

CANDIDE

Coordination Action on Nuclear Data for Industrial Development in Europe



J. Blomgren¹, E. Bauge², D. Cano Ott⁹, S. Czifrus⁵, I. Gonçalves¹³, E. Gonzalez⁹, H. Henriksson¹⁵,
R. Jacqmin², A.J. Koning⁴, D. Lecarpentier¹², E. Malambu Mbala⁸, A. Mengoni¹⁴, R. Mills¹¹,
A. Plompen³, A. Ranta-Aho⁶, G. Rimpault², V. Stary⁷, C. Trakas¹⁰, P. Vaz¹³, C. Zimmerman¹¹



Budapest University of Technology and Economics

- 1) Uppsala University, Sweden
- 2) Commissariat à l'Énergie Atomique, France
- 3) Joint Research Centre – Institute for Reference Materials and Measurements, EU
- 4) Nuclear Research and consultancy Group, the Netherlands
- 5) Budapest University of Technology and Economics, Hungary
- 6) Teollisuuden Voima Oy, Finland
- 7) Nuclear Research Institute Řež, Czech Republic
- 8) Studiecentrum voor Kernenergie - Centre d'étude de l'Énergie Nucléaire, Belgium
- 9) Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Spain
- 10) AREVA, France
- 11) Nexia Solutions, United Kingdom
- 12) Electricité de France, France
- 13) Instituto Tecnológico e Nuclear, Portugal
- 14) International Atomic Energy Agency, UN
- 15) Nuclear Energy Agency, OECD



AIM:

- **Assessment of present and future status on nuclear data.**
- **Provide recommendations on research.**

RECOMMENDATIONS

Actions of general applicability:

A long term commitment to modern nuclear data evaluation should be provided in Europe (JEFF).

Complete nuclear data libraries, including covariance matrices.
Systematic quality-assured data evaluation methods.

Support the facilities that are capable to produce key nuclear measurements and stimulate high-level measurements on key reactions of interest to advanced reactor development

Selected differential measurements (NEA SG-26, High-Priority Request List).
"Culture change" in experimental nuclear physics: complete documentation.
Integral measurements to test nuclear data in well defined reactor-type spectra.

Provide the capability for advanced nuclear model development

Nuclear models for actinides of same quality as for non-fissile nuclides.
Consistent statistical methods to produce reliable covariance information from both theory and experiment.

Ensure flexible implementation of improved nuclear data libraries in nuclear technology and design.

Easy upgradeable nuclear data library interfaces, for both static and dynamic system analyses,
using full-core coupled neutronic and thermo-hydraulic reactor calculations.
Systematic approaches to integral validation and sensitivity studies.

Application-specific actions:

High burnup systems.

Fast neutron actinide cross-sections for both critical or sub-critical reactors.

Void coefficients in sodium cooled fast reactors.

Cross-sections for transmutation and target design in accelerator-driven systems.

Specific capture and fission measurements in the 1 eV to 1 MeV range for Am and Cm isotopes.
Well-chosen integral measurements for neutrons at intermediate energies.
Assessment of uncertainties of high-energy data (>20 MeV).

RELEASE PARTY:

CANDIDE final OPEN meeting
Lisbon, Portugal, December 11, 2008