



**of the European Atomic Energy Community (Euratom)  
for nuclear research and training activities (2007-2011)**

**Collaborative Project**

<b><i>NURISP</i></b>
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Project title:	<b>NUclear Reactor Integrated Simulation Project</b>
Project number:	<b>232124</b>
Project coordinator:	<b>Commissariat a l'Energie Atomique, Paris, France</b>
HZDR participant:	<b>Institute of Safety Research</b>
Starting date:	<b>01.01.2009</b>
Duration (months):	<b>42</b>

**Summary**

The target of the proposed NURISP Collaborative Project is to make new and significant steps towards a European Reference Simulation Platform for applications relevant to present PWR and BWR and to future reactors. The roadmap of this Simulation Platform will be proposed to be part of the future Strategic Research Agenda of the Sustainable Nuclear Energy Technology Platform (SNE-TP, <http://www.snetp.eu/>).

The first step towards this ambitious target has been made during the FP6 NURESIM Integrated Project. The NURISP project will start from this basis and develop further the already common and well-proven NURESIM informatics platform. It will also strengthen and enlarge the united team of top level international experts already federated during the NURESIM project and it will transform it into an European pole of excellence in reactor safety computation.

The platform will provide a more accurate representation of the physical phenomena by developing and incorporating into “best estimate” codes the latest advances in core physics, two-phase thermal-hydraulics and fuel modeling. The project will also develop significant capacities for multiscale and multiphysics calculations, and for deterministic and statistical sensitivity and uncertainty analysis, facilitating their use in a generic environment.

The individual models, solvers and codes integrated into the platform will be verified, validated and demonstrated through benchmarks (some of them using NEA or IAEA databanks) corresponding to present and future PWR, VVER and BWR challenging applications.

Through the Users' Group, European Nuclear Utilities, Vendors, Technical Safety Organisations, Regulators, Universities and Research Labs will be able to share this reference tool, contribute to its qualification, and develop its potential; thus enabling an effective European Research Area to take a worldwide leading position in the numerical simulation of nuclear reactors.

FZD (HZDR) is involved in the work packages 1 (Core Physics, Training), 2 (Thermal-Hydraulics) and 3 (Multiphysics).