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Ukrainian Nuclear Data Centre
Status report to the Consultants' Meeting on
Co-ordination of the Nuclear Reaction Data Centres
(Technical Aspects)
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Compilation

We continue collection and compilation of new experimental data published in Ukrainian printed sources. As soon as they are ready, they are sent to NDS IAEA to be included to EXFOR library.

Collaboration

- We continue our collaboration with Slavutych Laboratory (SLIRT) in scientific support of Slavutych Nuclear Data Bank and its users. In frame of this activity the teaching course "The use of code NJOY 91/97"(72 hours) was lectured at this laboratory in September 2000.

- The active work under the joint project supported by STCU #1648 *Development and support of Nuclear Data Base in Slavutych for decommissioning of Chornobyl NPP reactor units* will be started this year soon (the period 2001-2004).

- The teaching course "Nuclear Data for Science and Technology " was lectured in 2000-2001 for graduate course students of Kyiv University, Physical Department. This course included the following items:

    1. ENDF/B libraries
    2. EXROR system
    3. ENSDF library
    4. The use of PREPRO codes in the work with ENDF libraries
    5. The Network of Nuclear Data Centers and the use of on-line services

- During 2000-2001 the data for users requests were prepared and adapted (from ENDF, ENSDF and EXFOR libraries) for our institute researchers and from other institutes.

Preparation of Guide for Reactor Dosimetry

- The work on *Neutron Exitation Function Guide for Reactor Dosimetry* was done and it is close to end. The list of included reactions is enclosed in *Appendix*. Each reaction is provided with information file and several graphic functions (from one to nine). Graphics are presented using the code ZVV 9.2 as PS-files. For each reaction in Dosimetry file the excitation functions from ENDF/B formatted libraries are presented. For reactions (n,γ) and (n,f) the resonance area is presented in group-form as in SAND II structure. To facilitate the analysis of discrepances in data from different libraries there are presented the 10, 50 and 90% responce functions and cross sections averaged over U-235 thermal neutron fission spectrum and Cf-252 spontaneous fission spectrum in Tables. Experimental data and short information on date and author of these data are presented on the graphics (more detailed information is given in supplementary Table).

N	Reaction	MT	Reactor Dosimetry Files			Evaluated Nuclear Data Files				
			IRDF-90	D-99	RRDF-98	ENDF/B-VI	JENDL-3	JEF-2	BROND-2	CENDL-2
1.	3-Li-6 (n, t) 2-He-4	105	+	+		+	+	+	+	
2.	3-LI-6 a-prod	207		+						
3.	3-Li-7 (n, n+t) 2-He-4 (t-prod)	205		+			+	+		+
4.	5-B-10 (n, a) 3-Li-7	107	+	+		+	+	+		+
5.	5-B-10 a-prod	207		+						
6.	6-C-12 (n, 2n) 6-C-11	16			+					
7.	8-O-16 (n, 2n) 8-O-15	16			+		+			+
8.	9-F-19 (n, 2n) 9-F-18	16	+	+	+	+	+	+	+	+
9.	11-Na-23 (n, 2n) 11-Na-22	16		+		+	+	+	+	+
10.	11-Na-23 (n, ?) 11-Na-24	102	+	+		+	+	+	+	+
11.	12-Mg-24 (n, p) 11-Na-24	103	+	+	+	+	+			
12.	13-Al-27 (n, p) 12-Mg-27	103	+	+		+	+	+		+
13.	13-Al-27 (n, a) 11-Na-24	107	+	+		+	+	+		+
14.	15-P-31 (n, p) 14-Si-31	103	+	+		+	+	+	+	+
15.	16-S-32 (n, p) 15-P-32	103	+	+		+	+	+		
16.	21-Sc-45 (n, ?) 21-Sc-46	102	+	+		+	+			
17.	22-Ti-0 (n, x) 21-Sc-46	220		+						
18.	22-Ti-0 (n, x) 21-Sc-47	221		+						
19.	22-Ti-0 (n, x) 21-Sc-48	222		+						
20.	22-Ti-46 (n, 2n) 22-Ti-45	16		+	+		+			
21.	22-Ti-46 (n, p) 21-Sc-46	103	+	+	+	+	+			
22.	22-Ti-47 (n, np) 21-Sc-46	28	+	+	+	+	+			
23.	22-Ti-47 (n, p) 21-Sc-47	103	+	+		+	+			
24.	22-Ti-48 (n, np) 21-Sc-47	28	+	+	+	+	+			
25.	22-Ti-48 (n, p) 21-Sc-48	103	+	+	+	+	+			
26.	22-Ti-49 (n, np) 21-Sc-48	28		+	+		+			
27.	23-V-51 (n, a) 21-Sc-48	107	+(00)		+(51)	+(00)		+(00)		+(00)
28.	24-Cr-50 (n, ?) 24-Cr-51	102		+		+	+	+	+	+
29.	24-Cr-52 (n, 2n) 24-Cr-51	16	+	+		+	+	+	+	
30.	25-Mn-55 (n, 2n) 25-Mn-54	16	+	+		+	+	+		+
31.	25-Mn-55 (n, ?) 25-Mn-56	102	+	+		+	+	+		+
32.	26-Fe-54 (n, 2n) 26-Fe-53	16			+	+	+	+	+	+
33.	26-Fe-54 (n, p) 25-Mn-54	103	+	+		+	+	+	+	+
34.	26-Fe-54 (n, a) 24-Cr-51	107			+	+	+	+	+	+
35.	26-Fe-56 (n, p) 25-Mn-56	103	+	+	+	+	+	+	+	
36.	26-Fe-57 (n, np) 25-Mn-56	28		+		+	+	+		+
37.	26-Fe-58 (n, ?) 26-Fe-59	102	+	+		+	+	+	+	+
38.	26-Fe-58 (n, a) 24-Cr-55	107				+	+	+	+	+
39.	27-Co-59 (n, 2n) 27-Co-58	16	+	+		+	+	+		+

40.	27-Co-59 (n, ?) 27-Co-60	102	+	+		+	+	+		+
41.	27-Co-59 (n, a) 25-Mn-56	107	+	+	+	+	+	+		+
42.	28-Ni-58 (n, 2n) 28-Ni-57	16	+	+		+	+	+	+	
43.	28-Ni-58 (n, p) 27-Co-58	103	+	+		+	+	+	+	
44.	28-Ni-60 (n, p) 27-Co-60	103	+	+		+	+	+	+	
45.	29-Cu-63 (n, 2n) 29-Cu-62	16	+	+		+	+			+
46.	29-Cu-63 (n, ?) 29-Cu-64	102	+	+	+	+	+			+
47.	29-Cu-63 (n, a) 27-Co-60	107	+	+	+	+	+			+
48.	29-Cu-65 (n, 2n) 29-Cu-64	16	+	+		+	+			+
49.	30-Zn-64 (n, p) 29-Cu-64	103	+	+				+		
50.	33-As-75 (n, 2n) 33-As-74	16			+		+			
51.	39-Y-89 (n, 2n) 39-Y-88	16	+	+		+	+	+		
52.	40-Zr-90 (n, 2n) 40-Zr-89	16	+	+		+	+		+	
53.	41-Nb-93 (n, 2n) 41-Nb-92	16	+	+	+					
54.	41-Nb-93 (n, n′) 41-Nb-93m	57	+	+	+					
55.	41-Nb-93 (n, ?) 41-Nb-94	102	+			+	+	+	+	+
56.	45-Rh-103 (n, n′) 45-Rh-103m	57	+	+	+					
57.	47-Ag-109 (n, ?) 47-Ag-110	102	+	+		+	+	+	+	+
58.	48-Cd-0 (n, ?)	102	+			+	+	+		+
59.	49-In-115 (n, 2n) 49-In-114	16	+				+			
60.	49-In-115 (n, n′) 49-In-115m	57	+	+	+					
61.	49-In-115 (n, ?) 49-In-116	102	+	+		+	+	+		
62.	53-I-127 (n, 2n) 53-I-126	16	+	+		+	+	+		
63.	57-La-139 (n, ?) 57-La-140	102					+	+		
64.	59-Pr-141 (n, 2n) 59-Pr-140	16			+	+	+	+		
65.	63-Eu-151 (n, ?) 63-Eu-152	102		+		+	+	+		
66.	64-Gd-0 (n, ?)	102	+						+	
67.	69-Tm-169 (n, 2n) 69-Tm-168	16		+						
68.	73-Ta-181 (n, ?) 73-Ta-182	102		+		+	+	+	+	+
69.	74-W-186 (n, ?) 74-W-187	102		+		+	+	+	+	
70.	79-Au-197 (n, 2n) 79-Au-196	16	+	+		+		+	+	+
71.	79-Au-197 (n, ?) 79-Au-198	102	+	+		+		+	+	+
72.	80-Hg-199 (n, n′) 80-Hg-199m	57		+						
73.	82-Pb-204 (n, n′) 82-Pb-204m	57					+		+	
74.	90-Th-232 (n, f)	18	+	+		+	+	+	+	+
75.	90-Th-232 (n,?) 90-Th-233	102	+	+		+	+	+	+	+
76.	92-U-235 (n, f)	18	+	+		+	+	+	+	
77.	92-U-238 (n, f)	18	+	+		+	+	+	+	+
78.	92-U-238 (n, ?) 92-U-239	102	+	+		+	+	+	+	+
79.	93-Np-237 (n, f)	18	+	+		+	+	+		+
80.	94-Pu-239 (n, f)	18	+	+		+	+	+	+	+
81.	95-Am-241 (n, f)	18		+		+	+	+	+	+