VALIDATION of jef2.2 structural material data .

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The validation of this type of data is underway and cannot be considered as completed. The integral data which have been considered so far are of neutron balance type and have been obtained in **MASURCA** experiments (Keff) or **MINERVE** or **RB2** experiments K_∞=1. For these experiments the contribution of the structural materials to the neutron balance is essentially due to the neutron absorption while the contribution of the slowing-down process (elastic and inelastic) is very modest.

The sensitivity of the Keff expresses this situation.

The absorption cross-section is defined as:

$$\sigma_{abs} = \sigma_{n,\gamma} + \sigma_{n,p} + \sigma_{n,t} + \sigma_{n,\alpha} + \cdots + \sigma_{n,xnp} + \sigma_{n,xnd} + \sigma_{n,xn\alpha} + \ldots$$

Due to their composition and to the cross-section data the natural elements have been reduced to their major isotopes, that is, Fe56 (92%) for natural Iron, Ni58 (58%) for natural Nickel, and Cr52 (84%) for natural Chromium. The absorption data seem to be correct (as far as one can conclude at this stage of the validation) for Fe56 and Cr52. On the contrary the absorption cross-section of Ni58 needs an important reduction (=-15%). From the evolution of this modification as a function of the energy ,especially below the (n,p) and (n,α) thresholds one deduces that the radiative cross section is essentially concerned by the adjustment. The results obtained in the analysis of 76 fast and thermal systems are fully described in the table 1.

In a very near future additionnal information will be included in the analysis, that is, the spectral indices obtained in RB2 which are ratios of absorption cross-section to the fission cross-section of U235 measured in thermal ,epithermal and fast spectra. In a longer term,the data of deep penetration in Iron and Sodium will be analysed with the **ASPILIB** (175g/1968g,P5) library recently made available by BOLOGNA.Important information is expected relative to the elastic and inelastic cross-sections and angular distributions to complete the one obtained from **PCA-REPLICA** experiment analysis.

NUCLEAR DATA CALCULATED CORRECTIONS

1 E+6 19.64	2 E+6 6.06	3 E+6 2.231	4 E+6 1.353	5 E+5 4.978	6 E+5 1.831	7 E+4 6.737	8 E+4 2.478	9 E+3 9.118	10 E+3 2.034	11 E+2 4.539	12 E+1 2.26	13 E+0 4	14 E-1 5.31	15 E-1 1.	GROUP UPPER LIMIT
															Fe 56
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NU
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	FISSION
0.0225	0.0189	-0.0034	-0.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	INELASTIC
-0.0038	-0.0187	-0.0397	-0.0711	-0.0923	-0.0942	-0.0770	-0.0418	-0.0069	0.0150	0.0261	0.0216	0.0104	0.0015	0.0003	ELASTIC
0.0031	-0.0025	-0.0073	-0.0164	-0.0274	-0.0346	-0.0397	-0.0335	-0.0231	-0.0168	-0.0061	-0.0022	-0.0010	0.0007	-0.0002	CAPTURE
															NI 58
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NU
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	FISSION
0.0137	0.0097	-0.0086	-0.0095	-0.0092	-0.0090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	INELASTIC
-0.0004	-0.0066	-0.0159	-0.0137	-0.0065	-0.0056	-0.0019	0.0011	0.0042	0.0051	0.0036	0.0023	0.0007	0.0000	0.0000	ELASTIC
-0.0879	-0.0765	-0.1314	-0.2176	-0.2889	-0.2883	-0.2920	-0.3138	-0.2303	-0.1577	-0.0888	-0.0417	-0.0202	-0.0015	0.0000	CAPTURE
															Cr 52
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NU
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	FISSION
0.1464	0.0225	0.0252	0.0282	0.0071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	INELASTIC
-0.0015	-0.0028	-0.0038	-0.0274	-0.0396	-0.0364	-0.0249	-0.0137	-0.0056	-0.0012	-0.0008	-0.0004	0.0000	0.0000	0.0000	ELASTIC
0.0000	-0.0029	-0.0061	-0.0104	-0.0092	-0.0091	-0.0130	-0.0141	-0.0151	-0.0177	-0.0126	-0.0085	-0.0044	-0.0002	0.0000	CAPTURE