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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.

New data libraries received

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ENDL-84. The 1984 version of the Evaluated Nuclear Data Library (ENDL) of the Lawrence Livermore National Laboratory, USA, has been made available in ENDF-5 format by courtesy of R.J. Howerton. For a summary of the contents see the document IAEA-NDS-11 Rev. 4 by D.E. Cullen and P.K. McLaughlin. The library contains 95 materials ranging from 1-H to 98-Cf. The size of the library is 231.472 records. It contains all significant neutron reaction data (including data for neutron and photon production) for incident neutron energies from 10^{-4} eV to 20 MeV. This library appears to be the most comprehensive and up-to-date neutron data library presently available. Note that the earlier version ENDL-78 is superseded. ENDL-82, however, which is available in "ENDL-Transmittal Format", should not be considered as superseded, see Nuclear Data Newsletter issue no. 5 for details.

JENDL-2, (Rev. 1). For the 1984 version of the Japanese Evaluated Nuclear Data Library (see last issue of this Newsletter) several supporting documents were received:

JAERI-M-84-103, Summary of JENDL-2 general purpose file, June 1984, 378 pages, edited by T. Nakagawa.

JAERI-M-84-052, Graphs of evaluated neutron cross-sections in JENDL-2, March 1984, edited by Japanese Nuclear Data Committee.

JAERI-M-84-192 by T. Nakagawa, RESEND, a modified version of the code RESEND to reconstruct cross-section data from resonance-parameters in the ENDF/B format. Among the advantages of the new code are: that it processes Reich-Moore parameters and that it treats J-unknown resonances. Both items that may occur in JENDL-2 and other ENDF/B formatted data files, are not legal in ENDF/B-V and, therefore, not provided in ENDF/B-V processing codes.

IRDF-85. The 1985 version of the International Reactor Dosimetry file, documented in IAEA-NDS-41 Rev.1 by D.E. Cullen et al. This library contains activation cross-sections used for neutron dosimetry by foil activation. Activation cross-sections are given for 54 materials. In many but not all cases data are accompanied by covariance matrices. The library is supplemented by two files with radiation damage cross-sections for iron and 10 files of benchmark neutron spectra. The file is distributed in 640 group structure (= extended SAND-II structure), but the basic file (evaluated cross-sections with or without resonance parameters) from which the multigroup file has been derived, is also available.

INDL/V. The 1985 version of the IAEA Nuclear Data Library for various neutron data evaluations, documented in IAEA-NDS-31 Rev. 3 by H. D. Lemmel, V. Goulo, K. McLaughlin, V. Pronjaev, O. Schwerer. The library is a collection of evaluations of varying origin and purpose, all in ENDF-5 format. Most evaluations from the 1982 version of INDL/V have been revised and many have been added.

CENDL. The start of a Chinese Evaluated Nuclear Data Library in ENDF-4 format contains partial evaluations for 12 nuclides, documented in IAEA-NDS-61 by Liang Qi-Chang and Shen Lin-Xing.

Data indexes and bibliographies

CINDA-85. The bibliography and data index for microscopic neutron data, is available for 560.- Austrian Schillings, including a supplement to be published in November.

Fotojadernye Dannye - Photonuclear Data, issue number 7, a bibliography with abstracts in Russian and English, covering the literature of 1983.

EXFOR-Index. An index file to the EXFOR library is now available on tape (70 000 records of a length of 132 characters). The format of the index is described in IAEA-NDS-66 by M.M. Seits and H.D. Lemmel. EXFOR contains experimental data for nuclear reactions induced by neutrons, photons, charged-particles, heavy ions, and also selected evaluated data for these reactions.

Nuclear Data Handbooks

"Neutron Cross-Sections", vol. I part B (Z=61-100), containing thermal neutron cross-sections, resonance-parameters, strength functions, resonance-integrals. Available for 45.- US\$ from Academic Press, Promotion Dept., Orlando, Florida, USA-32887-0017. This is a new issue of what was previously known as "BNL-325". - Part A of this issue (Z=1-60) is still available for 65.- US\$. - Note, that payment can be made by UNESCO coupons.

"Neutron Radiative Capture", R.E. Chrien (ed.), vol. 3 in the OECD monograph series on Nuclear Physics and Nuclear Data in Science and Technology. Different chapters of the book, written by leading experts, cover the theory of neutron capture, measurement techniques and calculational methods to determine neutron capture cross-sections and gamma-ray energy spectra, and reviews on practical applications in thermal and fast fission reactors and in neutron-capture gamma-ray spectroscopy. Also included is a chapter on neutron capture in stellar nucleosynthesis. The scope of the book is as valuable for both, the pure nuclear physicist and the scientist involved in nuclear physics applications. A long list of

references (cut-off date 1982) represents a guide to more detailed studies. Previous books in the same series covered nuclear fission (Michaudon) and neutron sources (Cierjacks). - Available from Pergamon Press (Oxford, UK, or Elmsford, N.Y. 10523, USA) for 65.- US\$.

"Statistical Properties of Excited Atomic Nuclei", A.V. Ignatjuk. Available costfree as INDC(CCP)-233, English translation from Russian.

"Cross-Section Data for Nuclear Reactor Analysis", S. Pearlstein, published as a special issue of the journal Progress in Nuclear Energy, vol. 13, nr. 2/3, (1984).

"Thermal constants of fissile isotopes", for a new evaluation of the thermal neutron constants of U-233, U-235, Pu-239, Pu-241 and nu-bar of Cf-252 by E.J. Axton see European Applied Research Reports vol.5 (1984) p.611-676. The final revised value of E.J. Axton's measurement of nu-bar (Cf-252) is reported in Metrologia, to be published 1984. Compare also IAEA Technical Report No. 227 (1983) on Nuclear Data Standards for Nuclear Measurements p. 71 where results of Axton's evaluation have been quoted prior to publication.

Selected new publications of interest

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- ** = 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
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- * Neutronnaja Fizika, Proceedings of the Neutron Physics Conference, Kiev, USSR, 2-6 Oct. 1983, 4 volumes, in Russian with abstracts in English.
 - BNL-51778. R.E. Chrien, T.W. Burrows (ed.), Proceedings of the NEANDC Meeting on Yields and Decay Data of Fission-Product Nuclides, Brookhaven National Laboratory, USA, 24-27 Oct. 1983.
 - * IAEA-TECDOC-336. Transactinium Isotope Nuclear Data, Proceedings of the third IAEA meeting on this topic, Uppsala, Sweden, 21-25 May 1984.
 - ** INDC(NDS)-158. A. Lorenz (ed.), Summary Report of the same Meeting on Transactinium Isotope Nuclear Data, Uppsala, 21-25 May 1984.
 - ** INDC(CCP)-238. M.V. Blinov et al., Prompt neutron energy spectrum (10keV-10MeV) for the spontaneous fission of Cf-252. Final report for the experiment finished in 1984.
 - AECL-8490 (1984). V.F. Sears, Thermal-neutron scattering lengths and cross-sections tabulated in a form needed for condensed-matter research.
 - ** INDC(CPR)-001. Yuan Hanrong, Brief synopsis of activities on neutron standard reference data at the Inst. of Atomic Energy, Beijing, China, 1964-1984.
 - ** H.D. Lemmel, D.E. Cullen, J.J. Schmidt: Nuclear data files for reactor calculations and other applications (Experimental data - evaluated data files). Reprint from Computer Physics Communications 33 (1984). Contents: General considerations about international data exchange, EXFOR and ENDF/B.
 - ** INDC(HUN)-22. Z.T. Bödy, K. Mihaly: Compilation and evaluation of (n,t) cross-sections around 14 MeV.

- ** INDC(CSR)-6. I. Ribansky et al.: Neutron activation cross-sections for Cr isotopes at 14.8 MeV neutron energy.
- * Photodisintegration of Lithium, by V.V. Varlamov et al., a compilation of experimental photonuclear data of the lithium isotopes covering literature up to 1982. Appeared in the series Fotojadernye Dannye/Photonuclear Data by the USSR Photonuclear Data Centre Moscow. Introductory text in Russian and English.
- * Photofission of heavy nuclei. V.V. Varlamov et al., a review and a compilation of experimental photofission cross-sections and yields and distributions of fission fragments. Appeared in the series Fotojadernye Dannye/Photonuclear Data by the USSR Photonuclear Data Centre, Moscow. Full text in Russian and English.
- ** INDC(CCP)-231. B.D. Kuzminov, Survey of Soviet work in the field of neutron nuclear data, 1983/1984.
- ** INDC(NDS)-162. K. Przewlocki et al., High resolution gamma-ray spectroscopy for well-logging.
- ** INDC(BZL)-12. R.D.M. Garcia, A new technique for generation of transfer matrices for elastic and discrete inelastic scattering.
- ** INDC(BZL)-13. R.D.M. Garcia, The computational efficiency of a semi-analytical technique for evaluating angular integrals encountered in transfer matrix generation.
- ** INDC(BZL)-14. Shizuca Onu, R. Paviotti Corcuera: Preparation of fission product cross-sections lumped for a multigroup library.
- ** INDC(BZL)-15. Ezzat Selim Chalboub, M. de Moraes: AMZ, a multigroup library based on ENDF/B-IV.
- ** INDC(CCP)-221 (Nov. 1984). Translations of selected USSR papers, including: A theoretical nuclear model applied to neutron emission spectra and (n,p) data (Bychkov); elastic and inelastic scattering data for Li (Ferch); neutron scattering on Fe (Sarkisov); neutron-emission spectra for U-235 (Lovchikova); U-238 transmission experiments in unresolved region (Vankov); Th-232, Pu-240, Pu-242 data in unresolved region (Vankov); delayed neutrons in geological analysis (Vertman); neutron spectra from (α ,xn) (Balitskij).
- ** INDC(CCP)-222 (Nov. 1984). Translations of selected USSR papers, including: Pu-239 resonance-parameters (Konshin); prompt neutron spectra Pu-239, U-233 (Lajtai); delayed neutrons in U and Th activation analysis (Bertman); thick target yields systematics with 22 MeV protons (Dmitriev); hardware/software for nuclear data evaluation (Zvenigorodskij).
- ** INDC(CCP)-229 (Nov. 1984). Translations of selected USSR papers, including: Even Mo isotopes, fast neutron scattering (Korz); odd Sm and Eu isotopes, fast capture (Yurlov); covariances of nu-bar (Malinovskij).

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