TOWARDS A EUROPEAN SEVERE ACCIDENT INFRASTRUCTURE NETWORK (SAINET): AN OUTCOME OF THE SEAKNOT PROJECT

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One of the expected outcomes of the SEAKNOT (Severe Accident Research and Knowledge management for LWRs) project is to create the first step for an integrated experimental European Severe Accident Infrastructure of laboratories able to answer at Horizon 2026-2028 to current and future needs for water-cooled reactors severe accident research, Small Modular Reactors (SMRs) included. After having carried out a mapping of European Severe Accident experimental facilities, discussions have progressed on the outline of a future Severe Accident Infrastructure Network (SAINET). The aim of this future network will be to cover all the aspects of experimental Severe Accident R&D: in-vessel corium, ex-vessel corium, source term, and containment issues, including experiments related to severe accident mitigation processes/systems and to post-accident D&D. Not only experiments with irradiated or prototypic materials are considered but also those with justified simulants. It is expected that SAINET will have the capability to provide an integrated experimental offer for any Water-Cooled-Reactor severe accident issue both to classical stakeholders (TSOs, Research Centres, Regulators, vendors) and newcomers such as SMR start-ups. Another expected benefit of building SAINET is the networking it provides to the technical staff and the young scientists working on these facilities. The exchanges on experimental techniques (e.g. instrumentation, high temperature heating, refractory material issues…) are thus an important outcome of such networking. This network shall also become a forum of exchange in view of future investments in new research infrastructures and facilitate cross funding between different partners of future facilities. It should indeed help adjust the capabilities of a future facility with the expected needs of the European severe accident research area.

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