



**of the European Atomic Energy Community (Euratom)
for nuclear research and training activities (2007-2013)**

Coordination and Support Action

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| <i>SARGEN_IV</i> |
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| Project title: | Proposal for a harmonized European methodology for the safety assessment of innovative reactors with fast neutron spectrum planned to be built in Europe |
| Project number: | 295446 |
| Project coordinator: | Institut de Radioprotection et de Surete Nucleaire (IRSN), Fontenay aux Roses, France |
| HZDR participant: | Institute of Resource Ecology |
| Starting date: | 01.01.2012 |
| Duration (months): | 24 |

Summary

The European Sustainable Nuclear Industrial Initiative was launched in November 2010 to anticipate the development a fleet of fast reactors with closed cycle. Three fast neutron technologies have been selected:

- The Sodium cooled Fast Reactor with the ASTRID prototype
- The Lead cooled Fast Reactor with the ALFRED demonstrator which will be preceded by a pilot plan MYRRHA
- The Gas cooled Fast Reactor with the ALLEGRO demonstrator

With the objective of future assessment of these advanced reactor concepts, the SARGEN_IV Project is intended to gather safety experts from recognized European technical safety organizations from designers and vendors as well as from research institutes and universities to:

- Develop and provide a tentative commonly agreed methodology for the safety assessment
- Identify open issues in the safety area, mainly addressing and focusing on assessment relevant ones

- Detect and underline new fields for R&D in the safety area
- Provide a roadmap and preliminary deployment plan for safety-related R&D, including cost estimation

Firstly, the proposed methodology requires the identification and the ranking of the main safety issues related to these reactors which needs a strong collaboration with other European projects as CP-ESFR, GoFastR, Leader and CDT.

Secondly, a review of the safety methodologies proposed by international organizations and those issued from national practices and European consortia in order to define the tentative commonly agreed methodology which will be therefore applied to specific safety issues relevant for the selected reactors.

The project beneficiaries are convinced that fostering to harmonization of the various European safety approaches will be very beneficial and will streamlining EURATOM contribution to Generation IV International Forum in the safety field. It will also improve relations between safety assessment and research programmes efficiency in the development of new concepts.