



Contribution ID: 224

Type: Poster

Decommissioning By Design (DBD) Concept of Indonesia's PeLUIt 150 MW Small Modular Reactors (SMR) Model: Challenge and Opportunity to Ensure Safety and Sustainability

The construction of nuclear reactors in Indonesia is moving towards a new phase marked by the plan to build the first nuclear power plant (NPP) which is planned to start in the near future, among the many existing nuclear power plant technologies, small modular reactor (SMR) type NPP was chosen because it is considered to have a high level of effectiveness and operational safety, so the risk of accidents can be very small. The SMR currently projected in Indonesia is named PeLUIt and has been licensed by the IAEA, SMR PeLUIt technology is 150 MW nuclear power plant based on the High Temperature Gas-cooled Reactor (HTGR) technology, with the helium-coolant and output thermal power of 150 MW. Before the implementation of the current PeLUIt NPP Development, one of the tasks is to ensure that every nuclear power plant reactor technology that will be built does not burden future generations and maintain the safety of future generations, so it is necessary to design a scheme for the implementation of decommissioning to waste management since the PeLUIt reactor was designed (before Development), but the implementation of decommissioning by design (DBD) designed in Indonesia certainly faces challenges ranging from Determination of relevant schemes by considering future conditions, the dynamics of each process during nuclear reactor operations, the absence of specific regulations, to the design of financing schemes. All existing challenges become opportunities that Indonesia which is seriously working on nuclear power plants to find new approaches that previously did not exist, especially on the SMR technology itself through the implementation of decommissioning and waste management since the reactor design was made.

Country OR International Organization

Indonesia

Email address

renaldysaragih2002@gmail.com

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Author: SARAGIH, Renaldy Bernardo (Politeknik Teknologi Nuklir Indonesia)

Presenter: SARAGIH, Renaldy Bernardo (Politeknik Teknologi Nuklir Indonesia)

Track Classification: Topical Group A: SMR Design, Technology and Fuel Cycle: Track 2: Advanced

fuels, reprocessing, waste management and decommissioning aspects for SMRs –Safety, Design and Technology