Nuclear Data Newsletter

ISSUE No. 9   May 1986

Note: The quoted data, documents or codes are available costfree upon
        request (unless indicated otherwise). - When requesting data on
        magnetic tape, kindly specify the acceptable density and maximum
        blocking factor. Tapes will be in 9 track EBCDIC; 7 track tapes
        can no longer be sent.

Nuclear Data Handbooks

Nuclear Standard Reference Data. Proceedings of an IAEA Advisory Group
Meeting, Geel, Belgium, 12-16 Nov. 1984, edited by K. Okamoto, IAEA-TECDOC-
335 (1985). Limited number of copies available costfree. This document
gives a survey on the present status of standard reference data, not only
for neutron cross-sections but also for neutron spectra, neutron energies,
fission yields, gamma rays and others. It is supplementary to the data
handbook on "Nuclear Data Standards for Nuclear Measurements" published in
1983 as IAEA Technical Report 227 (see Nuclear Data Newsletter No. 6).

Decay Data of the Transactinium Nuclides. Values for half-lives and
emission probabilities for alpha particles and selected gamma rays,
recommended by an IAEA Coordinated Research Programme on the measurement
and evaluation of transactinium isotope decay data. IAEA Technical Report
261 (1986). This handbook has a salesprice of 400,-- Austrian Schillings.
A limited number of copies is available free of charge to scientists in
developing countries.

Computer code intercomparison

The OECD/NEA Data Bank completed an intercomparison of nuclear model codes
with emphasis on pre-equilibrium effects (see NEA Data Bank Newsletter No.
32, Sept. 1985, available upon request). This project is being continued
by testing the predictive power of the nuclear model codes in a case where
so far unmeasured experimental data will be released after completion of
the calculations. Whoever wishes to participate is invited to contact, as
soon as possible, Dr. E. Sartori, NEA-Data Bank, F-91191 Gif-sur-Yvette,
France.

New data libraries received
================================

ENDF/B-5 fission-product yields, containing yield data for 11 fissioning
nuclides at one or more energies of incident neutrons (e.g. thermal, fast,
14 MeV, spontaneous). The file is based on the Rider and Meek compilation
of 1976. It is available on magnetic tape in ENDF-5 format, costfree upon
request. For a summary documentation see IAEA-NDS-62.

INDL Supplement. New evaluations by V.A. Konshin et al. (Minsk, USSR) for
U-235, Pu-239, Pu-240, Pu-241, Pu-242 have been received and added to the
IAEA Nuclear Data Library INDL/A. These new evaluations supersede all
earlier files by the same authors. The data are available on tape ("INDL/A
Suppl. 86/5"). The evaluations are described in Russian in two books of
which microfiche copies are available as INDC(CCP)-256 [Pu isotopes] and
INDC(CCP)-257 [U-235].

ENDF/B-5 updates. For several parts of the ENDF/B-5 library the following
updates have been received:

- ENDF/B-5 standards: MAT 1306 for 6-C, MAT 1379 for 79-Au-197, and
  MAT 1359 for 92-U-235 were modified. For carbon and gold there
  are few minor corrections, whereas for U-235 new data are given
  for the energy release in fission and the cross-section covariance
  matrix, in addition to few minor corrections in other data types.

- ENDF/B-5 actinides: Modifications were made to

    MAT 1391 for 91-Pa-233   MAT 1394 for 92-U-234
    MAT 1396 for 92-U-236   MAT 1337 for 93-Np-237
    MAT 1338 for 94-Pu-238   MAT 1342 for 94-Pu-242
    MAT 1361 for 95-Am-241   MAT 1363 for 95-Am-243
    MAT 1344 for 96-Cm-244   MAT 1345 for 96-Cm-245

  In several cases these modifications include updated evaluations for
  some data types.

- ENDF/B-5 fission-product cross-sections: New evaluations are given
  for 47-Ag-107 (MAT 1407) and 47-Ag-109 (MAT 1409) superseding the
  earlier evaluations under MAT 1371 and 1373. Modifications in 5
  other materials do not affect the physical data.

Note: Above modified ENDF/B files were run through a program comparing the
old version against the modified version of the files. The output, which
lists all the differences, is available as document IAEA-NDS-65. It may
help data users to determine the possible impacts of the modifications made.

Data indexes and bibliographies
================================

CINDA-86, the bibliography and data index for microscopic neutron data, is
available for 680,- Austrian Shillings, including a supplement to be
published in November.

Integral Charged Particle Nuclear Data bibliography, BNL-NCS-51771, first
edition, supplement 1, April 1985, literature scanned from 1 April 1984 to
31 March 1985. Compiled by N.E. Holden et al. Costfree.

Fotojadernye Dannye - Photonuclear Data, issue 8, a bibliography with
abstracts in Russian and English, covering the literature of 1984, costfree.

2

Selected new publications of interest
=======================================

   ** = document available costfree from IAEA/NDS upon request
    * = few copies available costfree from IAEA/NDS upon request
    - = available from the originator, or from the INIS Microfiche
        Service (IAEA, P.O. Box 100, A-1400 Vienna, Austria)
    o = to be purchased from publisher

o   Nuclear Data, Cross-Section Libraries, and their Application in Nuclear
    Technology. Proceedings of an international "State of the
    Art"-Seminar, Bonn, FRG, 1-2 Oct. 1985. D. Bünemann (ed.), organized
    by Kerntechnische Gesellschaft e.V..

*   IAEA-TECDOC-345. Neutron Physics and Nuclear Data Measurements with
    Accelerators and Research Reactors. Lectures given on the IAEA
    Interregional Training Course, Tashkent, 4-30 September 1983.

** INDC(GDR)-34. Techniques of measurements, analysis and instrumentation
    for 14-MeV-neutron nuclear cross-sections. D. Seeliger, ed. Papers
    presented at the 13th International Conference on Nuclear Physics,
    Gaussig/Dresden, German Dem. Rep., 21-25 November 1983.

** INDC(NDS)-173. Status reviews of 14-MeV-neutron induced cross-sections:
    measurements and calculations. M.K. Mehta, ed. Papers presented at a
    research co-ordination meeting on 14-MeV-neutron data needed for
    fission and fusion reactor technology, Gaussig/Dresden, German Dem.
    Rep., 21-25 Nov. 1983, in conjunction with the aforementioned
    conference.

** INDC(NDS)-176. M.K. Mehta, H.K. Vonach, R.C. Haight et al.:
    Intercomparison exercise for activation measurements of 14-MeV-netron
    irradiated nickel foils.

** INDC(BUL)-10. C.C. Pandeleev et al.: Ratio of (n,2n) cross-section for
    lead and iron.

-   ANL/NDM-89 (April 1985). B.P. Evain et al. Compilation and evaluation
    of 14-MeV neutron-activation cross-sections for nuclear technology
    applications.

** INDC(CSR)-7. I. Ribansky et al. Neutron activation cross-section for
    Ni isotopes at 14.8 MeV.

** INDC(VN)-4. Hoang Dac Luc et al. Activation cross-sections of (n,p)
    and (n,n'p) reactions induced by 14.8 MeV neutrons on Cr isotopes.

** INDC(CPR)-6. H.Q. Qi et al. The measurement of neutron scattering
    cross-sections at small angles.

** INDC(CPR)-5. H.Q. Qi et al. Study on position sensitive neutron
    detection system.

** INDC(CPR)-3. Bao Shanglian et al. Measurement of nonelastic
    cross-section for the elements Cu, Si at 14.9 MeV.

** INDC(NDS)-168. Progress in Fission-Product Nuclear Data, No. 11. M.
    Lammer, ed. (1985).

** INDC(CCP)-245. G.N. Manturov et al. Evaluation of Th-232 neutron data
    in the unresolved resonance region.

**   INDC(CPR)-4. Chen Jinxiang et al. Measurement of partial neutron spectrum of an Am-Be (α,n) source.

**   INDC(CCP)-246. S.N. Abramovich et al. Estimations of total and differential cross-sections for proton-interaction with Li-6 and Li-7.

**   INDC(NDS)-175. Summary and recommendations of the IAEA meeting on Nuclear and Atomic Data for Radiotherapy and Related Radiobiology, Rijswijk, the Netherlands, 16-20 Sept. 1985. K. Okamoto, ed.

**   INDC(BZL)-16. R. Paviotti-Corcuera. Covariance matrices in evaluated nuclear data.

**   INDC(BZL)-17. R.D.M. Garcia, M.D. Santina. Generation of elastic and discrete inelastic transfer matrices.

**   INDC(BZL)-18. A.D. Caldeira, R. Paviotti: Effect of two representations of the fission spectrum in the calculation of average cross-sections.

**   INDC(CCP)-247. V.A. Dulin: Evaluation of the accuracy of group calculations for reactor criticality perturbations.

**   INDC(BZL)-19. R.D.M. Garcia: Evaluation of angular integrals in the generation of transfer matrices for multigroup transport codes.

**   INDC(CCP)-249. G.M. Zhuravleva: Updating and using the international non-neutron experimental nuclear data base in "Generalized EXFOR" format.

**   INDC(CCP)-250. G.M. Zhuravleva et al.: Data input technology for producing a secondary information document in "Generalized EXFOR" format on a minicomputer.

**   INDC(CCP)-253. A.V. Komarov, A.A. Luk'janov: Evaluation of resonance self-shielding factors for Pu-239 in the unresolved resonance region.

**   INDC(CCP)-251. A.A. Vankov: Measurement and evaluation of nuclear data for fissile and fertile isotopes (new transmission function measurements are needed).

**   INDC(BUL)-11. G. Voykov et al.: Legendre-series development of the amisotropy density of neutron elastic scattering by means of cubic splines.

**   INDC(CPR)-2. Neutron nuclear reaction theory and application. A document containing four papers by Chinese authors, in English.

**   INDC(NDS)-171. Gamma-ray standards for detector calibration. Brief summary report of a consultants' meeting, Grenoble, France, 30-31 May 1985. A. Lorenz, ed.

*   ZfI-45. B. Letz et al., Graphical data representation from ENSDF.

4