Memo 4C-3/129

To: Distribution 23 July 1975

From: H.D. Lemmel

Subject: Evaluated neutron dosimetry data

I would like to draw your attention to the fact that an evaluated neutron dosimetry data file with 24 reactions has been presented by Bondars et al. in Jadernye Konstanty 15, pages 63 - 91, (1974). The cross-section curves are given in graphical form only. The integral cross-sections are given as attached.

May we ask CJD to transmit these important data soon to the other centers. Possibly, the data should be transmitted in SOKRATOR format, but as long as this is not available, any other form of listing, even hand-written, would be as welcome.

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Таблица I

Пороговые детекторы, эффективные пороговые энергии $E_{эфф}$, эффективные сечения $\sigma_{эфф.}$ и усредненные сечения активации $\bar{\sigma}$ по спектру нейтронов деления

№ п/п	Детектор	$E_{эфф.}$, Мэв	$\sigma_{эфф.} \pm \Delta\sigma_{эфф.}$ (мб)	$\bar{\sigma} \pm \Delta\sigma$ (мб)
I.	$^{103}Rh(n,n')^{103m}Rh$	0,80	880 ± 30	670 ± 20
2.	$^{115}In(n,n')^{115m}In$	I,I5	290 ± 5	I83 ± 3
3.	$^{64}Zn(n,p)^{64}Cu$	2,60	I07 ± 10	29 ± 3
4.	$^{32}S(n,p)^{32}P$	2,65	240 ± 40	63 ± 10
5.	$^{58}Ni(n,p)^{58}Co$	2,70	420 ± 40	I08 ± II
6.	$^{54}Fe(n,p)^{54}Mn$	3,00	390 ± 30	83 ± 6
7.	$^{27}Al(n,p)^{27}Mg$	4,50	49 ± 3	3,7 ± 0,3
8.	$^{90}Zr(n,p)^{90}Y$	6,20	I7 ± I	0,38± 0,02
9.	$^{56}Fe(n,p)^{56}Mn$	6,60	64 ± 4	I,05± 0,06
I0.	$^{59}Co(n,\alpha)^{56}Mn$	7,I0	I3,4± 0,6	0,I50±0,007
II.	$^{24}Mg(n,p)^{24}Na$	7,I5	I36± 7	I,50±0,07
I2.	$^{27}Al(n,\alpha)^{24}Na$	7,45	77± 2	0,68±0,02
I3.	$^{232}Th(n,2n)^{231}Th$	7,6	2000±I00	I5,7±0,7
I4.	$^{181}Ta(n,2n)^{180}Ta$	9,0	I200±50	3,2±0,I
I5.	$^{204}Tl(n,2n)^{203}Tl$	9,90	I390±40	I,80±0,05
I6.	$^{115}In(n,2n)^{114m}In$	I0,6	I270±40	0,95±0,03
I7.	$^{65}Cu(n,2n)^{64}Cu$	II,2	580±60	0,27±0,03
I8.	$^{121}Sb(n,2n)^{120}Sb$	II,4	I660±80	0,66±0,03
I9.	$^{55}Mn(n,2n)^{54}Mn$	II,7	640±I50	0,20±0,05
20.	$^{85}Rb(n,2n)^{84}Rb$	I2,2	I820±70	0,37±0,0I
2I.	$^{19}F(n,2n)^{18}F$	I2,8	82±23	0,0I0±0,003
22.	$^{63}Cu(n,2n)^{62}Cu$	I2,9	650 ±20	0,073±0,002
23.	$^{62}Ni(n,2n)^{61}Ni$	I3,7	38±2	0,0022±0,000I
24.	$^{64}Zn(n,2n)^{63}Zn$	I4,8	750±20	0,0I4±0,003