BNL-NCS--51572

DE83 009800

BNL-NCS-51572

DOE/NDC-28/U

UC-34c

(Physics-Nuclear - TIC-4500)

COMPILATION OF REQUESTS FOR NUCLEAR DATA

COMPILED AND EDITED BY THE NATIONAL NUCLEAR DATA CENTER
FOR THE
DOE NUCLEAR DATA COMMITTEE

NOTICE

PORTIONS OF THIS REPORT ARE ILLEGIBLE.

It has been reproduced from the best available copy to permit the broadest possible availability.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

January 1983

NATIONAL NUCLEAR DATA CENTER
BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.

UNDER CONTRACT NO. DE-AC02-76CH00016 WITH THE
UNITED STATES DEPARTMENT OF ENERGY

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED *824*

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency, contractor or subcontractor thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency, contractor or subcontractor thereof.

Printed in the United States of America
Available from
National Technical Information Service
U. S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

NTIS price codes:
Printed Copy: A05; Microfiche Copy: A01

TABLE OF CONTENTS

		page
I	INTRODUCTION	v
II	PROCEDURES FOR SUBMITTING REQUESTS	vi
III	PRIORITY ASSIGNMENTS	vii
IV	DOE/NDC COMMITTEE MEMBERSHIP	viii
V	REQUEST LIST FOR NUCLEAR DATA	1

Appendices

<i>A</i>	<i>Reaction Tables for DOE/NDC Request List</i>	<i>A1</i>
<i>B</i>	<i>File of Requesters</i>	<i>B1</i>
<i>C</i>	<i>List of ENDF/B-V Evaluators</i>	<i>C1</i>

I. INTRODUCTION

The purpose of this compilation is to summarize the current needs of U. S. Nuclear Energy programs and other applied technologies for nuclear data. It is the result of a biennial review in which the Department of Energy (DOE) and contractors, Department of Defense Laboratories and contractors, and other interested groups have been asked to review and revise their requests for nuclear data. It was felt that the evaluators of cross section data and the users of these evaluations should be involved in the review of the data requests to make this compilation more useful. Hence, the following review procedure was adopted for the current edition of the Data Request List; retrievals of requests from the 1981 edition pertaining to the following four categories of reviewers were sent for comments to:

1. Originators of data requests
2. Evaluators of ENDF/B-V
3. Members of the Data Testing Subcommittee of the Cross Section Evaluation Working Group (CSEWG).
4. Office of Fusion Energy (OFE) data needs reviewers.

Out of a group of 106, some 60 replied with their comments and suggestions. These included recommendations for deleting requests which had been satisfied by recent measurements or evaluations. The changing priorities of some applied programs also suggested the omission of some requests and the inclusion of new ones. New data requests had to include a written justification. The revision of OFE data requests was coordinated by E. T. Cheng (GA). The comments and new requests received from all the reviewers were scrutinized by the Data Requests and Status Subcommittee of CSEWG and a preliminary Request List based on its recommendations adopted. This was further reviewed by the Data Testing and Applications Committee of CSEWG and changes in the Request List recommended by it were included.

Because of the changing and continuing character of the need for the data request information as well as the probability that current measurements may satisfy a portion of the requests, this report is to be regarded as a working document. In fact, it is maintained on a continuous access basis as a data base by the National Nuclear Data Center (NNDC).

The present request list is produced from a computerized data file by the NNDC. The system permits full use of upper case, lower case, Greek letters, subscripts and superscripts. The contents of this document, except for requests withheld by sponsoring organizations, will be included in the forthcoming edition of WRENDA, published by the International Atomic Energy Agency.

This request list is ordered by target nucleus (Isotope) and then reaction type (Quantity). An attempt has been made to describe the Quantity in standard notation. In appendix A, the user will find a glossary of these symbols with a short explanatory text.

Each request is assigned a unique identifying number. The first two digits of this number give the year the request was initiated. All requests for a given Isotope and Quantity are grouped (or blocked) together. The requests in a block are followed by any status comments.

Each request has a unique Isotope, Quantity and Requester. The requester is identified by laboratory, last name, and sponsoring U. S. government agency, e.g. BET, DEI, DNR. All requesters, together with their addresses and phone numbers, are given in appendix B. A list of the evaluators responsible for ENDF/B-V evaluations with their affiliation appears in appendix C.

All requests must give the energy (or range of energy) for the incident particle when appropriate. The accuracy needed in percent is also given. The error quoted is assumed to be $1-\sigma$ at each measured point in the energy range requested unless a comment specifies otherwise. Sometimes a range of accuracy indicated by two values is given or some statement is given in the free text comments. An incident particle energy resolution in percent is sometimes given.

II. PROCEDURES FOR SUBMITTING REQUESTS

New data requests should be submitted to the designated representative* who will coordinate the requests originating from each laboratory and do an initial screening. If your institution does not have a designated representative, requests may be submitted directly to the NNDC. Data requests should include a justification of the request and should state its importance and application.

In accepting a request for nuclear data, the DOE/NDC assumes that the originator or the sponsoring agency has established that the existing data base has been reviewed and determined to be inadequate. In this regard, comments on evaluations that may be necessary, or the need for results from further theoretical work, should be included in the request. Originators of data requests must be realistic and exercise good sense and moderation, as well as a sense of proportion, in assembling their list. Requests should be ordered in terms of priority, in consultation with the program sponsors, to judge the importance of requests from the viewpoint of the whole program. From this list, a few of the most important requests should be chosen and submitted for the Data Request Compilation. This will prevent the Compilation from becoming an exercise in wishful thinking in which most of the requests do not stand an appreciable chance of ever being fulfilled.

*A. B. Smith (ANL), R. E. Chrien (BNL), R. E. Schenter (HEDL), R. Heath (INEL), P. G. Young (LANL), R. Haight (LLNL) and F. G. Perey (ORNL)

DOE-NDC Compilation of Requests for Nuclear Data 1982

III. PRIORITY ASSIGNMENTS

The exact meaning of priority is difficult to assess but the following definitions, which closely resemble those used by both NEANDC and the NEACRP, have been adopted by the DOE/NDC.

- PRIORITY I. Nuclear data which satisfy the criteria of Priority II and which have been selected for maximum practicable attention taking into account the urgency of nuclear energy program requirements.*
- PRIORITY II. Nuclear data that will be required during the next few years in the applied nuclear energy programs (for example, data needed to make the best use of reactor fuel and construction materials such as neutron moderators, absorbers, and radiation shields, space and bio-medical applications, data required for better understanding of some significant aspect of reactor behavior).
- PRIORITY III. Nuclear data of more general interest and data required to fill out the body of information needed for nuclear technology.

*For example, the NEACRP assigns its highest priorities for reactor measurements as follows:

The highest priority should be given to requests for nuclear data for reactors to be built in the near future if these data are still necessary to predict the different reactor properties after all information from integral experiments and operating reactors has been used, or information on an important reactor parameter is in principle attainable through mathematical calculations from nuclear data only, or these data are needed for materials required in reactor physics measurements.

IV. DOE/NDC COMMITTEE MEMBERSHIP

Dr. John D. Anderson/
Dr. R. C. Haight
Physics Dept., E Division
Lawrence Livermore National
Laboratory
Livermore, CA 94550

Mr. Sam E. Berk
Office of Energy Research
Reactors & Systems Radiation
Branch
U. S. Department of Energy
Washington, DC 20545

Dr. Robert E. Chrien
Physics Department
Brookhaven National Laboratory
Upton, NY 11973

Dr. Russell L. Heath
Research & Engineering
Idaho National Engineering
Laboratory
Idaho Falls, ID 93401

Mr. Philip B. Hemmig
Chief, Physics Branch
Reactor Research & Technology
Office of Energy Technology
U. S. Department of Energy
Washington, DC 20545

Dr. Francis G. Perey
Neutron Physics Division
Oak Ridge National Laboratory
Oak Ridge, TN 37830

Dr. Richard E. Schenter
Hanford Engineering Development
Laboratory
P. O. Box 1970
Richland, WA 99352

Dr. Alan B. Smith
Applied Physics Division
Argonne National Laboratory
Argonne, IL 60439

Dr. Philip M. Stone
Applied Plasma Physics
Office of Fusion Energy
U. S. Department of Energy
Washington, DC 20545

Dr. O. A. Wasson
Radiation Physics Building
National Bureau of Standards
Washington, DC 20234

Dr. Stanley L. Whetstone (Chairman)
Division of Nuclear Sciences
Office of Basic Energy Sciences
U. S. Department of Energy
Washington, DC 20545

Dr. Phillip G. Young
T-2 Nuclear Data
Los Alamos Scientific Laboratory
Los Alamos, NM 87545

Dr. Sol Pearlstein
(Ex-officio member)
Director, NNDC
Brookhaven National Laboratory
Upton, NY 11973

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^1H	$\sigma_{n,\text{tot}}$ (E)	2	1.00 keV $\rightarrow$.500 MeV	.3 %		LAS Stewart To check on primary standard in largely unmeasured regions.	RRT	78175
^1H	$\sigma_{n,n}$ (E, θ)	2	10.0 MeV $\rightarrow$ 50.0 MeV	1. %		LAS Stewart To confirm or improve present evaluation. Absolute values at a few incident energies required.	RRT	80289
^1H	$\sigma_{n,\gamma}$ (E)	1	Thermal $\rightarrow$ 10.0 eV	0.3 %		DOE Hemmig To help resolve discrepancies in thermal criticality parameters. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82001
^1H	$\sigma_{n,x}$ (E)	2	.100 keV $\rightarrow$ 1.00 MeV	30. %	30.%	NBS Bowman Electron excitation or removal induced by sudden acceleration of nucleus in neutron-nucleus scatter (n,n'e). Neutron spectrum calculations.	NBS	82050
^2H	$\sigma_{n,2n}$ (E)	2	Thresh $\rightarrow$ 20.0 MeV	5. %		LAS Stewart	OMA	76043
^3He	$\sigma_{n,p}$ (E)	2	10.0 keV $\rightarrow$ 3.00 MeV	1. %		DOE Hemmig Absolute values required. Intermediate accuracy useful. For use as secondary standard.	RRT	69001
		2	5.00 keV $\rightarrow$.200 MeV	2. %		LAS Stewart	RRT	69003
		2	.200 MeV $\rightarrow$ 3.00 MeV	3. %		LAS Stewart Absolute values required. Increasingly useful as a standard and for spectrometers.	RRT	
		3	2.00 MeV $\rightarrow$ 30.0 MeV	10. %		HED McElroy	OPE	80234
		3	30.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy For FMIT dosimetry.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^3He	$\sigma_{n,n'p}$ (E)	3	Thresh $\rightarrow$ 30.0 MeV	10. %		HED McElroy	OFE	80235
		3	30.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy For FMIT dosimetry.		
^3He	$\sigma_{n,2p}$ (E)	3	Thresh $\rightarrow$ 30.0 MeV	10. %		HED McElroy	OFE	80233
		3	30.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy For FMIT dosimetry.		
^7Li	$\sigma_{\alpha,n}$ (E)	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %		LAS Walton Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.	DSS	78167
^6Li	$\sigma_{n,t}$ (E)	1	1.00 keV $\rightarrow$ 3.00 MeV	1. %		ANL Smith	RRT	69009
		1	1.00 keV $\rightarrow$ 3.00 MeV	1. %		DOE Hemmig	RRT	
		2	.500 keV $\rightarrow$ 3.00 MeV	1. $\rightarrow$ 3. %		LAS Hale	RRT	
						Absolute values required. Accuracy of 3% useful. Energy resolution must reproduce true shape. For use as standard.		
		1	10.0 eV $\rightarrow$.100 MeV	1. %		LAS Hale	RRT	72009
		1	10.0 mV $\rightarrow$ 10.0 eV	1. %		For use as standard below 1 MeV. NBS Carlson To study atomic binding and related effects.		
^6Li	$\sigma_{n,t}$ (E, θ)	2	.500 keV $\rightarrow$ 3.00 MeV	5. %		LAS Hale	RRT	80291
						Absolute cross section as a function of angle. Needed for use of $\text{Li}^6(n,\alpha)$ as standard.		

STATUS :

LAS

Hale: REQ.80291. Work in progress at several places:
Drosig (Vienna), Condé (Stockholm), Lane (Ohio).

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^6Li	$\sigma_{n,\alpha} (E)$	2 2	Thresh $\rightarrow$ 25.0 MeV 25.0 MeV $\rightarrow$ 40.0 MeV	10. % 20. %		HED McElroy HED McElroy Total He production for mass spectrometry. For FMIT dosimetry and damage calculations.	OFE	80205
<u>STATUS :</u>		A1	Kneff: Req.80205. 12% measurement at 14.8 MeV, DOE/ER-0046/10(1982).					
^7Li	$\sigma_{n,n't} (E)$	1	14.0 MeV	3. $\rightarrow$ 5. %	1.M	LAS Young Tritium production X/S needed. Should be state-of-the-art. To resolve discrepancies in existing data and to corroborate accuracy (or to correct data) of new evaluation.	OFE	82046
<u>STATUS :</u>		LAS	Young: REQ.82046. Modern measurements at 14 MeV are discrepant; has to be resolved by new measurements.					
^9Be	$\sigma_{n,\alpha n} (E)$	2	$\rightarrow$ 15.0 MeV	5. %		GA Engholm Data for neutron multiplier.	OFE	80020
<u>STATUS :</u>		LAS	Young: REQUEST 80020. Present accuracy $\approx$ 15% (see LA-7932-MS). New measurement required.					
^9Be	$\sigma_{n,\alpha n} (E, \theta, E_n)$	2	1.80 MeV $\rightarrow$ 5.00 MeV	15. %	5. %	DOE Hemmig Must record neutrons down to a few hundred keV. Accuracy 50 mb at 2 - 3 Mev. Resolution on E_n - 500 keV. For Be moderated fast spectrum reactors and for thermal breeders or converters and neutron economy calculations.	RRT	62002
^9Be	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80089

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^9Be	$\sigma_{a,n} (E)$	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %		LAS Walton	DSS	78168
						Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.		
^{10}Be	$\sigma_{n,n'\alpha} (E)$	3	RADIOACTIVE 1.6X(10**6) YR 14.0 MeV	25. %		LAS Muir	OFE	80116
						Production of He^6 wanted, radioactive target. Needed for activation of graphite structures.		
^{11}B	$\sigma_{n,\text{tot}} (E)$	2	4.50 MeV $\rightarrow$ 15.0 MeV	3. $\rightarrow$ 4. %		DOE Hemmig	RRT	74001
						For shielding effect of B_4C .		
^{11}B	$\sigma_{n,n} (E,\theta)$	2	4.50 MeV $\rightarrow$ 15.0 MeV	15. %		DOE Hemmig	RRT	74003
^{11}B	$\sigma_{n,n'} (E,\theta,E_n')$	2	Thresh $\rightarrow$ 15.0 MeV	10. %	10. %	DOE Hemmig	RRT	74005
						15% in energy spectra. 20% in angular distribution if not isotropic. $\Delta E_n' = 10\%$.		
^{11}B	$\sigma_{n,x\gamma} (E,\theta_\gamma,E_\gamma)$	2	1.00 keV $\rightarrow$ 15.0 MeV	15. %	10. %	DOE Hemmig	RRT	74007
						20% in angular distribution if not isotropic. $\Delta E_\gamma = 10\%$.		
^{10}B	$\sigma_{n,x\gamma} (E,\theta_\gamma,E_\gamma)$	2	.750 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78156
						Data needed for blanket, shield and magnet heat deposition calculations.		

STATUS : LAS Young: REQ.78156. New evaluation needed.

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{10}B	$\sigma_{n,\alpha}$ (E)	1	30.0 keV $\rightarrow$.100 MeV	1. %		ANL Smith	RRT	69373
		1	30.0 keV $\rightarrow$.100 MeV	1. %		DOE Hemmig	RRT	
		1	.100 MeV $\rightarrow$.300 MeV	3. %		ANL Smith	RRT	
		1	.100 MeV $\rightarrow$.300 MeV	3. %		DOE Hemmig	RRT	
		1	.300 MeV $\rightarrow$ 10.0 MeV	5. %		ANL Smith	RRT	
		1	.300 MeV $\rightarrow$ 10.0 MeV	5. %		DOE Hemmig	RRT	
						Absolute values required for 480 keV γ . 3% accuracy useful to 100 keV, 10% above. For use as standard.		

STATUS : LAS Hale: REQ.69373. Partially satisfied by
Schrack (NBS) measurements from 30 keV to .100 MeV
but not absolute.
From .100 MeV to 10 MeV partially satisfied by
new Liskien (Geel) measurement, but not absolute.

¹⁰ B	$\sigma_{n,\alpha}$ (E)	RATIO						
		1	1.00 keV $\rightarrow$.100 MeV	1. %	ANL Smith	RRT		69364
		1	1.00 keV $\rightarrow$.100 MeV	1. %	DOE Hemmig	RRT		
		1	.100 MeV $\rightarrow$.300 MeV	3. %	ANL Smith	RRT		
		1	.100 MeV $\rightarrow$.300 MeV	3. %	DOE Hemmig	RRT		
		1	.300 MeV $\rightarrow$ 10.0 MeV	5. %	ANL Smith	RRT		
		1	.300 MeV $\rightarrow$ 10.0 MeV	5. %	DOE Hemmig	RRT		
					Absolute values required.			
					α_0/α_1 ratio needed for both α and γ detection.			
					3% accuracy useful to 100 keV, 10% accuracy useful above 100 keV.			
					For use as standard.			

STATUS : LAS Hale: REQ.69364. New measurements at a few isolated
points from BNL/NBS. Systematic measurement over
this energy range still required.

^{10}B	$\sigma_{n,\alpha}$ (E)							
		2	Thresh $\rightarrow$ 25.0 MeV	10. %	HED McElroy	OFE		80238
		2	25.0 MeV $\rightarrow$ 40.0 MeV	20. %	HED McElroy			
					Total He production for mass spectrometry.			
					For FMIT dosimetry.			
					For use as fluence monitor.			

STATUS : A1 Kneff: REQ.80238. 7% measurement at 14.8 MeV, see
DOE/ER-0046/10(1982).

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{10}B	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80048
<u>STATUS:</u> LAS Young: REQ.80048. New evaluation needed.								
^{11}B	$\sigma_{n,\gamma} (E, \theta, E_\gamma)$	2	2.10 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk Data needed for blanket, shield and magnet heat deposition calculations.	OFE	78157
<u>STATUS:</u> LAS Young: REQ.78157. New evaluation needed.								
^{11}B	$\sigma_{n,\alpha} (E)$	3 3	Thresh $\rightarrow$ 25.0 MeV 25.0 MeV $\rightarrow$ 40.0 MeV	10. % 20. %		HED McElroy HED McElroy For FMIT dosimetry and track recorder.	OFE	80221
^{nat}C	$\sigma_{n,n'\gamma} (E, \theta, E_\gamma)$	2	5.00 MeV $\rightarrow$ 20.0 MeV	5. %		ORL Fu For 4.43 MeV γ 's only. Measure for at least four angles.	RRT	74177
^{nat}C	$\sigma_{n,xn} (E, \theta, E_n)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk For shielding and transport studies of next generation D-T reactor designs.	OFE	78043
<u>STATUS:</u> ORL Larson: REQ.78043. For secondary neutron spectra from thick C sample. See ORNL-TM-5814 (1977).								

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat}C	$\sigma_{n,\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk For radiation damage studies of next generation D-T reactor designs.	OFE	78061
<p><u>STATUS :</u></p> <p>BNL Burrows: REQ.78061. Prelim. meas. of ^{12}C (n,α) + ^{12}C (n,n'α) at 9.0 MeV at OHIO. AI Kneff: REQ.78061. 8% data at 14.8 MeV, see J.Nucl.Materials,103/104,1451(1981).</p>								
^{nat}C	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80051
^{nat}C	$\sigma_{\alpha,n} (E)$	2	1.00 MeV $\rightarrow$ 6.50 MeV	6. %		LAS Walton Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.	DSS	78169
^{12}C	$\sigma_{n,\alpha} (E)$	2	15.0 MeV $\rightarrow$ 50.0 MeV	10. %		NBS Caswell Measurement at threshold and several energies throughout the range should be sufficient. γ -ray production and charged-particle spectra are of interest. Needed for energy deposition calculations for radiotherapy.	OHER	76111
^{12}C	$\sigma_{n,n'\alpha} (E)$	2	Thresh $\rightarrow$ 20.0 MeV	15. %		ORL Fu Measurement at threshold and several energies throughout the range should be sufficient. α spectra are of interest. Needed for energy deposition calculations for radiotherapy.	RRT	74174
		2	Thresh $\rightarrow$ 50.0 MeV	10. %		NBS Caswell Discrepancy exists at 20 MeV neutron energy between experimental data and theoretical calculations of secondary particle energy deposition spectra.	OHER	76112

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{12}C	$\sigma_{n,x} (E)$	2	100 keV $\rightarrow$ 14.0 MeV	30. %	30. %	NBS Bowman Electron excitation or removal induced by sudden acceleration of nucleus in neutron-nucleus scatter (n,n'e). Neutron spectrum calculations.	NBS	82051
^{13}C	$\sigma_{n,\alpha} (E)$	3	5.00 MeV $\rightarrow$ 15.0 MeV	25. %		LAS Muir Production of Be^{10} wanted. 25% accuracy adequate below 10 MeV. Needed for activation and parasitic absorption in graphite structures.	OFE	80117
^{14}N	$\sigma_{n,n} (E,\theta)$	2	3.50 MeV $\rightarrow$ 6.00 MeV	5. %		LAS Young At one or more energies covering the cross section minimum.	OMA	74157
		2	14.0 MeV	5. %		LAS Young Complete angular distribution required.	OMA	78048
^{14}N	$\sigma_{n,\gamma} (E)$	2	1.00 keV $\rightarrow$ 1.00 MeV	10. %	20. %	DOE Hemmig Resonance parameters needed.	RRT	74009
^{14}N	$\sigma_{n,x\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk For radiation damage calculations.	OFE	78097

STATUS :

BNL Burrows: REQ.78097. 14-MeV meas. of p,d,t,
 $^3\text{He},\alpha$, from $^{14}\text{N}+n$ at LLL (BAPS,26,1138,81)
 LAS Young: REQ.78097. New evaluation needed.

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{14}N	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80041
<p><u>STATUS :</u> LAS Young: REQUEST 80041. Present ENDF/B-V eval. has not been updated in 8-9 yrs. New measurements to be incorporated. Several requests for 50-60 MeV evaluated data for radiotherapy, radiobiology and space-shielding applications.</p>								
^{14}N	$\sigma_{n,xn} (E,\theta,E_n')$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk Data needed for shielding and neutron transport calculations.	OFE	78085
<p><u>STATUS :</u> LAS Young: REQ.78085. New evaluation needed.</p>								
^{16}O	$\sigma_{n,n} (E)$	2	5.00 keV $\rightarrow$ 10.0 MeV	5. %		BET Dei To resolve discrepancies between calculated and measured multiplication factors in small critical facilities.	DNR	76050
^{16}O	$\sigma_{n,n} (E,\theta)$	2	10.0 keV $\rightarrow$ 20.0 MeV	5. %		DOE Hemmig Needed for fast reactor reflector worths.	RRT	68028
		2	2.35 MeV	5. %		LAS Young At one or more energies near minimum.	OMA	74159
		3	14.0 MeV	5. %		LAS Young Complete angular distribution required.	OMA	76047
		2	5.00 keV $\rightarrow$ 10.0 MeV	5. %		BET Dei To resolve discrepancies between calculated and measured multiplication factors in small critical facilities.	DNR	76051

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat}O	$\sigma_{n,Xn} (E, \theta, E_n')$	1	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk Data needed for shielding, activation and neutron transport calculations.	OFE	78089
<u>STATUS :</u> LAS Young: REQ.78089. New evaluation needed.								
^{nat}O	$\sigma_{n,Xp} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk For radiation damage calculations.	OFE	78113
<u>STATUS :</u> BNL Burrows: REQ.78113. 14-MeV meas. of p.d.l. $^3He, \alpha$, from $^{16}O+n$ at LLL (BAPS,26,1138,81) LAS Young: REQ.78113. New evaluation needed.								
^{nat}O	$\sigma_{n,X\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk For radiation damage calculations.	OFE	78101
<u>STATUS :</u> BNL Burrows: REQ.78101. 14-MeV meas. $^3He, \alpha$, from α , from $^{16}O+n$ at LLL (BAPS,26,1138,81). LAS Young: REQ.78101. New evaluation needed.								
^{nat}O	$\sigma_{n,X} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80042
<u>STATUS :</u> LAS Young: REQ.80042. New evaluation needed.								
^{nat}O	$\sigma_{\alpha,n} (E)$	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %		LAS Walton Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.	DSS	78170

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{18}O	$\sigma_{n,\alpha}$ (E)	2	Thresh $\rightarrow$ 50.0 MeV	10. %		NBS Caswell	OHER	76113
						Measurement at threshold and several energies throughout the range should be sufficient. γ -ray production and charged-particle spectra are of interest. Needed for energy deposition calculations for radiotherapy.		
		2	$\rightarrow$ 15.0 MeV			DOE Berk	OFE	80069
						Accuracy to 10% near 15 Mev and 50% near 2.5 MeV. Data needed for diagnostics.		
<hr/>								
<u>STATUS:</u>			BNL	Burrows: REQ.80069. 14-MeV meas. of p,d,t, ^3He , α , from $^{18}\text{O}+n$ at LLL (BAPS,26,1138,81).				
			LAS	Young: REQ.80069. New evaluation needed.				
<hr/>								
^{18}O	$\sigma_{n,n'\alpha}$ (E)	2	Thresh $\rightarrow$ 50.0 MeV	10. %		NBS Caswell	OHER	76114
						Measurement at threshold and several energies throughout the range should be sufficient. γ -ray production and charged-particle spectra are of interest. Needed for energy deposition calculations for radiotherapy.		
<hr/>								
^{18}O	$\sigma_{n,n'^{14}\alpha}$ (E)	2	Thresh $\rightarrow$ 50.0 MeV	10. %		NBS Caswell	OHER	76115
						At least one measurement urgently needed for normalization. Measurement at threshold and several energies throughout the range should be sufficient. α spectra are of interest. Needed for energy deposition calculations for radiotherapy.		
<hr/>								
^{18}O	$\sigma_{\alpha,n}$ (E)	3	Thresh $\rightarrow$ 9.00 MeV	10. %	200K	BET Dei	DNR	66010
						Needed for intrinsic source.		
<hr/>								
^{18}F	$\sigma_{n,n'}(E,\theta,E_n)$	2	.100 MeV $\rightarrow$ 20.0 MeV	15. %		ORL Fu	RRT	74169
						Only data at 14 MeV and below 3.6 MeV.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{10}P	$\sigma_{n,abs} (E)$	2	2.00 MeV $\rightarrow$ 20.0 MeV	5. %		ORL Fu	RRT	74170
^{10}P	$N_{n,\gamma} (E, E_\gamma)$	2	10.0 keV $\rightarrow$ 1.00 MeV	5. %		ORL Fu	DNA	74180
^{10}P	$\sigma_{n,xn} (E, \theta, E_n)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk Data needed for shielding, activation and neutron transport calculations.	OFE	78087
^{10}P	$\sigma_{\alpha,n} (E)$	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %		LAS Walton Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.	DSS	78171
^{23}Na	$\sigma_{n,n} (E, \theta)$	2	10.0 keV $\rightarrow$ 15.0 MeV	10. %		DOE Hemmig 15% in angular distribution.	RRT	74012
^{23}Na	$\sigma_{n,n'} (E, E_n)$	2	2.00 MeV $\rightarrow$ 10.0 MeV	10. %	10%	ANL Smith Total integral over 4π required. Spectra at several angles if significantly anisotropic. $\Delta E_n \leq 10\%$.	RRT	62006
^{23}Na	$\sigma_{n,n'} (E, \theta, E_n)$	2	Thresh $\rightarrow$ 2.00 MeV	5. %	10%	DOE Hemmig	RRT	74014
		2	2.00 MeV $\rightarrow$ 15.0 MeV	10. %	10%	DOE Hemmig Accuracy of 15% in energy spectra $\Delta E_n = 10\%$.	RRT	
		2	15.0 MeV $\rightarrow$ 35.0 MeV	15. %		HED Carter For FMIT calculational dosimetry.	OFE	80113
^{23}Na	$\sigma_{n,\gamma} (E)$	2	.500 MeV $\rightarrow$ 22.0 MeV	10. %		HED Carter	OFE	80222
		2	22.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED Carter Activation is required for FMIT.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{23}Na	$\sigma_{n,2n}$ (E)	2	Thresh $\rightarrow$ 20.0 MeV	15. %		DOE Hemmig	RRT	74020
		2	20.0 MeV $\rightarrow$ 30.0 MeV	20. %		Needed for coolant activation. HED Carter Dosimetry for FMIT facility.	OFE	80027
^{23}Na	$\sigma_{n,p}$ (E)	2	$\rightarrow$ 20.0 MeV	10. %		ORL Larson	RRT	80262
						Activation measurement to guide model calculations.		
^{23}Na	$\sigma_{n,\alpha}$ (E)	2	$\rightarrow$ 20.0 MeV	10. %		ORL Larson	RRT	80263
						Activation measurement to guide model calculations.		
^{23}Na	$\sigma_{n,x}$ (E)	2	1.00 keV $\rightarrow$ 14.0 MeV	30. %	30. %	NBS Bowman	NBS	82052
						Electron excitation or removal induced by sudden acceleration of nucleus in neutron nucleus scatter (n,n'e). Neutron spectrum calculation.		
^{nat}Mg	$N_{n,\gamma}$ (E,E _{γ})	3	10.0 keV $\rightarrow$ 1.00 MeV	20. %		ORL Larson	DNA	74181
^{nat}Mg	$\sigma_{n,xp}$ (E)	3	Thresh $\rightarrow$ 20.0 MeV	20. %		ORL Larson	DNA	74189
						Accuracy of 20% needed. Quantity needed is spectrum data of protons.		
^{nat}Mg	$\sigma_{n,\alpha\alpha}$ (E)	3	Thresh $\rightarrow$ 20.0 MeV	20. %		ORL Larson	DNA	74190
						Accuracy of 20% needed. Quantity needed is spectrum data of α 's.		
^{nat}Mg	$\sigma_{a,n}$ (E)	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %	100K	LAS Walton	DSS	78174
						Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{24}Mg	$\sigma_{n,p}$ (E)	3	Thresh $\rightarrow$ 20.0 MeV	10. %		HED McElroy	OFE	80224
		3	20.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy Activation is required. For FMIT dosimetry.		
<hr/>								
<u>STATUS :</u>		ORL	Larson: REQ.80224. Evaluation by Tagesen et al., Physics Data,13,1(1979).					
<hr/>								
^{27}Al	$\sigma_{n,2n}$ (E)	2	Thresh $\rightarrow$ 16.0 MeV	15. %		LAS Young	OFE	80119
						(n,2n) cross section for production of 6-sec. isomer. Needed to resolve experimental discrepancies and for use in fusion diagnostics.		
		2	16.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter	OFE	82071
						Long term activation of FMIT facility.		
<hr/>								
^{27}Al	$\sigma_{n,xn}$ (E, θ , E_n)	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78078
						Data needed for shielding, activation and neutron transport calculations.		
		2	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		HED Doran	OFE	80054
						For materials damage calculations.		
<hr/>								
<u>STATUS :</u>		LAS	Young: REQ.78078,80054. New evaluation needed.					
		ORL	Larson: REQ.80054. ORELA (n,xn) measurement at one angle 1-20 MeV, ORNL/TM-5241(1978).					
<hr/>								
^{27}Al	$\sigma_{n,xp}$ (E)	3	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	80057
		3	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Doran Materials damage calculations.		
<hr/>								
<u>STATUS :</u>		LAS	Young: REQ.80057. 8-yr. old evaluation needs update.					
<hr/>								
^{27}Al	$\sigma_{n,\alpha}$ (E)	2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter	OFE	82070
						Needed for short-term FMIT activation.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{27}Al	$\sigma_{n,\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	80056
		2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran		
		Materials damage calculations and dosimetry.						
<u>STATUS :</u>		LLL	Haight: REQ.80056. 14 MeV data, Grimes et al., NSE,62,187(1977).					
		LAS	Young: REQ.80056. 8-yr.old evaluation needs update.					
		AI	Kneff: REQ.80056. 14.8 MeV data, Nucl. Tech. 49,498(1980).					
^{27}Al	$\sigma_{n,n} (E)$	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %	100K	LAS Walton	DSS	78172
		Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.						
^{nat}Si	$\sigma_{n,n} (E,\theta,E_n)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk	OFE	78045
		For shielding and transport studies of next generation D-T reactor designs.						
<u>STATUS :</u>		BNL	Burrows: REQ.78045. TUNL meas. at 10,12-MeV.					
^{nat}Si	$\sigma_{n,\alpha} (E)$	2	Thresh $\rightarrow$ 20.0 MeV	10. %		ORL Larson	DNA	74191
		2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	
		For radiation damage studies of next generation D-T reactor designs.						
^{nat}Si	$\sigma_{n,\alpha} (E)$	2	Thresh $\rightarrow$ 20.0 MeV	10. %		ORL Larson	DNA	74192
		2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	
		For radiation damage studies of next generation D-T reactor designs.						
<u>STATUS :</u>		AI	Kneff: REQ.78063. 8% data at 14.8 MeV, DOE/ER-0046/10 (1982).					

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat}Si	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80044
^{28}Si	$\sigma_{n,p} (E)$	2	10.0 MeV $\rightarrow$ 15.0 MeV	5.0 %		LLL Haight Activation is required. For diagnosing pellet performance in inertial fusion.	OMA	82058
^{nat}S	$\sigma_{n,tot} (E)$	2	10.0 keV $\rightarrow$.500 MeV	3. %		DOE Hemmig For shielding effect of concrete.	RRT	74021
^{nat}S	$N_{n,\gamma} (E, E_\gamma)$	2	10.0 keV $\rightarrow$.500 MeV	15. %		DOE Hemmig For shielding effect of concrete.	RRT	74025
^{nat}K	$\sigma_{n,n'} (E, \theta, E_{n'})$	1	15.0 MeV $\rightarrow$ 40.0 MeV	15. %		HED Carter For FMIT dosimetry.	OFE	80114
<div> <div>STATUS :</div> <div> <div>ORL</div> <div>Larson: REQ.80114. New evaluation needed; not redone since 1966.</div> </div> </div>								
^{39}K	$\sigma_{n,2n} (E)$	2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter Activation of NaK coolant, affecting FMIT maintenance.	OFE	82069
^{41}K	$\sigma_{n,p} (E)$	2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter FMIT activation.	OFE	82072
^{nat}Ca	$\sigma_{n,\gamma} (E)$	2	1.00 keV $\rightarrow$.500 MeV	10. %		DOE Hemmig For shielding effect of concrete.	RRT	74029

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat}Ca	$N_{n,\gamma} (E, E_\gamma)$	2	2.00 keV $\rightarrow$ 1.00 MeV	5. %		ORL Fu	DNA	74183
^{nat}Ca	$\sigma_{a,n} (E)$	2	.100 MeV $\rightarrow$ 6.50 MeV	6. %	100K	LAS Walton Thick target yields required. Relative error of 3.0% needed. α energy resolution 100 keV.	DSS	78173
^{45}Sc	$\sigma_{n,\gamma} (E)$	2	.100 MeV $\rightarrow$ 18.0 MeV	10. %		HED McElroy Activation is required. For use as fluence monitor.	RRT	69065
^{nat}Ti	$\sigma_{\gamma,p} (E)$	2	10.0 MeV $\rightarrow$ 20.0 MeV	50. %		DOE Berk Reaction used to identify runaway electrons that hit PDX limiters.	OFE	80072
^{nat}Ti	$\sigma_{n,xn} (E, \theta, E_n)$	2	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		HED Doran Accuracy to be determined from sensitivity studies. For material damage calculations.	OFE	78039

STATUS :

BNL

Burrows: REQ.78039. (ORNL-5563) Neutron and
 α -emission spectra meas. up to 20-MeV.

^{nat}Ti	$\sigma_{n,xp} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78027
		2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran For material damage calculations.		
^{nat}Ti	$\sigma_{n,x\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78212
		2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran For material damage calculations and dosimetry.		

STATUS :

AI

Kneff: REQ.78212. 8% data at 14.8 MeV. see
J.Nucl.Materials, 103/104, 1451(1981).

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{48}Ti	$\sigma_{n,x} (E)$	2	15.0 MeV $\rightarrow$ 25.0 MeV	10. %		HED McElroy	OFE	82075
		2	25.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy ^{48}Sc production desired. FMIT dosimetry.		
^{48}Ti	$\sigma_{n,p} (E)$	2	15.0 MeV $\rightarrow$ 40.0 MeV	10. %		HED McElroy FMIT activation.	OFE	82079
^{51}V	$\sigma_{n,n'} (E, E_{n'})$	3	1.50 MeV $\rightarrow$ 10.0 MeV	15. %		ANL Smith	RRT	62011
		3	1.50 MeV $\rightarrow$ 10.0 MeV	15. %		DOE Hemmig Total integral over 4π required. Spectra at several angles if significantly anisotropic.	RRT	
^{51}V	$\sigma_{n,xn} (E, \theta, E_{n'})$	2	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		HED Doran	OFE	78038
		2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		Accuracy to be determined from sensitivity studies. For material damage calculations. DOE Berk	OFE	78086
^{51}V	$\sigma_{n,xp} (E)$	3	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78026
		3	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran For material damage calculations.		
^{51}V	$\sigma_{n,x\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78211
		2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran For material damage calculations.		

STATUS :

AI

Kneff: REQ.78211. New 7% data at 14.8 MeV, J. Nuci.
Materials, 103/104, 1451(1981), also
DOE/ER-0046/7(1981).

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{51}V	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. $\rightarrow$ 20. %		DOE Berk All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.	OFE	80085
<u>STATUS :</u> LLL Haight: REQ.80085. $^{51}\text{V}(n,p)$, $^{51}\text{V}(n,\alpha)$ 14.8 MeV data, see Phys.Rev/C,17,508(1978).								
^{nat}Cr	$\sigma_{n,tot} (E)$	2	1.00 keV $\rightarrow$ 20.0 MeV	3. %		DOE Hemmig 5% accuracy minima. Energy resolution - sufficient to resolve major structure.	RRT	72035
		2	1.00 keV $\rightarrow$.500 MeV	2.0 %		LAS Young For radiation damage and heating calculations in the toroidal field coils of a fusion device. New evaluation needed to confirm 15% uncertainty in ENDF/B-V. If confirmed need new measurement.	OFE	82040
<u>STATUS :</u> ORL Larson: REQ.82040. Data of Larson, et al. from 5 keV to 30 MeV may meet this need.								
^{nat}Cr	$\sigma_{n,n} (E,\theta)$	3	.100 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Hemmig	RRT	74032
^{nat}Cr	$\sigma_{n,n'} (E,E_{n'})$	2	.500 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Hemmig Total integral over 4π required. Spectra at several angles if significantly anisotropic. Energy resolution required to determine major structure.	RRT	66012
^{nat}Cr	$\sigma_{n,\gamma} (E)$	2	1.00 keV $\rightarrow$.200 MeV	15. %	20. %	DOE Hemmig Resonance parameters needed, especially γ widths.	RRT	72036

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{54}Cr	$\sigma_{n,xn} (E, \theta, E_n)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78049
		1	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		For shielding and transport studies of next generation D-T reactor designs. HED Doran	OFE	78218
						Accuracy to be determined from sensitivity studies. For material damage calculations.		
^{54}Cr	$\sigma_{n,xp} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk	OFE	78058
		2	15.0 MeV $\rightarrow$ 35.0 MeV	10. %		For radiation damage studies of next generation D-T reactor designs. HED Doran	OFE	78215
						For material damage calculations.		
^{54}Cr	$\sigma_{n,\alpha} (E)$	2	Thresh $\rightarrow$ 14.0 MeV	20. %		BNL Prince	RRT	80125
						Helium production evaluation.		
^{54}Cr	$\sigma_{n,x\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78067
		1	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		For radiation damage studies of next generation D-T reactor designs. HED Doran	OFE	78216
						For material damage calculations.		

STATUS :

A1

Kneff: REQ.78067. For 12% data at 14.8 MeV, see J.Nucl.Materials,103/104,1451(1981).

^{54}Cr	$\sigma_{n,x} (E)$	1	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	80046
						All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.		
		2	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Carter	OFE	82073
						^{52}V production desired. FMIT activation.		
		2	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Carter	OFE	82074
						^{51}Cr production desired. FMIT activation.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{50}Cr	$\sigma_{n,\gamma}$ (E)	2	25.3 mV $\rightarrow$.300 MeV	10. %		BNL Prince Activation file.	RRT	80124
^{50}Cr	$\sigma_{n,2n}$ (E)	2	14.0 MeV $\rightarrow$ 20.0 MeV	20. %		BNL Prince Activation file.	RRT	80123
^{52}Cr	$\sigma_{n,2n}$ (E)	2	14.0 MeV $\rightarrow$ 20.0 MeV	20. %		BNL Prince Activation file.	RRT	80122
		2	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Carter FMIT activation.	OFE	82080
^{52}Cr	$\sigma_{n,p}$ (E)	2	7.00 MeV $\rightarrow$ 18.0 MeV	25. %		BNL Prince Hydrogen production evaluation.	RRT	80126
		2	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Carter FMIT activation.	OFE	82084
^{53}Cr	$\sigma_{n,3n}$ (E)	2	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Carter FMIT activation.	OFE	82081
^{54}Cr	$\sigma_{n,4n}$ (E)	2	15.0 MeV $\rightarrow$ 35.0 MeV	20. %		HED Carter FMIT activation.	OFE	82083
^{55}Mn	$\sigma_{n,X}$ (E)	2	2.50 eV $\rightarrow$ 15.0 MeV	20. %		GA Engholm Activation cross section. Fusion reactor shutdown dose rates.	OFE	80101
^{55}Mn	$\sigma_{n,tot}$ (E)	2		4. %		ORL Fu Need values in Fe windows.	RRT	74195
^{55}Mn	$\sigma_{n,2n}$ (E)	2	20.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	80022

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat}Fe	$\sigma_{\gamma,n} (E)$	2	Thresh $\rightarrow$ 20.0 MeV	30. %	5. %	MDD Driemeyer Determination of photoneutron activation in EBT-P. in the upgrade phase of EBT-P operation.	OFE	82043
^{nat}Fe	$\sigma_{n,n} (E,\theta)$	1	.500 MeV $\rightarrow$ 3.00 MeV	5. %	1. %	ORL Bartine Required at several peaks and in valleys. Required in valleys for shielding.	RRT	69085
		1	1.00 keV $\rightarrow$ 15.0 MeV	10. %		ANL Smith Energy resolution - to at least resolve intermediate structure.	RRT	69086
		1	1.00 keV $\rightarrow$ 15.0 MeV	10. %		DOE Hemmig	RRT	69087
^{nat}Fe	$\sigma_{n,n'} (E,E_{n'})$	2	2.00 MeV $\rightarrow$ 5.00 MeV	10. %	20K	DOE Hemmig Total integral over 4π required. Spectra at several angles if significantly anisotropic.	RRT	66016
		2	2.00 MeV $\rightarrow$ 15.0 MeV	10. %		$\Delta E_{n'} = 20$ keV ORL Bartine To resolve spectra measurements from stainless steel.	RRT	76075
^{nat}Fe	$N_{n,\gamma} (E,E_{\gamma})$	2	24.0 keV	10. %		ORL Fu No measurements available in 24 keV iron window.	RRT	74179
		2	1.00 keV $\rightarrow$ 1.00 MeV	5. %		ORL Fu	RRT	74184
		2	1.00 keV $\rightarrow$ 5.00 keV	5. %		WEW Doncals	RRT	76039
^{nat}Fe	$\sigma_{n,xn} (E,\theta,E_{n'})$	1	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		DOE Berk For shielding and transport studies of next generation D-T reactor designs.	OFE	78048

STATUS :

BNL

Burrows: REQ.78048. 2-30 MeV neutron and
 α -emission spectra under analysis at ORNL.
 TUNL meas. at 10-12 MeV.

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat}Fe	$\sigma_{n,xp}$ (E)	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78024
		2	15.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED Doran		
					For material damage calculations. For radiation damage studies of next generation D-T reactor designs.			
		<u>STATUS :</u>						
		LAS	Young: REQ.78024. Possibly satisfied to 15 MeV (see LA-8628-MS).					
^{nat}Fe	$\sigma_{n,x\alpha}$ (E)	1	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	80066
		1	15.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED Doran		
					Total helium production cross section for dosimetry and radiation damage studies.			
		<u>STATUS :</u>						
		LLL	Haight: REQ.80066. 15 MeV data, see Phys.Rev/C. 19,2127(1979).					
		LAS	Young: REQ.80066. Possibly satisfied to 15 MeV (see LA-8628-MS).					
		AI	Kneff: REQ.80066. for 6% data at 14.8 MeV, see J. Nucl.Materials,103/104,1451(1981).					
^{nat}Fe	$\sigma_{n,x}$ (E)	1	20.0 MeV $\rightarrow$ 40.0 MeV	10. $\rightarrow$ 20. %		HED McElroy	OFE	78018
						^{54}Mn production desired. Dosimetry for FMIT facility.		
		1	20.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 20. %		HED McElroy	OFE	78019
						^{51}Cr production desired. Dosimetry for FMIT facility.		
		2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter	OFE	82076
						^{56}Mn production desired. FMIT activation.		
		<u>STATUS :</u>						
		AI	Kneff: REQ.78019. 14.8 MeV data for (n,x α), see J.Nucl.Materials,103/104,1451(1981).					
^{54}Fe	Resonance Parameters	2	$\rightarrow$.100 MeV	10. %		ORL Fu	RRT	74043
		2	$\rightarrow$.100 MeV	10. %		DOE Hemmig	RRT	
					Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted.			

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{56}Fe	$\sigma_{n,\gamma}$ (E)	1	10.0 keV $\rightarrow$ 1.00 MeV	10. $\rightarrow$ 15. %		DOE Hemmig Energy averaged accuracy to 10-15%. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82033
^{56}Fe	$\sigma_{n,x}$ (E)	2	1.00 keV $\rightarrow$ 14.0 MeV	30. %	30. %	NBS Bowman Electron excitation or removal induced by sudden acceleration of nucleus in neutron-nucleus scatter (n,n'e). Neutron spectrum calculations.	NBS	82053
^{56}Fe	Resonance Parameters	1 1 1	$\rightarrow$.400 MeV $\rightarrow$.400 MeV $\rightarrow$.400 MeV	10. % 10. % 10. %		ORL Fu DOE Hemmig ANL Smith Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted.	RRT RRT RRT	74046
^{57}Fe	$\sigma_{n,n'}$ (E)	1	Thresh $\rightarrow$ 10.0 MeV	20. %		DOE Hemmig Total inelastic scattering cross section needed. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82034
^{58}Co	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 71.3 DAY	10. %		BET Dei Thermal cross section most important. Resonance integral also needed. For interpretation of $\text{Ni}^{58}(\text{n,p})$ fluence monitor data.	DNR	72046
^{58}Co	$\sigma_{n,\gamma}$ (E)	2	METASTABLE 9.1 HR	10. %		BET Dei Thermal cross section most important. Resonance integral also needed. For interpretation of $\text{Ni}^{58}(\text{n,p})$ fluence monitor data.	DNR	72045

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{59}Co	$\sigma_{n,\gamma}$ (E)	2	1.00 keV $\rightarrow$ 18.0 MeV	10. %		HED McElroy Activation is required. To ground and metastable states. For use as a fluence monitor.	RRT	69106
^{59}Co	$\sigma_{n,3n}$ (E)	1	Thresh $\rightarrow$ 40.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	78015
<u>STATUS :</u>		BNL	Burrows: REQ.78015. 3-50 MeV dosimetry c/s calcs. at LAS, publ. in conf. proc..					
		LAS	Young: REQ.78015. Satisfied to 30-MeV by Los Alamos analysis.					
^{59}Co	$\sigma_{n,4n}$ (E)	1	Thresh $\rightarrow$ 50.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	78016
<u>STATUS :</u>		BNL	Burrows: REQ.78016. 3-50 MeV dosimetry c/s calcs. at LAS, publ. in conf. proc..					
^{59}Co	$\sigma_{n,p}$ (E)	1	20.0 MeV $\rightarrow$ 28.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	78017
		2	4.00 MeV $\rightarrow$ 15.0 MeV	20. %		LAS Hale Data inconsistency between 4 and 10 MeV and at 14 MeV. Fusion dosimetry.	OFE	82082
<u>STATUS :</u>		BNL	Burrows: REQ.78017. 3-50 MeV dosimetry c/s calcs. at LAS, publ. in conf. proc..					
		LAS	Young: REQ.78017. Serious problem here even below 20-MeV. Measurements needed.					
^{59}Co	$\sigma_{n,\alpha}$ (E)	2	20.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter FMIT activation.	OFE	82077

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{59}Co	$\sigma_{n,\alpha} (E)$	2	15.0 MeV $\rightarrow$ 25.0 MeV	10. %		HED McElroy	OFE	80004
		2	25.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy		
		Only selected energies needed. Needed for FMIT dosimetry.						
<hr/>								
<u>STATUS :</u>		BNL	Burrows: REQ.80004. 3-50 MeV dosimetry c/s calcs. at LAS, publ. in conf. proc..					
		AI	Kneff: REQ.80004. 8% data at 14.8MeV,see DOE/ER-0046/8, Vol.1,p.31(1981).					
<hr/>								
^{nat}Ni	$\sigma_{n,n} (E,\theta)$	2	.100 MeV $\rightarrow$ 15.0 MeV	5. $\rightarrow$ 10. %		ANL Smith	RRT	72048
		2	.100 MeV $\rightarrow$ 15.0 MeV	5. $\rightarrow$ 10. %		DOE Hemmig	RRT	
						Energy resolution - resolution of intermediate structure probably adequate.		
<hr/>								
^{nat}Ni	$\sigma_{n,n'} (E,E_{n'})$	2	Thresh $\rightarrow$ 15.0 MeV	10. %	10. %	DOE Hemmig	RRT	66024
						Total integral over 4π required. Spectra at several angles if significantly anisotropic. $\Delta E_n = 10\%$. Energy resolution required to determine major structure. For Inconel shield design.		
<hr/>								
^{nat}Ni	$\sigma_{n,\gamma} (E)$	2	1.00 keV $\rightarrow$ 1.00 MeV	10. %		BNL Divadeenam	RRT	74053
		2	1.00 keV $\rightarrow$ 1.00 MeV	10. %		DOE Hemmig	RRT	
		2	1.00 keV $\rightarrow$ 1.00 MeV	10. %		ANL Smith	RRT	
		2	1.00 keV $\rightarrow$ 1.00 MeV	10. %		WEW Doncals	RRT	
<hr/>								
^{nat}Ni	$\sigma_{n,x\gamma} (E,E_\gamma)$	2	Thermal $\rightarrow$.600 MeV	20. %		DOE Hemmig	RRT	72052
						All γ 's are of interest. For shielding and γ heating calculations.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{64}Ni	$\sigma_{n,xn} (E, \theta, E_n)$	1	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		HED Doran	OFE	78037
		1	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		Accuracy to be determined from sensitivity studies. For material damage calculations. DOE Berk	OFE	78044
						For shielding and transport studies of next generation D-T reactor designs.		
<hr/>								
		<u>STATUS :</u> BNL Burrows: REQ.78037,78044. TUNL meas. at 10,12 MeV.						
^{64}Ni	$\sigma_{n,xp} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	78025
		2	15.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED Doran		
						For material damage calculations and next generation D-T reactor designs.		
^{64}Ni	$\sigma_{n,\alpha} (E)$	2	Thermal $\rightarrow$ 20.0 MeV	10. %		BNL Divadeenam	RRT	80147
						For evaluation and model testing purposes.		
^{64}Ni	$\sigma_{n,x\alpha} (E)$	1	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78062
		1	$\rightarrow$ 40.0 MeV	10. %		For radiation damage studies of next generation D-T reactor designs. HED Doran	OFE	80064
						FMIT radiation damage studies.		
<hr/>								
		<u>STATUS :</u> BNL Burrows: REQ.78062,80064. 7%, 14.8 MeV measured at Al, see J.Nucl.Materials,103/104,1451(1981). LLL Haight: REQ.78062,80064. 15 MeV measurement, see Phys.Rev/C,19,2127(1979).						
^{64}Ni	$\sigma_{n,x} (E)$	1	2.50 eV $\rightarrow$ 15.0 MeV	20. %		GA Engholm	OFE	80019
						Activation cross section. Fusion reactor shutdown dose rates.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{58}Ni	$\sigma_{n,\gamma}$ (E)	2	1.00 keV $\rightarrow$ 2.00 MeV	10. %		BNL Divadeenam For evaluation needs. Average capture cross section. For helium build-up via $\text{Ni}^{58}(\text{n},\alpha)$ reaction.	RRT	80136
^{58}Ni	$\sigma_{n,2n}$ (E)	1	20.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 20. %		HED Carter FMIT activation.	OFE	78020
^{58}Ni	$\sigma_{n,3n}$ (E)	1	20.0 MeV $\rightarrow$ 40.0 MeV	10. $\rightarrow$ 20. %		HED Carter FMIT activation.	OFE	78021
^{58}Ni	$\sigma_{n,p}$ (E)	3	Thresh $\rightarrow$ 15.0 MeV	5. %		BET Dei For use as fluence monitor.	DNR	72055
		2	2.00 MeV $\rightarrow$ 10.0 MeV	5. %	5.0%	NBS McGarry Required for reactor pressure vessel dosimetry.	NBS	82054
^{58}Ni	$\sigma_{n,t}$ (E)	2	15.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy All reactions leading to Co-56 are needed. Needed for FMIT activation and dosimetry.	OFE	80003
^{58}Ni	Resonance Parameters	2	$\rightarrow$.100 MeV	10. %		DOE Hemmig ANL Smith	RRT	74058
		2	$\rightarrow$.100 MeV	10. %		Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted.	RRT	
		2	.100 MeV $\rightarrow$.700 MeV	10. %		BNL Divadeenam For evaluation needs. Precise capture cross section necessary for estimating helium build-up via $\text{Ni}^{58}(\text{n},\alpha)$	RRT	80135
^{58}Ni	$\sigma_{n,\alpha}$ (E)	2	RADIOACTIVE 7.5X(10**4) YR 5.00 keV $\rightarrow$ 14.0 MeV	10. %		BNL Divadeenam α channel is open at zero neutron energy. Important for helium production.	RRT	80128

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
⁵⁹ Ni	Resonance Parameters	2	RADIOACTIVE 7.5x(10**4) YR 25.3 mV → .500 MeV	10. %		BNL Divadeenam	RRT	80127
						Elastic, γ , α and proton widths. reaction.		
⁶⁰ Ni	$\sigma_{n,p}$ (E)	2	Thresh → 50.0 MeV	10. - 20. %		HED Carter	OFE	78023
						FMIT activation.		
⁶⁰ Ni	$\sigma_{n,t}$ (E)	2	15.0 MeV → 40.0 MeV	20. %		HED McElroy	OFE	80009
						All reactions leading to Co ⁵⁸ are needed. Needed for FMIT dosimetry and activation.		
<div> <div>STATUS :</div> <div>LAS</div> <div>Young: REQ.80009. Production of ⁵⁸Co is dominated at higher energies by (n,2np) reaction.</div> </div>								
⁶⁰ Ni	Resonance Parameters	2	→ .100 MeV	10. %		DOE Hemmig	RRT	74059
		2	→ .100 MeV	10. %		ANL Smith	RRT	
						Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted.		
		2	.100 MeV → .700 MeV	10. %		BNL Divadeenam	RRT	80141
						For evaluation needs.		
⁶¹ Ni	Resonance Parameters	3	→ .100 MeV	10. %		DOE Hemmig	RRT	74062
		3	→ .100 MeV	10. %		ANL Smith	RRT	
						Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted.		
		3	.100 MeV → .700 MeV	10. %		BNL Divadeenam	RRT	80142
						For evaluation needs.		
⁶² Ni	Resonance Parameters	3	→ .100 MeV	10. %		DOE Hemmig	RRT	74065
		3	→ .100 MeV	10. %		ANL Smith	RRT	
						Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted.		
		2	.100 MeV → .700 MeV	10. %		BNL Divadeenam	RRT	80157
						For evaluation needs.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{63}Ni	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 100 YR 1.00 mV $\rightarrow$ 10.0 MeV	10. %		BET Dei Flux monitor from Cu(n,p) reaction.	DNR	76053
^{64}Ni	Resonance Parameters	3	$\rightarrow$.100 MeV	10. %		DOE Hemmig	RRT	74068
		3	$\rightarrow$.100 MeV	10. %		ANL Smith	RRT	
		3	.100 MeV $\rightarrow$.700 MeV	10. %		Energy requested is a maximum value only. Neutron width, γ -width, spin and parity wanted. BNL Divadeenam	RRT	80143
						For evaluation needs.		
^{nat}Cu	$\sigma_{\gamma,n}$ (E)	2	Thresh $\rightarrow$ 20.0 MeV	30. %	5. %	MDD Driemeyer	OFE	82044
						Determination of photoneutron activation in EBT-P. Needed in assessing potential activation problems in the upgrade phase of EBT-P operation.		
^{nat}Cu	$\sigma_{n,tot}$ (E)	2	1.00 keV $\rightarrow$ 2.00 MeV	1.0 %		LAS Young	OFE	82037
						For radiation damage and heating calculations in the toroidal field coils of a fusion device.		
		2	13.0 MeV $\rightarrow$ 15.0 MeV	1.0 %		LAS Young	OFE	82038
						For radiation damage and heating calculations in the toroidal field coils of a fusion device.		
<hr/>								
<u>STATUS :</u>		ORL	Larson: REQ.B2037. Data of Pandey, et al., see Phys. Rev/C.15,600(1977) may meet this requirement.					
		ORL	Larson: REQ.B2038. Data of Larson, et al. to be published should meet this request.					
^{nat}Cu	$\sigma_{n,n}$ (E)	2	13.0 MeV $\rightarrow$ 15.0 MeV	4.0 %		LAS Young	OFE	82039
						For radiation damage and heating calculations in the toroidal field coils of a fusion device.		
<hr/>								
<u>STATUS :</u>		ORL	Larson: REQ.82039. Presently available data is being evaluated.					

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{63}Cu	$N_{n,\gamma} (E, E_\gamma)$	2	25.3 mV $\rightarrow$.600 MeV	10. $\rightarrow$ 20. %		ORL Fu 10-20% accuracy. To resolve discrepancies in existing data at 0.0253 eV. No data between 0.0253 eV and 600 keV.	OFE	82049
^{63}Cu	$\sigma_{n,xn} (E, E_n)$	2	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		HED Doran Accuracy to be determined from sensitivity studies.	OFE	78040
		2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		For material damage calculations. DOE Berk For shielding and transport studies of next generation D-T reactor designs.	OFE	78046
<p><u>STATUS :</u> BNL Burrows: REQ.78040,78046. 10,12 MeV TUNL meas. ORL Larson: REQ.78046. Data from 1-20 MeV, see ORNL-5499(1979).</p>								
^{63}Cu	$\sigma_{n,xp} (E)$	3	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78028
		3	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran For material damage calculations and next generation D-T reactor designs.		
<p><u>STATUS :</u> LLL Haight: REQ.78028. 15 MeV data, see Phys.Rev/C, 19,2127(1979) ORL Larson: REQ.78028. Data from 15-20 MeV, see ORNL-5499(1979).</p>								
^{63}Cu	$\sigma_{n,x\alpha} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		HED Doran	OFE	78064
		2	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran FMIT dosimetry, activation and radiation damage studies.		
<p><u>STATUS :</u> LLL Haight: REQ.78064. 15 MeV data, see Phys.Rev/C,19, 2127(1979). AI Kneff: REQ.78064. 14.8 MeV data for ^{63}Cu in Nucl. Technol.49,498(1980), for $^{63,65}\text{Cu}$ in J.Nucl. Materials,103/104,1451(1981).</p>								

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{63}Cu	$\sigma_{n,x}$ (E)	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	80049
						All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.		
		2	20.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Carter	OFE	82078
						^{60}Co production wanted. FMIT activation.		
^{63}Cu	$\sigma_{n,\gamma}$ (E)	2	Thermal $\rightarrow$ 1.00 keV	2. $\rightarrow$ 5. %		DOE Hemmig	RRT	67001
						Accuracy - 2% near thermal, 5% above thermal. For detector applications.		
		2	1.00 keV $\rightarrow$ 18.0 MeV	10. %		HED McElroy	RRT	69132
						Activation of Cu^{64} is required. For use as fluence monitor.		
		2	1.00 mV $\rightarrow$ 15.0 MeV	5. %		BET Dei	DNR	76056
						Needed for long term flux monitor.		
^{63}Cu	$\sigma_{n,p}$ (E)	2	Thresh $\rightarrow$ 15.0 MeV	5. %		BET Dei	DNR	76055
						Needed for long term flux monitor.		
^{64}Zn	$\sigma_{n,p}$ (E)	1	Thresh $\rightarrow$ 15.0 MeV	10. $\rightarrow$ 50. %		DOE Berk	OFE	80070
						Accuracy to 10% near 15 MeV and 50% near 2.5 MeV. Data needed for diagnostics.		
^{78}Br	$\sigma_{d,2n}$ (E)	2	Thresh $\rightarrow$ 12.0 MeV	10. %		LLL Haight	OMA	82062
						Production of ^{79m}Kr required. For diagnosing pellet performance in inertial fusion.		
^{81}Br	$\sigma_{n,\gamma}$ (E)	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins	RRT	80111
						Need better measurements of resonance parameters from thermal to 10 keV for isotopes in which capture leads to build-up of gas-tag isotopes for FFTF.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{81}Kr	Resonance Parameters	2	$\rightarrow 1.00 \text{ keV}$	10. %		BNL Prince Calculation of (n, γ) cross section and resonance integral. Data needed for tagging material study. Also important for fission product files.	RRT	80121
^{78}Kr	$\sigma_{n,\gamma} (E)$	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of FFTF.	RRT	80104
^{78}Kr	$\sigma_{n,p} (E)$	2	10.0 MeV $\rightarrow$ 15.0 MeV	10. %		LLL Haight Activation is required. For diagnosing pellet performance in inertial fusion.	OMA	82059
^{80}Kr	$\sigma_{n,\gamma} (E)$	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of FFTF.	RRT	80105
^{80}Kr	$\sigma_{n,2n} (E)$	2	10.0 MeV $\rightarrow$ 15.0 MeV	10. %		LLL Haight Production of ^{79m}Kr required. For diagnosing pellet performance in inertial fusion.	OMA	82060
^{80}Kr	$\sigma_{d,2n} (E)$	2	Thresh $\rightarrow$ 12.0 MeV	10. %		LLL Haight Production of ^{80}Rb required. For diagnosing pellet performance in inertial fusion.	OMA	82063
^{80}Kr	$\sigma_{t,3n} (E)$	2	Thresh $\rightarrow$ 10.0 MeV	10. %		LLL Haight Production of ^{80}Rb is required. For diagnosing pellet performance in inertial fusion.	OMA	82066

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
⁸² Kr	$\sigma_{n,\gamma}$ (E)	2	40.0 eV	10. %		NBS Bowman	NBS	76116
						Values for a few higher resonances also needed. Needed to ground, first and second excited states for γ -ray laser.		
		2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins	RRT	80106
						Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of FFTF.		
⁸² Kr	$\sigma_{d,2n}$ (E)	2	Thresh $\rightarrow$ 12.0 MeV	10. %		LLL Haight	OMA	82064
						Production of ⁸² Rb is required. For diagnosing pellet performance in inertial fusion.		
⁸² Kr	$\sigma_{t,3n}$ (E)	2	Thresh $\rightarrow$ 10.0 MeV	10. %		LLL Haight	OMA	82067
						Production of ⁸² Rb is required. For diagnosing pellet performance in inertial fusion.		
⁸³ Kr	Resonance Parameters	2	1.00 mV $\rightarrow$ 1.00 keV	10. %		BET Dei	DNR	67190
		2	1.00 mV $\rightarrow$ 1.00 keV	10. %		KAP Feiner	DNR	
						For fission product absorption calculation.		
⁸⁶ Kr	$\sigma_{d,2n}$ (E)	2	Thresh $\rightarrow$ 12.0 MeV	10. %		LLL Haight	OMA	82065
						Production of ⁸⁶ Rb is required. For diagnosing pellet performance in inertial fusion.		
⁸⁶ Kr	$\sigma_{t,3n}$ (E)	2	Thresh $\rightarrow$ 10.0 MeV	10. %		LLL Haight	OMA	82068
						Production of ^{86m} Rb is required. For diagnosing pellet performance in inertial fusion.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{89}Y	$\sigma_{n,2n} (E)$	2	20.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	80033
<u>STATUS :</u>								
			BNL	Burrows: REQ.80033. LAS eval. completed for 0.1-20 MeV, publ. as LANL report.				
			LAS	Young: REQ.80033. Known to 10% below 20 MeV. See (NSE.76.137.80).				
^{89}Y	$\sigma_{n,3n} (E)$	2	20.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	80032
<u>STATUS :</u>								
			BNL	Burrows: REQ.80032. LAS eval. completed for 0.1-20 MeV, publ. as LANL report.				
^{89}Y	$\sigma_{n,p} (E)$	2	20.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	80034
<u>STATUS :</u>								
			BNL	Burrows: REQ.80034. LAS evaluation completed for 0.1-20 MeV, publ. as LANL report. 15 MeV meas. at LLL (PR/C.23,700.81).				
			LAS	Young: REQ.80034. 10% data available below 20 MeV and evaluation completed for $E_n=0.1-2.0$ MeV; published as LANL report.				
^{nat}Zr	$\sigma_{n,\gamma} (E)$	2	Thermal $\rightarrow$ 1.00 keV	5. %		RL Orton For reactor moderation and reactivity effects.	NMPO	67005
		2	1.00 mV $\rightarrow$ 50.0 keV	10. %		BET Dei Low resolution measurement above thermal desired. Want 2% accuracy in thermal value. For verification of recent measurements.	DNR	76057
^{nat}Zr	$\sigma_{n,xn} (E, \theta, E_n)$	2	3.00 MeV $\rightarrow$ 14.0 MeV	10. %	10. %	KAP Feiner $\Delta E_n = 10\%$. For design of pressurized water reactors using Zr.	DNR	67003
		2	3.00 MeV $\rightarrow$ 14.0 MeV	10. %	10. %	ANL Smith $\Delta E_n = 10\%$.	RRT	67004

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{90}Zr	$\sigma_{n,x}$ (E)	3	20.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy Activation is required. Reaction to Zr^{89} . For FMIT dosimetry.	OFE	80207
^{91}Zr	Capture RI	1 1	.500 eV .500 eV	2. % 2. %		KAP Feiner BET Dei Energy requested is a minimum value only. Shielded integrals down to 0.4 times dilute integral also wanted. To resolve discrepancies in existing data.	DNR DNR	69143
^{90}Zr	$\sigma_{n,3n}$ (E)	3	Thresh $\rightarrow$ 50.0 MeV	10. $\rightarrow$ 20. %		HED McElroy Dosimetry for FMIT facility.	OFE	80035
^{91}Zr	Resonance Parameters	1	.290 keV			KAP Feiner G-factor is important in determining the shielded absorption rate. The long-standing discrepancy between Geel and ORNL should be resolved. Need to know if J is 2 or 3.	DNR	80120
^{93}Zr	$\sigma_{n,\gamma}$ (E)	2	10.0 keV $\rightarrow$.100 MeV	30. %		HED Schenter Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.	RRT	80268

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
⁹³ Zr	$\sigma_{n,\gamma}$ (E)		RADIOACTIVE 64.0 DAY					
		3	1.00 eV $\rightarrow$ 10.0 keV	20. %		BET Dei	DNR	67010
		2	.500 eV $\rightarrow$ 10.0 keV	10. $\rightarrow$ 20. %		KAP Feiner	DNR	
						Thermal cross section and RI wanted.		
						Accuracy -		
						10% if $\sigma > 100$ barns, 20% if 10-100 barns.		
						Energies above 1 eV of interest to give -		
						10% in RI if > 1000 barns, 20% if 100-1000 barns.		
						Decays to important fission product.		
		2	10.0 keV $\rightarrow$.100 MeV	30. %		HED Schenter	RRT	80267
						Accuracy determination should reflect fast reactor flux weighting spectrum.		
						For calculations of reactivity and burn-up in fast reactors.		
⁹⁵ Zr	Resonance Parameters	1	.300 keV	10. %		KAP Feiner	DNR	74074
						Neutron and γ - widths required.		
						Needed to verify measurement on 300 eV resonance and remove discrepancies.		
⁹³ Nb	$\sigma_{n,n'}$ (E)	1	10.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED McElroy	OFE	80260
						Activation is required.		
						Reaction to isomeric state.		
						Accuracy 20% above 15 MeV.		
						For PMIT dosimetry.		
		2	.500 MeV $\rightarrow$ 10.0 MeV	10. %	10. %	NBS McGarry	NBS	82056
						Reactor pressure vessel dosimetry.		
⁹³ Nb	$\sigma_{n,2n}$ (E)	1	20.0 MeV $\rightarrow$ 28.0 MeV	20. %		HED McElroy	OFE	80028
						Dosimetry for PMIT facility.		
⁹³ Nb	$\sigma_{n,xn}$ (E, θ ,E _{n'})	3	20.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 50. %		HED Doran	OFE	78222
						Accuracy to be determined from sensitivity studies.		
						For material damage calculations.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
⁹³ Nb	$\sigma_{n,xp}$ (E)	2	9.00 MeV $\rightarrow$ 14.0 MeV	20. %		DOE Berk	OFE	78105
		3	15.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 50. %		For radiation damage calculations. HED Doran	OFE	78219
		Accuracy to be determined from sensitivity studies. For material damage calculations.						
<u>STATUS :</u>		LLL	Haight: REQ.78105. 15 MeV data, see Phys.Rev/C,17, 508(1978).					
⁹³ Nb	$\sigma_{n,x\alpha}$ (E)	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78093
		3	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 50. %		For radiation damage calculations. HED Doran	OFE	78220
		Accuracy to be determined from sensitivity studies. For material damage calculations.						
<u>STATUS :</u>		LLL	Haight: REQ.78093. 15 MeV data, see Phys.Rev/C,17, 508(1978).					
		AI	Kneff: REQ.78093. 7%, 14.8 MeV data, see DOE/ER-0046/7, 28(1981).					
⁹³ Nb	$\sigma_{n,x}$ (E)	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	80088
						All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.		
⁹³ Nb	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE Thermal 35.1 DAY	10. $\rightarrow$ 20. %		KAP Feiner	DNR	67012
						Thermal average useful. Accuracy - 20% if absorption cross section is 10-100 barns, 10% if greater. Decays to important fission product poison.		
⁹⁸ Mo	$\sigma_{n,xn}$ (E, θ ,E _n)	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78084
						Data needed for shielding and neutron transport calculations.		
<u>STATUS :</u>		BNL	Burrows: REQ.78084. Neutron and γ emission spectra from 2-30 MeV under analysis at ORL.					

表 1 2000—2009 年中国人口老龄化与人口红利变化

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat} Mo	σ _{n,xp} (E)	2	9.00 MeV → 15.0 MeV	20. %		DOE Berk For radiation damage calculations.	OFE	78108
<hr/>								
<u>STATUS :</u>		BNL	Burrows: REQ.78108. 15 MeV meas. on ^{92,94-98} Mo (PR/C, <u>23</u> ,700,81) for (n,p).					
^{nat} Mo	σ _{n,Xa} (E)	2	9.00 MeV → 15.0 MeV	20. %		DOE Berk For radiation damage calculations.	OFE	78096
<hr/>								
<u>STATUS :</u>		BNL	Burrows: REQ.78096. 15 MeV meas. on ^{92,94-98} Mo (PR/C, <u>23</u> ,700,81). AI Kneff: REQ.78096. 14.8 MeV data, see J.Nucl. Materials, <u>103/104</u> ,1451(1981).					
^{nat} Mo	σ _{n,x} (E)	2	2.50 eV → 15.0 MeV	20. %		GA Engholm Activation cross section. Fusion reactor shutdown dose rates.	OFE	80102
⁹⁸ Mo	σ _{n,γ} (E)	3	RADIOACTIVE 66 HR 1.00 mV → 1.00 keV	10. → 20. %		BET Dei KAP Feiner Resonance parameters also wanted. Accuracy - 10% if σ>100 barns, 20% if 10-100 barns. Energies above 1 eV of interest to give - 10% in RI if >1000 barns, 20% if 100-1000 barns. Decays to important fission product.	DNR DNR	67013
		3	1.00 mV → 1.00 keV	10. → 20. %				
¹⁰³ Ru	σ _{n,γ} (E)	3	RADIOACTIVE 39.4 DAY 1.00 mV → 1.00 keV	10. → 20. %		KAP Feiner Accuracy - 10% if σ>100 barns, 20% if 10-100 barns. Energies above 1 eV of interest to give - 10% in RI if >1000 barns, 20% if 100-1000 barns. For calculation of fission product poisons.	DNR	67015
		2	10.0 keV → .100 MeV	30. %		HED Schenter Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.	RRT	80272

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{106}Ru	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 367 DAY 1.00 keV $\rightarrow$ 1.00 MeV	20. %		HED Schenter	RRT	80273
						Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.		
^{103}Rh	$\sigma_{n,n'}$ (E)	3	10.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED McElroy	OFE	80258
						Activation is required. Reaction to isomeric state. For FMIT dosimetry.		
		2	.500 MeV $\rightarrow$ 10.0 MeV	10. %	10. %	NBS MCGarry	NBS	82057
						Reactor pressure vessel dosimetry. Absolute measurement needed.		
^{107}Pd	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 6.5X(10**6) YR 1.00 keV $\rightarrow$ 1.00 MeV	10. %		HED Schenter	RRT	80274
						Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.		
<hr/>								
<u>STATUS :</u>			HED Schenter: REQ.80274. RPI resonance parameter data.					
^{nat}Sn	$\sigma_{n,Xn}$ (E, θ , E_n)	3	15.0 MeV $\rightarrow$ 35.0 MeV	10. $\rightarrow$ 40. %		HED Doran	OFE	78041
						Accuracy to be determined from sensitivity studies.		
		2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78083
						Data needed for shielding and neutron transport calculations.		
<hr/>								
<u>STATUS :</u>			BNL Burrows: REQ.78041,78083. TUNL meas. at 10,12 MeV.					
^{nat}Sn	$\sigma_{n,Xp}$ (E)	3	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	78029
		3	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran		
						For material damage calculations.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{115}Sn	$\sigma_{n,\alpha}$ (E)	3	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	78214
		3	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran		
		For material damage calculations.						
<hr/>								
<u>STATUS</u> :		BNL	Burrows: REQ.78214. TUNL meas. at 10,12 MeV.					
		A1	Kneff: REQ.78214. 7%, 14.8 MeV data, see DOE/ER-0046/8,V.1,31(1982).					
<hr/>								
^{127}Te	$\sigma_{n,\gamma}$ (E)	2	METASTABLE 109 DAY 1.00 mV $\rightarrow$ 1.00 eV	20. %		KAP Feiner	DNR	67022
						Thermal average or 0.025 eV value useful. For calculation of fission product poisons.		
^{133}I	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 20.8 HR 1.00 mV $\rightarrow$ 1.00 keV	20. %		BET Dei	DNR	87024
						Accuracy 10% if $\sigma > 9000$ barns. Above 1 eV want R1 to 20% if in range 9000-90,000 barns, to 10% if larger. For calculation of fission product poisons.		
^{124}Xe	$\sigma_{n,\gamma}$ (E)	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins	RRT	80107
						Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of PFTF.		
^{126}Xe	$\sigma_{n,\gamma}$ (E)	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins	RRT	80108
						Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of PFTF.		
^{126}Xe	$\sigma_{n,2n}$ (E)	2	10.0 MeV $\rightarrow$ 15.0 MeV	10. %		LLL Haight	OMA	82061
						Production of ^{125m}Xe required. For diagnosing pellet performance in inertial fusion.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{129}Xe	$\sigma_{n,\gamma}$ (E)	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins	RRT	80109
						Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of FFTF.		
^{129}Xe	$\sigma_{n,\gamma}$ (E)	2	25.3 mV $\rightarrow$ 10.0 keV	10. %		HED Rawlins	RRT	80110
						Need better measurements of resonance parameters from thermal to 10 keV for isotopes used in gas-tagging of FFTF.		
^{131}Xe	$\sigma_{n,\gamma}$ (E)	2	1.00 keV $\rightarrow$ 1.00 MeV	20. %		HED Schenter	RRT	80277
						Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.		
^{133}Xe	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 5.29 DAY 1.00 mV $\rightarrow$ 5.00 keV	10. %		BET Dei	DNR	74088
						Thermal cross section and RI wanted. For fission product poison calculations.		
^{135}Xe	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 9.17 HR 1.00 mV $\rightarrow$ 5.00 eV	2. %		BET Dei	DNR	74089
		2	1.00 mV $\rightarrow$ 5.00 eV	3. %		KAP Feiner	DNR	
		2	5.00 eV $\rightarrow$ 5.00 keV	5. %		BET Dei	DNR	
						Thermal cross section wanted to 2%. For fission product poison calculations.		
^{135}Xe	$\sigma_{n,\gamma}$ (E, E $_{\gamma}$)	2	RADIOACTIVE 9.17 HR Thermal	10. $\rightarrow$ 20. %		KAP Feiner	DNR	67029
						For γ energies 1-8 MeV. γ -energy resolution $\sim$ 10-20%. For γ shielding and heat calculations.		
^{135}Cs	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 3.0X(10**6) YR 1.00 keV $\rightarrow$ 1.00 MeV	20. %		HED Schenter	RRT	80278
						Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{144}Ce	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 284 DAY 10.0 keV $\rightarrow$ 100 MeV	30. %		HED Schenter	RRT	80279
						Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.		
^{147}Nd	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 11 DAY 1.00 mV $\rightarrow$ 1.00 keV	5. $\rightarrow$ 10. %		BET Dei	DNR	67040
		2	1.00 mV $\rightarrow$ 1.00 keV	5. $\rightarrow$ 10. %		KAP Feiner	DNR	
						Thermal cross section and RI wanted.		
<u>STATUS:</u>		HED Schenter: REQ.67040. See 79KNOX, p.907.						
^{147}Pm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 2.6234 YR 1.00 keV $\rightarrow$ 1.00 MeV	10. %		HED Schenter	RRT	80280
						Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.		
<u>STATUS:</u>		HED Schenter: REQ.80280. CFRMF integral data.						
^{148}Pm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 5.37 DAY 1.00 mV $\rightarrow$ 1.00 keV	10. %		BET Dei	DNR	67046
		2	1.00 mV $\rightarrow$ 1.60 eV	10. %		KAP Feiner	DNR	
						Thermal cross section and RI wanted. Look for 1/v above 1 eV. For calculation of fission product poisons.		
<u>STATUS:</u>		HED Schenter: REQ. 67046. $\sigma_{th}=2000\pm1000$ (BNL-325(73)). See CINDA 81, CINDA-A.						
^{151}Pm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 28.4 HR 1.00 mV $\rightarrow$ 1.00 keV	10. %		BET Dei	DNR	67057
						Thermal cross section and RI wanted. Energies above 1 eV of interest to give RI to 10%. For calculation of fission product poisons.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponso.	No.
^{151}Sm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 90 YR 1.00 mV $\rightarrow$ 1.00 keV	5. %	5. %	BET Dei	DNR	67054
		2	1.00 keV $\rightarrow$ 1.00 MeV	20. %		Thermal cross section and RI wanted. Energies above 1 eV of interest to give RI to 10%. For calculation of fission product poisons. HED Schenter	RRT	80282
Accuracy determination should reflect fast reactor flux weighting spectrum. For calculations of reactivity and burn-up in fast reactors.								
<hr/>								
<u>STATUS :</u>		HED	Schenter: REQ.67054. See BNL-325(73). There are differences between ENDF/B-V and French integral results.					
<hr/>								
^{153}Sm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 46.5 HR 1.00 mV $\rightarrow$ 1.00 keV	10. $\rightarrow$ 20. %		BET Dei	DNR	67061
		2	1.00 mV $\rightarrow$ 1.00 keV	10. $\rightarrow$ 20. %		KAP Feiner	DNR	
Thermal cross section and RI wanted. Accuracy - 10% if $\sigma > 30,000$ barns, 20% if lower. Energies above 1 eV of interest to give - 10% in RI if > 300 barns, 20% if 30-300 barns. For calculation of fission product poisons.								
^{nat}Eu	$\sigma_{n,tot}$ (E)	2	1.00 eV $\rightarrow$ 15.0 MeV	15. %		DOE Hemmig	RRT	74097
Needed for resonance self-shielding.								
^{151}Eu	$\sigma_{n,\gamma}$ (E)	2	1.00 keV $\rightarrow$ 1.00 MeV	5. %		DOE Hemmig	RRT	74099
		2	.500 eV $\rightarrow$ 5.00 keV	5. %		BNL Mughabghab	RRT	76076
^{151}Eu	$\sigma_{n,\gamma}$ (E)	2	RATIO 1.00 keV $\rightarrow$ 1.00 MeV	10. %		ORL Fu	RRT	74102
Ratio ground state to isomer capture wanted.								
^{151}Eu	$N_{n,\gamma}$ (E, E_γ)	2	1.00 keV $\rightarrow$ 1.00 MeV	10. %		DOE Hemmig	RRT	74100
^{152}Eu	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 13 YR 1.00 mV $\rightarrow$ 1.00 keV	10. %		BNL Mughabghab	RRT	76077
Also require resonance parameters and resonance integral.								

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{153}Eu	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 5.00 keV	2. $\rightarrow$ 5. %		BNL Mughabghab	RRT	67064
		2	1.00 keV $\rightarrow$ 1.00 MeV	5. %		Accuracy - 2% near thermal, 5% above. Energies above 1 eV of interest to give RI to 10%. For calculation of fission product poisons. DOE Hemmig	RRT	74105
^{153}Eu	$N_{n,\gamma}$ (E, E $_{\gamma}$)	2	1.00 keV $\rightarrow$ 1.00 MeV	10. %		DOE Hemmig	RRT	74106
^{162}Dy	$\sigma_{n,\text{tot}}$ (E)	3	1.00 eV $\rightarrow$ 10.0 eV	4. $\rightarrow$ 10. %	1.5%	BNL Mughabghab	RRT	82047
						Total cross section measurement on a very thin Dy 162 sample to determine whether the 5.4 eV resonance is a doublet and the corresponding accurate resonance parameters. See Neutron Cross Sections Vol. 1, Part B, Fourth Edition.		
^{169}Tm	$\sigma_{n,2n}$ (E)	2	8.00 MeV $\rightarrow$ 25.0 MeV	10. $\rightarrow$ 20. %		HED McElroy	OFE	80031
						Dosimetry for FMIT facility.		
^{169}Tm	$\sigma_{n,3n}$ (E)	2	15.0 MeV $\rightarrow$ 30.0 MeV	10. $\rightarrow$ 20. %		HED McElroy	OFE	80030
						Dosimetry for FMIT facility.		
^{169}Tm	$\sigma_{n,4n}$ (E)	3	$\rightarrow$ 40.0 MeV	20. %		HED McElroy	OFE	80251
						Activation is required. For FMIT dosimetry.		
^{169}Tm	$\sigma_{n,5n}$ (E)	3	Thresh $\rightarrow$ 50.0 MeV	10. $\rightarrow$ 20. %		HED McElroy	OFE	80029
						Dosimetry for FMIT facility.		
$n+^{1}\text{Hf}$	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 1.00 eV	2. %		BET Dei	DNR	62024
		2	1.00 mV $\rightarrow$ 1.00 eV	2. %		KAP Feiner	DNR	
						To resolve discrepancies in thermal data. For Monte Carlo calculations of burn-up in thermal reactors.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{176}Hf	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 5.00 keV	10. $\rightarrow$ 40. %		BET Dei	DNR	62026
		2	1.00 mV $\rightarrow$ 5.00 keV	10. $\rightarrow$ 40. %		KAP Feiner	DNR	
		Accuracy - thermal value: 20%, <1 eV: 40%, - 10-100 eV: Γ_{tot} , Γ_n , Γ_γ to 10%, - 100 eV-5 keV: Γ_{tot} , Γ_n , Γ_γ to 20%, - average p-wave Γ_γ to 20%, - s-wave strength function to 40%. To resolve discrepancies in RI. For Monte Carlo burn-up calculations.						
^{177}Hf	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 5.00 keV	4. $\rightarrow$ 20. %		BET Dei	DNR	62028
		2	1.00 mV $\rightarrow$ 5.00 keV	4. $\rightarrow$ 20. %		KAP Feiner	DNR	
		Accuracy - <1 eV: 4%, - 10-100 eV: Γ_{tot} , Γ_n , Γ_γ to 10%, - 100 eV-5 keV: Γ_{tot} , Γ_n , Γ_γ to 20%, - 5.89, 6.57, 8.87 eV: widths to 5%, - average p-wave Γ_γ to 20%, - s-wave strength function to 20%. To resolve discrepancies in RI. For Monte Carlo burn-up calculations.						
^{178}Hf	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 5.00 keV	3. $\rightarrow$ 20. %		BET Dei	DNR	62030
		2	1.00 mV $\rightarrow$ 5.00 keV	3. $\rightarrow$ 20. %		KAP Feiner	DNR	
		Accuracy - <1 eV: 5%, - 10-100 eV: Γ_{tot} , Γ_n , Γ_γ to 10%, - 100 eV- 5 keV: Γ_{tot} , Γ_n , Γ_γ to 20%, - 7.78 eV: widths to 3%, - average p-wave Γ_γ to 20%, - s-wave strength function to 20%. To resolve discrepancies in RI. For Monte Carlo burn-up calculations.						
^{179}Hf	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 5.00 keV	5. $\rightarrow$ 20. %		BET Dei	DNR	62032
		2	1.00 mV $\rightarrow$ 5.00 keV	5. $\rightarrow$ 20. %		KAP Feiner	DNR	
		Accuracy - <1 eV: 5%, - 10-100 eV: Γ_{tot} , Γ_n , Γ_γ to 10%, - 100 eV- 5 keV: Γ_{tot} , Γ_n , Γ_γ to 20%, - 5.68 eV: widths to 5%, - average p-wave Γ_γ to 20%, - s-wave strength function to 20%. To resolve discrepancies in RI. For Monte Carlo burn-up calculations.						

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{180}Hf	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 5.00 keV	4. $\rightarrow$ 20. %		BET Dei	DNR	67080
		2	1.00 mV $\rightarrow$ 5.00 keV	4. $\rightarrow$ 20. %		KAP Feiner	DNR	
		Accuracy - <1 eV: 4%, 10-100 eV: Γ_{tot} , Γ_n , Γ_γ to 10%, 100 eV- 5 keV: Γ_{tot} , Γ_n , Γ_γ to 20%, average p-wave Γ_γ to 20%, s-wave strength fn. to 20%. To resolve discrepancies in RI. For Monte Carlo burn-up calculations.						
^{181}Ta	$\sigma_{n,\gamma}$ (E)	2	1.00 eV $\rightarrow$ 1.00 keV	10. %		DOE Hemmig	RRT	69192
		2	1.00 keV $\rightarrow$.150 MeV	5. %		DOE Hemmig	RRT	
		Double accuracy useful. Fast breeder control and burn-up calculations.						
^{181}Ta	$\sigma_{n,\gamma}$ (E)	2	1.00 eV $\rightarrow$ 16.0 MeV	15. %		DOE Hemmig	RRT	74111
						γ -rays below 1 MeV important.		
^{181}Ta	σ_n	2	2.50 eV $\rightarrow$ 15.0 MeV	20. %		GA Engholm	OFE	80018
		Capture γ spectrum also needed. Use as advanced shielding material.						
^{181}Ta	$\sigma_{n,\alpha n}$ (E, θ , E_n)	2	5.00 MeV $\rightarrow$ 15.0 MeV	20. %		GA Engholm	OFE	80017
		Neutron spectrum also needed. Use as advanced shielding material.						
^{181}Ta	$\sigma_{n,\alpha}$ (E)	2	2.50 eV $\rightarrow$ 15.0 MeV	20. %		GA Engholm	OFE	80099
		Activation cross section. Fusion reactor shutdown dose rates.						

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{nat} W	$\sigma_{n,Xn} (E,\theta,E_n)$	2	4.00 MeV $\rightarrow$ 16.0 MeV	5. %	5. %	ORL Bartine	RRT	66040
						Low energy neutrons should be included. Spectra at a few angles may suffice. Angular resolution, 10°. $\Delta E_n = 500$ keV		
		3	15.0 MeV $\rightarrow$ 35.0 MeV			HED Doran	OFE	80055
						For materials damage calculations.		
<u>STATUS :</u>		BNL	Burrows: REQ.80055. LAS evaluation completed for 0.1-20 MeV, publ. as LANL report. TUNL meas. at 10,12 MeV.					
^{nat} W	$\sigma_{n,Xp} (E)$	3	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		HED Doran	OFE	80058
		3	15.0 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran		
					Materials damage calculations.			
<u>STATUS :</u>		BNL	Burrows: REQ.80058. LAS eval. completed for 0.1-20 MeV, publ. as LANL report.					
^{nat} W	$\sigma_{n,X\alpha} (E)$	3	9.00 MeV $\rightarrow$ 30.0 MeV	20. %		HED Doran	OFE	80059
					Materials damage calculations and dosimetry.			
		<u>STATUS :</u>		BNL	Burrows: REQ.80059. LAS eval. completed for 0.1-20 MeV, publ. as LANL report.			
^{nat} Pt	$\sigma_{n,n} (E,\theta)$	2	10.0 mV $\rightarrow$ 10.0 eV	10. %		NBS Eisenhower	NBS	78177
					For scattering corrections in Pt fission deposit backings.			
		<u>STATUS :</u>						
¹⁹⁷ Au	$\sigma_{n,\gamma} (E)$	2	10.0 keV $\rightarrow$ 1.00 MeV	2. %		BNL Mughabghab	RRT	72073
¹⁹⁷ Au	$\sigma_{n,2n} (E)$	2	20.0 MeV $\rightarrow$ 25.0 MeV	20. %		HED McElroy	OFE	78010
					Dosimetry for FMIT facility.			
		<u>STATUS :</u>						

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{197}Au	$\sigma_{n,3n}$ (E)	1	20.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy Dosimetry for FMIT facility.	OFE	78011
^{197}Au	$\sigma_{n,4n}$ (E)	3	25.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy Dosimetry for FMIT facility.	OFE	78012
^{197}Au	$\sigma_{n,5n}$ (E)	3	30.0 MeV $\rightarrow$ 40.0 MeV	20. %		HED McElroy Dosimetry for FMIT facility.	OFE	78013
^{197}Au	$\sigma_{n,xn}$ (E)	2	15.0 MeV $\rightarrow$ 30.0 MeV	10. %		HED McElroy Total helium production cross section for dosimetry.	OFE	80065
<div> <div>STATUS :</div> <div> A1 Kneff: REQ.80065. 14.8 MeV data, see J.Nucl.Materials, 103/104,1451(1981). </div> </div>								
^{210}Pb	$\sigma_{\gamma,n}$ (E)	2	Thresh $\rightarrow$ 20.0 MeV	30. %	5. %	MDD Driemeyer Determination of photoneutron activation in EBT-P. Needed for assessing potential activation problems in the upgrade phase of EBT-P operation.	OFE	82045
^{210}Pb	$N_{n,\gamma}$ (E,E γ)	2	2.00 keV $\rightarrow$.600 MeV	5. %		ORL Fu	OFE	74186
^{210}Pb	$\sigma_{n,2n}$ (E)	2	6.76 MeV $\rightarrow$ 15.0 MeV	10. %		GA Engholm Secondary neutron spectra required.	OFE	80021
^{210}Pb	$\sigma_{n,3n}$ (E)	3	14.2 MeV $\rightarrow$ 15.0 MeV	20. %		GA Engholm Total cross section and secondary neutron spectrum. For fission-suppressed hybrid reactor blanket designs.	OFE	80011

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{208}Pb	$\sigma_{n,xn} (E, \theta, E_n)$	3	2.00 MeV $\rightarrow$ 16.0 MeV	5. %	250K	ORL Bartine	RRT	63005
		2	9.00 MeV $\rightarrow$ 15.0 MeV	10. %		Angular dependence only if significantly anisotropic. Energy intervals - 500 keV. Angular resolution - 3° in 10° intervals. DOE Berk For shielding, activation and transport studies of next generation D-T reactor designs.	OFE	78050
<hr/>								
STATUS : BNL Burrows: REQ.78050. TUNL meas. at 10,12 MeV.								
<hr/>								
^{208}Pb	$\sigma_{n,x} (E)$	2	9.00 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	80045
						All significant activation reaction cross sections. Data needed for shielding, activation and neutron transport calculations.		
<hr/>								
^{209}Bi	$\sigma_{n,2n} (E)$	2	Thresh $\rightarrow$ 15.0 MeV	10. %		WEW Green	OFE	82041
						Total (n,2n) cross section and secondary neutron energy distribution needed. For fission suppressed hybrid blanket design.		
<hr/>								
^{230}Th	$\sigma_{n,\gamma} (E)$	2	RADIOACTIVE $8.0 \times (10^{-4})$ YR Thermal $\rightarrow$ 1.00 MeV	10. %		ORL Bartine	RRT	78196
						Key reaction for production of U^{232} .		
<hr/>								
^{232}Th	$\sigma_{n,tot} (E)$	2	.100 eV $\rightarrow$ 6.00 eV	.5 %		BNW Leonard	RRT	76080
		2	.100 eV $\rightarrow$ 20.0 eV	.5 %		Needed for thermal cross section evaluation. BET Dei	DNR	78181
		2	1.00 keV $\rightarrow$.100 MeV	2. %		ORL Peelle	RRT	78197
						Resolved neutron widths needed to 3-5% correlated uncertainties. For resonance parameter evaluation, several samples required.		
<hr/>								
STATUS : ORL (REQSTS 76080,78181) DeSaussure: Little*(ANS,32,748,79) and Olsen* (1980 ADV.IN REACT.PHYS.,P743,80) satisfy this above 1.0 eV.								

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{232}Th	$\sigma_{n,\gamma}$ (E)	1	1.00 mV $\rightarrow$ 20.0 eV	2. %		BET Dei	DNR	62034
		1	20.0 eV $\rightarrow$ 5.00 keV	5. %		BET Dei	DNR	
		Thick sample transmission and self-indication experiments desirable. Resonance parameters, total cross section and resonance integral also needed. Need thermal value to 0.5 %. Need accuracy of 5% in resonance parameters. Thermal shape important for thermal breeder calculations.						
^{232}Th	$\sigma_{n,2n}$ (E)	2	Thresh $\rightarrow$ 15.0 MeV	5. %		BET Dei	DNR	76065
						For calculation of fuel activity in Th^{232} cycle reactors.		
		2	11.0 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78161
						For hybrid system design.		
<u>STATUS :</u>		ANL	D.Smith: REQ.76065,78161. See ANL/NDM-35. Request not yet satisfied, uncertainty in 10-20% range.					
^{232}Th	$\sigma_{n,3n}$ (E)	2	11.0 MeV $\rightarrow$ 15.0 MeV	20. %		DOE Berk	OFE	78162
						For hybrid system design.		
		<u>STATUS :</u>						
		ANL	D.Smith: REQ.78162. Request not satisfied, see ANL/NDM-35.					
^{232}Th	$N_{n,f}$ (E, E_n)	2	RADIOACTIVE	1.41X(10**10) YR		WEW Green	OFE	82048
			$\rightarrow$ 14.0 MeV	10. %		Energy and angular distribution of fission neutrons needed for fusion hybrid applications.		
^{232}Th	$N_{n,f}$ (E, E_n) (delayed)	1			2. %	BET Dei	DNR	78182
		Need fast group yields and spectra. To verify existing evaluations.						

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{231}Pa	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 3.28X(10**4) YR Thermal $\rightarrow$ 10.0 MeV	10. %		BNW Leonard	RRT	69219
		2	1.00 mV $\rightarrow$ 1.00 keV	5. $\rightarrow$ 10. %		For control of U^{232} production. BET Dei	DNR	76066
						Also need resonance parameters and resonance integral. For calculation of fuel activity in Th^{232} cycle reactors.		
^{231}Pa	$N_{n,f}$ (E, E_n) (delayed)	2	RADIOACTIVE 3.28X(10**4) YR	5. %		BET Dei	DNR	78183
						Need fast group yields and spectra. To verify existing evaluations.		
^{233}Pa	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 27.0 DAY 1.00 mV $\rightarrow$.100 keV	5. %		BET Dei	DNR	76059
						Resonance parameters also desired. Needed for analysis of Th^{232} cycle thermal reactors.		
^{232}U	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 72 YR 1.00 mV $\rightarrow$ 1.00 keV	2. $\rightarrow$ 5. %		BET Dei	DNR	76067
						Also need resonance parameters and resonance integral. For calculation of fuel activity in Th^{232} cycle reactors.		
^{233}U	Prompt $\bar{\nu}$	2	RADIOACTIVE 1.592X(10**5) YR 14.0 MeV	2. %		LAS Young	OMA	78164
						Prompt $\bar{\nu}$ wanted. Needed for multipurpose evaluation.		
^{233}U	$\sigma_{n,tot}$ (E)	2	RADIOACTIVE 1.592X(10**5) YR 1.00 mV $\rightarrow$ 2.00 eV	.5 %		BNW Leonard	RRT	76082
		2	60.0 eV $\rightarrow$.100 MeV	3. %		Needed for thermal cross section evaluation. LAS Stewart	RRT	79001
						Needed to cover the unresolved range and overlap the recent ANL data which begins at 42 keV.		
^{233}U	$\sigma_{n,n'}$ (E, E_n)	2	RADIOACTIVE 1.592X(10**5) YR 40.0 keV $\rightarrow$ 7.00 MeV	10. $\rightarrow$ 20. %		ANL Smith	RRT	67086
						Accuracy of 5-10% above 0.5 MeV.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{233}U	$\sigma_{n,\gamma} (E)$		RADIOACTIVE $1.592 \times (10^{**5})$ YR					
		1	1.00 mV $\rightarrow$.500 eV	1. %		BET Dei	DNR	74112
		1	.500 eV $\rightarrow$ 2.00 eV	2. %		BET Dei	DNR	
		2	.100 keV $\rightarrow$.200 MeV	5. $\rightarrow$ 10. %		Verification of recent ORNL results desired. ORL Peelle	RRT	76081
		2	60.0 eV $\rightarrow$.500 MeV	5. $\rightarrow$ 8. %		Most important below 30 keV where there are no data. LAS Stewart	RRT	79002
						Needed to cover the unresolved range and to extend to higher energies. No data available above 2 keV except α measurements of Diven.		
^{233}U	$\sigma_{n,2n} (E)$	2	RADIOACTIVE $1.592 \times (10^{**5})$ YR Thresh $\rightarrow$ 15.0 MeV	10. %		DOE Hemmig	RRT	67088
						For contamination of U^{233} by U^{232} .		
^{233}U	$\sigma_{n,Xn} (E, \theta, E_n)$	3	RADIOACTIVE $1.592 \times (10^{**5})$ YR 1.00 MeV	5. $\rightarrow$ 10. %		LAS Stewart	RRT	79004
						Absolute cross sections required. Measure at several angles and detect low energy neutrons.		
^{233}U	$\sigma_{n,t} (E)$	1	RADIOACTIVE $1.592 \times (10^{**5})$ YR 1.00 mV $\rightarrow$ 20.0 MeV	1. $\rightarrow$ 5. %		BET Dei	DNR	78184
		2	60.0 eV $\rightarrow$.100 MeV	5. $\rightarrow$ 8. %		Accuracy wanted - 1 percent below 100 eV, 5 percent above. For thermal reactor analysis. LAS Stewart	RRT	79003
						Measurements relative to U^{235} not desired due to large cross section fluctuations. Needed to cover the unresolved range and overlap the ratio measurements of Carlson.		
^{233}U	$\sigma_{n,t} (E)$	2	RATIO $1.592 \times (10^{**5})$ YR 1.00 keV $\rightarrow$ 10.0 MeV	1. %	3. %	DOE Hemmig	RRT	69226
						Ratio to U^{235} fission wanted. Accuracy of 2-3% useful. Energy calibration - 1%.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab	Requester	Sponsor	No.
²³³ U	Alpha (E)		RADIOACTIVE	1.592X(10**5) YR					
		1	5.00 mV → .500 eV	2. → 8. %		BET Dei		DNR	62041
		2	.500 eV → 10.0 keV	3. %		BET Dei		DNR	
		2	10.0 keV → 20.0 MeV	5. → 10. %		BET Dei		DNR	
Capture cross section equally useful. Integral experiments needed to resolve discrepancies. Want η to ~ 0.25% below 3 eV (1% useful below 1 eV), 1% from 30 eV to 1 keV (5% useful). Want η to 2% from 1 - 30 keV. Want verification of recent ORNL and Bettis work.									
²³³ U	Alpha (E)		RADIOACTIVE	1.592x(10**5) YR					
		2	1.00 keV → 3.00 MeV	10. → 20. %		ANL Smith		RRT	67090
		2	1.00 keV → 3.00 MeV	10. → 20. %		DOE Hemmig		RRT	
Capture cross section equally useful. Want η to 2% from 1 - 30 keV.									
²³³ U	Eta (E)		RADIOACTIVE	1.592X(10**5) YR					
		1	1.00 mV → 1.00 eV	.4 %		BET Dei		DNR	74113
Thermal value and shape needed. To verify manganese bath results.									
²³³ U	$\bar{\nu}$ (E)		RADIOACTIVE	1.592X(10**5) YR					
		1	1.00 mV → 30.0 eV	.25 %		BET Dei		DNR	69443
		1	30.0 eV → 1.00 keV	1. %		BET Dei		DNR	
		1	1.00 keV → 10.0 keV	2. %		BET Dei		DNR	
Measurement relative to U ²³⁵ and Pu ²³⁹ preferred. Low energy structure may be important. Needed to resolve discrepancies in thermal parameters and breeding prediction.									
²³³ U	$\bar{\nu}$ (E) (delayed)		RADIOACTIVE	1.592X(10**5) YR					
		1	Thermal	5. %		BET Dei		DNR	74116
To resolve discrepancies.									
²³³ U	N _{n,r} (E,E _n)		RADIOACTIVE	1.592X(10**5) YR					
		1	Thermal	1. %		BET Dei		DNR	78185
Need shape of neutron energy distribution from 100 keV to 15 MeV. Relative peak to 1%. Needed for criticality calculations.									

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab	Requester	Sponsor	No.
²³³ U	$Y_{n,f}$ (E,nuclide)	1	RADIOACTIVE	1.592X(10**5) YR					
		1	Thermal	1. %			BET Dei	DNR	78191
		1	Thermal	1. %			KAP Feiner	DNR	
							Nuclides of interest are $Y^{90}, Sr^{90}, Mo^{95},$ $Tc^{99}, Rh^{103}, Rh^{105}, Xe^{135}, Cs^{135},$ $Xe^{136}, Cs^{137}, La^{139}, Pr^{141}, Pm^{147},$ $Nd^{147}, Sm^{149}, Sm^{151}, Sm^{152}$ and $Eu^{153}.$ Data needed to improve accuracy of predicted fission product poisons.		
²³³ U	Resonance Parameters	3	RADIOACTIVE	1.592X(10**5) YR					
		3	Thermal $\rightarrow$.100 keV	10. %			ANL Smith	RRT	67195
		3	Thermal $\rightarrow$.100 keV	10. %			DOE Hemmig	RRT	
		3	.100 keV $\rightarrow$ 5.00 keV	20. $\rightarrow$ 30. %			ANL Smith	RRT	
		3	.100 keV $\rightarrow$ 5.00 keV	20. $\rightarrow$ 30. %			DOE Hemmig	RRT	
							Multilevel parameters, statistical distributions in eV range. For thermal breeder calculations.		
²³⁴ U	$\sigma_{n,\gamma}$ (E)	2	1.00 mV $\rightarrow$ 2.00 eV	3. %			ANL Smith	RRT	69400
		2	2.00 eV $\rightarrow$ 10.0 keV	6. %			ANL Smith	RRT	
		2	10.0 keV $\rightarrow$ 1.00 MeV	10. %			ANL Smith	RRT	
		2	1.00 MeV $\rightarrow$ 10.0 MeV	20. %			ANL Smith	RRT	
							To evaluate isotope buildup in thermal reactors.		
²³⁴ U	$N_{n,f}$ (E, E_n) (delayed)	1		5. %			BET Dei	DNR	78187
							Need fast group yields and spectra. No measurements available. For non-destructive assay of $U^{233}-Th^{232}$ fuel.		
²³⁵ U	$\sigma_{n,tot}$ (E)	1	RADIOACTIVE	7.038X(10**8) YR					
		1	1.00 mV $\rightarrow$ 1.00 eV	0.5 %			DOE Hemmig	RRT	82004
							Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis.		
²³⁵ U	$\sigma_{n,n}$ (E, θ)	2	1.00 MeV $\rightarrow$ 5.00 MeV	20. %	.5M		ANL Smith	RRT	69237
		2	1.00 MeV $\rightarrow$ 5.00 MeV	20. %	.5M		DOE Hemmig	RRT	
							Needed for analyzing fast critical experiments.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.	
^{235}U	$\sigma_{n,n'}(E,E_{n'})$	2	50.0 keV $\rightarrow$ 6.00 MeV	10. %	10. %	ANL Smith	RRT	72076	
		2	50.0 keV $\rightarrow$ 6.00 MeV	10. %	10. %	DOE Hemmig	RRT		
Absolute spectra at 30 $\pm$ and 75 $\pm$ may suffice. Low energy (<300 keV) neutrons must be included. $\Delta E_n = 10\%$.									
^{235}U	$\sigma_{n,\gamma}(E)$	1	RADIOACTIVE 7.038X(10**8) YR 1.00 mV $\rightarrow$ 1.00 eV	0.5 %		DOE Hemmig	RRT	82006	
Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis.									
^{235}U	$\sigma_{n,Xn}(E,E_{n'})$	1	RADIOACTIVE 7.038X(10**8) YR .100 MeV $\rightarrow$ 14.0 MeV	10. $\rightarrow$ 15. %		DOE Hemmig	RRT	82028	
Spectrum of emitted neutrons needed at several energies. This request was reviewed by CSEWG and recommended as deserving special emphasis.									
^{235}U	$\sigma_{n,Xn}(E,\theta,E_{n'})$	2	RADIOACTIVE 7.038X(10**8) YR 14.0 MeV	10. %		LAS Stewart	OMA	74217	
Spectra at several angles required. Must record neutrons down to a few hundred keV.									
^{235}U	$\sigma_{n,f}(E)$	1	RADIOACTIVE 7.038X(10**8) YR 10.0 keV $\rightarrow$ 20.0 MeV	1. %		ANL Poenitz	RRT	69245	
		Excitation function with absolute calibration at several energies.							
		1	1.00 keV $\rightarrow$ 20.0 keV	2. %		DOE Hemmig	RRT	69449	
		1	20.0 keV $\rightarrow$ 3.00 MeV	1. %		DOE Hemmig	RRT		
		1	3.00 MeV $\rightarrow$ 14.0 MeV	2. %		DOE Hemmig	RRT		
		Absolute values required. Accuracy of 3-5% useful. For fast reactor calculations and for use as standard.							
		1	14.0 MeV $\rightarrow$ 40.0 MeV	10. $\rightarrow$ 20. %		HED McElroy	OFE	80185	
For track recorders for FMIT dosimetry.									
		1	7.50 eV $\rightarrow$ 30.0 keV	1. %		NBS Carlson	RRT	80294	
To resolve discrepancy in recent cross section measurements.									

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{235}U	$\sigma_{n,f}$ (E)	1	RADIOACTIVE 7.038X(10**8) YR 1.00 eV $\rightarrow$ 1.00 keV	1.0 %		DOE Hemmig	RRT	82002
						Resolved and unresolved resonance parameters needed yielding fission and capture resonance integrals consistent with integral measurements, and to resolve discrepancies in recent fission measurements over the range 0.1-1.0 keV.		
		1	1.00 keV $\rightarrow$ 14.0 MeV	1.0 %		This request was reviewed by CSEWG and recommended as deserving special emphasis.		
						DOE Hemmig	RRT	82003
						Ratio to H(n,p) and 10-B (n, α) and possibly other standards.		
		1	1.00 mV $\rightarrow$ 1.00 eV	0.5 %		This request was reviewed by CSEWG and recommended as deserving special emphasis.		
						DOE Hemmig	RRT	82005
						Needed to determine the thermal shape accurately.		
						This request was reviewed by CSEWG and recommended as deserving special emphasis.		
^{235}U	Alpha (E)	1	1.00 mV $\rightarrow$ 1.00 eV	1. %		BET Dei	DNR	72077
						Capture cross section equally useful. Experimental uncertainties need verification.		
^{235}U	Eta (E)	2	Thermal $\rightarrow$ 50.0 keV	.5 $\rightarrow$ 2. %		ANL Smith	RRT	67100
		2	Thermal $\rightarrow$ 50.0 keV	.5 $\rightarrow$ 2. %		DOE Hemmig	RRT	
						Accuracy 0.5% at thermal, 2% elsewhere.		
		1	1.00 mV $\rightarrow$ 1.00 eV	.4 %		BET Dei	DNR	74119
						Shape especially important at low energy. Use technique other than manganese bath.		
^{235}U	$\bar{\nu}$ (E)	1	Thermal $\rightarrow$ 3.00 MeV	1. %		ANL Smith	RRT	69253
		1	Thermal $\rightarrow$ 3.00 MeV	1. %		DOE Hemmig	RRT	
						Better than .5% required at thermal. To cross check with other isotopes.		
^{235}U	$\bar{\nu}$ (E)	1	RATIO 1.00 mV $\rightarrow$ 1.00 eV	.2 %		BET Dei	DNR	78189
						Measurements relative to U^{233} , Pu^{239} , and Cr^{252} wanted.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{235}U	$\bar{\nu}$ (E) (delayed)	1		3. %		BET Dei For the entire energy range. To resolve uncertainties in available data.	DNR	74120
^{235}U	$N_{n,f}$ (E, E_n)	2	Thermal $\rightarrow$ 3.00 MeV	5. %		ANL Smith	RRT	69256
		2	Thermal $\rightarrow$ 3.00 MeV	5. %		DOE Hemmig	RRT	
						Verification of fission spectrum.		
		1	Thermal	1. %		BET Dei	DNR	72080
						Need shape of neutron energy distribution from 100 keV to 15 MeV. Relative peak to 1%. Needed for criticality calculations.		
^{235}U	$N_{n,f}$ (E, E_n) (delayed)	2	Thermal $\rightarrow$ 5.00 MeV	5. %		DOE Hemmig	RRT	69260
						Yield, half-life and energy needed. For analysis of fast criticals and to check existing data.		
^{235}U	$N_{n,f}$ (E, E_γ) (delayed)	3	Thermal	15. %		LAS Walton	DSS	70029
						Spectra 0.25-5 MeV and time-dependent yield 1 msec-12 hr. Associate gammas with fission products. Ge(Li) resolution - 2.5 keV at 1.2 MeV. For non-destructive assays of U^{235} .		
^{235}U	$Y_{n,f}$ (E, nuclide)	1	Thermal	1. %		BET Dei	DNR	78192
		1	Thermal	1. %		KAP Feiner	DNR	
						Nuclides of interest are Rh^{103} , Xe^{135} , Cs^{135} , Cs^{137} , Nd^{147} , Sm^{149} and Eu^{153} . Data needed to improve accuracy of predicted fission product poisoning.		
^{235}U	Resonance Parameters	1	Thermal $\rightarrow$.200 keV	10. %		ANL Smith	RRT	69262
		1	Thermal $\rightarrow$.200 keV	10. %		DOE Hemmig	RRT	
						Multilevel fit where feasible. For extrapolation to unresolved resonance region.		
		2	Thermal $\rightarrow$.200 keV	10. %		BET Dei	DNR	69263
						Multilevel fit where feasible. Verification of existing data useful.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{238}U	$N_{n,f}(E,E_n)$ (delayed)	1	RADIOACTIVE 2.342X(10**7) YR	5. %		BET Dei Need fast group yields and spectra. No measurements available. For non-destructive assay of $\text{U}^{233}\text{-Th}^{232}$ fuel.	DNR	78188
^{238}U	$\sigma_{n,n}(E,\theta)$	1	1.00 keV $\rightarrow$.300 MeV	10. %		DOE Hemmig	RRT	69407
		1	.300 MeV $\rightarrow$ 2.00 MeV	5. %		ANL Smith	RRT	
		1	.300 MeV $\rightarrow$ 2.00 MeV	5. %		DOE Hemmig	RRT	
		1	2.00 MeV $\rightarrow$ 10.0 MeV	5. %		ANL Smith	RRT	
		1	2.00 MeV $\rightarrow$ 10.0 MeV	5. %		DOE Hemmig	RRT	
		1	.300 MeV $\rightarrow$ 10.0 MeV	10. %		ANL Smith	RRT	69468
^{238}U	$\sigma_{n,n'}(E)$	1	RADIOACTIVE 4.468X(10**9) YR Thresh $\rightarrow$ 10.0 MeV	5. $\rightarrow$ 7. %		DOE Hemmig Total inelastic cross section needed. Accuracy should be sufficient to determine broad group (e.g. 29 group) transfer matrix elements to 7-10%. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82029
^{238}U	$\sigma_{n,n'}(E,E_n)$	1	50.0 keV $\rightarrow$ 10.0 MeV	5. %	5.2	ANL Smith	RRT	69270
		1	50.0 keV $\rightarrow$ 10.0 MeV	5. %	5.2	DOE Hemmig	RRT	
						Emission cross sections instead of inelastic and (n,2n) might be useful.		
^{238}U	$\sigma_{n,\gamma}(E)$	1	.500 keV $\rightarrow$ 1.00 keV	6. %		DOE Hemmig	RRT	69419
		1	1.00 keV $\rightarrow$.300 MeV	1. %		ANL Smith	RRT	
		1	1.00 keV $\rightarrow$.300 MeV	2. %		DOE Hemmig	RRT	
		1	.300 MeV $\rightarrow$.500 MeV	1.5 %		ANL Smith	RRT	
		1	.300 MeV $\rightarrow$.500 MeV	3. %		DOE Hemmig	RRT	
		1	.500 MeV $\rightarrow$ 10.0 MeV	2.5 %		ANL Smith	RRT	
		1	.500 MeV $\rightarrow$ 10.0 MeV	5. %		DOE Hemmig	RRT	
						For fast reactor calculations.		
		1	.100 eV $\rightarrow$ 6.00 eV	.5 %		BNW Leonard	RRT	76085
						For thermal cross section evaluation.		
^{238}U	$\sigma_{n,\gamma}(E)$	1	RADIOACTIVE 4.468X(10**9) YR 30.0 keV $\rightarrow$ 1.00 MeV	2. $\rightarrow$ 3. %		DOE Hemmig This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82025

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{238}U	$\sigma_{n,\gamma}$ (E)		RATIO					
		1	10.0 keV $\rightarrow$.300 MeV	1.5 %		ANL Smith	RRT	69435
		1	10.0 keV $\rightarrow$.300 MeV	1.5 %		DOE Hemmig	RRT	
		1	.300 MeV $\rightarrow$ 10.0 MeV	2. %		ANL Smith	RRT	
		1	.300 MeV $\rightarrow$ 10.0 MeV	7. %		DOE Hemmig	RRT	
		Primary ratio should be to U^{235} fission, other ratios to recognized standards desirable. Ratio data discrepant with absolute measurements.						
^{238}U	$\sigma_{n,x\gamma}$ (E, θ_γ , E_γ)	2	1.00 mV $\rightarrow$ 15.0 MeV	10. %		DOE Hemmig For all γ energies. γ -energy intervals - 500 keV. For shielding and γ heating calculations.	RRT	72079
^{238}U	$\sigma_{n,2n}$ (E)	2	14.0 MeV $\rightarrow$ 20.0 MeV	10. %		ANL Smith Energy resolution 10%.	RRT	80001
^{238}U	$\sigma_{n,3n}$ (E)	2	14.0 MeV $\rightarrow$ 20.0 MeV	10. %		ANL Smith Energy resolution 10%.	RRT	80002
		2	11.0 MeV $\rightarrow$ 14.0 MeV	20. %		DOE Berk For hybrid system design.	OFE	80090
^{238}U	$\sigma_{n,xn}$ (E, θ , E_n)	2	14.0 MeV	10. %		LAS Stewart Spectra at several angles required. Must record neutrons down to a few hundred keV.	OMA	74218
^{238}U	$\sigma_{n,f}$ (E)		RATIO					
		2	.500 keV $\rightarrow$ 1.30 MeV	4. %	3%	ANL Smith	RRT	80296
		2	1.30 MeV $\rightarrow$ 5.00 MeV	2. %		ANL Smith	RRT	
		2	5.00 MeV $\rightarrow$ 14.0 MeV	3. %		ANL Smith	RRT	
		2	14.0 MeV $\rightarrow$ 20.0 MeV	3. %		ANL Smith	RRT	
Ratio to $\text{U}^{235}(n,f)$ wanted. Intermediate accuracy useful. Energy calibration - 1%.								
^{238}U	$\bar{\nu}$ (E)	1	RATIO $\rightarrow$ 10.0 MeV	1. %		DOE Hemmig Energy requested is a maximum value only. Ratio to Cr^{252} wanted. To verify measurement of Soleilac.	RRT	69275

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
²³⁸ U	ν̄ (E) (delayed)	3	5.00 MeV → 14.0 MeV	5. %		LAS Walton	DSS	70035
						Calculation of moderating assemblies for U assay. Data needed for extrapolation to 15 MeV.		
²³⁸ U	ν̄ (E) (delayed)	1	RADIOACTIVE 4.468X(10**9) YR Thresh → 5.00 MeV	3. → 5. %		DOE Hemmig	RRT	82014
						This must be an absolute measurement. This request was reviewed by CSEWG and recommended was deserving special emphasis.		
²³⁸ U	N _{n,r} (E,E _n)	1	RADIOACTIVE 4.468X(10**9) YR Thresh → 10.0 MeV			DOE Hemmig	RRT	82031
						Prompt fission neutron spectrum with reference to that of Cf ²⁵² with an accuracy of E to 1-1.5%. An absolute measurement of the shape of the spectrum may be necessary. This request was reviewed by CSEWG and recommended as deserving special emphasis.		
²³⁸ U	Resonance Parameters	1	RADIOACTIVE 4.468X(10**9) YR 1.00 keV → 300 keV			DOE Hemmig	RRT	82013
						Resonance parameters and capture cross section. Thick sample transmission and self-indication data desirable; need resolved and unresolved parameters to compute group cross sections to 3.0% accuracy for various self-shielding conditions. This request was reviewed by CSEWG and recommended as deserving special emphasis.		
²³⁷ Np	Half-life (alpha decay)	2	RADIOACTIVE 2.14X(10**6) YR	.5 %		NBS Gilliam	NBS	76123
						For mass determination of fissionable deposits.		
<u>STATUS :</u>		EGG	Reich: REQ.76123. Currently accepted value satisfies the accuracy requirement, but is based on only one measurement. Additional measurements justified to to verify this value.					
²³⁷ Np	σ _{n,2n} (E)	2	RADIOACTIVE 2.14X(10**6) YR Thresh → 15.0 MeV	10. %		SRL Sharp	NMPO	67112
						To evaluate contamination of Pu ²³⁹ by Pu ²³⁸ .		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{237}Np	$\sigma_{n,f}$ (E)	1	RADIOACTIVE 2.14X(10**6) YR 50.0 keV $\rightarrow$ 7.00 MeV	2. %		NBS Gilliam For materials dosimetry.	NBS	78178
^{239}Pu	$\sigma_{n,tot}$ (E)	1	RADIOACTIVE 2.41X(10**4) YR .500 mV $\rightarrow$ 5.00 eV	1. %		BNW Leonard Needed for thermal cross section evaluation.	RRT	76088
^{239}Pu	$\sigma_{n,tot}$ (E)	1	RADIOACTIVE 2.41X(10**4) YR 1.00 mV $\rightarrow$ 1.00 eV	0.5 %		DOE Hemmig Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82007
		1	1.00 eV $\rightarrow$.500 MeV	3.0 %		DOE Hemmig With energy resolution sufficient to show secondary structure up to 10 keV. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82015
^{239}Pu	$\sigma_{n,n}$ (E, θ)	2	RADIOACTIVE 2.41X(10**4) YR 1.00 MeV $\rightarrow$ 3.00 MeV	10. %	500K	ANL Smith	RRT	69303
		2	1.00 MeV $\rightarrow$ 3.00 MeV	10. %	500K	DOE Hemmig	RRT	
^{239}Pu	$\sigma_{n,n'}$ (E)	1	RADIOACTIVE 2.41X(10**4) YR 50.0 keV $\rightarrow$ 10.0 MeV	10. $\rightarrow$ 15. %		DOE Hemmig Total inelastic cross section needed. Accuracy should be sufficient to determine broad group (e.g. 29 group) transfer matrix elements to 10-20%. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82030
^{239}Pu	$\sigma_{n,n'}$ (E, E_n)	1	RADIOACTIVE 2.41X(10**4) YR 7.00 keV $\rightarrow$ 10.0 MeV	20. %		DOE Hemmig	RRT	72084
^{239}Pu	$\sigma_{n,\gamma}$ (E)	1	RADIOACTIVE 2.41X(10**4) YR 1.00 mV $\rightarrow$ 1.00 eV	0.5 %		DOE Hemmig Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82009

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{239}Pu	$\sigma_{n,2n} (E)$	2	RADIOACTIVE 2.41X(10**4) YR 6.00 MeV $\rightarrow$ 10.0 MeV	10. %		DOE Hemmig To predict buildup of Pu^{238} .	RRT	69306
^{239}Pu	$\sigma_{n,xn} (E, E_n)$	1	RADIOACTIVE 2.41X(10**4) YR .100 MeV $\rightarrow$ 14.0 MeV	10. $\rightarrow$ 15. %		DOE Hemmig Spectrum of emitted neutrons needed at several energies. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82027
^{239}Pu	$\sigma_{n,xn} (E, \theta, E_n)$	2	RADIOACTIVE 2.41X(10**4) YR 14.0 MeV	10. %		LAS Stewart Spectra at several angles required. Must record neutrons down to a few hundred keV.	OMA	74219
^{239}Pu	$\sigma_{n,f} (E)$	1	RADIOACTIVE 2.41X(10**4) YR 1.00 eV $\rightarrow$ 3.00 MeV	2. %		ANL Smith	RRT	69467
		1	1.00 eV $\rightarrow$ 3.00 MeV	2. %		DOE Hemmig	RRT	
		1	3.00 MeV $\rightarrow$ 10.0 MeV	3. %		ANL Smith	RRT	
		1	3.00 MeV $\rightarrow$ 10.0 MeV	3. %		DOE Hemmig	RRT	
						Verification of current accuracy or intermediate accuracy useful.		
						Need related accuracy for 5-10% energy bins.		
						For fast reactor calculations.		
		2	Thermal $\rightarrow$ 1.00 keV	1. %		GEB Cowan	RRT	72085
						Improved precision needed for thermal reactors.		
						Direct measurements disagree.		
						U and Pu half lives should be confirmed as they affect these measurements.		
		1	10.0 keV $\rightarrow$ 14.0 MeV	2. %	3. %	DOE Hemmig	RRT	72086
						Ratio to $\text{U}^{235}(\text{n},\text{f})$ required.		
						Avg. over 10-20% energy intervals		
		2	10.0 keV $\rightarrow$ 1.00 MeV	2. %		GEB Cowan	RRT	74125
						Ratio to $\text{U}^{235}(\text{n},\text{f})$ wanted.		
		1	1.00 eV $\rightarrow$ 20.0 keV	3. %		WEW Doncals	RRT	76040
		1	20.0 keV $\rightarrow$ 3.00 MeV	5. %		WEW Doncals	RRT	
						Needed for fast reactor calculations.		
		2	.100 MeV $\rightarrow$ 20.0 MeV	2. %		GEB Cowan	RRT	76089
						Absolute measurement desired.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{239}Pu	$\sigma_{n,f}$ (E)		RADIOACTIVE 2.41X(10**4) YR					
		1	1.00 mV $\rightarrow$ 1.00 eV	0.5 %		DOE Hemmig	RRT	82008
						Needed to determine the thermal shape accurately.		
						This request was reviewed by CSEWG and recommended as deserving special emphasis.		
		1	1.00 eV $\rightarrow$ 1.50 MeV	1.0 %		DOE Hemmig	RRT	82016
						This request was reviewed by CSEWG and recommended as deserving special emphasis.		
^{239}Pu	Alpha (E)		RADIOACTIVE 2.41X(10**4) YR					
		1	1.00 keV $\rightarrow$ 50.0 keV	4. %		ANL Smith	RRT	69314
		1	1.00 keV $\rightarrow$ 50.0 keV	4. %		DOE Hemmig	RRT	
		1	.600 MeV $\rightarrow$ 10.0 MeV	10. %		ANL Smith	RRT	
		1	.600 MeV $\rightarrow$ 10.0 MeV	10. %		DOE Hemmig	RRT	
						Capture cross section equally useful.		
^{239}Pu	Alpha (E)		RADIOACTIVE 2.41X(10**4) YR					
		1	$\rightarrow$.600 MeV	6.0 %		DOE Hemmig	RRT	82017
						This request was reviewed by CSEWG and recommended as deserving special emphasis.		
^{239}Pu	$\bar{\nu}$ (E)		RADIOACTIVE 2.41X(10**4) YR					
		1	Thermal $\rightarrow$ 3.00 MeV	.3 %		ANL Smith	RRT	66050
		1	Thermal $\rightarrow$ 3.00 MeV	.3 %		DOE Hemmig	RRT	
						Accuracy of 0.5% useful.		
						For fast reactor calculations.		
		1	Thermal $\rightarrow$ 1.00 keV	1. %		WEW Doncals	RRT	76041
		1	1.00 keV $\rightarrow$ 3.00 keV	.5 %		WEW Doncals	RRT	
		1	3.00 keV $\rightarrow$ 10.0 MeV	1. %		WEW Doncals	RRT	
						Essential for accurate fast reactor calculations.		
<hr/>								
<u>STATUS :</u>			ORL	Weston: REQ.66050,76041. Gwin (ORNL) has new measurements from 1 keV to 10 MeV to $\approx$ 1.25%.				
^{239}Pu	$\bar{\nu}$ (E)		RADIOACTIVE 2.41X(10**4) YR					
		1	Thermal $\rightarrow$.500 MeV	0.3 %		DOE Hemmig	RRT	82018
						This request was reviewed by CSEWG and recommended as deserving special emphasis.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{239}Pu	$\bar{\nu}$ (E)	1	RATIO 1.00 mV $\rightarrow$ 1.00 eV	2.41X(10**4) YR 1.2 %		BET Dei Measurements relative to U^{233} and U^{235} wanted.	DNR	78190
<p><u>STATUS</u> : ORL Weston: REQ.78190. Gwin (ORNL) has new measurements from 1 keV to 10 MeV to $\approx$ 1.25%.</p>								
^{239}Pu	$\bar{\nu}$ (E) (delayed)	2	RADIOACTIVE Thermal $\rightarrow$ 5.00 MeV	2.41X(10**4) YR 5. %		ANL Smith	RRT	76090
^{239}Pu	$N_{n,f}$ (E, E_n)	2 2	RADIOACTIVE Thermal $\rightarrow$ 20.0 MeV Thermal	2.41X(10**4) YR 10. % 1. %		GEB Cowan BET Dei Need shape of neutron energy distribution from 100 keV to 15 MeV. Relative peak to 1%. Needed for criticality calculations.	RRT DNR	76091 78186
^{239}Pu	$N_{n,f}$ (E, E_n)	1	RADIOACTIVE 10.0 keV $\rightarrow$ 10.0 MeV	2.41X(10**4) YR		DOE Hemmig Prompt fission neutron spectrum with reference to that of Cf^{252} with an accuracy of E to 1-1.5%. An absolute measurement of the shape of the spectrum may be necessary. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82032
^{239}Pu	$N_{n,f}$ (E, E_n) (delayed)	2 2	RADIOACTIVE Thermal $\rightarrow$ 5.00 MeV Thermal $\rightarrow$ 5.00 MeV	2.41X(10**4) YR		ANL Smith DOE Hemmig Half-life and energy spectrum needed. For analysis of fast criticals and fast reactor calculations.	RRT RRT	69312
^{239}Pu	$N_{n,f}$ (E, E_γ) (delayed)	3	RADIOACTIVE Thermal	2.41X(10**4) YR 15. %		LAS Walton Spectra 0.25-5 MeV and time-dependent yield for 1 msec-12 hr. Associate γ 's with fission products, if possible. Ge(Li) resolution - 2.5 keV at 1.2 MeV. For non-destructive assays of Pu^{239} .	DSS	70043

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{239}Pu	$Y_{n,f}$ (E,nuclide)	2	RADIOACTIVE Thermal	2.41X(10**4) YR	3. %	BET Dei	DNR	67125
		2	Thermal		1. %	Cumulative and direct yield of Xe^{135} (inclusive of 15-min isomer). Yields of Nd^{147} and Sm^{149} wanted. For calculation of fission product poisons.	DNR	67126
		2	Thermal $\rightarrow$ 15.0 MeV		5. %	BET Dei Yield of Cs^{137} wanted. For burn-up indicator standard. GEB Cowan	RRT	74126
^{240}Pu	$\sigma_{n,tot}$ (E)	2	RADIOACTIVE 5.00 keV $\rightarrow$ 20.0 MeV	6.57X(10**3) YR	1. %	ORL Weston	RRT	80264
						Needed in evaluation to limit model calculations.		
^{240}Pu	$\sigma_{n,tot}$ (E)	1	RADIOACTIVE 5.00 keV $\rightarrow$ 10.0 MeV	6.57X(10**3) YR	1. $\rightarrow$ 2. %	DOE Hemmig	RRT	82035
						Only one comprehensive and reasonably reliable result exists from 0.04 - 1.0 MeV. Data needed to establish energy averaged value to 1-2%. This request was reviewed by CSEWG and recommended as deserving special emphasis.		
^{240}Pu	$\sigma_{n,n'}$ (E)	1	RADIOACTIVE Thresh $\rightarrow$ 10.0 MeV	6.57X(10**3) YR	20. $\rightarrow$ 25. %	DOE Hemmig	RRT	82036
						Total inelastic cross section needed to determine broad group (e.g. 29 group) transfer matrix elements to 30%. This request was reviewed by CSEWG and recommended as deserving special emphasis.		
^{240}Pu	$\sigma_{n,\gamma}$ (E)	1	RADIOACTIVE .500 keV $\rightarrow$ 150 MeV	6.57X(10**3) YR	5. %	ANL Smith	RRT	69389
		1	.150 MeV $\rightarrow$ 1.00 MeV		10. %	Accuracy of 15% would be useful. For fast reactor calculations. DOE Hemmig	RRT	69390
						Accuracy of 15% useful. For fast reactor calculations.		
^{240}Pu	$\sigma_{n,\gamma}$ (E)	1	RADIOACTIVE Thermal $\rightarrow$.100 keV	6.57X(10**3) YR	3.0 %	DOE Hemmig	RRT	82020
						Improved precision needed for thermal reactors. This request was reviewed by CSEWG and recommended as deserving special emphasis.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{240}Pu	$\sigma_{n,f}$ (E)		RADIOACTIVE 6.57X(10**3) YR					
		2	.500 MeV $\rightarrow$ 10.0 MeV	2. %	ORL Weston	RRT	72088	
		2	.500 keV $\rightarrow$.100 MeV	9. %	For fast reactor calculations. DOE Hemmig	RRT	72089	
For fast reactor calculations.								
^{240}Pu	$\sigma_{n,f}$ (E)		RATIO 6.57X(10**3) YR					
		3	1.00 keV $\rightarrow$.100 MeV	5. %	DOE Hemmig	RRT	72090	
Ratio to $^{10}\text{B}(n,\alpha)$ or $^6\text{Li}(n,\alpha)$ wanted. Accuracy of 5% useful.								
^{240}Pu	$\bar{\nu}$ (E) (delayed)	2	RADIOACTIVE 6.57X(10**3) YR Thermal $\rightarrow$ 5.00 MeV	10. %		DOE Hemmig	RRT	76092
^{240}Pu	Resonance Parameters		RADIOACTIVE 6.57X(10**3) YR					
		2	20.0 eV $\rightarrow$ 10.0 keV	10. %	ANL Smith	RRT	69391	
		2	20.0 eV $\rightarrow$ 10.0 keV	10. %	DOE Hemmig	RRT		
To resolve discrepancies in existing data. For fast reactor calculations, including Doppler effect.								
<hr/>								
<u>STATUS :</u>		ORL	Weston: REQ.69391. Need resonance region to high neutron energies due to self-shielding effects. Important.					
<hr/>								
^{240}Pu	Resonance Parameters		RADIOACTIVE 6.57X(10**3) YR					
		1	1.00 eV	1.0 %	DOE Hemmig	RRT	82021	
Resonance strongly influences thermal cross section evaluation. There is discrepancy between differential and integral data. This request was reviewed by CSEWG and recommended as deserving special emphasis.								
^{241}Pu	$\sigma_{n,tot}$ (E)		RADIOACTIVE 14.4 YR					
		2	1.00 keV $\rightarrow$ 20.0 MeV	1. %	ORL Weston	RRT	80265	
Needed in evaluation to limit model calculations.								
^{241}Pu	$\sigma_{n,tot}$ (E)		RADIOACTIVE 14.4 YR					
		1	1.00 mV $\rightarrow$ 1.00 eV	0.5 %	DOE Hemmig	RRT	82010	
Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis.								

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{241}Pu	$\sigma_{n,\gamma}$ (E)	1	RADIOACTIVE 14.4 YR Thermal $\rightarrow$.300 MeV	3. %		ORL Weston α also wanted. Accuracy of 3% in η . Improved precision needed for thermal reactors. Also wanted for fast reactors.	RRT	67132
^{241}Pu	$\sigma_{n,\gamma}$ (E)	1	RADIOACTIVE 14.4 YR 1.00 mV $\rightarrow$ 1.00 eV	0.5 %		DOE Hemmig Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82012
^{241}Pu	$\sigma_{n,f}$ (E)	1	RADIOACTIVE 14.4 YR Thermal $\rightarrow$ 10.0 eV	3. %		ANL Smith	RRT	69328
		1	Thermal $\rightarrow$ 10.0 eV	2. %		ORL Weston	RRT	
		1	20.0 keV $\rightarrow$.400 MeV	3. %		Ratio to U^{235} or Pu^{239} would be useful. DOE Hemmig	RRT	72094
		1	10.0 eV $\rightarrow$ 30.0 keV	2. %		Ratio to $\text{U}^{235}(\text{n},\text{f})$ wanted. WEW Dontals	RRT	76042
		1	1.00 mV $\rightarrow$ 1.00 eV	0.5 %		Ratio to U^{235} or Pu^{239} would be useful. DOE Hemmig	RRT	82011
		1	Thermal $\rightarrow$ 10.0 eV	3.0 %		Needed to determine the thermal shape accurately. This request was reviewed by CSEWG and recommended as deserving special emphasis. DOE Hemmig	RRT	82022
		1	20.0 keV $\rightarrow$.400 MeV	3.0 %		Ratio to U^{235} and Pu^{239} would be useful. This request was reviewed by CSEWG and recommended as deserving special emphasis. DOE Hemmig	RRT	82023
						Ratio to U^{235} fission wanted. This request was reviewed by CSEWG and recommended as deserving special emphasis.		
^{241}Pu	Alpha (E)	1	RADIOACTIVE 14.4 YR 1.00 keV $\rightarrow$ 2.00 MeV	10. %		DOE Hemmig	RRT	69332
^{241}Pu	$\bar{\nu}$ (E)	1	RADIOACTIVE 14.4 YR 1.00 keV $\rightarrow$ 1.00 MeV	2.0 %		DOE Hemmig This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82024
^{241}Pu	Resonance Parameters	2	RADIOACTIVE 14.4 YR Thermal $\rightarrow$.100 keV	5. %		ANL Smith	RRT	72140
		2	.100 keV $\rightarrow$.400 keV	10. %		ANL Smith	RRT	

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{242}Pu	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 3.76X(10**5) YR 1.00 keV $\rightarrow$ 7.00 MeV	6. $\rightarrow$ 20. %		DOE Hemmig	RRT	72098
		2	.100 keV $\rightarrow$ 1.00 keV	6. $\rightarrow$ 10. %		For fast breeder calculations, Cm, Cf production. HED Schenter	RRT	72142
						Want resonance parameters to 10-20% below 10 keV. For fast breeder calculations, Cm, Cf production.		
^{242}Pu	$\bar{D}$ (E)	2	RADIOACTIVE 3.76X(10**5) YR .500 MeV $\rightarrow$ 10.0 MeV	5. %		DOE Hemmig	RRT	69334
<p><u>STATUS:</u></p> <p>LAS Young: REQUEST 69334. Probably can be done combining systematics and theory. Useful calculation check, so retain on list.</p> <p>LLL Howerton: REQ.69334. See NSE,62,438(77).</p>								
^{241}Am	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 433 YR Thermal $\rightarrow$ 1.00 keV	10. %		RL Orton	NMPO	67136
		1	1.00 keV $\rightarrow$ 2.00 MeV	20. %		Production of both Am^{242} and Am^{242m} wanted. For Pu^{238} program and production of Cm^{244} . DOE Hemmig	RRT	74127
						Production of both Am^{242} and Am^{242m} wanted. For spent fuel shielding.		
^{242}Am	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 16.01-HR AND 152-YR ISOMERS Thermal $\rightarrow$ 10.0 keV	10. $\rightarrow$ 20. %		SRL Sharp	NMPO	69341
						Thermal value and RI wanted For Pu^{238} production.		
^{243}Am	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 7.37X(10**3) YR Thermal $\rightarrow$ 10.0 MeV	20. %		HED Schenter	RRT	72101
		2	1.00 keV $\rightarrow$.200 MeV	6. %		For long term reactivity calculations and for spent fuel shielding. DOE Hemmig	RRT	74128
						For spent fuel shielding.		
^{242}Cm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 163 DAY Thermal	20. %		SRL Sharp	NMPO	67139
						For Pu^{238} production.		
^{242}Cm	Resonance Parameters	3	RADIOACTIVE 163 DAY Thermal $\rightarrow$ 1.00 keV	20. %		RL Orton	NMPO	67192
						Elastic and γ -widths wanted. For Pu^{238} production.		

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{246}Cm	$\sigma_{n,\text{tot}}$ (E)	2	RADIOACTIVE 4.7X(10**3) YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Shape of thermal cross section especially important. Resonance structure needed. Accuracy of 10% in RI.	NMPO	67146
^{246}Cm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 4.7X(10**3) YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Accuracy of 10% in RI. To evaluate Cf production.	NMPO	69350
^{247}Cm	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 1.6X(10**7) YR Thermal $\rightarrow$ 10.0 keV	5. $\rightarrow$ 10. %		SRL Sharp Shape of thermal cross section especially important. Accuracy of 5-10% in thermal value and RI. To evaluate Cf production.	NMPO	67149
^{247}Cm	$\sigma_{n,f}$ (E)	2	RADIOACTIVE 1.6X(10**7) YR Thermal $\rightarrow$ 10.0 keV	5. $\rightarrow$ 10. %		SRL Sharp Shape of thermal cross section especially important. Accuracy of 5-10% in thermal value and RI.	NMPO	67148
^{247}Cm	Resonance Parameters	2	RADIOACTIVE 1.6X(10**7) YR Thermal $\rightarrow$ 10.0 keV	20. %		SRL Sharp Accuracy of 20% in RI. To evaluate Cf production.	NMPO	67147
^{250}Cf	$\sigma_{n,\gamma}$ (E)	2	RADIOACTIVE 13.1 YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Accuracy of 10% in RI. To evaluate Cf production.	NMPO	69357
^{250}Cf	$\sigma_{n,f}$ (E)	2	RADIOACTIVE 13.1 YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Accuracy of 10% in RI. To evaluate Cf production.	NMPO	67153

DOE-NDC Compilation of Requests for Nuclear Data 1982

Isotope	Quantity	Priority	Energy Range	Accuracy	ΔE	Lab Requester	Sponsor	No.
^{250}Cf	Resonance Parameters	2	RADIOACTIVE 13.1 YR Thermal $\rightarrow$ 10.0 keV	20. %		SRL Sharp Accuracy of 20% in R1. To evaluate Cf production.	NMPO	67152
^{251}Cf	$\sigma_{n,\gamma} (E)$	2	RADIOACTIVE 9.0X(10**2) YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Accuracy of 10% in R1. To evaluate Cf production.	NMPO	67154
^{251}Cf	$\sigma_{n,f} (E)$	2	RADIOACTIVE 9.0X(10**2) YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Thermal cross section shape especially important. 10% in resonance integral. To evaluate Cf production.	NMPO	74132
^{251}Cf	Resonance Parameters	2	RADIOACTIVE 9.0X(10**2) YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp	NMPO	76106
^{252}Cf	Spon. $\bar{\nu}$	1	RADIOACTIVE 2.64 YR	.25 %		DOE Hemmig This request may be satisfied by a recent 0.2% measurement at ORNL, NSE 80,603(1982). This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82019
^{252}Cf	$N_{\text{spon},f} (E_n)$	1	RADIOACTIVE 2.64 YR	1.0 %		DOE Hemmig Mean spectrum energy desired to 1.0 % for interpretation of $\bar{\nu}$ ratio measurement. Need the spectrum shape. ΔE to 5% (130 keV) would not be useful. An absolute measurement of the shape of the spectrum may be necessary. This request was reviewed by CSEWG and recommended as deserving special emphasis.	RRT	82026
^{252}Cf	$\sigma_{n,f} (E)$	2	RADIOACTIVE 2.64 YR Thermal $\rightarrow$ 10.0 keV	10. %		SRL Sharp Accuracy of 10% in R1. To evaluate Cf production.	NMPO	74129

APPENDIX A

REACTION TABLES FOR DOE-NDC REQUEST LIST

QUANTITY SYMBOL	DEFINITION
<u>A. Structure Information</u>	
Half-life	Half life
Half-life (alpha decay)	Alpha half life
Half-life (fission)	Fission half life
Spon. $\bar{\nu}$	Average number of neutrons emitted per fission
Prompt $\bar{\nu}$	Average number of prompt neutrons per fission
$N_{\text{spon},f}(E_n)$	Energy distribution of fission neutrons
<u>B. Gamma-ray Interactions</u>	
$\sigma_{\gamma,n}(E)$	Neutron production cross section
$\sigma_{\gamma,p}(E)$	Proton production cross section
<u>C. Neutron Interactions</u>	
$\sigma_{n,\text{tot}}(E)$	Total cross section
$\sigma_{n,n}(E)$	Elastic cross section
$\sigma_{n,n}(E,\theta)$	Angular distribution of elastically scattered particles
$\sigma_{n,n'}(E)$	Inelastic cross section
$\sigma_{n,n'}(E,\theta)$	Angular distribution of inelastically scattered particles
$\sigma_{n,n'}(E,E_n')$	Energy distribution of inelastic particles
$\sigma_{n,n'}(E,\theta,E_n')$	Double differential (energy,angle) inelastic cross section
$\sigma_{n,\text{sc}}(E)$	Total scattering cross section (elastic + inelastic)
$\sigma_{n,\text{non}}(E)$	Non-elastic cross section
$\sigma_{n,\text{abs}}(E)$	Absorption cross section
$\sigma_{n,\gamma}(E)$	Capture cross section
$N_{n,\gamma}(E,E_\gamma)$	Capture gamma ray spectra
$\sigma_{n,n'\gamma}(E,\theta_\gamma)$	Angular distribution of photons from inelastic scattering
$\sigma_{n,x\gamma}(E)$	Total photon production cross section from all photon-emitting processes
$\sigma_{n,x\gamma}(E,E_\gamma)$	Energy distribution of photons from all photon emitting processes
$\sigma_{n,x\gamma}(E,\theta_\gamma,E_\gamma)$	Double differential (energy,angle) total photon emission cross section
$\sigma_{n,2n}(E)$	Two neutron production cross section
$\sigma_{n,3n}(E)$	Three neutron production cross section
$\sigma_{n,4n}(E)$	Four neutron production cross section
$\sigma_{n,5n}(E)$	Five neutron production cross section
$\sigma_{n,xn}(E)$	Total neutron production cross section from all neutron emitting processes
$\sigma_{n,xn}(E,E_n')$	Energy distribution of neutrons from all neutron emitting processes
$\sigma_{n,xn}(E,\theta,E_n')$	Double differential (energy,angle) neutron emission cross section
$\sigma_{n,p}(E)$	Proton production cross section
$\sigma_{n,n'p}(E)$	Neutron and proton production cross section
$\sigma_{n,n'2p}(E)$	Neutron and 2-proton production cross section
$\sigma_{n,2p}(E)$	Two proton production

APPENDIX A

<u>QUANTITY SYMBOL</u>	<u>DEFINITION</u>
C. Neutron Interactions	
$\sigma_{n, \text{xp}}$ (E)	Total proton production cross section from all processes
$\sigma_{n, \text{xp}}$ (E, θ , E_p)	Double differential (energy, angle) proton emission cross section
$\sigma_{n, \text{t}}$ (E)	Triton production cross section
$\sigma_{n, \text{t}}$ (E, θ)	Angular distribution of tritons
$\sigma_{n, \text{n't}}$ (E)	Neutron and triton production cross section
$\sigma_{n, \alpha}$ (E)	Alpha production cross section
$\sigma_{n, \alpha}$ (E, θ)	Angular distribution of alpha particles
$\sigma_{n, \text{n'3}\alpha}$ (E)	Neutron and alpha production cross section
$\sigma_{n, \text{n'4}\alpha}$ (E)	Emission of a neutron and three alpha particles
$\sigma_{n, \text{x}\alpha}$ (E)	Emission of a neutron and four alpha particles
$\sigma_{n, \text{x}\alpha}$ (E, θ , E_α)	Total alpha production cross section from all processes
$\sigma_{n, \text{x}}$ (E)	Double differential (energy, angle) alpha emission cross section
$\sigma_{n, \text{f}}$ (E)	Special quantity further defined in comments
Alpha (E)	Fission cross section
Eta (E)	Capture to fission ratio e.g. $\sigma(n, \gamma)/\sigma(n, f)$
$\bar{\nu}$ (E)	Number of neutrons emitted per neutron absorption
$\bar{\nu}$ (E) (delayed)	Average number of neutrons emitted per fission
$N_{n, \text{f}}$ (E, E_n)	Average number of delayed neutrons emitted per fission
$N_{n, \text{f}}$ (E, E_n) (delayed)	Energy distribution of fission neutrons
$N_{n, \text{f}}$ (E, E_γ) (delayed)	Energy distribution of delayed fission neutrons
$Y_{n, \text{f}}$ (E, nuclide)	Spectrum of delayed gamma rays emitted in fission
Resonance Parameters	Fission product mass yield spectrum
Capture R1	Resonance parameters
	Capture resonance integral
D. Proton Interactions	
$\sigma_{p, \gamma}$ (E)	Capture cross section
$\sigma_{p, \text{n}}$ (E)	Neutron production cross section
$\sigma_{p, \text{p}}$ (E)	Proton production cross section
$\sigma_{p, 3\alpha}$ (E)	Production of three alpha particles
$\sigma_{p, \text{x}\alpha}$ (E, θ , E_α)	Double differential (energy, angle) alpha emission cross section
E. Deuteron Interactions	
$\sigma_{d, 2n}$ (E)	Two neutron production cross section
$\sigma_{d, \text{p}}$ (E)	Proton production cross section
$\sigma_{d, \text{d}}$ (E)	Deuteron production cross section
$\sigma_{d, \alpha}$ (E)	Alpha production cross section

APPENDIX A

<u>QUANTITY SYMBOL</u>	<u>DEFINITION</u>
<u>F. Triton Interactions</u>	
$\sigma_{t,3n} (E)$	Three neutron production cross section
$\sigma_{t,t} (E)$	Triton production cross section
$\sigma_{t,\alpha} (E)$	Alpha production cross section
<u>G. Helium-3 Interactions</u>	
$\sigma_{He-3,p} (E)$	Proton production cross section
$\sigma_{He-3,2p} (E)$	Two proton production
$\sigma_{He-3,He-3} (E)$	Helium-3 production cross section
$\sigma_{He-3,X} (E)$	Special quantity further defined in comments
<u>H. Alpha Interactions</u>	
$\sigma_{\alpha,\alpha} (E)$	Elastic cross section
$\sigma_{\alpha,n} (E)$	Neutron production cross section
$\sigma_{\alpha,p} (E)$	Proton production cross section
<u>J. Lithium-6 Interactions</u>	
$\sigma_{Li-6,X} (E)$	Special quantity further defined in comments

APPENDIX B

LIST OF REQUESTERS

<u>NAME</u>	<u>LAB</u>	<u>AGENCY</u>	<u>PHONE</u>	<u>ADDRESS</u>
D. Bartine	ORL	RRT	615-483-6897	Oak Ridge National Laboratory P. O. Box X Oak Ridge, TN 37830
S. E. Berk	DOE	OFE	301-353-4171	U. S. Dept. of Energy Office of Fusion Energy Division of Development and Technology Washington, DC 20545
C. D. Bowman	LAS	NBS	505-667-1757	Los Alamos National Laboratory PDOD-434 P. O. Box 1663 Los Alamos, NM 87545
A. D. Carlson	NBS	RRT	301-921-2677	National Bureau of Standards Radiation Physics Building Washington, DC 20234
L. L. Carter	HED	OFE	509-376-5193	Hanford Engineering Development Laboratory P. O. Box 1970 Richland, WA 99352
R. S. Caswell	NBS	OTHER	301-921-2625	National Bureau of Standards Center for Radiation Research Neutron Standards Section Washington, DC 20234
C. L. Cowan	GEB	RRT	408-738-7304	General Electric Company, ARSD P. O. Box 5020 310 DeGuigne Drive Sunnyvale, CA 94086
D. E. Dei	BET	DNR	412-462-5000	Bettis Atomic Power Laboratory Box 79 West Mifflin, PA 15122
M. Divadeenam	BNL	RRT OFE	516-282-2902	National Nuclear Data Center Brookhaven National Laboratory Upton, NY 11973

APPENDIX B

<u>NAME</u>	<u>LAB</u>	<u>AGENCY</u>	<u>PHONE</u>	<u>ADDRESS</u>
R. C. Doncals	WEW	RRT	412-722-5271	Westinghouse Electric Corporation Advanced Reactor Division Waltz Mill Site P. O. Box 158 Madison, PA 15663
D. E. Driemeyer	MCD	OFE	314-232-4980	McDonnell Douglas Astronautics Company St. Louis Division Box 516 St. Louis, MO 63166
C. Eisenhower	NBS	NBS	301-921-2685	National Bureau of Standards Washington, DC 20234
B. Engholm	GA	OFE	714-455-3000	General Atomic P.O. Box 81608 San Diego, CA 92138
F. Feiner	KAP	DNR	518-393-4400	Knolls Atomic Power Laboratory P. O. Box 1072 Schenectady, NY 12301
C. Y. Fu	ORL	RRT DNA OFE	615-574-6116	Oak Ridge National Laboratory Neutron Physics Division P. O. Box X Oak Ridge, TN 37830
D. M. Gilliam	NBS	NBS	301-921-2677	National Bureau of Standards Washington, DC 20234
L. Green	WEW	OFE	412-722-5381	Westinghouse Electric Corporation Advanced Reactor Division Waltz Mill Site P. O. Box 158 Madison, PA 15663
R. C. Haight	LLL	OMA	415-411-4510	Lawrence Livermore National Laboratory P. O. Box 808 Livermore, CA 94550
G. Hale	LAS	RRT	505-667-7738	Los Alamos National Laboratory P. O. Box 1663 Los Alamos, NM 87545

APPENDIX B

<u>NAME</u>	<u>LAB</u>	<u>AGENCY</u>	<u>PHONE</u>	<u>ADDRESS</u>
P. B. Hemmig	DOE	RRT	301-353-3577	U. S. Department of Energy Division of Reactor Research and Technology Washington, DC 20545
D. Larson	ORL	RRT DNA	615-574-6119	Oak Ridge National Laboratory Neutron Physics Building P. O. Box X Oak Ridge, TN 37830
B. R. Leonard, Jr.	BNW	RRT	509-946-2558	Pacific Northwest Laboratory P. O. Box 999 Richland, WA 99352
F. M. Mann	HED	OFE	509-376-5598	Hanford Engineering Development Laboratory P. O. Box 1970 Richland, WA 99352
W. N. McElroy	HED	OFE RRT	509-942-3791	Hanford Engineering Development Laboratory P. O. Box 1970 Richland, WA 99352
E. Dale McGarry	NBS	NBS	301-921-2421	National Bureau of Standards Nuclear Radiation Division Washington, DC 20234
S. F. Mughabghab	BNL	RRT	516-282-2902	National Nuclear Data Center Brookhaven National Laboratory Upton, NY 11973
D. W. Muir	LAS	OFE	505-667-1207	Los Alamos National Laboratory P. O. Box 1663 Los Alamos, NM 87545
G. T. Orton	RL	NMPO	509-942-7465	Richland Operations Office P. O. Box 550 Richland, WA 99352
R. W. Peelle	ORL	RRT	615-483-6993	Oak Ridge National Laboratory P. O. Box X Oak Ridge, TN 37830
W. P. Poenitz	ANL	RRT	312-972-2816	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439

APPENDIX B

<u>NAME</u>	<u>LAB</u>	<u>AGENCY</u>	<u>PHONE</u>	<u>ADDRESS</u>
A. Prince	BNL	RRT	516-282-5079	Brookhaven National Laboratory Upton, NY 11973
J. A. Rawlins	HED	OFE RRT	509-376-3314	Hanford Engineering Development Laboratory P. O. Box 1970 Richland, WA 99352
R. E. Schenter	HED	RRT	509-376-3339	Hanford Engineering Development Laboratory P. O. Box 1970 Richland, WA 99352
D. A. Sharp	SRL	NMPO	803-725-2373	Savannah River Laboratory P. O. Box 117 Aiken, SC 29801
A. B. Smith	ANL	RRT	312-972-6084	Argonne National Laboratory Applied Physics Division 9700 South Cass Ave. Argonne, IL 60439
D. Steiner	RPI	OFE	518-270-6407	Rensselaer Polytechnic Institute Department of Nuclear Engineering Troy, NY 12181
L. Stewart	LAS	OMA RRT	505-667-7737	Los Alamos National Laboratory P. O. Box 1663 Los Alamos, NM 87545
R. B. Walton	LAS	DSS	505-667-4393	Los Alamos National Laboratory P. O. Box 1663 Los Alamos, NM 87545
L. Weston	ORL	RRT	615-574-6129	Oak Ridge National Laboratory P. O. Box X Oak Ridge, TN 37830
P. G. Young	LAS	OMA OFE	505-667-7670	Los Alamos National Laboratory P. O. Box 1663 Los Alamos, NM 87545

APPENDIX C

LIST OF MATERIALS AND EVALUATORS

Material	Principal Evaluator(s)	Laboratory	Material	Principal Evaluator(s)	Laboratory
1-H-1	L.Stewart	LAS	47-Ag-107	R.Schenter,M.Bhat	HED,BNL
1-H-2	L.Stewart	LAS	47-Ag-109	R.Schenter,M.Bhat	HED,BNL
1-H-3	L.Stewart	LAS	48-Cd	S.Pearlstein	BNL
2-He-3	L.Stewart	LAS	48-Cd-113	S.Pearlstein,F.Mann	BNL,HED
2-He-4	G.M.Hale	LAS	54-Xe	M.R.Bhat, S.F.Mughabghab	BNL
3-Li-6	G.M.Hale	LAS	54-Xe-135	B.R.Leonard,Jr.	BNW
3-Li-7	R.J.LaBauve	LAS	55-Cs-133	R.Schenter,M.Bhat	HED,BNL
4-Be-9	R.J.Howerton	LLL	56-Ba-138	R.J.Howerton	LLL
5-B-10	G.M.Hale	LAS	62-Sm-149	R.Schenter,B.R.Leonard,Jr.	HED,BNW
5-B-11	C.Cowan	GEB	63-Eu	S.F.Mughabghab	BNL
6-C	C.Y.Fu	ORL	64-Gd	B.A.Magurno	BNL
7-N-14	P.G.Young	LAS	66-Dy-164	B.R.Leonard,Jr.	BNW
7-N-15	E.D.Arthur	LAS	71-Lu	B.R.Leonard,Jr.	BNW
8-O-16	P.G.Young	LAS	72-Hf	M.K.Drake	SAI
8-O-17	B.A.Magurno	BNL	73-Ta-181	R.J.Howerton	LLL
9-F-19	C.Y.Fu	ORL	73-Ta-182	J.Otter	AI
11-Na-23	D.C.Larson	ORL	74-W	J.Otter	AI
12-Mg	D.C.Larson	ORL	75-Re	W.B.Henderson	WAP
13-Al-27	P.G.Young	LAS	79-Au-197	S.F.Mughabghab	BNL
14-Si	D.C.Larson	ORL	82-Pb	C.Y.Fu	ORL
15-P-31	R.J.Howerton	LLL	83-Bi-209	D.Smith,R.J.Howerton	ANL,LLL
16-S	M.Divadeenam	BNL	90-Th-232	Bhat,Smith,Leonard,DeSaussure	BNL,ANL,BNW,ORL
16-S-32	R.J.Howerton	LLL	91-Pa-233	L.F.Mann,C.Reich	HED,INL
17-Cl	M.K.Drake	SAI	92-U-233	L.Stewart,L.Weston,F.Mann	LAS,ORL,HED
19-K	M.K.Drake	SAI	92-U-234	M.Divadeenam,F.Mann,C.Reich	BNL,HED
20-Ca	C.Y.Fu,F.G.Perey	ORL	92-U-235	M.R.Bhat	BNL
22-Ti	C.Phillis,A.Smith,R.Howerton	BRC,ANL,LLL	92-U-236	M.Divadeenam,F.Mann,C.Reich	BNL,HED
23-V	A.Smith,H.Howerton,F.Mann	ANL,LLL,HED	92-U-238	E.Pennington	ANL
24-Cr	A.Prince	BNL	93-Np-237	F.Mann,R.Benjamin,A.Smith,C.Reich	HED,SRL,ANL,INL
25-Mn-55	S.F.Mughabghab	BNL	94-Pu-238	F.Mann,C.Dunford	HED,BNL
26-Fe	C.Y.Fu	ORL	94-Pu-239	E.Kujawski,L.Stewart	GEB,LAS
27-Co-59	S.F.Mughabghab	BNL	94-Pu-240	L.W.Weston	ORL
28-Ni	M.Divadeenam	BNL	94-Pu-241	L.W.Weston,R.J.Howerton	ORL,LLL
29-Cu	C.Y.Fu	ORL	94-Pu-242	Mann,Benjamin,Madland,Howerton	HED,SRL,LAS,LLL
31-Ga	R.G.Howerton,P.G.Young	LLL,LAS	95-Am-241	F.Mann,L.W.Weston	HED,ORL
36-Kr	A.Prince	BNL	95-Am-242m	F.Mann,R.Benjamin,R.J.Howerton	HED,SRL,LLL
40-Zr	M.Drake	SAI	95-Am-243	F.Mann,R.Benjamin,R.J.Howerton	HED,SRL,LLL
42-Mo	R.J.Howerton,F.Schmittroth	LLL,HED	96-Cm-243	F.Mann,R.Benjamin,R.J.Howerton	HED,SRL,LLL
43-Tc-99	R.Schenter,Z.Livolsi	HED,B+W	96-Cm-244	F.Mann,R.Benjamin,R.J.Howerton	HED,SRL,LLL
45-Rh-103	R.Schenter,Z.Livolsi	HED,B+W	96-Cm-245	R.W.Benjamin,R.J.Howerton	SRL,LLL
			96-Cm-246	R.Benjamin,R.Howerton,R.Kinsey	SRL,LLL,BNL