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Classification Requirements for Floating Nuclear Power Plants (FNPPs)

Increased interest in advanced nuclear technology for global decarbonization includes commercial floating nuclear power plants (FNPPs). Like all vessels today, FNPPs will be registered to a Flag State, which usually delegates some responsibility to Classification Societies, such as the American Bureau of Shipping (ABS), to perform engineering reviews, inspections and surveys on their behalf. The role of Classification is explained to provide an understanding of the marine regulatory framework and the integration with nuclear regulatory regimes.

Existing International Maritime Organization (IMO) regulations apply to nuclear merchant ships using pressurized water reactors but may not directly apply to FNPPs. To support the technology-agnostic production of FNPPs, the ABS Requirements for Nuclear Power Systems for Marine and Offshore Applications provide minimum requirements to obtain the **Power Service (Nuclear)** Classification Notation.

The provisions for Classification using these requirements are described, including the risk assessment, Interface Document, integration testing and in-service survey plans that are required to differentiate the verification activities of Classification from the nuclear regulator for design and license approvals. These requirements may be used for FNPPs and leveraged later for nuclear ships, to guide the collaboration of the maritime and nuclear industries for successful implementation of commercial nuclear-maritime applications.

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