

SEAKNOT

SEvere Accident research and KNOwledge management for LWRs

● OBJECTIVES

Management, exploitation and assessment of knowledge in the Severe Accident (SA) field is the top level objective of SEAKNOT. In order to achieve it, some specific goals are pursued:

- To carry out a critical analysis of the current knowledge on SAs to make recommendations on the way forward to significantly reduce risks associated with existing and forthcoming nuclear technologies (SMLWRs & ATFs).
- To identify experimental research needs required to support and optimize SA mitigation measures, including an assessment of the current and future EU SA facilities.
- To strengthen the background and the skills of the young generation on SA through the implementation of an efficient plan to achieve Knowledge and Know-how Transfer (K2T) from senior scientists and engineers.

As a consequence, the **major outcomes of the project** have been identified as:

- Phenomena Identification Ranking Table (PIRT) on SA
- SA Validation Database Directory
- SA experimental infrastructure network, including a mapping of existing facilities and needs
- Knowledge spreading (SA Textbook, new editions of SA Phenomenology Course and ERMSAR Conference)
- Ambitious mobility granting for MSc/PhD students and young researchers

● EXPECTED IMPACTS

- Enhance NPP safety outlining the most efficient path for investigation to be conducted in the coming years.
- Maintain and further expand EC expertise in SA domain.
- Strengthen the abilities and skills of the workforce responsible for conducting such research.
- Reinforce education & training activities on SA.

Dissemination actions will have three axes: *scientific*, supporting the creation and diffusion of high-quality applied knowledge; *societal*, generating knowledge that support the uptake of innovative solutions to address global challenges, including SDG7 Clean Energy; and *economic*, facilitating technological development, demonstration and deployment of innovative solutions.

● HIGHLIGHTS

- Strong benefit from previous EU and non-EU research in the SA field.
- Collaboration with the NEA/CSNI and IAEA related Working Groups, strong link with the NUGENIA TA2.
- Creation of a "common space" for SA experts and young nuclear generations.
- A reset of needs in SA research based on what's known, what's unknown and what's safety significant.
- Upcoming technological and methodological innovation without neglecting the expertise built for decades.

● PARTNERS

CIEMAT/IRSN/KIT/JSI/UPM/FZJ/UJV/TRACTEBEL/ FRAMATOME/KTH/VTT/ENEA/CEA/UNIPI/BT/LGI/PSI

● DURATION & BUDGET

October 2022 to September 2026 - 4 years
Budget €2,726,993.75

● CONTACTS

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● EVENTS

Severe Accident Phenomenology (SAP) Course – two editions planned in June 2023 (UPM Madrid) and 2025 (FZJ)
European Review Meeting on Severe Accident Research (ERMSAR) – two editions planned in May 2024 (KTH Stockholm) and 2026 (CIEMAT Madrid)

