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The muse experiments for subcritical neutronics validation

Fact Sheet

Project Information

MUSE

Grant agreement ID: FIKW-CT-2000-00063

Project closed

Start date

1 October 2000

End date

31 October 2004

Funded under

Research and training programme (Euratom) in the field of nuclear energy (1998 to 2002)

Total cost

€ 4 056 932,00

EU contribution

€ 2 000 000,00

Coordinated by

COMMISSARIAT A L'ENERGIE
ATOMIQUE

 France

Objective

The MUSE experiments to be performed at MASURCA facility (CEA-Cadarache), will investigate several subcritical configurations driven by an external neutron source provided by (d, d) or (d, t) reactions. The incident deuterons will be provided by a pulsed accelerator (GENEPI), to be installed in the MASURCA facility. The configurations foreseen will have uranium, plutonium, thorium fuels, with lead or sodium or gas coolant. Several levels of subcriticality will be investigated ($K_{eff} = 0.95$ to 1.). Measurements are foreseen of the subcriticality (with static, dynamic and neutron noise methods), of the neutron spatial distributions, neutron spectra, and effective delayed neutron fraction and neutron source importance parameter.

Extensive cross-comparison of codes and data is foreseen. Experimental reactivity control techniques will be developed, related to subcritical operation.

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > [inorganic chemistry](#) > **[alkali metals](#)**

[engineering and technology](#) > [environmental engineering](#) > **[energy and fuels](#)**



Programme(s)

[FP5-EAECTP C - Research and training programme \(Euratom\) in the field of nuclear energy \(1998 to 2002\)](#).

Topic(s)

[2.1.2.-2.2.3 - Transmutation \(basic studies\)](#).

Call for proposal

Data not available

Funding Scheme

[CSC - Cost-sharing contracts](#)

Coordinator



COMMISSARIAT A L'ENERGIE ATOMIQUE

EU contribution

No data

Total cost

No data

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Participants (12)



BELGIAN NUCLEAR RESEARCH CENTRE

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EU contribution

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Total cost

No data



BRITISH NUCLEAR FUELS PLC

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EU contribution

No data

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Total cost

No data



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EU contribution

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Total cost

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EU contribution

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Total cost

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DELFT UNIVERSITY OF TECHNOLOGY

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Total cost

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ROYAL INSTITUTE OF TECHNOLOGY

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Total cost

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UNIVERSITY OF MINING AND METALLURGY

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Total cost

No data

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European Union, 2025

