

おしらせ(そのⅡ)

F P N D progress report について

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IAEAでは、核分裂生成物核種の核データ(FPND)に関する研究の現状を把握し、研究者、利用者の便宜を計る目的で、年に1度、世界中のFPNDの研究者、利用者呼びかけて、それぞれの国や研究機関におけるFPNDに関する研究の現状を報告するよう協力を求めて来ております。

こゝに掲載した報告はシグマ委員会核データ専門部会FP核データワーキンググループおよび炉定数専門部会FP炉定数ワーキンググループで行った作業の概要です。この報告はIAEAにおいて、他国からの報告と共に、FPNDのprogress reportとして編集され、配布されることになっております。

我々は今後もこの活動に協力して行く所存ですので、皆様からの御意見、御要望をお聞かせいただきたいと思っております。

Laboratory and Address: Japanese Nuclear Data Committee/F.P. Nuclear Data Working Group (Japan Atomic Energy Research Institute, Tokai-mura, Naka-gun, Ibaraki-ken, Japan)

Names: S. Iijima (Nippon Atomic Industry Group Co.) group leader  
S. Igarasi, T. Nakagawa, Y. Kikuchi, Z. Matsumoto (JAERI)  
Y. Matsunobu (Sumitomo Atomic Industries)  
M. Kawai, T. Yoshida, T. Murata (Nippon Atomic Industry Group Co.)  
H. Sasaki (Mitsubishi Atomic Industries, Inc.)  
H. Nakamura (Fuji Electric Co.)  
T. Watanabe (Kawasaki Heavy Industries)  
I. Otake (Power Reactor and Nuclear Fuel Development Corporation)  
R. Nakasima (Hosei Univ.)

Compilation: (Nuclear level schemes by Nakasima, Matsumoto and Murata.  
Neutron capture and inelastic cross sections by Matsunobu and Watanabe.)

Purpose: For evaluation of neutron cross sections of F.P.

Major sources of information:

Recent Reference List and Nuclear Data Sheets for level schemes.  
CINDA75 and NEUDADA tape for neutron cross sections.

Deadline of literature coverage: Mid 1976

Cooperation with other groups : none in particular

Other relevant details: Compilation covers about 90 F.P. nuclides.

Computer files: A modified file based on ORNL nuclear structure data file format was prepared to store level scheme data and is under test.  
NESTOR file is used for comparison plotting of cross section data.

Expected completion date: Mid 1976

Publications: JAERI-M5752(1974) for level schemes of 28 nuclides.

Paper presented to Bologna conference(1973) by Matsunobu for capture cross sections of 11 nuclides.

Evaluation: (neutron cross section, ongoing)

Purpose: For entry to JENDL/1 (Japanese Evaluated Nuclear Data Library)

Method: Calculation with optical model and statistical theory, adjusted by capture data. Also, semi-empirical statistical theory in unresolved resonance region.

Major sources of information:

Compilation of level schemes and cross sections described above, and BNL-325 3rd editor. for resonance parameters.

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Deadline of literature coverage: Mid 1976

Cooperation with other groups: JNDC/F.P. Reactor Constants Working Group

Status: Evaluation was completed for 27 nuclides in March 1975. For

other about 70 nuclides, the work started from April 1975.

Preparation of input data is at the final stage.

Other relevant details: JNDC/F.P. Reactor Constants Working Group per-

formed integral test of our evaluated data of 27 nuclides using

F.P. reactivity measurements data in STEK reactor at Petten.

The attached Table 1 shows our results in comparison with F.P. data  
of ENDF/B-4 for the measurements in STEK-1000 reactor.

(communicated by Y. Kikuchi, A. Hasegawa and H. Nishimura, JAERI)

Computer file of compiled data: NESTOR

Computer file of evaluated data: JENDL

Discrepancies encountered: Nothing much to add to those reported in

INDC(NDS)-70.

Expected completion date: End of 1976

Publication: JAERI-M5752(1974),

Evaluation of Neutron Cross Sections of 27 Fission Product  
Nuclides important for Fast Reactor, submitted to Journal  
of Nucl. Sci. and Technol. (1976)

April 24, 1976

Other relevant details :

Table 1. The C/E Values for F.P. Sample Reactivities in STEK-1000 Reactor

<u>Isotopes</u>	<u>JENDL/1</u>	<u>ENDF/B-4</u>	<u>Comment</u>
Zr-93	0.93	0.62	core dependence not understandable
Mo-95	0.98	0.97	
Mo-97	1.07	0.91	
Tc-99	0.66	0.62	
Ru-101	0.85	0.62	
Ru-102	2.2	2.0	small reactivity
Ru-104	2.5	2.35	small reactivity
Rh-103	0.88	0.98	
Pd-105	0.72	0.82	
Pd-107	0.67	0.50	
Ag-109	0.82	0.59	
J-129	2.7	2.2	
Cs-133	0.86	0.86	
Cs-135	0.4	-	core dependence not understandable
Nd-143	1.22	1.20	
Nd-144	3.0	3.7	small reactivity
Nd-145	0.76	0.69	
Pm-147	0.74	0.85	
Sm-147	0.94	0.65	
Sm-149	0.78	0.53	
Sm-151	0.49	0.50	
Eu-153	0.87	0.85	
U-235	0.94	-	JAEI-FAST set, Version 2
R-10	0.92	-	JAEI-FAST set, Version 2