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Study of isolation valve for Sodium Fast Reactor

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In the framework of the ASTRID (Advanced Sodium Technological Reactor for Industrial Demonstration) project, the VELAN Company is involved to propose a concept of isolation valve to guaranty the confinement of the reactor block in case of severe accident scenario. An innovative and compact design for the isolation sodium valve was developed. Following the basic design phase studies on the sodium secondary loops, a dedicated valve concept was study to evaluate the technical parameters. The large size of the valve ND 700 mm requires optimizing the mass and dimensions due to cost mastering and response to seismic spectrum. After a description of the service conditions, the paper presents the mains outcomes of the technical parameters (mechanical behavior, sealing performance, hydraulic performance) which led on several valve designs. Maintenance aspects are also considered and a proposal of a butterfly valve design is proposed for detailed studies.

Country/Int. Organization

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