"Methodology, Analysis and Experiments for the "Safety In MYRRHA Assessment"

Fact Sheet

Project information

MAXSIMA

Grant agreement ID: 323312

Status
Closed project

Start date 1 November 2012
End date 31 October 2018

Funded under:
FP7-EURATOM-FISSION

Overall budget:
€ 10 087 542

EU contribution
€ 5 500 000

Coordinated by:
STUDIECENTRUM VOOR KERNENERGIE / CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE
Belgium

Objective

"The Strategic Research Agenda of the EU Sustainable Nuclear Energy Technical platform requires new large infrastructures for its successful deployment. MYRRHA has been identified as a long term supporting research facility for all ESNII systems and as such put in the high-priority list of ESFRI. The goal of MAXSIMA is to contribute to the "safety in MYRRHA" assessment.

MAXSIMA has five technical work-packages. The first contains safety analyses to support licensing of MYRRHA. Design-based, design extended and severe accident events will be studied with a focus on transients potentially leading to fuel pin failures. Fuel assembly blockage and control system failure are the least unlikely events leading to core damage. For code validation a thermal-hydraulic study of different blockage scenarios of the fuel bundle and tests of the hydrodynamic behaviour of a new buoyancy driven control/safety system are planned. Both are supported by numerical simulations. Safety of the Steam Generator is treated by looking at consequences and damage propagation of a SG Tube Rupture event (SGTR) and by characterising leak rates and bubble sizes from typical cracks in a SGTR. Additionally a leak detection system and the drag on bubbles travelling through liquid LBE are studied. MOX fuel segment qualification with transient irradiations is a big step in licensing. MAXIMA include validation experiments for safety computer codes involving core damage scenarios with high temperature MOX-LBE interactions. Fuel-coolant-clad chemistry is studied up to 1700°C and a core melt experiment in a reactor is prepared to assess the interaction of LBE with molten fuel. Following the Fukushima accident, effort is put on
development of enhanced passive safety systems for decay heat removal and on confinement analyses for HLM systems. A separate work package is dedicated to education and training. Beside workshops, lecture series and training sessions, virtual-safety simulator software will be developed.

Programme(s)

FP7-EURATOM-FISSION - EURATOM: Nuclear fission and radiation protection

Topic(s)

Fission-2012-2.3.1 - R&D activities in support of the implementation of the Strategic Research Agenda of SNE-TP

Call for proposal

FP7-Fission-2012

See other projects for this call

Funding Scheme

CP - Collaborative project (generic)

Coordinator

STUDIECENTRUM VOOR KERNENERGIE / CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE

Address

Avenue Herrmann Debroux 40, 1160 Bruxelles, Belgium

Activity type

Research Organisations

EU Contribution

€ 2 173 500

Website

Contact the organisation

Administrative Contact

Ludo Veuchelen (Mr.)

Participants (13)
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Activity type
Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)

Website
Contact the organisation
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Luminita Savoiu (Ms.)

AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE

Italy

EU Contribution
€ 862 705

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Activity type
Research Organisations

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Contact the organisation
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KARLSRUHER INSTITUT FUER TECHNOLOGIE

Germany

EU Contribution
€ 742 000

Address
Kaiserstrasse 12
76131 Karlsruhe

Activity type
Higher or Secondary Education Establishments

Website
Contact the organisation
Administrative Contact
Natascha Kindsvogel (Ms.)
<table>
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<tr>
<th>Organisation Name</th>
<th>Country</th>
<th>EU Contribution</th>
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<td>ANSALDO NUCLEARE SPA</td>
<td>Italy</td>
<td>€ 208 447</td>
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<tr>
<td>GESELLSCHAFT FUR ANLAGEN UND REAKTORSICHERHEIT (GRS) gGmbH</td>
<td>Germany</td>
<td>€ 66 607</td>
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<td>NUCLEAR RESEARCH AND CONSULTANCY GROUP</td>
<td>Netherlands</td>
<td>€ 101 858</td>
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**Address**

- Via Lorenzi Nicola 8  
  16152 Genova

**Activity type**

- Private for-profit entities  
  (excluding Higher or Secondary Education Establishments)

**Website**

**Contact the organisation**

Administrative Contact

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**Activity type**

- Other

**Website**

**Contact the organisation**

Administrative Contact

Dietrik W. Emmens (Mr.)
<table>
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<tr>
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<td>€ 146 678</td>
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<td>Research Organisations</td>
<td>Vincent Moreau (Mr.)</td>
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<td>KUNGLIGA TEKNISKA HOEGSKOLAN</td>
<td>€ 507 395</td>
<td>Brinellvagen 8 100 44 Stockholm</td>
<td>Higher or Secondary Education Establishments</td>
<td>Monica Thorén (Ms.)</td>
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<tr>
<td>HELMHOLTZ-ZENTRUM DRESDEN-ROSEN DORF EV</td>
<td>€ 56 850</td>
<td>Bautzner Landstrasse 400 01328 Dresden</td>
<td>Research Organisations</td>
<td>Katja Gröger (Ms.)</td>
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</table>
REGIA AUTONOMA TEHNOLOGII PENTRU ENERGIA NUCLEARA - RATE\[\[n\] Romania

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**Activity type**
Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)

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Administrative Contact
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CHALMERS TEKNISKA HOEGSKOLA AB
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- 41296 Goeteborg

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**Website**

**Contact the organisation**
Administrative Contact
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INSTITUTE OF ATOMIC ENERGY OF NATIONAL NUCLEAR CENTRE OF REPUBLIC OF KAZAKHSTAN
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071100 Kurchatov

**Activity type**
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**Website**

**Contact the organisation**
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Alexander Vurim (Mr.)
<table>
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<th><strong>CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT</strong></th>
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<td>Avenida Complutense 40 28040 Madrid</td>
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Ana Collados Martín-Posadillo (Ms.)

**Last update:** 2 August 2019

**Record number:** 106639