P 4

RUSSIAN NUCLEAR DATA CENTRE (CJD)

Progress Report
to IAEA Advisory Group Meeting on the "Network of Nuclear Reaction Data Centres"
15-19 May 2000
Obninsk

1. The compilation into EXFOR is on steady level. Since June 1999 to March 2000 five TRANS 4114-4118 were prepared and sent to other Network centres. The tapes contained 79 ENTRY (30 new and 49 old).

2. Last year the RNDC WWW-site was created with information about RNDC publications and national evaluated data libraries. Unfortunately we have lost some information on WWW-site because of failure of the computer disk with WWW-pages. Now the work is in progress to restore the information. At the present time the abstracts of Voprosy Atomnoi Nauki i Tekhniki (VANT), series Yadernye Konstanty (Nuclear Constants), catalogues of the libraries BROND-2 and ADL-3 are placed on the RNDC WWW-site. In the nearest future the catalogue of MENDL-2 library will be placed.

However, sometimes it is difficult to provide steady access to our WWW-site. It is a technical problem and connected with the present structure of IPPE local network. Some work is made to change the situation to the better.

3. Main efforts of the RNDC is directed on analysis and evaluation of the nuclear data for different applications. We take into account practical requirements in the nuclear data for reactor and accelerator transmutation of actinides, for activation and radiation damage of materials for the fission and fusion reactors.

The work on comparison and analysis of the evaluated nuclear data from available libraries are continued. As a result of this comparison we inform nuclear data community through report publication or directly the responsible Nuclear Data Centres. For example, together with Japanese Nuclear Data Center we analysed the threshold reaction data from JDOS/D-99 and JENDL-3.2, agreed the methods of selection of more reliable data, discussed the results and in many cases came to agreed conclusion about discrepancies revealed and the way to improve the data. As far as the foreign evaluated data libraries are used in our country for some applications we have a great interest that the data from these libraries would be improved.

4. Last time the (n,2n) and (n,3n) reactions for 150 fission products were evaluated and included in the group constant system BNAB. The evaluation was made also of the threshold reactions leading to production of the long-lived radioactive isotopes as a result irradiation of the steel containing V, Ti, Cr, Fe, Ni.

5. The specialists of our Theoretical Division together with specialists from VNIIEF (Sarov) continue the work in the frame of the ISTC project, the objective of which is measurement, analysis, calculation and evaluation of the production cross sections and spectra of gamma-rays for set of the structural and technological materials such as C, Al, Na, isotopes of Si, Cr, Fe, Nb, Zr, Pb, Bi. Simultaneously the calculation and consistent evaluation of all other neutron reactions for the same isotopes are made. These evaluated data are used for formation

of the full files for the isotopes mentioned.

Together with the full files for minor actinides (Np-237, Am-241, Am-243, Cm-242, Cm-243, Cm-244) evaluated three years ago we intend to include all the files for the isotopes mentioned (about 25) into version 3 of BROND library.

Having in mind that the work of formation of many files does not completed and some time is needed for the testing of all these files on the basis of integral experiments and model calculations we can not fix the exact date of release of the new BROND library version.

6. The work on improvement of specialised libraries is continued. Atlas on fission product yields was prepared. The new version of the photonuclear data library BOFOD-99 library was made.

7. In 1999 the following works on nuclear data evaluations were published:

V.N.Manokhin, Some considerations concerning 58-Ni(n,a) reaction. In: Voprosy Atomnoi Nauki i Tekhniki, ser. Yadernye Konstanty, 1, 1999, p.39.

A.V.Ignatyuk, A.I.Blokhin, V.P.Lunev, V.N.Manokhin, G.Ya.Tertychnyj, V.A.Tolstikov, K.I.Zolotarev, Evaluation of neutron cross sections for 241,-243 Am. In: Voprosy Atomnoi Nauki i Tekhniki, ser. Yadernye Konstanty, 1, 1999, p.25.

V.N.Manokhin, N.Odano, A.Hasegava, Consistent evaluation of (n,2n) and (n,np) reaction excitation functions for some even-even isotopes using empirical systematics. Report JAERI (in press).

A.I.Blokhin, A.S.Badikov, A.V.Ignatyuk, V.P.Lunev, V.N.Manokhin, G.Ya.Tertychnyj, K.I.Zolotarev, Evaluation on neutron cross sections for 242-244 Cm. In: Voprosy Atomnoi Nauki i Tekhniki, ser. Yadernye Konstanty, 2,1999, p.53.

A.I.Blokhin, N.N.Buleeva, V.V.Vozyakov, M.V.Mikhailyukova, S.M.Nasyrova, BOFOD-99: Recent status of evaluated photonuclear data. In: Voprosy Atomnoi Nauki i Tekhniki, ser. Yadernye Konstanty, 2,1999, p.95.