



## ABSTRACT

### Launching the new MUSA Project

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MUSA (Management and Uncertainties of Severe Accidents) is a new project approved in the last H2020 call (Euratom–work programme 2018) within the Nuclear safety topic 1 (Safety assessments to improve accident management strategies for Generation II & III reactors).

The general main MUSA's objective is to assess the capability of Severe Accident (SA) codes when modelling reactor and Spent Fuel Pool (SFP) accident scenarios of GEN II, GEN III and GEN III+ designs. To do so, Uncertainty methods are to be employed, with an emphasis on the effect of both existing and innovative SAM measures on the accident progression, particularly those measures related to the source term (ST) mitigation.

The large scope requires a technically sound and well-structured work plan. MUSA is built around seven WPs, including coordination (WP1) and dissemination of results (WP7) and will develop through five major activities:

- Identification and ranking of uncertainties in SA modelling (WP2);
- peer review of UQ methodologies and adaptation to the SA domain (WP3);
- testing of the UQ adapted methodologies against integral SA tests (WP4) and
- application to SA scenarios in full-scale reactors and SFPs (WP5 and WP6, respectively).

In all application cases, ST related variables will be selected as figures of merit.

The MUSA consortium is formed by a total of 29 partners, of which roughly 25% are Non-European organizations. It involves the most experienced organizations in the scientific domain of SA and the vast majority has a long tradition in participation in EURATOM Programmes and/or other frameworks like OECD/NEA or IAEA, particularly in the last decade.

The practical nature of MUSA maximizes the relevance of having on board a truly diverse set of organizations: Research Centres, Universities, Technical Support Organizations (TSOs), regulatory bodies and industries. They build a very consistent and complementary consortium that covers diverse aspects of ST (i.e., release, transport and chemistry) and gather experienced teams in SA analytical tools and data. All in all, the project comprises a highly valued group of skilled nuclear engineers and scientists. The WP leathers gather: ENEA, GRS, IRSN, JRC, KIT and UNIPI with the overall coordination of CIEMAT together with LGI.

This work presents the project, structure and goals to be fulfilled within the next 4 years.