



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

**Collaborative Project**

***NURESAFE***

Project title:	<b>NUCLEAR REACTOR SAFETY SIMULATION PLATFORM</b>
Project number:	<b>323263</b>
Project coordinator:	<b>Commissariat a l Energie Atomique et aux Energies Alternatives CEA, Paris, France</b>
HZDR participant:	<b>Institute of Fluid Dynamics</b>
Starting date:	<b>01.01.2013</b>
Duration (months):	<b>36</b>

**Summary**

After the 2011 disaster that occurred in Japan, improvement of nuclear safety appears more clearly as a paramount condition for further development of nuclear industry. The NURESAFE project addresses engineering aspects of nuclear safety, especially those relative to design basis accidents (DBA). Although the Japanese event was a severe accident, in a process of defense-in-depth, prevention and control of DBA is obviously one of the priorities in the process of safety improvement. In this respect, the best simulation software are needed to justify the design of reactor protection systems and measures taken to prevent and control accidents.

The NURESAFE project addresses safety of light water reactors which will represent the major part of fleets in the world along the whole 21st century. The first objective of NURESAFE is to deliver to European stakeholders a reliable software capacity usable for safety analysis needs and to develop a high level of expertise in the proper use of the most recent simulation tools.

Nuclear reactor simulation tools are of course already widely used for this purpose but more accurate and predictive software including uncertainty assessment must allow to quantify the margins toward feared phenomena occurring during an accident and they must be able to model innovative and more complex design features.

This software capacity will be based on the NURESIM simulation platform created during FP6 NURESIM project and developed during FP7 NURISP project which achieved its goal by making available an integrated set of software at the state of the art. The objectives under the work-program are to develop practical applications usable for safety analysis or operation and design and to expand the use of the NURESIM platform. Therefore, the NURESAFE project concentrates its activities on some safety relevant “situation targets”. The main outcome of NURESAFE will be the delivery of multiphysics and fully integrated applications.