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The United Kingdom Nuclear Science Forum

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The United Kingdom Nuclear Science Forum

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Abstract. The United Kingdom Nuclear Science Forum effectively acts as the United Kingdom's Nuclear Data Committee. As such it is the interface between the UK nuclear data community and international nuclear data centres. This paper outlines the Forum's terms of reference and describes some of its recent activities.

INTRODUCTION

The United Kingdom Nuclear Science Forum (UKNSF) brings together the measurers, evaluators, and users of nuclear data throughout the United Kingdom. Its members, including representatives from the nuclear industry, the regulators, government departments, and academia have interests in both neutron cross-section data and decay scheme data. The forum meets formally once a year, while, between meetings, business is carried out by e-mail and via the forum's web site. The UKNSF is responsible to the Health and Safety Executive and to the UK government Department of Trade and Industry for maintaining the interface between the UK nuclear data community and international nuclear data centres such as the Organisation for European Cooperation and Development (OECD) Nuclear Energy Agency Data Bank and the Nuclear Data Section of the International Atomic Energy Agency. The forum also acts as an interface between regulators, data users and data measurers to assist in establishing UK policy with respect to data issues. The UKNSF aims to engender and disseminate expertise in measuring, evaluating, processing, testing, and using nuclear data in the UK. It provides peer review for reports of measurements, evaluations, and tests of basic nuclear data and identifies programmes of work to improve the quality of nuclear data libraries. The forum is chaired by Robin Forrest, UKAEA Culham, while Desmond MacMahon, NPL, acts as secretary.

AIMS OF THE UKNSF

- Act as a focus for matters relating to the Nuclear Science Committee of the Nuclear Energy Agency and the IAEA Nuclear Data Section.
- Provide a communications link between regulators, data users, and data producers to assist in establishing UK policy with respect to said data issues.
- Provide an interface with relevant national committees in other countries and with international committees.
- Advise on, and monitor, the activities and memberships of the relevant national committees.
- Ensure that the UK is fully represented in the development of international data libraries and ensure that such libraries are adequate for UK needs.
- Provide peer-review reports of measurements, evaluations, and tests of basic nuclear data, and identify needs and discrepancies in these data.
- Identify programmes of work to improve the quality of nuclear data libraries on the basis of 'fit for purpose.'
- Engender expertise in measuring, evaluating, processing, testing, and using nuclear data in the UK.

- Decide by discussions between users and producers of data the best and most user-friendly ways of making data available to the scientific community, and assist in achieving this objective by encouraging suitable publications and software development.

TYPES OF DATA COVERED

- Radioactive decay data
- Fission yields
- Neutron production and reaction cross sections
- Spectra and angular distributions of emitted particles
- Integral data
- Charged particle and photon cross sections

- Data for specific areas including nuclear fusion, nuclear medicine, and other industrial applications.

ACTIVITIES OF THE UKNSF

- An annual meeting to discuss matters of common interest to users of nuclear data.
- Provision of an annual report to the UK Health & Safety Executive.
- Maintaining a web site [www.npl.co.uk/uknsf] to help disseminate use of the best available nuclear data to the user community and to act as a library of UKNSF papers and meeting minutes for use by UKNSF members. The home page is shown in Fig. 1.
- Promotion of the activities of the UKNSF to the user community.

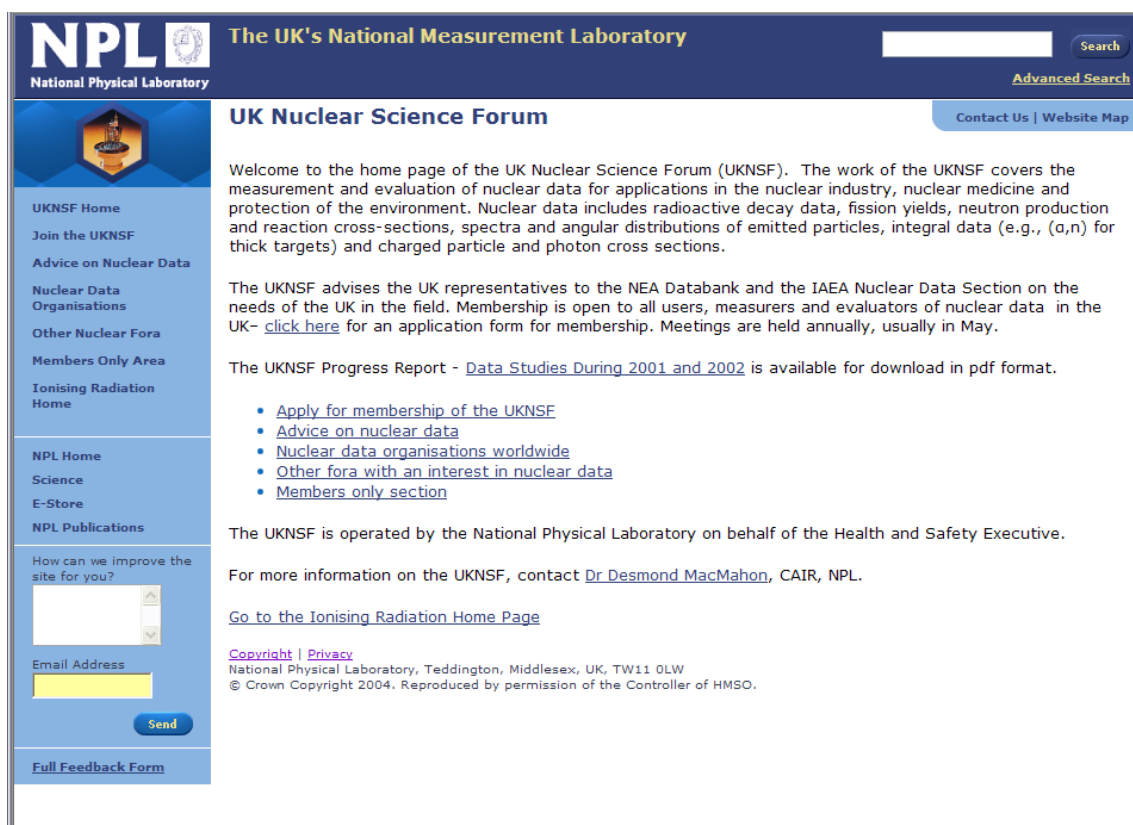


FIGURE 1. UKNSF web site home page.

- Organising working groups, as appropriate, to resolve specific technical issues.
- The UKNSF is managed by the National Physical Laboratory, who provides the Chairman (via a contract) and Secretary of the UKNSF.
- Assessment and Evaluation of decay Data for EAF – 2002/04
- The Generation of Beta Spectra from ENDF-6 Evaluations

REPORTS OF THE UKNSF

- Recent UKNSF reports have covered the following topics:
- Reports of OECD/NEA Nuclear Science Committee Meetings, June 2004
- JEFF Meetings, May 2004
- COGEND: A Code to Generate Nuclear Decay Scheme Data in ENDF-6 Format
- Modifications to COGEND to process β -n and β - α Decay Data
- Evaluation of Half-life Data [1]
- UKNSF Progress Report – Data Studies during 2001 & 2002 [2]

- Installation and testing of FIZCON 6.13
- MONK8B Analysis of the Hellstrand Experiment
- Spectral Data in JEFF 2.2 and JEFF 3T2 Decay Files
- Evaluation of Decay Data for Specific Actinides and Decay Chain Nuclides
- Calculation of the Valduc Lattices with revised ^{235}U Data

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