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SNETP Forum

Towards a European Severe Accident Infrastructure Network (SAINET): An Outcome Of The SEAKNOT Project

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1. Introduction - Context:

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) and Advanced Technology Fuels (ATFs) 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) and its expected benefits.

2. Outline of the future SAINET network

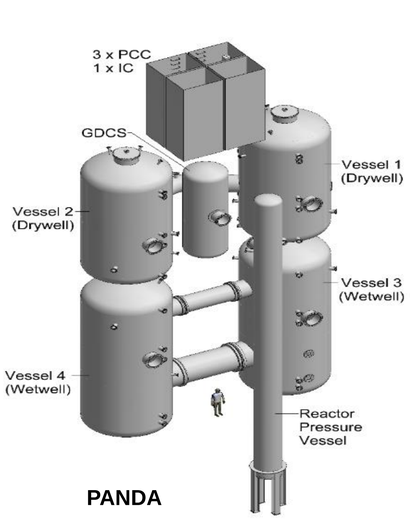
The aim of this future network will be to cover **all the aspects of experimental Severe Accident R&D**:

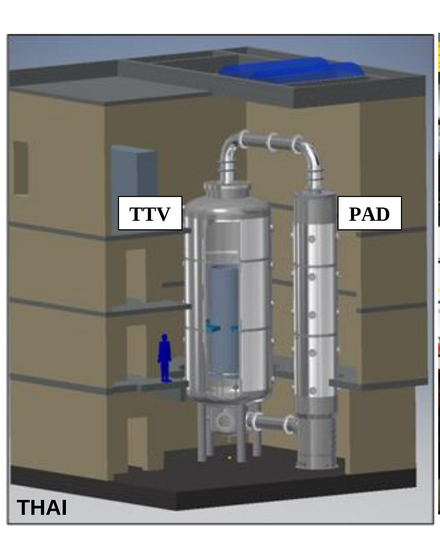
- **in-vessel corium**,
- **ex-vessel corium**,
- **source term**,
- **containment issues**,

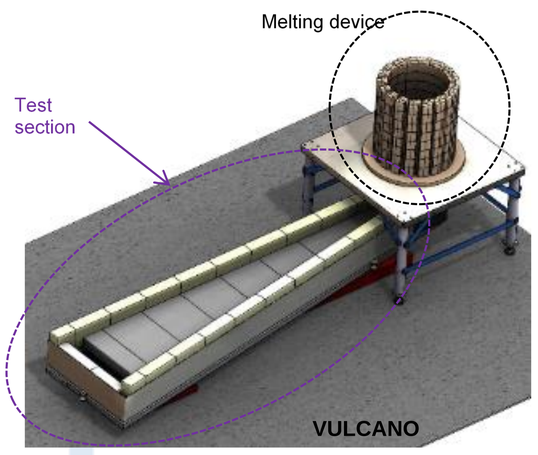
including experiments related to **severe accident mitigation** processes/systems and to **post-accident D&D**.

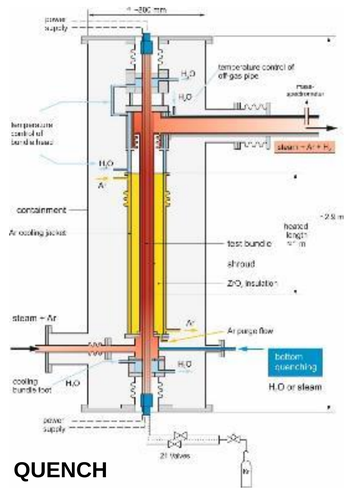
<u>European experimental facilities of interest :</u>

- with irradiated or prototypic materials
- with justified simulants.









Some European Severe Accident experimental facilities

3. Expected benefits

- Capability to provide an **integrated experimental offer** for any Water-Cooled-Reactor (PWR, BWR) severe accident issue
  - both to **classical stakeholders** (TSOs, Research Centres, Regulators, vendors)
  - and newcomers such as SMR **start-ups.**
- Providing **exchanges** for the **technical staff** and **young scientists** working on these facilities and developing/applying up to date experimental techniques (e.g. instrumentation, high temperature heating, refractory material issues…).
- Be 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**, optimizing both resources and data quality.

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