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JAPANESE LIST OF REQUESTS FOR NUCLEAR DATA

March 1988

Compiled by  
(Ed.) Sin-iti IGARASI  
and

WRENDA Group of Japanese Nuclear Data Committee

日本原子力研究所  
Japan Atomic Energy Research Institute

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## Japanese List of Requests for Nuclear Data

Compiled by

(Ed.) Sin-iti IGARASI

and

WREND A Group of Japanese Nuclear Data Committee \*)

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Requests for nuclear data at 1987 are presented. They are 49 for fission reactor, 25 for fusion reactor, and 4 for safeguards. These will be registered in WREND A 87/88<sup>+</sup>). This report contains these 78 requests, and also 66 requests which should be withdrawn from the previous WREND A list. These withdrawn requests are 23 for fission reactor, 32 for fusion reactor, 9 for safeguards, and 2 for others.

\*) Group members (O-mark stands for members of the new group)

- T. Asami (Japan Atomic Energy Research Institute)
- O S. Igarasi (Japan Atomic Energy Research Institute, Group Leader)
- O M. Igashira (Tokyo Institute of Technology)
- S. Iijima (Nippon Atomic Energy Industry Group Co., Ltd.)
- O Y. Ikeda (Japan Atomic Energy Research Institute)
- O K. Maki (Hitachi Ltd.)
- H. Matsumobu (Sumitomo Atomic Energy Industries, Ltd.)
- R. Nakasima (Hosei University)
- O M. Oshima (Japan Atomic Energy Research Institute)
- I. Otake (I.S.L. Ltd.)
- O M. Sasaki (Mitsubishi Atomic Power Industries, IND.)
- O K. Shibata (Japan Atomic Energy Research Institute)
- T. Tamura (Japan Atomic Energy Research Institute)

Keywords: Nuclear Data, Data Requests, Fission Reactors, Fusion Reactors, Safeguards, WREND A

+) WREND A: World Request List for Nuclear Data, see Ref. 1.

(1)

## 核データに対する要求リスト

シグマ研究委員会 WRENDA グループ\*)

五十嵐 信一 (編)

(1988年2月17日受理)

1987年時点ですとめた核データに対する要求リストである。要求の内容は核分裂炉関係49件、核融合炉関係25件、保障措置関係4件である。これらの要求は WRENDA 87/88<sup>+)</sup>に登録される。この報告書にはこれら78件の要求の他に、前回のリストから取り下げた66件の内容も載せてある。取り下げたものの内訳は核分裂炉関係23件、核融合関係32件、保障措置関係9件、その他2件になっている。

\*) グループメンバー (○印は新グループのメンバー)

浅見 哲夫 (日本原子力研究所)	○大 島 真 澄 (日本原子力研究所)	中 嶋 龍 三 (法 政 大 学)
飯 島 俊 吾 (日本原子力事業)	大 竹 巖 (アイ・エス・エル)	○真 木 紘 一 (日 立 製 作 所)
○井 頭 政 之 (東京工業大学)	○佐々木 誠 (三菱原子力工業)	松 延 廣 幸 (住友原子力工業)
○五十嵐 信一 (日本原子力研究所)	○柴 田 恵 一 (日本原子力研究所)	
○池 田 裕二郎 (日本原子力研究所)	山 村 務 (日本原子力研究所)	

東海研究所：〒319-11 茨城県那珂郡東海村白方字白根2-4

+) WRENDA: World Request List for Nuclear Data のことである。参考文献1を参照。

## Contents

1. Introduction .....	1
2. List of Requests Submitted to New WRENDA .....	2
3. List of Withdrawn Requests from WRENDA 83/84 .....	15
4. New Requests Submitted to WRENDA .....	26
References .....	31
Appendix Codes of Laboratories .....	32

## 目次

1. 序 言 .....	1
2. 新WRENDAへ提出した要求のリスト .....	2
3. WRENDA 83/84 から取り下げた要求のリスト .....	15
4. WRENDAへ提出した新規の要求 .....	26
参考文献 .....	31
附録 機関名のコード .....	32

## 1. Introduction

WREND A Group of Japanese Nuclear Data Committee was convened in July 1987 to screen new requests, to examine the old Japanese requests and to compile Japanese List of Requests for Nuclear Data in 1987. About 25 new requests were received by the WREND A Group, and were examined whether or not they were appropriate to the requests from the viewpoint of the present status of the nuclear data. When questions arose about the requests, the WREND A Group asked requestors the reasons behind their requests and discussed with them the questionable matters of their requests. In some cases, the WREND A Group modified partly the descriptions of the original requests so that they might fit the status quo of the data. Finally, the WREND A Group adopted 9 requests for fission reactors and 12 for fusion reactors.

The old requests <sup>1,2)</sup> were returned back to the requestors and were reviewed in the light of the data status and needs. The nuclear reaction data requested from fusion branch were mostly withdrawn. The data satisfies these requests, and 32 requests for fusion reactors were deleted. Nine for safeguards and two for the other were also withdrawn. Most of them are rather old, and are already satisfied. For fission reactors, there are still constant requests, and only 23 old requests were deleted.

In the present review work, 66 requests were finally withdrawn. Hence, a total of 78 Japanese requests will be registered in WREND A. In this report, these requests are presented in the form of the computer output lists.

## 2. List of Requests Submitted to New WRENDA

In this section, Japanese requests submitted to new WRENDA are presented in the form of output lists from the computer. First line of each request shows, from the left, sequential number for this request list, atomic number, name of element, mass number, incident particle, and physical quantity, respectively. Second line gives generation figure, data of reception at JAERI/NDC, data of revision (if any, with increase of generation figure), data of submission to WRENDA, and data of withdrawal from WRENDA (for only withdrawn requests). Third line is for the energy region, required accuracy, priority, and requestors' names. If requestors are more than three persons, their names are shown in fourth and fifth lines. The next line is for the registration numbers for this storage and retrieval system and for WRENDA entry, and category for application. Comment area is devoted to quantity comment (Q), accuracy comment (A) and other comment (O), respectively. These structures are made so as to reproduce the WRENDA lists.

\*\* REQUESTS REGISTERED TO WRENDA.

\*\*

1 001 HYDROGEN 003 NEUTRON 80/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 00 80/11/10 UP TO  
 800002 812019 15.00 MEV 15.0% 2 OSA A.TAKAHASHI  
 FUSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTION FOR (N,2N) REACTION WANTED.  
 O: FOR ESTIMATION OF EMITTED NEUTRON SPECTRA FROM D-T MIXTURE OF INERTIALLY  
 CONFINED TARGET PLASMA.

2 003 LITHIUM 006 NEUTRON 87/07/25 80/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 01 80/11/10 2.00 MEV 15.00 MEV 5.0% 1 OSA A.TAKAHASHI JAE Y.SEKI  
 800003 832035 HIT K.MAKI  
 FUSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS REQUIRED WITH INCIDENT ENERGY STEP  
 OF 0.5 MEV.  
 O: NEUTRON TRANSPORT AND TRITIUM PRODUCTION RATE CALCULATIONS. ANGULAR  
 DISTRIBUTIONS OF INELASTICALLY SCATTERED NEUTRONS FOR ALL AVAILABLE  
 DISCRETE LEVELS ALSO REQUIRED.

3 003 LITHIUM 006 NEUTRON 87/08/01 ELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870011 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS, AND FOR  
 INTERCOMPARISON OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

4 003 LITHIUM 006 NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870012 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

5 003 LITHIUM 006 NEUTRON 87/08/01 DOUBLE DIFFERENTIAL INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870016 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 O: NO DATA ABOVE 15 MEV.

6 003 LITHIUM 007 NEUTRON N,NT  
 01 76/04/01 87/07/25 76/10/10  
 4.00 MEV 12.00 MEV 5.0% 1 OSA A.TAKAHASHI  
 780013 832036 FUSION REACTOR  
 Q: NEUTRON SPECTRA WITH ACCURACY 15 PER CENT ALSO REQUIRED  
 O: TRITIUM BREEDING AND ENERGY DEPOSITION CALCULATION. MET FOR 13 TO 15 MEV.

\*\* REQUESTS REGISTERED TO WRENDA.

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PAGE 2

7 003 LITHIUM 007 87/07/25 80/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 01 80/11/10 15.00 MEV 5.0% 1 HIT K.MAKI OSA A.TAKAHASHI  
 800004 832037 FUSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSIONS  
 REQUIRED.

O: NEUTRON TRANSPORT AND TRITIUM PRODUCTION RATE CALCULATIONS. ANGULAR  
 DISTRIBUTIONS OF INELASTICALLY SCATTERED NEUTRONS FOR ALL AVAILABLE  
 DISCRETE LEVELS ALSO REQUIRED. EMISSION SPECTRUM IN LOW SECONDARY ENERGY  
 REGION. NOT MET FOR 7 TO 12 MEV.  
 A: HIGHER ACCURACY IS REQUIRED FROM DESIGN STUDY.

8 003 LITHIUM 007 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 6.00 MEV 15.00 MEV 10.0% 1 JAE K.SHIBATA JAE S.CHIBA  
 870010 FUSION REACTOR

O: TO ESTIMATE NEUTRON SPECTRA IN BLANKET PRECISELY.  
 Q: CROSS SECTION FOR THE SECOND LEVEL IS WANTED.  
 O: LARGE DISCREPANCY BETWEEN TNL AND OTHER DATA.

9 003 LITHIUM 007 87/08/01 DOUBLE DIFFERENTIAL INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870013 FUSION REACTOR

O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 O: NO DATA ABOVE 15 MEV.

10 003 LITHIUM 007 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870014 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

11 003 LITHIUM 007 87/08/01 ELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870015 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

PAGE 3

12 004 BERYLLIUM 009 NEUTRON DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 01 80/11/10 87/07/25 80/12/25  
 1.70 MEV 15.00 MEV 5.0% 2 JAE Y.SEKI OSA A.TAKAHASHI  
 HIT K.MAKI  
 800005 832038 FUSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSIONS  
 REQUIRED. (N,2N) REACTION CROSS SECTION IS ALSO REQUIRED BY A.TAKAHASHI.  
 O: BLANKET NEUTRONICS CALCULATIONS. FOR ALSO NEUTRON MULTIPLICATION  
 CALCULATIONS.  
 A: 3 % REQUIRED FOR (N,2N) CROSS SECTION. HIGHER ACCURACY IS REQUIRED FROM  
 DESIGN STUDY.

13 006 CARBON 012 NEUTRON DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 00 80/11/10 87/07/25 80/12/25  
 7.00 MEV 15.00 MEV 10.0% 2 OSA A.TAKAHASHI  
 800006 832039 FUSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSIONS  
 REQUIRED. ANGULAR DISTRIBUTIONS OF INELASTIC SCATTERING CROSS SECTIONS FOR  
 ALL AVAILABLE DISCRETE LEVELS ESPECIALLY WANTED.  
 O: NEUTRON TRANSPORT CALCULATIONS. NOT MET FOR 7.62 MEV LEVEL CROSS SECTION  
 AND (N,N'3A).

14 006 CARBON 013 NEUTRON EMISSION CROSS SECTION  
 00 78/08/08  
 UP TD  
 780021 792070  
 ALPHA 78/12/12  
 10.00 MEV 20.0% 2 SAE N.YAMANO  
 Q: EXPERIMENTAL DATA WANTED. ANGULAR DISTRIBUTION ALSO REQUIRED. REQUIRED  
 NEUTRON ENERGIES ARE 100 KEV TO 10 MEV.  
 O: FOR NEUTRON SHIELDING AND EVALUATION OF NEUTRON SOURCE. FOR EVALUATION OF  
 NEUTRON ENERGY SPECTRUM IN FUEL RECYCLE PROCESS.

15 008 OXYGEN 017 NEUTRON N,ALPHA  
 01 78/08/08 82/12/10 78/12/12  
 0.25-1 EV 15.00 MEV 30.0% 2 PNC T.KAWAKITA  
 780025 792073 FISSIION REACTOR  
 Q: EVALUATED DATA WANTED  
 O: FOR EVALUATION OF QUANTITY OF CIA FROM OXIDE FUEL IN FAST REACTOR. BOTH  
 EVALUATIONS AND MEASUREMENTS ARE SCARCE.

16 008 OXYGEN 017 NEUTRON EMISSION CROSS SECTION  
 00 78/08/08  
 UP TD  
 780026 792072  
 ALPHA 78/12/12  
 10.00 MEV 20.0% 2 SAE N.YAMANO  
 Q: EXPERIMENTAL DATA WANTED. ANGULAR DISTRIBUTION ALSO REQUIRED. REQUIRED  
 NEUTRON ENERGIES ARE 100 KEV TO 10 MEV.  
 O: FOR NEUTRON SHIELDING AND EVALUATION OF NEUTRON SOURCE. FOR EVALUATION OF  
 NEUTRON ENERGY SPECTRUM IN FUEL RECYCLE PROCESS.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

PAGE 4

17 008 OXYGEN 018 ALPHA 78/12/12 NEUTRON EMISSION CROSS SECTION  
 00 78/08/08 10.00 MEV 20.0% 2 SAE N.YAMANO  
 UP TO  
 780027 792074 FISSION REACTOR  
 Q: EXPERIMENTAL DATA WANTED. ANGULAR DISTRIBUTION ALSO REQUIRED. REQUIRED  
 NEUTRON ENERGIES ARE 100 KEV TO 10 MEV.  
 O: FOR NEUTRON SHIELDING AND EVALUATION OF NEUTRON SOURCE. FOR EVALUATION OF  
 NEUTRON ENERGY SPECTRUM IN FUEL RECYCLE PROCESS.

18 018 ARGON 040 NEUTRON 71/10/10 CAPTURE CROSS SECTION  
 00 71/04/01 10.00 MEV  
 UP TO  
 780039 712006 FISSION REACTOR  
 A: ACCURACY REQUIRED TO BETTER THAN 20.0 PERCENT.  
 O: FOR REACTOR HAZARD CALCULATION.

19 020 CALCIUM NEUTRON 82/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 00 82/11/20 87/07/25 15.00 MEV 15.0% 3 JAE Y.SEKI  
 1.00 MEV  
 820003 832018 FISSION REACTOR  
 O: INCLUDED IN CONCRETE. SHIELDING DESIGN.

20 024 CHROMIUM NEUTRON 82/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 01 82/11/20 87/07/25 15.00 MEV 10.0% 2 JAE Y.SEKI HIT K.MAKI  
 UP TO  
 820004 832024 FISSION REACTOR  
 O: NEUTRON TRANSPORT CALCULATIONS.

21 026 IRON NEUTRON 80/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 01 80/11/10 87/07/25 80/12/25  
 UP TO 15.00 MEV 10.0% 2 OSA A.TAKAHASHI HIT K.MAKI  
 800007 832042 FISSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR INELASTIC SCATTERING AND  
 (N,2N) REACTION ARE ESPECIALLY WANTED.  
 O: NEUTRON TRANSPORT CALCULATION. NOT MET FOR LOW ENERGY PART OF EMISSION  
 SPECTRUM.

22 026 IRON NEUTRON 87/07/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 00 82/11/20 87/07/25 82/12/25  
 UP TO 15.00 MEV 10.0% 2 JAE Y.SEKI  
 820005 832025 FISSION REACTOR  
 O: NEUTRON TRANSPORT CALCULATIONS.

23 028 NICKEL NEUTRON 87/08/01 N,2N REACTION CROSS SECTION  
 00 87/07/25 20.00 MEV 15.0% 2 NIG S.IIJIMA  
 8.00 MEV  
 870017 FISSION REACTOR  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.  
 O: DISCREPANCY BETWEEN AND CALCULATED DATA.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

PAGE 5

24 028 NICKEL  
 00 87/07/25 8.00 MEV NEUTRON 87/08/01 N,XN REACTION CROSS SECTION  
 870018 20.00 MEV 15.0% 2 NIG S.IIJIMA  
 FUSION REACTOR  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.  
 O: NO DATA AVAILABLE, EXCEPT AT 15 MEV.

25 028 NICKEL  
 00 87/07/25 600.00 KEV NEUTRON 87/08/01 N,GAMMA RACTION CROSS SECTION  
 870019 10.00 MEV 10.0% 1 NIG S.IIJIMA  
 FUSION REACTOR  
 O: FOR FISSION AND FUSION REACTOR CALCULATIONS.  
 A: EXISTING DATA FOR 600 KEV - 1 MEV DISCREPANT ABOUT 20 %.  
 O: NO DATA ARE AVAILBLE ABOVE 1 MEV. EVALUATED DATA ARE ALSO DISCREPANT BY A  
 FACTOR OF 2 ABOVE 1 MEV.

26 028 NICKEL 060  
 00 87/07/25 12.00 MEV NEUTRON 87/08/01 N,2N REACTION CROSS SECTION  
 870020 20.00 MEV FUSION REACTOR 2 NIG S.IIJIMA  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.  
 O: NO EXPERIMENTAL DATA.

27 028 NICKEL 060  
 00 87/07/25 12.00 MEV NEUTRON 87/08/01 N,XN REACTION CROSS SECTION  
 870021 20.00 MEV FUSION REACTOR 2 NIG S.IIJIMA  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.

28 041 NIOBIUM  
 00 80/11/10 87/07/25 80/12/25 NEUTRON 80/12/25 DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 UP TD 13.00 MEV 10.0% 2 OSA A.TAKAHASHI  
 800009 832043 FUSION REACTOR  
 O: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSIONS  
 REQUIRED.  
 O: FOR NEUTRON MULTIPLICATION CALCULATION OF FUSION BLANKET. MET FOR 14MEV  
 REGION.

29 041 NIOBIUM 093  
 01 80/11/10 82/12/10 80/12/25 NEUTRON 80/12/25 INELASTIC CROSS SECTION.  
 UP TD 20.00 MEV 10.0% 2 MAP M.SASAKI JAE K.SAKURAI  
 800012 812029 FISSIION REACTOR  
 O: PRODUCTION FOR 13.6 YEAR ISOMER.  
 O: FOR NEUTRON DOSIMETRY.

30 042 MOLYBDENUM  
 01 76/04/01 80/11/10 76/10/10 NEUTRON DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 1.00 MEV 15.00 MEV 10.0% 2 JAE Y.SEKI  
 780099 762126 FUSION REACTOR  
 O: NEUTRON TRANSPORT CALCULATIONS.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

31 042 MOLYBDENUM 095 NEUTRON RESONANCE PARAMETERS  
 00 82/11/20 87/07/25 82/12/25  
 2.00 KEV 3.00 KEV 10.0% 2 NIG M.KAWAI  
 820006 832027 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

32 042 MOLYBDENUM 097 NEUTRON RESONANCE PARAMETERS  
 00 82/11/20 87/07/25 82/12/25  
 2.00 KEV 3.00 KEV 10.0% 2 NIG M.KAWAI  
 820007 832028 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

33 044 RUTHENIUM 101 NEUTRON RESONANCE PARAMETERS  
 00 82/11/20 87/07/25 82/12/25  
 1.00 KEV 3.00 KEV 10.0% 2 NIG M.KAWAI  
 820009 832030 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

34 044 RUTHENIUM 102 NEUTRON RESONANCE PARAMETERS  
 01 80/11/10 87/07/25 80/12/25  
 UP TO 3.00 KEV 20.0% 2 NIG S.IIJIMA  
 800028 812033 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

35 044 RUTHENIUM 103 NEUTRON CAPTURE CROSS SECTION  
 01 78/08/08 80/11/10 78/12/12  
 100.00 EV 500.00 KEV 20.0% 2 NIG S.IIJIMA  
 780127 792079 FISSION REACTOR  
 Q: EXPERIMENTAL DATA REQUIRED.  
 O: FOR FAST REACTOR BURNUP CALCULATIONS. NO DIFFERENTIAL OR INTEGRAL DATA  
 EXIST. VERY LARGE DISCREPANCIES BETWEEN EVALUATIONS.

36 044 RUTHENIUM 104 NEUTRON RESONANCE PARAMETERS  
 01 80/11/10 82/12/10 80/12/25  
 UP TO 3.00 KEV 20.0% 2 NIG S.IIJIMA  
 800029 812034 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

37 046 PALLADIUM 104 NEUTRON RESONANCE PARAMETERS  
 00 82/11/20 87/07/25 82/12/25  
 UP TO 3.00 KEV 20.0% 2 NIG M.KAWAI  
 820010 832031 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

38 046 PALLADIUM 106 NEUTRON RESONANCE PARAMETERS  
 00 82711/20 87/07/25 3.00 KEV 20.0% 2 NIG M.KAWAI

820011 832032 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

39 049 INDIUM 115 GAMMA SPECIAL QUANTITY  
 00 78708/08 78/12/12 10.00 MEV 20.0% 3 TOK Y.OKA

780132 792080 FISSION REACTOR  
 Q: EXPERIMENTAL DATA WANTED FOR (G,G') REACTION.  
 O: FOR CORRECTION OF IN-115M PRODUCTION THROUGH IN-115(N,N') IN-115M, FOR  
 REACTOR SHIELDING AND DOSIMETRY APPLICATIONS

40 050 TIN 116 NEUTRON ELASTIC CROSS SECTION  
 00 87707/25 87/08/01 30.00 MEV 10.0% 3 JAE S.CHIBA

870002 FISSION REACTOR  
 Q: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

41 050 TIN 116 NEUTRON INELASTIC CROSS SECTION  
 00 87707/25 87/08/01 30.00 MEV 10.0% 3 JAE S.CHIBA

870003 FISSION REACTOR  
 Q: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

42 050 TIN 118 NEUTRON ELASTIC CROSS SECTION  
 00 87707/25 87/08/01 30.00 MEV 10.0% 3 JAE S.CHIBA

870004 FISSION REACTOR  
 Q: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

43 050 TIN 118 NEUTRON INELASTIC CROSS SECTION  
 00 87707/25 87/08/01 30.00 MEV 10.0% 3 JAE S.CHIBA

870005 FISSION REACTOR  
 Q: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

44 050 TIN 120 NEUTRON ELASTIC CROSS SECTION  
 00 87707/25 87/08/01 30.00 MEV 10.0% 3 JAE S.CHIBA

870006 FISSION REACTOR  
 Q: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

PAGE 8

45 050 TIN 120 NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 30.00 MEV 10.0% 3 JAE S.CHIBA  
 870007 FISSION REACTOR  
 O: TO DETERMINE SYSTEMATICS OF <N-Z>/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

46 050 TIN 124 NEUTRON 87/08/01 ELASTIC CROSS SECTION  
 00 87/07/25 30.00 MEV 10.0% 3 JAE S.CHIBA  
 870008 FISSION REACTOR  
 O: TO DETERMINE SYSTEMATICS OF <N-Z>/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

47 050 TIN 124 NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 30.00 MEV 10.0% 3 JAE S.CHIBA  
 870009 FISSION REACTOR  
 O: TO DETERMINE SYSTEMATICS OF <N-Z>/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

48 054 XENON 131 NEUTRON 82/12/10 75/10/10 CAPTURE CROSS SECTION  
 02 75/04/01 4.00 KEV 500.00 KEV 20.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 780142 752014 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS. RESONANCE PARAMETERS ARE KNOWN UP TO  
 4 KEV.

49 054 XENON 132 NEUTRON 82/12/10 80/12/25 CAPTURE CROSS SECTION  
 01 80/11/10 100.00 EV 500.00 KEV 20.0% 2 NIG S.IIJIMA SAE H.MATSUNOBU  
 800018 812038 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

50 054 XENON 132 NEUTRON 82/12/10 80/12/25 RESONANCE PARAMETERS  
 01 80/11/10 40.00 KEV 20.0% 2 NIG S.IIJIMA SAE H.MATSUNOBU  
 800019 812039 FISSION REACTOR  
 Q: ONLY 5 LEVELS BELOW 3.85 KEV.  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

51 054 XENON 134 NEUTRON 82/12/25 RESONANCE PARAMETERS  
 00 82/11/20 40.00 KEV 20.0% 2 NIG M.KAWAI  
 820012 832033 FISSION REACTOR  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

\*\* REQUESTS REGISTERED TO WRENDA.

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52 055 CESIUM 134 NEUTRON CAPTURE CROSS SECTION  
 00 72/04/01 72/10/10  
 0.25-1 EV 0.25-1 3.0% 1 JAE H.OKASHITA  
 780148 722022 SAFEGUARDS  
 Q: RESONANCE INTEGRAL ALSO WANTED.  
 O: FOR BURNUP CALCULATION FROM NON-DESTRUCTIVE MEASUREMENT.

53 055 CESIUM 135 NEUTRON CAPTURE CROSS SECTION  
 01 75/04/01 82/12/10 75/10/10  
 100.00 EV 500.00 KEV 10.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 780150 752016 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS. EVALUATIONS ARE VERY DISCREPANT.

54 055 CESIUM 135 NEUTRON RESONANCE PARAMETERS  
 01 80/11/10 82/12/10 80/12/25  
 800020 812040 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR  
 MOMENTUM WANTED.

55 061 PROMETHIUM 147 NEUTRON CAPTURE CROSS SECTION  
 01 75/04/01 80/11/10 75/10/10  
 100.00 EV 500.00 KEV 10.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 780158 752019 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

56 062 SAMARIUM 144 NEUTRON RESONANCE PARAMETERS  
 00 87/07/25 87/08/01  
 1.00-3 EV 500.00 KEV 2.0% 3 JAE T.NAKAGAWA  
 870001 FISSION REACTOR  
 O: WANTED FOR SYSTEMATIC STUDY OF AVERAGE RESONANCE PARAMETERS, SO,DO FOR SM  
 ISOTOPES.  
 O: NO DATA EXIST.

57 062 SAMARIUM 149 NEUTRON CAPTURE CROSS SECTION  
 01 75/04/01 80/11/10 75/10/10  
 25.00 KEV 25.00 KEV 5.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 780159 752020 FISSION REACTOR  
 Q: ONE POINT PRECISE MEASUREMENT AT 25 KEV IS REQUIRED.  
 O: FOR FAST REACTOR BURNUP CALCULATIONS. DISCREPANCY BETWEEN STEK DATA AND  
 RECENT DIFFERENTIAL DATA.

58 062 SAMARIUM 151 NEUTRON CAPTURE CROSS SECTION  
 00 75/04/01 75/10/10  
 100.00 EV 500.00 KEV 10.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 780160 752021 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS. NO KEV DATA.

59 063 EUROPIUM 152 NEUTRON CAPTURE CROSS SECTION  
 00 80/11/10 80/12/25  
 100.00 EV 500.00 KEV 10.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 800021 812041 FISSION REACTOR  
 Q: NO KEV DATA.  
 O: FOR CONTROL ROD AND THERMAL REACTOR BURNUP CALCULATIONS.

\*\* REQUESTS REGISTERED TO WRENDA.

\*\*

PAGE 10

60 063 EUROPIUM 152 NEUTRON RESONANCE PARAMETERS  
 01 80/11/10 82/12/10 80/12/25  
 800022 812042 FISSION REACTOR  
 Q: THERE EXIST NO DATA, EXCEPT THOSE BY VERTEBNYJ ET AL.(1977) IN 0.88 TO 17  
 EV. RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL  
 ANGULAR MOMENTUM WANTED.  
 O: FOR CONTROL ROD AND THERMAL REACTOR BURNUP CALCULATIONS.

61 063 EUROPIUM 154 NEUTRON CAPTURE CROSS SECTION  
 00 80/11/10 80/12/25  
 100.00 EV 500.00 KEV 10.0% 1 NIG S.IIJIMA SAE H.MATSUNOBU  
 800023 812043 FISSION REACTOR  
 Q: NO EXPERIMENTAL DATA.  
 O: FOR CONTROL ROD AND THERMAL REACTOR BURNUP CALCULATIONS.

62 063 EUROPIUM 154 NEUTRON RESONANCE PARAMETERS  
 01 80/11/10 82/12/10 80/12/25  
 800024 812044 FISSION REACTOR  
 Q: INSUFFICIENT RESONANCE PARAMETERS. RESONANCE ENERGY, NEUTRON WIDTH,  
 RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.  
 O: FOR CONTROL ROD AND THERMAL REACTOR BURNUP CALCULATIONS.

63 063 EUROPIUM 155 NEUTRON CAPTURE CROSS SECTION  
 00 80/11/10 80/12/25  
 100.00 EV 500.00 KEV 20.0% 2 NIG S.IIJIMA SAE H.MATSUNOBU  
 800025 812045 FISSION REACTOR  
 Q: NO EXPERIMENTAL DATA  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

64 063 EUROPIUM 155 NEUTRON RESONANCE PARAMETERS  
 01 80/11/10 82/12/10 80/12/25  
 800026 812046 FISSION REACTOR  
 Q: INSUFFICIENT RESONANCE PARAMETERS. RESONANCE ENERGY, NEUTRON WIDTH,  
 RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

65 080 MERCURY 199 NEUTRON INELASTIC CROSS SECTION  
 01 80/11/10 82/12/10 80/12/25  
 500.00 KEV 20.00 MEV 10.0% 3 JAE K.SAKURAI  
 800013 812030 FISSION REACTOR  
 Q: PRODUCTION CROSS SECTION FOR 42.6 MIN ISOMER THROUGH INELASTIC SCATTERING.  
 O: FOR NEUTRON DOSIMETRY.

66 082 LEAD NEUTRON DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 01 80/11/10 87/07/25 80/12/25  
 UP TO 15.00 MEV 5.0% 1 OSA A.TAKAHASHI HIT K.MAKI  
 800008 832044 FISSION REACTOR  
 Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSIONS  
 REQUIRED.  
 O: FOR NEUTRON MULTIPLICATION CALCULATION OF FUSION BLANKET.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

PAGE 11

67 094 PLUTONIUM 239 NEUTRON 76/10/10 TOTAL CROSS SECTION  
 01 76/04/01 87/07/25 50.00 KEV 2.0% 1 NIG M.KAWAI  
 780198 762210 FISSION REACTOR  
 O: FISSION REACTOR CALCULATIONS.

68 094 PLUTONIUM 239 NEUTRON 76/10/10 FISSION CROSS SECTION  
 02 76/04/01 87/07/25 200.00 KEV 3.0% 1 NIG M.KAWAI  
 780199 762211 FISSION REACTOR  
 O: FISSION REACTOR CORE DESIGN AND ANALYSIS. LARGE DISCREPANCY BETWEEN  
 EXPERIMENTAL DATA FROM 50 KEV TO 1.0 MEV.

69 094 PLUTONIUM 239 NEUTRON 70/10/10 NEUTRONS EMITTED PER FISSION(NU BAR)  
 01 70/04/01 87/07/25 1.00 MEV 0.5% 1 NIG M.KAWAI  
 UP TO FISSION REACTOR  
 780201 702037  
 A: ACCURAY REQUIRED TO BETTER THAN 0.2 PER CENT, IF POSSIBLE.  
 O: FOR FAST AND HYBRID FUSION REACTOR CALCULATIONS. DISCREPANCY EXISTS BETWEEN  
 EXPERIMENTAL DATA.

70 094 PLUTONIUM 239 NEUTRON 76/10/10 DELAYED NEUTRONS EMITTED PER FISSION  
 00 76/04/01 10.00 MEV 5.0% 2 NIG T.MURATA  
 780203 762048 SAFEGUARDS  
 Q: THE REQUESTED QUANTITIES ARE THE GROUP HALF LIVES AND GROUP YIELDS  
 (NORMALIZED TO 1 FISSION) WHICH CAN BE USED TO FIT THE DECAY CURVE OF  
 DELAYED NEUTRONS FOR THE TIME RANGE 0.1 - 300 SEC WITHIN AN ACCURACY OF 5  
 PER CENT.  
 O: INCIDENT ENERGY STEP LESS THAN 2 MEV. ACTIVE ASSAY OF MIXED FRESH AND  
 IRRADIATED FUEL.

71 094 PLUTONIUM 240 NEUTRON 76/10/10 DELAYED NEUTRONS EMITTED PER FISSION  
 00 76/04/01 10.00 MEV 5.0% 2 NIG T.MURATA  
 780210 762049 SAFEGUARDS  
 Q: THE REQUESTED QUANTITIES ARE THE GROUP HALF LIVES AND GROUP YIELDS  
 (NORMALIZED TO 1 FISSION) WHICH CAN BE USED TO FIT THE DECAY CURVE OF  
 DELAYED NEUTRONS FOR THE TIME RANGE 0.1-300 SEC WITHIN AN ACCURACY OF 5 PER  
 CENT.  
 O: INCIDENT ENERGY STEP LESS THAN 2 MEV. ACTIVE ASSAY OF MIXED FRESH AND  
 IRRADIATED FUEL.

72 094 PLUTONIUM 241 NEUTRON 76/10/10 DELAYED NEUTRONS EMITTED PER FISSION  
 00 76/04/01 10.00 MEV 5.0% 2 NIG T.MURATA  
 780220 762050 SAFEGUARDS  
 Q: THE REQUESTED QUANTITIES ARE THE GROUP HALF LIVES AND GROUP YIELDS  
 (NORMALIZED TO 1 FISSION) WHICH CAN BE USED TO FIT THE DECAY CURVE OF  
 DELAYED NEUTRONS FOR THE TIME RANGE 0.1 - 300 SEC WITHIN AN ACCURACY OF 5  
 PER CENT.  
 O: ACTIVE ASSAY OF MIXED FRESH AND IRRADIATED FUEL INCIDENT ENERGY STEP LESS  
 THAN 2 MEV.

\*\* REQUESTS REGISTERED TO WRENDA. \*\*

PAGE 12

73 095 AMERICIUM 241 NEUTRON CAPTURE CROSS SECTION  
 02 75/04/01 87/07/25 75/10/10 PNC R.YUMOTO SAE H.MATSUNOBU  
 500.00 KEV 1.00 MEV 10.0% 1 FBE T.HOUYAMA  
 780230 752033 FISSION REACTOR  
 Q: PRODUCTION OF AM-242 AND AM-242M WANTED.  
 O: REACTOR BURNUP CALCULATIONS AND ESTIMATION OF TRANS- URANIUM NUCLIDE  
 BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.  
 A: 20% IN MEV REGION.

74 095 AMERICIUM 242 NEUTRON CAPTURE CROSS SECTION  
 00 75/04/01 75/10/10 PNC R.YUMOTO SAE H.MATSUNOBU  
 < 0.25-1 EV 100.00 KEV 1 JAE R.SHINDO  
 780234 752036 FISSION REACTOR  
 Q: WANTED FOR GROUND AND ISOMERIC STATES.  
 A: ACCURACY REQUIRED 5 TO 20 %.  
 O: REACTOR BURNUP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE  
 BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

75 096 CURIUM 242 NEUTRON CAPTURE CROSS SECTION  
 01 75/04/01 82/12/10 75/10/10 PNC R.YUMOTO SAE H.MATSUNOBU  
 < 0.25-1 EV 100.00 KEV 2 FBE T.HOUYAMA  
 780238 752042 FISSION REACTOR  
 A: ACCURACY REQUIRED 10 TO 20 PER CENT.  
 O: REACTOR BURNUP CALCULATIONS AND ESTIMATION OF TRANS- URANIUM NUCLIDE  
 BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

76 096 CURIUM 242 NEUTRON FISSION CROSS SECTION  
 01 75/04/01 87/07/25 75/10/10 PNC R.YUMOTO SAE H.MATSUNOBU  
 1.50 MEV 20.00 MEV 2 FBE T.HOUYAMA  
 780240 752041 FISSION REACTOR  
 A: ACCURACY REQUIRED 10 TO 20 PER CENT.  
 O: REACTOR BURNUP CALCULATIONS AND ESTIMATION OF TRANS- URANIUM NUCLIDE  
 BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

77 096 CURIUM 243 NEUTRON CAPTURE CROSS SECTION  
 01 75/04/01 82/12/10 75/10/10 PNC R.YUMOTO SAE H.MATSUNOBU  
 20.00 EV 100.00 KEV 2 FBE T.HOUYAMA  
 780241 752047 FISSION REACTOR  
 A: ACCURACY REQUIRED 10 TO 20 PER CENT.  
 O: REACTOR BURNUP CALCULATIONS AND ESTIMATION OF TRANS- URANIUM NUCLIDE  
 BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

78 096 CURIUM 243 NEUTRON FISSION CROSS SECTION  
 01 75/04/01 87/07/25 75/10/10 PNC R.YUMOTO SAE H.MATSUNOBU  
 3.00 MEV 20.00 MEV 2 FBE T.HOUYAMA  
 780243 752045 FISSION REACTOR  
 A: ACCURACY REQUIRED 10 TO 20 PER CENT.  
 O: REACTOR BURNUP CALCULATIONS AND ESTIMATION OF TRANS- URANIUM NUCLIDE  
 BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

3. List of Withdrawn Requests from WRENDA 83/84

Withdrawn requests of 66 are shown in this section. They were carefully reviewed by the requestors before they were decided to be withdrawn. Reasons for withdrawal are satisfaction of the requirements, changes of the requestors' plan in which they were going to use the data, amalgamation of some requests which were made for similar quantities, and so forth.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

1 001 HYDROGEN 001 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION  
 00 82/11/20 87/07/25 82/12/25 87/07/25  
 5.00 MEV 15.00 MEV 0.5% 3 JRE T.MICHIKAWA  
 820001 832023 OTHERS

Q: STANDARD FOR ABSOLUTE MEASUREMENTS OF MONOENERGETIC FAST NEUTRON FLUENCE.  
 A: PRESENT ACCURACY IS 1.0%. LESS THAN 0.5% ACCURACY REQUESTED.  
 O: PRECISE MEASUREMENTS AND EVALUATIONS ARE REQUIRED. PRECISE EVALUATION OF ELASTIC SCATTERING CROSS SECTION FROM 10 KEV TO 20 MEV IS ALSO WANTED.

2 001 HYDROGEN 002 NEUTRON DOUBLE DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION  
 00 80/11/10 87/07/25 80/12/25 87/07/25  
 UP TO 15.00 MEV 15.0% 2 OSA A.TAKAHASHI  
 800001 812018 FUSION REACTOR

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTION FOR (N,2N) REACTION WANTED.  
 O: FOR ESTIMATION OF EMITTED NEUTRON SPECTRA FROM D-T MIXTURE OF INERTIALLY CONFINED TARGET PLASMA.

3 003 LITHIUM 006 NEUTRON N,T  
 01 76/04/01 87/07/25 76/10/10 87/07/25  
 3.00 MEV 15.00 MEV 3.0% 1 JAE Y.SEKI HIT K.MAKI  
 780005 762053 FUSION REACTOR  
 O: TRITIUM BREEDING AND ENERGY DEPOSITION CALCULATION.

4 004 BERYLLIUM 009 NEUTRON N,ALPHA  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 8.00 MEV 15.00 MEV 15.0% 3 JAE Y.SEKI  
 780018 762063 FUSION REACTOR  
 O: HELIUM ACCUMULATION CALCULATIONS.

5 006 CARBON 012 NEUTRON N,N 3ALPHA  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TO 15.00 MEV 15.0% 2 JAE Y.SEKI  
 780020 762065 FUSION REACTOR  
 Q: TOTAL ALPHA PRODUCTION CROSS SECTION AND SECONDARY NEUTRON ENERGY SPECTRUM REQUIRED  
 O: NEUTRON TRANSPORT AND HELIUM ACCUMULATION CALCULATIONS.

6 006 CARBON 012 NEUTRON N,N ALPHA  
 00 80/11/10 87/07/25 80/12/25 87/07/25  
 UP TO 40.00 MEV 15.0% 2 KTO K.SHIN TOH H.ORIHARA  
 800011 832040 FUSION REACTOR  
 Q: SECONDARY NEUTRON AND ALPHA-PARTICLE ENERGY SPECTRA ARE REQUIRED.  
 O: FOR DETECTOR EFFICIENCY DETERMINATION IN FUSION REACTOR NEUTRONICS EXPERIMENTS.

7 006 CARBON 012 NEUTRON N,P  
 00 80/11/10 87/07/25 80/12/25 87/07/25  
 15.00 MEV 20.00 MEV 5.0% 2 NAG S.ITOH  
 800031 832041 FUSION REACTOR  
 O: FOR CALCULATION OF DETECTOR RESPONSE FUNCTION. DISAGREEMENT BETWEEN KREGER AND RIMMER ABOVE 16.0 MEV.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

PAGE 2

8 008 OXYGEN 016 NEUTRON N,ALPHA  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 7.50 MEV 15.00 MEV 15.0% 2 JAE Y.SEKI  
 780022 762066 FUSION REACTOR  
 Q: TOTAL ALPHA PRODUCTION CROSS SECTION  
 O: HELIUM ACCUMULATION CALCULATION IN LI-OXIDE BLANKETS.

9 008 OXYGEN 016 NEUTRON N,N ALPHA  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TO 15.00 MEV 15.0% 2 JAE Y.SEKI  
 780023 762067 FUSION REACTOR  
 Q: SECONDARY NEUTRON ENERGY SPECTRA REQUIRED  
 O: CALCULATION OF NEUTRON TRANSPORT AND HELIUM ACCUMULATION IN LI-OXIDE  
 BLANKETS.

10 008 OXYGEN 016 TRITON NEUTRON EMISSION CROSS SECTION  
 00 78/08/08 87/07/25 78/12/12 87/07/25  
 UP TO 12.00 MEV 10.0% 2 JAE K.TANAKA JAE H.KUDO  
 780024 792071 FUSION REACTOR  
 Q: EXPERIMENTAL DATA WANTED  
 A: 5% ENERGY RESOLUTION DESIRABLE  
 O: FOR PRECISE ESTIMATION OF L120 BURNUP IN CTR BLANKET, FOR EVALUATION OF  
 NUMBER OF Q18 ATOMS FROM BETA PLUS DECAY OF F18 PRODUCED THROUGH  
 Q16(T,N)F18.

11 008 OXYGEN 017 NEUTRON N,P  
 00 82/11/20 87/07/25 82/12/25 87/07/25  
 UP TO 20.00 MEV 20.0% 2 CRC T.ISHIZUKA CRC H.KADOTANI  
 820002 832022 FISSON REACTOR  
 O: SHIELDING PRIMARY COOLING SYSTEMS FROM DELAYED NEUTRONS FROM N-17.

12 013 ALUMINIUM 027 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 0.25-1 EV 15.00 MEV 15.0% 3 MAP M.KASAI  
 780032 762075 FUSION REACTOR  
 O: GAMMA-RAY HEATING CALCULATIONS.

13 013 ALUMINIUM 027 NEUTRON N,D  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TO 15.00 MEV 15.0% 3 MAP M.KASAI  
 780035 762072 FUSION REACTOR  
 O: HYDROGEN ACCUMULATION CALCULATIONS.

14 013 ALUMINIUM 027 NEUTRON N,T  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TO 15.00 MEV 15.0% 3 MAP M.KASAI  
 780036 762073 FUSION REACTOR  
 O: HYDROGEN ACCUMULATION CALCULATIONS.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

15 019 POTASSIUM 039 NEUTRON N,P  
 87/07/25 78/12/12 87/07/25  
 01 78/08/08 EV 15.00 MEV 30.0% 2 PNC T.KAWAKITA  
 0.25-1  
 780040 792076 FISSION REACTOR  
 Q: EVALUATED DATA WANTED.  
 O: FOR REACTOR HAZARD CALCULATION. THERE ARE MANY EXPERIMENTAL DATA IN MEV REGION.

16 022 TITANIUM NEUTRON  
 87/07/25 76/10/10 87/07/25 TOTAL PHOTON PRODUCTION CROSS SECTION  
 00 76/04/01 EV 15.00 MEV 15.0% 3 MAP M.KASAI  
 0.25-1  
 780046 762083 FISSION REACTOR  
 O: POTENTIAL CONSTITUENT OF STRUCTURAL MATERIAL. GAMMA-RAY HEATING CALCULATIONS.

17 022 TITANIUM NEUTRON N,ALPHA  
 87/07/25 76/10/10 87/07/25  
 00 76/04/01 UP TO 15.00 MEV 15.0% 3 MAP M.KASAI  
 780049 762082 FISSION REACTOR  
 O: POTENTIAL CONSTITUENT OF STRUCTURAL MATERIAL. HELIUM ACCUMULATION CALCULATIONS.

18 023 VANADIUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION  
 87/07/25 76/10/10 87/07/25  
 00 76/04/01 EV 15.00 MEV 10.0% 2 MAP M.KASAI  
 0.25-1  
 780052 762089 FISSION REACTOR  
 O: POTENTIAL CONSTITUENT OF STRUCTURAL MATERIAL. GAMMA-RAY HEATING CALCULATIONS.

19 023 VANADIUM NEUTRON N,2N REACTION CROSS SECTION  
 87/07/25 76/10/10 87/07/25  
 00 76/04/01 UP TO 15.00 MEV 10.0% 2 MAP M.KASAI  
 780053 762085 FISSION REACTOR  
 O: POTENTIAL CONSTITUENT OF STRUCTURAL MATERIAL. NEUTRON MULTIPLICATION CALCULATIONS.

20 024 CHROMIUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION  
 87/07/25 76/10/10 87/07/25  
 01 76/04/01 UP TO 15.00 MEV 15.0% 2 JAE Y.SEKI  
 780059 762094 FISSION REACTOR  
 Q: GAMMA-RAY SPECTRA ALSO REQUIRED.  
 O: GAMMA-RAY HEATING CALCULATIONS.

21 026 IRON NEUTRON INELASTIC CROSS SECTION  
 87/07/25 76/10/10 87/07/25  
 01 76/04/01 UP TO 20.00 MEV 5.0% 1 JAE Y.SEKI  
 780064 762099 FISSION REACTOR  
 Q: INELASTIC GAMMA RAY SPECTRA ALSO REQUIRED.  
 O: NEUTRON TRANSPORT AND GAMMA-RAY HEATING CALCULATIONS.

22 026 IRON NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION  
 87/07/25 76/10/10 87/07/25  
 00 76/04/01 EV 15.00 MEV 10.0% 2 MAP M.KASAI  
 0.25-1  
 780066 762104 FISSION REACTOR  
 O: GAMMA-RAY HEATING CALCULATIONS.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25, '87 \*\*

PAGE 4

23 026 IRON 057 NEUTRON 87/07/25 80/12/25 87/07/25 INELASTIC CROSS SECTION  
 00 80/11/10 UP TD 800.00 KEV 10.0% 2 NIG M.KAWAI  
 800014 812031 FISSION REACTOR  
 O: FOR REACTOR SHIELDING CALCULATION.

24 028 NICKEL NEUTRON 87/07/25 76/10/10 87/07/25 INELASTIC CROSS SECTION  
 02 76/04/01 UP TD 20.00 MEV 5.0% 1 JAE Y.SEKI MAP M.KASAI  
 780072 762105 FISSION REACTOR  
 Q: INELASTIC GAMMA-RAY SPECTRA ALSO REQUIRED.  
 O: NEUTRON TRANSPORT AND GAMMA-RAY HEATING CALCULATIONS.

25 028 NICKEL NEUTRON 87/07/25 76/10/10 87/07/25 TOTAL PHOTON PRODUCTION CROSS SECTION  
 00 76/04/01 EV 15.00 MEV 10.0% 2 MAP M.KASAI  
 780074 762111 FISSION REACTOR  
 O: GAMMA-RAY HEATING CALCULATIONS.

26 029 COPPER NEUTRON 87/07/25 76/10/10 87/07/25 TOTAL PHOTON PRODUCTION CROSS SECTION  
 00 76/04/01 EV 15.00 MEV 15.0% 2 JAE Y.SEKI  
 780081 762113 FISSION REACTOR  
 Q: GAMMA-RAY SPECTRA ALSO REQUIRED.  
 O: GAMMA-RAY HEATING IN MAGNETS.

27 030 ZINC 064 NEUTRON 87/07/25 78/08/08 87/07/25 CAPTURE CROSS SECTION  
 01 78/08/08 EV 15.00 MEV 20.0% 2 PNC T.KAWAKITA  
 780082 792077 FISSION REACTOR  
 Q: EXPERIMENTAL DATA WANTED.  
 O: FOR ESTIMATION OF RADIOACTIVITY OF SPENT STRUCTURAL MATERIALS IN FAST REACTORS. BOTH EXPERIMENTAL AND EVALUATED DATA ARE SCARCE.

28 040 ZIRCONIUM 093 NEUTRON 87/07/25 75/10/10 87/07/25 CAPTURE CROSS SECTION  
 01 75/04/01 EV 500.00 KEV 20.0% 2 NIG S.IIJIMA SAE H.MATSUNOBU  
 780086 752004 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS.

29 040 ZIRCONIUM 093 NEUTRON 87/07/25 78/12/12 87/07/25 RESONANCE PARAMETERS  
 01 78/08/08 EV 20.0% 2 SAE H.MATSUNOBU NIG S.IIJIMA  
 780087 792068 FISSION REACTOR  
 O: FOR FAST REACTOR BURNUP CALCULATIONS. MORE RESONANCE DATA ARE REQUIRED.  
 ONLY ONE RESONANCE LEVEL AT 110 EV. NO KEV DATA.

30 041 NIOBIUM NEUTRON 87/07/25 80/12/25 87/07/25 TOTAL PHOTON PRODUCTION CROSS SECTION  
 00 80/11/10 EV 20.00 MEV 20.0% 2 KTO K.SHIN  
 800010 812027 FISSION REACTOR  
 Q: LARGE DIFFERENCES BETWEEN EXPERIMENTAL DATA MEASURED AT ORNL,LASL AND KYOTO UNIVERSITY.  
 O: MORE EXPERIMENTS WANTED.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

31 041 NIOBIUM 093 NEUTRON INELASTIC CROSS SECTION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TD 15.00 MEV 20.0% 2 MAP M.KASAI  
 780089 762117 FUSION REACTOR  
 Q: NB-93M PRODUCTION CROSS SECTION BY INELASTIC.  
 A: 15.0% REQUIRED FOR NEUTRON TRANSPORT CALCULATIONS.  
 O: TRANSMUTATION AND NEUTRON TRANSPORT CALCULATIONS.

32 041 NIOBIUM 093 NEUTRON N,P  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TD 15.00 MEV 20.0% 2 MAP M.KASAI  
 780094 762119 FUSION REACTOR  
 O: HYDROGEN ACCUMULATION CALCULATIONS.

33 041 NIOBIUM 093 NEUTRON TOTAL ALPHA PRODUCTION CROSS SECTION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TD 15.00 MEV 15.0% 2 MAP K.IOKI  
 780096 762121 FUSION REACTOR  
 O: HELIUM ACCUMULATION CALCULATIONS.

34 042 MOLYBDENUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION  
 01 76/04/01 87/07/25 76/10/10 87/07/25  
 0.25-1 EV 15.00 MEV 15.0% 2 JAE Y.SEKI  
 780102 762131 FUSION REACTOR  
 Q: GAMMA-RAY SPECTRA ALSO REQUIRED.  
 O: NEUTRON BALANCE AND GAMMA-RAY HEATING CALCULATION.

35 042 MOLYBDENUM NEUTRON N,P  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TD 15.00 MEV 10.0% 2 JAE H.IIDA  
 780104 762129 FUSION REACTOR  
 Q: CROSS SECTION FOR EACH ISOTOPE ARE ALSO REQUESTED.. ESPECIALLY, DATA OF  
 MO-95,-96 ARE REQUIRED FOR ESTIMATION OF DOSE RATES AROUND THE MOLYBDENUM  
 STRUCTURES.

36 042 MOLYBDENUM NEUTRON N,ALPHA  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TD 15.00 MEV 20.0% 2 JAE Y.SEKI  
 780105 762130 FUSION REACTOR  
 Q: CROSS SECTIONS FOR EACH ISOTOPE ARE ALSO REQUESTED.  
 O: HELIUM ACCUMULATION CALCULATIONS.

37 042 MOLYBDENUM 092 NEUTRON N,NP  
 00 78/08/08 87/07/25 78/12/12 87/07/25  
 UP TD 15.00 MEV 20.0% 2 JAE H.IIDA  
 780108 792078 FUSION REACTOR  
 Q: EXPERIMENTAL DATA REQUIRED.  
 O: FOR CALCULATION OF INDUCED ACTIVITIES AROUND MOLYBDENUM STRUCTURES.

38 042 MOLYBDENUM 094 NEUTRON N,2N REACTION CROSS SECTION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 UP TD 15.00 MEV 10.0% 2 MAP K.IOKI  
 780111 762133 FISSION REACTOR  
 O: NEUTRON BALANCE AND TRANSMUTATION CALCULATIONS.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

PAGE 6

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39 043 TECHNETIUM 099      NEUTRON      82/12/25      87/07/25      RESONANCE PARAMETERS
00 82/11/20      87/07/25      10.00 KEV      10.0%      2      NIG      M.KAWAI
      UP TO
820008 832029      FISSION REACTOR
Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR
MOMENTUM WANTED.
O: FOR BURN-UP CALCULATION. TO RESOLVE DISCREPANCIES BETWEEN DIFFERENTIAL AND
INTEGRAL DATA.

40 046 PALLADIUM 105      NEUTRON      80/12/25      87/07/25      RESONANCE PARAMETERS
01 80/11/10      87/07/25      10.00 KEV      10.0%      2      NIG      S.IIJIMA
      UP TO
800030 812035      FISSION REACTOR
Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR
MOMENTUM WANTED.
O: FOR FAST REACTOR BURNUP CALCULATIONS.

41 046 PALLADIUM 107      NEUTRON      75/10/10      87/07/25      CAPTURE CROSS SECTION
01 75/04/01      87/07/25      500.00 KEV      10.0%      1      NIG      S.IIJIMA
      780130 752012      FISSION REACTOR
O: FOR FAST REACTOR BURNUP CALCULATIONS. EVALUATIONS ARE VERY DISCREPANT. NO
KEV DATA.

42 051 ANTIMONY 124      NEUTRON      78/12/12      87/07/25      CAPTURE CROSS SECTION
00 78/08/08      87/07/25      0.25-1 EV      20.0%      3      JAE      K.NISHIMURA
      780135 792082      FISSION REACTOR
Q: EXPERIMENTAL DATA REQUIRED.
O: FOR ESTIMATION OF SB-124 PRODUCTION IN SB-BE NEUTRON SOURCE. VERY LARGE
DISCREPANCIES EXIST AMONG EXPERIMENTAL DATA.

43 053 IODINE 129      NEUTRON      80/12/25      87/07/25      CAPTURE CROSS SECTION
01 80/11/10      87/07/25      500.00 KEV      20.0%      2      NIG      S.IIJIMA
      800016 812036      FISSION REACTOR
Q: EXPERIMENTAL DATA ARE SCARCE.
O: FOR FAST REACTOR BURNUP CALCULATIONS.

44 053 IODINE 129      NEUTRON      80/12/25      87/07/25      RESONANCE PARAMETERS
01 80/11/10      87/07/25      20.0%      2      NIG      S.IIJIMA
      800017 812037      FISSION REACTOR
Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR
MOMENTUM WANTED.
O: FOR FAST REACTOR BURNUP CALCULATIONS.
    
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\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

PAGE 7

45 055 CESIUM 134      87/07/25      NEUTRON      CAPTURE CROSS SECTION  
 00 76/04/01      EV      10.00 MEV      20.0%      1      JAE      K.TASAKA  
 0.25-1      SAFEGUARDS  
 780149      762024  
 Q: CROSS-SECTION VALUES AT HIGHER NEUTRON ENERGIES ARE NEEDED, AS WELL AS AT THERMAL ENERGY.  
 A: 10 PER CENT ACCURACY FOR 25.3 MV, 20 PER CENT ACCURACY FOR HIGHER ENERGY REGION.  
 O: BURNUP DETERMINATION BASED ON ABSOLUTE MEASUREMENT OF ACTIVITY RATIO CS-134/CS-137 ESTIMATION OF THE DECAY POWER OF FISSION PRODUCTS.

46 056 BARIUM 137      87/07/25      NEUTRON      RESONANCE PARAMETERS  
 00 82/11/20      UP TO      10.00 KEV      20.0%      2      NIG      M.KAWAI  
 820013      832034  
 Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.  
 O: FOR BURN-UP CALCULATION.

47 063 EUROPIUM 154      87/07/25      NEUTRON      CAPTURE CROSS SECTION  
 00 72/04/01      EV      0.25-1      EV      5.0%      1      JAE      H.OKASHITA  
 780162      722039      SAFEGUARDS  
 Q: RESONANCE INTEGRAL ALSO WANTED.  
 O: FOR BURNUP CALCULATION FROM NON-DESTRUCTIVE MEASUREMENT.

48 063 EUROPIUM 155      87/07/25      GAMMA RAY YIELD  
 00 72/04/01      1.0%      2      JAE      K.TASAKA  
 780163      722015      SAFEGUARDS  
 Q: YIELD PER DISINTEGRATION OF 86.5 AND 105.3 KEV GAMMA-RAYS REQUIRED.  
 (FOLLOWING BETA DECAY EVENT).  
 O: FOR BURNUP CALCULATION FROM NON-DESTRUCTIVE MEASUREMENT.

49 072 HAFNIUM      87/07/25      NEUTRON      CAPTURE CROSS SECTION  
 00 82/11/20      1.00 KEV      1.00 MEV      82/12/25      87/07/25  
 820014      832026      FISSIION REACTOR      2      NIG      S.IIJIMA  
 Q: GREATER THAN 10% DISCREPANCY AMONG EXPERIMENTAL DATA. INCONSISTENCY BETWEEN CROSS SECTIONS OF HF AND SUM OF ISOTOPIC DATA.  
 O: CONTROL ROD MATERIAL IN LWR.  
 A: 5 TO 10% REQUIRED.

50 072 HAFNIUM 176      87/07/25      NEUTRON      CAPTURE CROSS SECTION  
 00 82/11/20      1.00 KEV      1.00 MEV      82/12/25      87/07/25      2      NIG      S.IIJIMA  
 820015      832020      FISSIION REACTOR  
 Q: NO EXPERIMENTAL DATA.  
 O: CONTROL ROD MATERIAL.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

PAGE 8

51 072 HAFNIUM 177 NEUTRON CAPTURE CROSS SECTION  
 00 82/11/20 87/07/25 82/12/25 87/07/25  
 1.00 KEV 10.0% 2 NIG S.IIJIMA  
 820016 832019 FISSION REACTOR  
 Q: NO EXPERIMENTAL DATA.  
 O: CONTROL ROD MATERIAL.

52 077 IRIIDIUM 191 NEUTRON CAPTURE CROSS SECTION  
 00 82/11/20 87/07/25 82/12/25 87/07/25  
 0.25-1 EV 10.00 MEV 10.0% 3 JAE K.TSUCHIHASHI  
 820017 832021 OTHERS  
 Q: EVALUATED DATA REQUIRED.  
 O: RADIOISOTOPE PRODUCTION. FOR NON-DESTRUCTIVE ASSAY OF ENGINES.

53 082 LEAD NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 0.25-1 EV 15.00 MEV 15.0% 2 JAE Y.SEKI  
 760166 762134. FISSION REACTOR  
 Q: GAMMA-RAY SPECTRA ALSO REQUIRED.  
 A: AN UPPER LIMIT OF THE CROSS SECTION OR ACCURACY 20 PER CENT USEFUL. NEUTRON  
 ENERGY RESOLUTION 300 KEV ABOVE 100 KEV AND 10 PER CENT OTHERWISE. GAMMA  
 ENERGY RESOLUTION 1 MEV.  
 O: SHIELDING DESIGN AND GAMMA-RAY HEATING CALCULATION.

54 082 LEAD 206 NEUTRON N.ALPHA  
 00 78/08/08 87/07/25 78/12/12 87/07/25  
 UP TD 15.00 MEV 20.0% 2 JAE H.IIDA  
 780167 792091 FISSION REACTOR  
 Q: EXPERIMENTAL DATA REQUIRED.  
 O: FOR FUSION REACTOR SHIELDING CALCULATION. FOR CALCULATION OF RESIDUAL  
 ACTIVITY. NO EXPERIMENTAL DATA EXCEPT FOR A FEW AT 14 MEV.

55 092 URANIUM 233 NEUTRON CAPTURE CROSS SECTION  
 01 78/08/08 87/07/25 78/12/12 87/07/25  
 1.00 MEV 20.00 MEV 10.0% 2 SAE N.ASANO  
 780169 792083 FISSION REACTOR  
 Q: EXPERIMENTAL DATA REQUIRED.

56 092 URANIUM 233 NEUTRON N,2N REACTION CROSS SECTION  
 01 78/08/08 87/07/25 78/12/12 87/07/25  
 UP TD 20.00 MEV 10.0% 2 SAE N.ASANO  
 780170 792092 FISSION REACTOR  
 Q: EXPERIMENTAL DATA WANTED.

57 092 URANIUM 235 NEUTRON CAPTURE CROSS SECTION  
 01 68/04/01 87/07/25 68/10/10 87/07/25  
 1.00 MEV 10.00 MEV 3 SAE H.MATSUNOBU  
 780173 682055 FISSION REACTOR  
 Q: ALPHA ALSO WANTED.  
 A: REQUIRED ACCURACY - 5 TO 10 PER CENT.  
 O: FOR FAST REACTORS. NUCLEAR DATA EVALUATION. NO EXPERIMENTAL DATA ABOVE 2.6  
 MEV.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

58 092 URANIUM 235 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 0.25-1 EV 10.00 MEV 5.0% 2 NIG T.MURATA  
 780174 762046 SAFEGUARDS

Q: THE REQUESTED QUANTITIES ARE THE GROUP HALF LIVES AND GROUP YIELDS (NORMALIZED TO 1 FISSION) WHICH CAN BE USED TO FIT THE DECAY CURVE OF DELAYED NEUTRONS FOR THE TIME RANGE 0.1-300 SEC WITHIN AN ACCURACY OF 5 PER CENT.  
 O: INCIDENT ENERGY STEP LESS THAN 2 MEV. ACTIVE ASSAY OF MIXED FRESH AND IRRADIATED FUEL.

59 092 URANIUM 238 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 0.25-1 EV 10.00 MEV 5.0% 2 NIG T.MURATA  
 780179 762047 SAFEGUARDS

Q: THE REQUESTED QUANTITIES ARE THE GROUP HALF LIVES AND GROUP YIELDS (NORMALIZED TO 1 FISSION) WHICH CAN BE USED TO FIT THE DECAY CURVE OF DELAYED NEUTRONS FOR THE TIME RANGE 0.1 - 300 SEC WITHIN AN ACCURACY OF 5.0 PER CENT.  
 O: INCIDENT ENERGY STEP LESS THAN 2 MEV. ACTIVE ASSAY OF MIXED FRESH AND IRRADIATED FUEL.

60 094 PLUTONIUM 238 GAMMA RAY YIELD  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 1.0% 1 JAE T.SUZUKI  
 780189 762009 SAFEGUARDS

Q: YIELD PER DISINTEGRATION OF 43.45,99.7,152.7 KEV GAMMA RAYS REQUIRED. (FOLLOWING ALPHA DECAY EVENT).  
 O: THOUGH PRESENT STATUS OF ACCURACY SEEMED TO MEET THE REQUIREMENT CONFIRMATION IS REQUIRED. ASSAY OF PU ISOTOPES BY GAMMA-RAY SPECTROSCOPY.

61 094 PLUTONIUM 239 GAMMA RAY YIELD  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 1.0% 1 JAE T.SUZUKI  
 780195 762010 SAFEGUARDS

Q: YIELD PER DISINTEGRATION OF 45.2,104.2 AND 642.3 KEV GAMMA RAYS REQUIRED. (FOLLOWING ALPHA DECAY EVENT).  
 O: THOUGH PRESENT STATUS OF ACCURACY SEEMED TO MEET THE REQUIREMENT CONFIRMATION IS REQUIRED. ASSAY OF PU ISOTOPES BY GAMMA-RAY SPECTROSCOPY.

62 094 PLUTONIUM 239 CAPTURE TO FISSION RATIO(ALPHA)  
 01 80/11/10 87/07/25 80/12/25 87/07/25  
 1.00 MEV 20.00 MEV 10.0% 2 MAP M.SASAKI  
 800015 812032 FISSION REACTOR  
 Q: INSUFFICIENT EXPERIMENTAL DATA.

63 094 PLUTONIUM 240 GAMMA RAY YIELD  
 00 76/04/01 87/07/25 76/10/10 87/07/25  
 1.0% 1 JAE T.SUZUKI  
 780206 762011 SAFEGUARDS

Q: YIELD PER DISINTEGRATION OF 45.2,104.2 AND 642.3 KEV GAMMA-RAYS REQUIRED. (FOLLOWING ALPHA DECAY EVENT).  
 O: THOUGH PRESENT STATUS OF ACCURACY SEEMED TO MEET THE REQUIREMENT CONFIRMATION IS REQUIRED. ASSAY OF PU ISOTOPES BY GAMMA-RAY SPECTROSCOPY.

\*\* REQUESTS WITHDRAWN FROM WRENDA ON JULY.25,'87 \*\*

PAGE 10

64 094 PLUTONIUM 240 NEUTRON FISSIION CROSS SECTION

02 76/04/01 87/07/25 76/10/10 87/07/25  
 1.00 KEV 1.00 MEV 5.0% 1 MAP M.SASAKI

780209 762213 FISSIION REACTOR  
 O: FOR FAST REACTOR CALCULATIONS.

65 094 PLUTONIUM 241 NEUTRON GAMMA RAY YIELD

00 76/04/01 87/07/25 76/10/10 87/07/25  
 780213 762012 SAFEGUARDS 5.0% 1 JAE T.SUZUKI

Q: YIELD PER DISINTEGRATION OF 56.4,77,103.5,148.6 AND 160 KEV GAMMA-RAYS  
 REQUIRED. (FOLLOWING ALPHA DECAY EVENT).  
 A: 1 PER CENT ACCURACY FOR 103.5 AND 148.6 KEV GAMMA RAYS, 5 PER CENT ACCURACY  
 FOR 56.4,77 AND 160 KEV GAMMA RAYS.  
 O: THOUGH PRESENT STATUS OF ACCURACY SEEMED TO MEET THE REQUIREMENT  
 CONFIRMATION IS REQUIRED. ASSAY OF PU ISOTOPES BY GAMMA-RAY SPECTROSCOPY.

66 095 AMERICIUM 243 NEUTRON CAPTURE CROSS SECTION

01 80/11/10 87/07/25 80/12/25 87/07/25  
 1.00 MEV 15.00 MEV 20.0% 2 PNC R.YUMOTO SAE H.MATSUNOBU  
 JAE R.SHINDO FBE T.HOUYAMA  
 NFI M.YADA

Q: CAPTURE CROSS SECTIONS TO GROUND AND ISOMER STATES OF AM-244 REQUIRED. THE  
 EXPERIMENTAL DATA ARE VERY SCARCE IN KEV AND MEV REGIONS.  
 O: FOR BURNUP CALCULATIONS OF THERMAL AND FAST REACTORS, ESTIMATION FOR  
 BUILD-UP OF TRANSURANICUM NUCLIDES IN SPENT FUEL, AND NEUTRON SHIELDING  
 DESIGN FOR TRANSPORT CASK OF SPENT FUEL.

4. New Requests Submitted to WREND A

In this section, 21 new requests are listed. They were adopted from about 25 requests after the WREND A Group in JNDC examined their suitability for the requests. They are 9 requests for fission reactors, 12 for fusion research.

\*\* REQUESTS SUBMITTED TO WRENDA ON JULY.25,'87 \*\*

PAGE 1

1 003 LITHIUM 006 NEUTRON 87/08/01 ELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870011 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS, AND FOR  
 INTERCOMPARISON OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

2 003 LITHIUM 006 NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870012 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

3 003 LITHIUM 006 NEUTRON 87/08/01 DOUBLE DIFFERENTIAL INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870015 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 O: NO DATA ABOVE 15 MEV.

4 003 LITHIUM 007 NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 6.00 MEV 15.00 MEV 10.0% 1 JAE K.SHIBATA JAE S.CHIBA  
 870010 FUSION REACTOR  
 O: TO ESTIMATE NEUTRON SPECTRA IN BLANKET PRECISELY.  
 Q: CROSS SECTION FOR THE SECOND LEVEL IS WANTED.  
 O: LARGE DISCREPANCY BETWEEN TNL AND OTHER DATA.

5 003 LITHIUM 007 NEUTRON 87/08/01 DOUBLE DIFFERENTIAL INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870013 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 O: NO DATA ABOVE 15 MEV.

6 003 LITHIUM 007 NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 00 87/07/25 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870014 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

\*\* REQUESTS SUBMITTED TO WRENDA ON JULY.25,'87 \*\*

PAGE 2

7 003 LITHIUM 007 NEUTRON ELASTIC CROSS SECTION  
 00 87/07/25 87/08/01  
 10.00 MEV 50.00 MEV 10.0% 3 JAE S.CHIBA  
 870015 FUSION REACTOR  
 O: FOR COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS, AND FOR INTERCOMPARISON  
 OF EXPERIMENTS.  
 Q: ANGULAR DISTRIBUTION IS ALSO WANTED.  
 O: NO DATA ABOVE 15 MEV.

8 028 NICKEL NEUTRON N,2N REACTION CROSS SECTION  
 00 87/07/25 87/08/01  
 8.00 MEV 20.00 MEV 15.0% 2 NIG S.IIJIMA  
 870017 FUSION REACTOR  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.  
 O: DISCREPANCY BETWEEN STUDY AND CALCULATED DATA.

9 028 NICKEL NEUTRON N,XN REACTION CROSS SECTION  
 00 87/07/25 87/08/01  
 8.00 MEV 20.00 MEV 15.0% 2 NIG S.IIJIMA  
 870018 FUSION REACTOR  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.  
 O: NO DATA AVAILABLE, EXCEPT AT 15 MEV.

10 028 NICKEL NEUTRON N,GAMMA REACTION CROSS SECTION  
 00 87/07/25 87/08/01  
 600.00 KEV 10.00 MEV 10.0% 1 NIG S.IIJIMA  
 870019 FUSION REACTOR  
 O: FOR FISSION AND FUSION REACTOR CALCULATIONS.  
 A: EXISTING DATA FOR 600 KEV - 1 MEV DISCREPANT ABOUT 20 %.  
 O: NO DATA ARE AVAILABLE ABOVE 1 MEV. EVALUATED DATA ARE ALSO DISCREPANT BY A  
 FACTOR OF 2 ABOVE 1 MEV.

11 028 NICKEL 060 NEUTRON N,2N REACTION CROSS SECTION  
 00 87/07/25 87/08/01  
 12.00 MEV 20.00 MEV 2 NIG S.IIJIMA  
 870020 FUSION REACTOR  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.  
 O: NO EXPERIMENTAL DATA.

12 028 NICKEL 060 NEUTRON N,XN REACTION CROSS SECTION  
 00 87/07/25 87/08/01  
 12.00 MEV 20.00 MEV 2 NIG S.IIJIMA  
 870021 FUSION REACTOR  
 O: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION.

13 050 TIN 116 NEUTRON ELASTIC CROSS SECTION  
 00 87/07/25 87/08/01  
 5.00 MEV 30.00 MEV 10.0% 3 JAE S.CHIBA  
 870002 FUSION REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-2)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

\*\* REQUESTS SUBMITTED TO WRENDA ON JULY.25,'87 \*\*

PAGE 3

14 050 TIN 116  
 00 87/07/25 5.00 MEV  
 870003

NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

15 050 TIN 118  
 00 87/07/25 5.00 MEV  
 870004

NEUTRON 87/08/01 ELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

16 050 TIN 118  
 00 87/07/25 5.00 MEV  
 870005

NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

17 050 TIN 120  
 00 87/07/25 5.00 MEV  
 870006

NEUTRON 87/08/01 ELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

18 050 TIN 120  
 00 87/07/25 5.00 MEV  
 870007

NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

19 050 TIN 124  
 00 87/07/25 5.00 MEV  
 870008

NEUTRON 87/08/01 ELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

20 050 TIN 124  
 00 87/07/25 5.00 MEV  
 870009

NEUTRON 87/08/01 INELASTIC CROSS SECTION  
 30.00 MEV 10.0% 3 JAE S.CHIBA  
 FISSON REACTOR  
 O: TO DETERMINE SYSTEMATICS OF (N-Z)/A TERM IN OPTICAL POTENTIAL AND  
 DEFORMATION PARAMETERS.  
 Q: ANGULAR DISTRIBUTION ALSO IS REQUIRED.

\*\* REQUESTS SUBMITTED TO WRENDA ON JULY.25,'87 \*\*

PAGE 4

21 062 SAMARIUM 144            NEUTRON            RESONANCE PARAMETERS  
00 87/07/25            87/08/01  
1.00-3            500.00 KEV            2.0%            3            JAE            T.NAKAGAWA  
870001            FISSION REACTOR  
0: WANTED FOR SYSTEMATIC STUDY OF AVERAGE RESONANCE PARAMETERS, SOJDO FOR SM  
ISOTOPES.  
0: NO DATA EXIST.

#### Acknowledgments

The authors would like to thank Tsutomu Narita for help in Programming a storage and retrieval system for the nuclear data requests, and in making various output lists. They also thank Sadako Ishibashi for the careful type-writing of the manuscript.

#### Reference

- 1) Pikaikin, V.: INDC(SEC)-88/URSF, "WRENDA 83/84 World Request List for Nuclear Data", (1983).
- 2) Igarasi, S. et al.: JAERI-M 83-145, "Japanese List of Requests for Nuclear Data", (1983).

Appendix Codes of Laboratories.

CRC	CENTURY RESEARCH CENTER CORPORATION
ELH	ELECTROTECHNICAL LABORATORY HEADQUARTERS
FBE	FAST BREEDER REACTOR ENGINEERING CO.,LTD
HIT	HITACHI LTD.
JAE	JAPAN ATOMIC ENERGY RESEARCH INSTITUTE
JRE	JAPAN RADIATION ENGINEERING COMPANY
KKU	KINKI UNIVERSITY
KTO	KYOTO UNIVERSITY
KYU	KYUSHU UNIVERSITY
MAP	MITSUBISHI ATOMIC POWER INDUSTRIES,INC.
NAG	NAGOYA UNIVERSITY
NFI	NUCLEAR FUEL INDUSTRIES
NIG	NIPPON ATOMIC INDUSTRY GROUP CO.,LTD
NIR	NATIONL INSTUTE OF RADIOGICAL SCIENCE
OSA	OSAKA UNIVERSITY
PNC	POWER REACTOR AND NUCLEAR FUEL DEVELOPME
SAE	SUMITOMO ATOMIC ENERGY INDUSTRIES,LTD.
TIT	TOKYO INSTITUTE OF TECHNOLOGY
TOH	TOHOKU UNIVESITY
TOK	TOKYO UNIVERSITY
TOS	TOSHIBA RESECH & DEVELOPMENT CENTER