

## **Research Needs in the Domain of Severe Accidents**

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### **Abstract**

The objectives of SARNET are to define common research programmes and to develop common computer tools and methodologies for safety assessment. To reach these objectives several elements or work programmes (WP) are established. One of them is the WP 'Severe Accident Research Priorities' (SARP) with the aims to harmonize and to re-orient research programmes, to define new ones, and to close a resolved issue on a common basis. This action will make use notably of (1) the outcome of the EURSAFE action, i.e., the results of the Phenomena Identification and Ranking Tables (PIRT) on severe accidents, (2) the results of the qualification and benchmarking activities on ASTEC, (3) the results of reactor calculations carried out in the other activities, and (4) the outcome of the research performed in the three thematic sub domains of SARNET (corium, containment, source term).

The main outcome of EURSAFE was a list of 21 topics which includes precise recommendations for experimental programmes and code developments and forms the basis of the work of the SARP. Also the methodology applied in EURSAFE to consider both risk potential and the severe accident issues where large uncertainties still subsist will be adopted. The analyses of the progress of research and developmental activities will be in close cooperation with the management team and the coordinators of the WPs. These analyses will consider whether (1) any research issue is resolved due to reduction of uncertainties or gain of scientific insights, (2) any new issue has to be added to the list of needed research, (3) any new process or phenomena have to be included in the general PIRT list taking into account the safety relevance and lack of knowledge, and (4) a new accident management programme has to be developed to cope with unresolved problems. Furthermore a strategy plan will be elaborated to ensure a wide consensus with the end users requirements and the objectives of SARNET research activities.