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Using open SMR datasets E-SMR and LDR lite for research and training purposes

Many Small Modular Reactor (SMR) designs rely on innovative safety features, which may differ from those of currently operating in conventional nuclear power plants. Access to simulation models of such nuclear units allows interested parties to build expertise prior to licensing processes. Two SMR datasets, E-SMR and LDR lite, have been recently published, and this paper presents examples of design basis accident scenario simulations on models made with those datasets performed at VTT.

The E-SMR dataset was created in EURATOM-funded ELSMOR (towards European Licensing of Small Modular Reactors) project, to demonstrate a safety philosophy similar to other PWR-type SMRs. The dataset was published under CC-BY-NC 4.0 license and has been used to perform design basis accident scenario benchmarks.

The LDR lite dataset is a public version of the Low-temperature District heating Reactor (LDR-50), intended for academic research. Designed by VTT, LDR-50 is suitable for district heating and other low-temperature applications, which influenced the design of the reactor to include different innovative passive safety systems designs and approaches.

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Confirm that the work is original and has not been published anywhere else

YES

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