The Fukushima accidents highlighted that both the in-depth understanding of such sequences and the development or improvement of adequate severe accident management measures is essential in order to further increase the safety of the nuclear power plants operated in Europe. CESAM (Code for European Severe Accident Management) is a R&D project that aims in particular at the improvement of the European reference code ASTEC towards a usage in severe accident management analysis for nuclear power plants (NPP).

The models of ASTEC that are available for the relevant phenomena during severe accidents in the reactor core as well as in the spent fuel ponds are assessed and recommendations for improvement are developed. The lessons learned from the severe accident in Fukushima will be especially considered. Based on these recommendations ASTEC models will be improved and validated by the partners.

In addition, ASTEC will be coupled to environmental consequences tools and a methodology will be investigated that evaluates the probability of different possible accident scenarios based on available on-side data during an accident in a nuclear power plant. This way, ASTEC will be extended to become a tool used for decision-making in emergency cases. ASTEC reference datasets for the main generic types of NPPs in Europe (PWR, BWR, CANDU) will jointly be prepared to give users appropriate guidance how to apply ASTEC for real plant analyses used e.g. for accident management. Plant analyses and possible improvements of SAM measures based on various plant scenarios and accounting for the lessons drawn from the Fukushima accidents, will be performed. A workshop will be organized to elaborate on ASTEC capabilities for calculations of the Fukushima accidents, both in the reactor core and the spent fuel ponds.
Contributo UE: EUR 641 945,80

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