International Atomic Energy Agency

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INDC INTERNATIONAL NUCLEAR DATA COMMITTEE

WRENDA 87/88

World Request List for Nuclear Data

Wang Dahai, IAEA, Editor

Published on behalf of

National Nuclear Data Centre, Brookhaven, USA (M.R. Bhat, coordinator)
NEA Data Bank, Saclay, France (N. Tubbs, coordinator)
Nuclear Data Section, Vienna, Austria (Wang Dahai, coordinator)
Nuclear Data Center, Obninsk, USSR (O.D. Kazachkovskij, coordinator)

August 1988

IAEA NUCLEAR DATA SECTION, WAGRAMERSTRASSE 5, A-1400 VIENNA

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ABSTRACT

WRENDA 87/88 is the ninth edition of the World Request List for Nuclear Data. This list is produced from a computer file of nuclear data requests, maintained by the Nuclear Data Section of the International Atomic Energy Agency (IAEA). The requests are provided by official bodies, such as national nuclear data committees, through four regional data centers serving all Member States of the IAEA. Each request included indicates

- that the estimated accuracy of the nuclear data available does not satisfy the requirements encountered,
- and that, consequently, new data measurements and/or data evaluations with improved accuracy are highly desirable.

WRENDA is intended to serve as a guide to experimentalists, evaluators and administrators when planning nuclear data measurement and evaluation programs.

The requests in this edition come from 18 different countries and one international organization.

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I. GENERAL INTRODUCTION TO WRENDA

I.A. Summary

WRENDA 87/88 is the ninth edition of the World Request List for Nuclear Data. The request list is intended to serve as guide to experimentalists, evaluators and administrators, when planning nuclear data programs. WRENDA is produced from a computer file of nuclear data requests, maintained by the Nuclear Data Section of the International Atomic Energy Agency (IAEA). Input to this request file is provided by official bodies, such as national nuclear data committees, through four regional data centers serving all Member States of the IAEA. The requests in this edition come from 18 different countries and one international organization.

In this edition, there are some changes to the request file since the production of the previous edition. To summarize the changes, 60 requests listed in the previous edition were modified, 661 withdrawn, 72 satisfied and 266 new requests were added. The total number of requests is 937 of which 326 are Priority 1, 475 are Priority 2 and 136 are Priority 3 requests. There are no Priority 4 requests.

The number of current requests related to fission reactor technology is 605, while the number of requests related to nuclear fusion is 253 and that related to nuclear materials safeguards is 56 and other applications is 23.

Part II of this report provides a detailed description of the WRENDA request list structure. Part III provides explanations of the various priority criteria in use and other supplementary information, to assist the user in interpreting the requests. Part IV contains the actual list. Part V contains an index of requests which appeared in the previous edition, but are now withdrawn or satisfied.

I.B. Background information

The practice of using a "request list" to communicate the data requirements of a developing technology to the producers of data has a long history in both the United States and the United Kingdom. In 1968, the Neutron Data Compilation Centre at Saclay initiated publication of a request list for neutron data measurements from a computerized file, known as RENDA, on behalf of the European-American Nuclear Data Committee (EANDC). That list contained requests from the countries represented on the EANDC. In 1971, the International Nuclear Data Committee (INDC) recommended that the IAEA assume responsibility for publication of an expanded international data request list, which would include neutron data requests from a larger number of countries and international organizations.

In response to this INDC recommendation, the Nuclear Data Section (NDS) of the IAEA developed a new, computerized, data-request file, WRENDA. The input to this data request file is provided by official bodies, such as national nuclear data committees, through the following regional nuclear data centers:

NNDC - National Nuclear Data Center, Brookhaven National Laboratory, Upton, L.I., N.Y., USA

NEA-DB - NEA Data Bank, Nuclear Energy Agency, Saclay, France

NDS - Nuclear Data Section, International Atomic Energy Agency, Vienna, Austria

CJD - Centr po Jadernym Dannym, Obninsk, USSR

Concurrently with the transfer of responsibility for the neutron data request file from the NEA to the IAEA, the Nuclear Data Section had developed international nuclear data request lists, for technologies related to nuclear materials safeguards and to controlled fusion. It was expedient to develop the new WRENDA system to accommodate data requests for all applications.

An immediate consequence of the expanded scope was that the new WRENDA system was designed to accommodate requests for data related to other nuclear processes as well as to neutron-induced reactions. Also concurrently with the development of the WRENDA system it was agreed that data requests related to fusion, safeguards and other applications should also be handled through the regional data centers.

The WRENDA system was designed as a cooperative effort by representatives of the regional centers, coordinated at the NDS by Ms. P.M. Attree. The associated computer programmes for file maintenance, error detection and book production were written in the PL/I language by P.M. Smith. The system and computer programme are described in detail in the internal documents maintained by the NDS. These documents are available upon request.

This report, listing the current contents of the WRENDA request file, is published on behalf of the four regional centers by the IAEA. The excellent co-operation of the other three centers as well as the INDC Liaison Officers in the production of the updated WRENDA file is gratefully acknowledged.

I.C. User Participation and WRENDA Services

The request list is intended to serve as a guide to experimentalists, evaluators and administrators when planning nuclear data measurement and evaluation programmes. When measurers and evaluators begin work which will provide data requested in this document, they are asked to inform the requestor(s).

Information about such work should also be provided to the Nuclear Data Section or to one of the regional data centers listed in Section I.B. The names of the requestors are printed with each request, and their addresses are given in Appendix D.

Future editions of WRENDA will continue to be issued every four years in the summer. Before each publication the national data committees will be asked to review their requests so that the lists can be kept current.

Although major updating of the file will usually occur in the spring prior to book publication, the master-files can be updated at other times as well. Between book-publications computer listings of the current files can be requested from the IAEA Nuclear Data Section. Special sorts and selective retrievals from the files can also be obtained upon request. For example, one can obtain, in essentially the same format as the complete request list, a listing of all requests originating in a given country or a given year, or relating to a given application, or having a given priority assignment - as well as arbitrary combinations.

Comments from the users of WRENDA are welcomed and encouraged so that the document and the special service available from the system can better meet their needs.

II. DESCRIPTION OF REQUEST LIST STRUCTURE

We now present a detailed description of the organisation of the WRENDA request list, together with instructions on how to find requests within the list.

II.A. Request Block Format

The request list appearing in Part IV of this report is made up of a series of "request blocks". A request block contains all current data requests of a given type, that is, all requests specifying the same target, projectile (incident particle) and quantity (type of reaction or process).

A WRENDA "data request" consists of a concise statement of what data are needed, the desired accuracy, the priority assignment, the intended application, and the name and affiliation of the requestor - all coded into a particular format for computerized storage, retrieval and report production. In addition, most requests also include free-text comments in which the requestor further defines his requirements.

A request block may also contain "status comments", which are short statements describing the quality of existing data or referencing work in progress. A typical example of a request block, containing 3 data requests and 1 status comment, is listed on the following page.

Block-heading

Referring to this example, the first line of a request block gives, from left to right, the target nuclide, the projectile and the quantity. This line of text is enclosed by a double line to make the beginning of each block stand out visually. The meaning of a quantity generally conforms to CINDA *) usage with the addition of some quantities to describe nuclear structure data and complex reactions. A list of the allowed quantities appears in Section II.B. The target nuclide description consists of the atomic number (Z), the element name, and the mass number (A) of the isotope. In case the target is the natural element mixture of several isotopes, the mass number is left blank. In the same way, if the target is a mixture of different elements, the atomic number is omitted.

Reference number

Following the block-heading, the individual data requests are listed. A serial number, the REFERENCE number, appears in the left-most field of the first line of each request. The reference number identifies a request in relation to this specific edition of WRENDA only. (Compare this with IDENTIFICATION number, discussed below).

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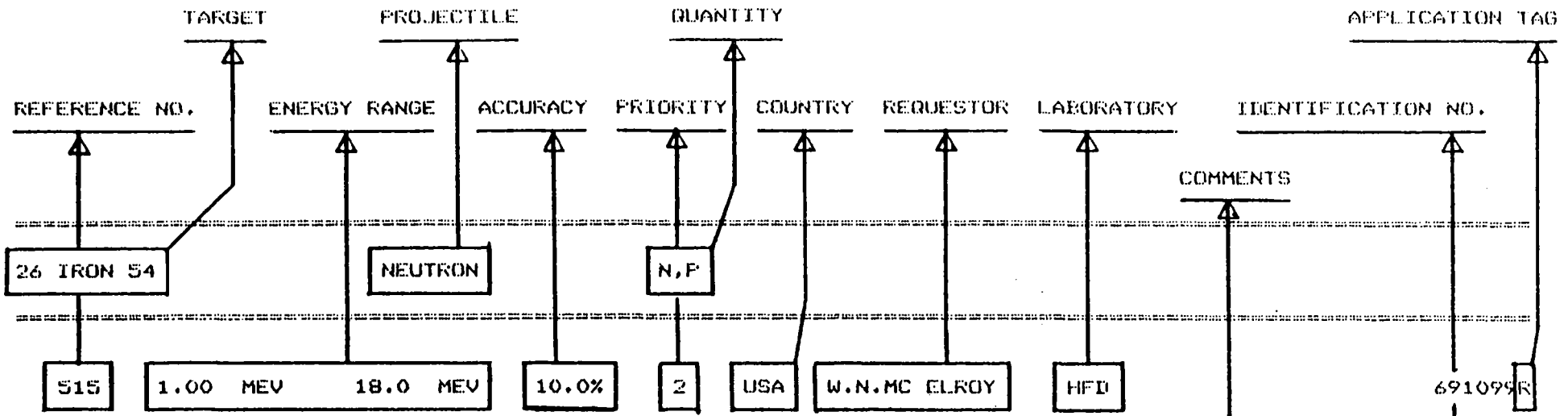
* CINDA - The Index to the Literature and Computer Files on Microscopic Neutron Data
published annually by the International Atomic Energy Agency.



Q: REQUIRED IS ACTIVATION.
ENERGY STEPS OF 500 KEV.
A: ENERGY RESOLUTION 250 KEV.
O: FOR USE AS A FLUENCE MONITOR

516	1.00	MEV	40.0	MEV	20.0%	1	USA	C.R.HEAD	DOE		781018F

O: DOSIMETRY FOR FMIT FACILITY.
M: NEW REQUEST.

517	25.3	MV	3.00	MEV	10.0%	1	FR	L.COSTA	CAD		792008R

O: OUT-OF-CORE CYCLE.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC. SEE APPENDIX A.

Energy

The next two entries on the first line of each request give the range of energy of the incident particle over which data are desired. The energy unit is given after each number. Because no lower case is used, we have adopted the notation MV for milli-electron volts, reserving MEV for million electron volts.

If an energy appears in the first field with the second field blank, then the requested information is required at only a single energy. In the case of a resonance integral, the single entry gives the lower energy limit for the integral. Requests for data at "thermal" energies have been entered at 25.3 MV. An entry in the second field preceded by the words "UP TO" in the first field indicates that data are needed up to the specified energy. This format appears most frequently for threshold reactions. All spectrum averages and non-standard energy specifications must be explained in the requestor's comments (see below).

Accuracy

The fourth field on the first line gives the accuracy required of the requested data stated in percent. Any accuracy requirements which cannot be stated as a single number are given in the requestor's comments. Unless specified otherwise, requested accuracies are one standard deviation. Any other meaning is explained in the comments.

Priority

The fifth field on the first line gives the priority of the requested information. Each of the three major application areas covered in this edition (fission, fusion and safeguards) employs a different set of priority criteria, which are presented in separate sections of Part III.

Requestor

The next three fields of the first line are used to identify the requestor. The first piece of information is a three letter code for the country originating the request. The codes and their explanations are given in Appendix B. The country code is followed by the name of the requestor. Mailing addresses for the requestors are given in Appendix D. The last piece of information is a three character code for the requestor's organisation. These codes conform to the CINDA codes and are listed along with the organisation name in Appendix C. In cases where there is more than one requestor for a request, then their names and organisation codes are given on successive lines.

Identification number

The number in the ninth field of the first line of each request is the IDENTIFICATION number. The number assigned is unique and remains associated with a request from one edition to the next.

When a request is withdrawn, this number is not assigned to another request. The first two digits of the identification number are the last two digits of the year in which the request was originated. The third digit represents the responsible nuclear data center (1 = NNDC, 2 = NEA-DB, 3 = NDS, 4 = CJD) and the final three digits are a sequence number. The nuclear data centers are responsible for assigning the identification number.

Application Tag

Each request stored in the WRENDA master file contains a two-character application code which identifies the application associated with the request. These application codes are listed along with explanations in Table 1. In this report, the first character of the application code is listed just to the right of the identification number as short APPLICATION TAG, allowing the user to quickly identify the general area of application. The most frequently occurring tags are R (fission reactors), F (fusion) and N (nuclear materials safeguards).

Requestors comments

Comments by requestors follow below the requestor's names on the right hand side of the page. The comments are grouped into four types denoted by the characters Q, A, O and M. The group of comments designated by Q refers to further experimental specifications such as details of the quantity to be measured and the energy range of incident or secondary particles. If average value of cross section in a typical spectrum is required, it should be clearly mentioned in the comment section. Those denoted by an A refer to further details concerning accuracy or energy resolution required. Energy resolution requirements or covariance assumptions, if any, should also be explicitly stated. The category O includes all other comments such as use of or justification for requested data. The last group of comments, designated by an M, contains statements about modifications which have been made since the previous version of WRENDA, such as "new requests" etc.

TABLE I. Explanation of Application Codes

F	FUSION
FA	FUSION, REACTOR PHYSICS
FB	FUSION, SHIELDING
FC	FUSION, RADIATION DAMAGE
FD	FUSION, DOSIMETRY
FF	FISSION,FUSION CALCULATIONS
G	GENERAL
M	MEDICINE
MI	RADIOISOTPE PRODUCTION
MT	CANCER RADIOTHERAPY
N	SAFEGUARDS
NA	SAFEGUARDS, ACTIVE ASSAY
NB	SAFEGUARDS, PASSIVE ASSAY
NC	BURN-UP DETERMINATION
R	FISSION REACTORS

RA	FISSION REACTORS, CORE PHYSICS
RB	FISSION REACTORS, SHIELDING
RC	FISSION REACTORS, DOSIMETRY
RD	FISSION REACTORS, RADIATION DAMAGE
RE	FISSION REACTORS, STANDARDS
RF	FISSION REACTORS, EVALUATIONS
RU	FISSION REACTORS' FUEL CYCLE
S	SPACE

Status comments

Some request blocks include a section devoted to status comments. Ideally, status comments could provide concise and up-to-date information on the accuracy of available data, as well as a summary of work planned or in progress to improve data. Unfortunately, no organisation has been in a position to accept continuing responsibility to compile this detailed information on a continuing basis for all requested data.

The only status comments listed in the present edition are short comments, provided by the NDS, indicating which quantities are under continuous review by members of technical sub-committees of INDC and NEANDC. More information on these reviews can be found in Appendix A.

Status comments are stored in a separate file from the data requests and can be updated whenever new information is available. WRENDA requestors should note that the standard accuracy requirements should be stated with 1σ - one standard deviation -, and it must be explicitly written in the comments, if otherwise. At the time of WRENDA publication, they are listed together with the corresponding data requests. The standard form of a status comment is an organisation code (see Appendix C), followed by a name and the text of the comment.

II.B. How to Find a Request in WRENDA

As is discussed in the previous section, all data requests for a single target nucleus, projectile, and quantity are blocked together. These blocks are sorted first by target, then by projectile and then by quantity. Within a given block, requests are sorted by increasing identification number, hence, chronologically.

The target nuclei are listed in order of increasing atomic number (Z). (The elements are listed alphabetically, along with the corresponding atomic number, on the back cover of this report). For fixed Z, request blocks are ordered by increasing mass number (A). An element with two or more naturally-occurring isotopes is listed before the individual isotopes of the element. On the other hand, an element consisting of a single stable isotope is listed in the appropriate position among the individual isotopes of the element. Following the request blocks of highest Z are requests in which the target is lumped fission products and, finally, requests in which the target is an alloy or chemical compound.

Table III. Quantity Sorting Order (Continued)

X,D
ENERGY DISTRIBUTION OF DEUTERONS
X,ND
X,T
ANGULAR DISTRIBUTION OF TRITONS
ENERGY DISTRIBUTION OF TRITONS
X,NT
ANG.DIST.OF NEUT.FROM N AND T PRODUCING CORSS SEC.
TOTAL TRITON PRODUCTION
X,HELIUM-3
ENERGY DISTRIBUTION OF HE-3 PARTICLES
TOTAL HE-3 PRODUCTION CROSS SECTION
X,ALPHA
ANGULAR DISTRIBUTION OF ALPHA PARTICLES
X,NALPHA
X,N3ALPHA
X,N4ALPHA
THREE ALPHA PARTICLES PRODUCTION CROSS SECTION
TOTAL ALPHA PRODUCTION CROSS SECTION
ENERGY DIFFERENTIAL ALPHA-PRODUCTION CROSS SECTION
ENERGY-ANGLE DIFF. ALPHA-PRODUCTION CROSS SECTION
TOTAL HYDROGEN-PRODUCTION CROSS SECTION
TOTAL HELIUM-PRODUCTION CROSS SECTION
SPECIAL QUANTITY (DESCRIPTION BELOW)
FISSION CROSS SECTION
SECOND CHANCE FISSION CROSS SECTION
CAPTURE TO FISSION RATIO (ALPHA)
NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)
NEUTRONS EMITTED PER NON-ELASTIC PROCESS
NEUTRONS EMITTED PER FISSION (NU BAR)
DELAYED NEUTRONS EMITTED PER FISSION
PROMPT NEUTRONS EMITTED PER FISSION
INFORMATION ON NEUTRONS FROM A FISSION FRAGMENT
ENERGY SPECTRUM OF FISSION NEUTRONS
ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS
SPECTRUM OF PROMPT GAMMA RAYS EMITTED IN FISSION
SPECTRUM OF GAMMA RAYS EMITTED IN FISSION
DELAYED GAMMA SPECTRUM FROM FISSION PRODUCTS
FISSION PRODUCT MASS YIELD SPECTRUM
INFORMATION ON KINETICS OF FISSION FRAGMENTS
RESONANCE PARAMETERS
ABSORPTION RESONANCE INTEGRAL
CAPTURE RESONANCE INTEGRAL
FISSION RESONANCE INTEGRAL

III. PRIORITY CRITERIA AND OTHER INFORMATION

III.A. Priority Criteria for Fission Reactor (R) Requests

The fission reactor data requests (i.e. those tagged by an "R" following the identification number) are assigned a numerical priority ranging from 1 to 3 (1 being the highest). The priorities are defined as follows:

Priority 1

Nuclear data which satisfy the criteria of Priority 2 and which have been selected for maximum practicable attention, taking into account the urgency of nuclear energy programme requirements.

For example, the Nuclear Energy Agency Committee for Reactor Physics 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:
>
> a. These data are still necessary to predict the different reactor properties after all information from integral experiments and operating reactors has been used; or
>
> b. information on an important reactor parameter is in principle attainable through mathematical calculation from nuclear data only; or
>
> c. these data are needed for materials required in reactor physics measurements."

Priority 2

Nuclear data which will be required during the next few years in the applied nuclear energy programme (e.g. the design of a reactor or fuel processing plant; data needed for optimum use of reactor fuel and construction materials such as neutron moderators, absorbers and radiation shields; space application and biomedical studies; data required for better understanding of some significant aspect of reactor behaviour).

Priority 3

Nuclear data of more general interest and data required to fill out the body of information for nuclear technology.

III.B. Supplementary Information from Contributors of Fission Reactor (R) Requests

L.N. Usachev's requests

The first set of requests concerns differential cross sections. These requests together make a unique system of requirements for the accuracy of evaluated nuclear data which would assure calculation of K_{eff} and breeding ratio (BR) of a fast plutonium breeder with accuracies of 1 % and 2 % respectively.

A second set of requests concerns spectrum-averaged (n,γ), (n,f) and (n,2n) cross sections for the actinides. Here the accuracy requirements have been determined by the following target accuracies of build-up calculations for fast reactors:

^{236}Pu (30 %), ^{238}Pu (20 %), ^{240}Pu (5 %), ^{241}Pu (4 %)
^{242}Pu (10 %), ^{241}Am (5 %), ^{242m}Am (20 %), ^{243}Am (20 %),
and ^{244}Cm (30 %).

Priorities

Accuracies requirements designated 2nd priority would assure the necessary calculational accuracy on the basis only of microscopic data without the use of data from integral experiments.

In connection with using the new integral experiment set for adjustment, those 1st priority requests appearing in WRENDA 76/77 had been withdrawn in WRENDA 81/82.

Meaning of uncertainty

As in all other WRENDA requests uncertainty (or accuracy) is characterized by one standard deviation.

Uncertainty of a point is supposed to be represented as a sum of components with different correlative properties. Accuracy specifications are for those components of the uncertainty which determine the accuracy of the integral under the curve in the partial energy interval mentioned in each request.

In requests for measurements the use of standards - $\bar{\nu}$ of ^{252}Cf, the ^{10}B (n,α) cross section (below 100 keV) and the ^{235}U (n,f) cross section (above 100 keV) - is assumed. In all requests except those for standards, the accuracy specifications refer to measurements relative to standards, and the accuracies required for the standards are specified separately.

The algorithm used to derive these requirements is described in References 1 through 5.

1. L.N. Usachev and Yu.G. Bobkov, "Planning of an optimum set of microscopic experiments and evaluations to obtain a given accuracy in reactor parameter calculations", Evaluation of Nuclear Data, (Proc. Panel, Vienna, 1971), Report IAEA-153, IAEA Vienna, 1973 (in Russian). English translation: INDC(CCP)-19 (1972).

2. L.N. Usachev, V.N. Manokhin and Yu.G. Bobkov, "The accuracy of nuclear data and its influence on fast reactor development", Nuclear Data in Science and Technology, (Proc. Symp., Paris, 1973), IAEA, Vienna, 1973, Vol. 1, p. 129 (in Russian).

3. Yu.G. Bobkov, L.T. Pyatnitskaya and L.N. Usachev, "Planning of experiments and evaluations on neutron data for reactors", The Metrology of Neutron Radiation in Reactors and Accelerators, (Proc. Conf., Moscow, 1974), Report FEI-527 (1974) (in Russian).

4. L.N. Usachev, "Unique Definition of Nuclear Data Accuracy", pp. 102-107 in the Proceedings of the 7th INDC Meeting, Lucas Heights, October 1974, INDC-18/L, International Atomic Energy Agency (1975) (in English). Report FEI-537 (1974) (in Russian).

5. L.N. Usachev, Yu.G. Bobkov, V.E. Kolesov, A.S. Krivtsov, "Determination of transactinide nuclear data required accuracy for burn-up calculation in fast reactors", contributed paper to Conf. on Neutron Physics and Nuclear Data for Reactors and Other Applied Purposes, Harwell, U.K., September 1978.

M.N. Nikolaev's requests

Basic demands for accuracy of K_{eff} and BR prediction are 1 and 1.6 percent, respectively.

The requests are formulated for the totality of microscopic data without taking into account the results of integral experiments. Therefore, these requests are, as a rule, of the second priority.

The comparatively less demanding accuracies specified in this set of requests are stipulated by an assumption about the sense of uncertainty which differs from the assumption used in Usachev's requests. In this set of requests complete correlation of uncertaintieswithin each group in the ABBN 26-group set and full statistical independence of uncertainties of neighbouring groups is supposed.

Correlation of uncertainties for different isotopes, cross sections and values is taken into account by assuming as standards the U-235 fission cross section and $\bar{\upsilon}$ of Cf-252.

The author of the requests considers that these conditions would exist for instance, when on each adjacent lethargy interval 0.5 - 1 there would fall, on the average, one experiment carried out by an independent method with the requested, guaranteed accuracy.

The algorithm of request formulation and substantiation of basic requirements for K_{eff} and BR are described in paper by S.M. Zaritsky, M.N. Nikolaev, M.F. Troyanov, "Nuclear Data Requirements for Calculation of Fast Reactors", Report INDC(CCP)-17, IAEA, Vienna, 1972.

Conclusion

The two sets of requirements presented here emphasize the importance of precise understanding of accuracy specifications.

III.C. Priority Criteria for Nuclear Fusion (F) Requests

The following priority criteria for fusion requests were developed by the IAEA with the assistance of the International Fusion Research Council (IFRC), the INDC and many scientists engaged in fusion research:

Priority 1

In general highest (first) priority shall be assigned to those nuclear data upon which some important aspect of fusion research is immediately contingent. Specifically Priority 1 shall be assigned to requests for nuclear data which

1. are required for evaluation of the feasibility of a proposed fusion reactor concept, or
2. are required for immediate application of plasma phenomena in a fusion reactor context, or
3. are essential for application of a material which is of conceptual importance in fusion research, or
4. are required for an important decision involving allocation of resources or redirection of research effort in fusion programmed, or
5. are necessary to develop some important aspect of current fusion programmes to a level consistent with progress in other aspects of these programmes.

Priority 2

Priority 2 shall be assigned to nuclear data which

1. are required for evaluation of materials of high potential utility in current fusion reactor designs, or
2. are expected to contribute to significant progress in fusion research or reactor design studies in the near future.

Priority 3

Priority 3 shall be assigned to nuclear data which

1. are of use in current design studies but are not of crucial importance, or

2. are not of immediate importance but which have probability of becoming important as fusion programmes develop.

Priority 4*

Priority 4 shall be assigned to nuclear data which

1. fill out the body of information needed for fusion reactor technology, or

2. are of potential interest for fusion research but which cannot be assigned a more definite priority at present.

III.D. Priority Criteria for Nuclear Materials Safeguards (N) Requests

The following criteria were recommended by the International Nuclear Data Committee (INDC) for use in assigning priorities to nuclear data requests for nuclear materials safeguards purposes:

Priority 1

First priority shall be given to those requests for nuclear data that

1. are necessary for the refinement of an existing technique in order to bring its accuracy to within acceptable limits for safeguards purposes, or

2. are essential for the development of a new and promising technique for the non-destructive assay and control of nuclear material in amounts that are significant to the safeguards system.

Priority 2

Second priority shall be given to those requests for nuclear data that

1. are essential for the use or interpretation of an existing or proposed technique for non-destructive assay and that are now obtained either by extrapolation or by an empirical method but for which experimental confirmation is desirable, or

---

* At present, there are no Priority 4 requests in the request file.

2. are necessary for the development of a technique for non-destructive assay that may reasonably be expected to be useful for safeguards purposes.

Priority 3

Third priority shall be given to those requests which

1. may be needed for the non-destructive assay of materials not now included in the safeguards system but that are likely to be in the future, or

2. are necessary for the assessment or elimination of minor sources of error in the assay of nuclear material, or

3. are needed for the exploration of new techniques for non-destructive assay for future applications, or

4. may be needed for the development of new techniques for non-destructive assay for which the required technology does not now exist but which may reasonably be expected to in the future.

WRENDA

1 HYDROGEN 1 NEUTRON TOTAL CROSS SECTION

1	1.00 KEV	500. KEV	.3 %	2	USA	STEWART	LAS			781175R

Q: TO CHECK ON PRIMARY STANDARD IN LARGELY UNMEASURED REGIONS WITH HIGH ACCURACY.

STATUS---STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

1 HYDROGEN 1 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

2	10.0 MEV	50.0 MEV	1. %	2	USA	STEWART	LAS			801289R

Q: TO CONFIRM OR IMPROVE PRESENT EVALUATION. ABSOLUTE VALUES AT A FEW INCIDENT ENERGIES REQUIRED.

STATUS---STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

1 HYDROGEN 1 NEUTRON SPECIAL QUANTITY (DESCRIPTION BELOW)

3	100. EV	1.00 MEV	30. %	2	USA	BOWMAN	NBS			821050R

Q: ELECTRON EXCITATION OR REMOVAL INDUCED BY SUDDEN ACCELERATION OF NUCLEUS IN NEUTRON-NUCLEUS SCATTER (N,N'E).
A: INCIDENT ENERGY RESOLUTION: 30. PERCENT.
O: NEUTRON SPECTRUM CALCULATIONS.

1 HYDROGEN 2 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

4	7.00 MEV	14.0 MEV	5. %	1	PRC	LIANG QICHANG	AEP			873039F

Q: ELASTIC SCATTERING ANGULAR DISTRIBUTION LACK OF MEASUREMENT AT ANGLES LESS THAN 30 DEGREES.
A: ACCURACY 5-10%.
O: CONTROLLED FUSION AND FISSION-FUSION HYBRID REACTOR STUDY.
M: NEW REQUEST.

1 HYDROGEN 2 NEUTRON N,2N

5	UP TO	16.0 MEV	15. %	2	PRC	ZHANG BENAI	IPM			873016F

Q: ENERGY-ANGULAR SPECTRUM OF (N,2N). NO SATISFACTORY AND COMPLETE EXPERIMENTAL RESULTS.
O: RESEARCH ON MECHANISM OF NUCLEAR INTERACTION BETWEEN NEUTRON AND LIGHT NUCLEI.
M: NEW REQUEST.

1 HYDROGEN 2 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

6	7.00 MEV	14.0 MEV	5. %	1	PRC	LIANG QICHANG	AEP			873059F

Q: NEUTRON SPECTRUM. NO NEUTRON SPECTRUM MEASUREMENT, EXCEPT FOR 14 MEV.
A: ACCURACY 5-10%.
O: CONTROLLED FUSION AND FISSION-FUSION HYBRID REACTOR STUDY.
M: NEW REQUEST.

1 HYDROGEN 3 NEUTRON N,2N

7	UP TO	20.0 MEV		2	FR	C.A.PHILIS	SRC			752095F

A: ACCURACY REQUIRED TO BETTER THAN 20 PERCENT.

1 HYDROGEN 3 NEUTRON ENERGY-ANGLE DIFF.2 NEUTRON-PRODUCTION CROSS SECT.

8	UP TO	15.0 MEV	5.0%	2	JAP	A.TAKAHASHI	OSA			812019F

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

1 HYDROGEN 3 NEUTRON (N,2N) + (N,3N) NEUTRON SPECTRUM

9	UP TO	14.0 MEV	10. %	1	PRC	LIANG QICHANG	AEP			873040F

Q: (N,2N) + (N,3N) NEUTRON SPECTRUM NO NEUTRON SPECTRUM MEASUREMENT SO FAR.
A: ACCURACY 10-20%.
O: SPECTRUM OF (N,2N) + (N.3N) WANTED CONTROLLED FUSION AND FISSION-FUSION HYBRID REACTOR STUDY.
M: NEW REQUEST.

1 HYDROGEN 3 TRITON T,2N

10	10.0	KEV	300.	KEV	15. %	3	PRC	ZHANG BENAI	IPM	873015F

Q: CROSS SECTION OF T(T,2N) REACTION.
NO EXPERIMENTAL RESULTS AVAILABLE.
O: FUSION ENERGY RESEARCH.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC. SEE APPENDIX A.

2 HELIUM 3 NEUTRON N,P

11	100.	KEV	1.00	MEV	2.0%	2	UK	E.LYNN	HAR	692003R

A: ENERGY DEPENDENCE NEEDED MORE ACCURATELY
O: USED AS A STANDARD IN CROSS-SECTION MEASUREMENTS.

12	100.	KEV	3.00	MEV	1. %	2	USA	CARLSON	NBS	861147R

O: TO IMPROVE ACCURACY OF STANDARD CROSS SECTION.
M: NEW REQUEST.

3 LITHIUM ALPHA ALPHA,N

13	100.	KEV	6.50	MEV	6. %	2	USA	WALTON	LAS	781167N

Q: THICK TARGET YIELDS REQUIRED.
A: RELATIVE ERROR OF 3.0 PERCENT NEEDED.
ALPHA ENERGY RESOLUTION 100 KEV.

3 LITHIUM 6 NEUTRON ELASTIC CROSS SECTION

14	10.0	MEV	50.0	MEV	10.0%	3	JAP	S.CHIBA	JAE	872011F

Q: COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,
AND FOR INTERCOMPARISON OF EXPERIMENTS
A: ANGULAR DISTRIBUTION IS ALSO WANTED
O: NO DATA ABOVE 15 MEV
M: NEW REQUEST.

3 LITHIUM 6 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

15	1.00	MEV	15.0	MEV	10.0%	2	GER	J.DARVAS	JUL	722060F
								H.BROCKMANN	JUL	

Q: AN IMPROVEMENT IN ACCURACY BELOW 6 MEV REQUIRED.
O: CALCULATION OF NEUTRON TRANSPORT.

16	1.00	KEV	15.0	MEV	20.0%	3	UK	R.HANCOX	CUL	722061F

O: EVALUATION REQUIREMENT.IN PROGRESS
FOR EUROPEAN FUSION FILE (EFF)

17	4.00	MEV	15.0	MEV	10.0%	2	CCP	I.N.GOLOVIN	KUR	724001F

Q: REFINEMENT OF DATA BELOW 7 MEV AND ADDITIONAL DATA
ABOVE 7 MEV REQUIRED.
O: CALCULATION OF NEUTRON TRANSMISSION.

18	1.00	MEV	20.0	MEV	15.0%	1	ITY	C.COCEVA	BOL	792094F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 6 NEUTRON INELASTIC CROSS SECTION

19	10.0	MEV	50.0	MEV	10.0%	3	JAP	S.CHIBA	JAE	872012F

Q: COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,
AND FOR INTERCOMPARISON OF EXPERIMENTS
A: ANGULAR DISTRIBUTION IS ALSO WANTED
O: NO DATA ABOVE 15 MEV
M: NEW REQUEST.

3 LITHIUM 6 NEUTRON ANGULAR DIFFERENTIAL INELASTIC CROSS SECTION

20	2.50	MEV	15.0	MEV	15.0%	1	ITY	C.COCEVA	BOL	792095F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 6 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

21	9.00	MEV	15.0	MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR	724004F

Q: GAMMA RAY PRODUCTION CROSS SECTIONS AND GAMMA RAY
SPECTRA ARE REQUIRED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

3 LITHIUM 6 NEUTRON N',2N

22	UP TO	20.0	MEV	20.0%	1	ITY	C.COCEVA	BOL	792096F

Q: ANGULAR DISTRIBUTION AND SPECTRUM OF EMITTED NEUTRONS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

23	UP TO	16.0	MEV		2	USA	CHENG	GA	861013F

A: ACCURACY RANGE 5. TO 8. PERCENT. IMPROVED PRECISION NEEDED.
O: DATA ARE NEEDED IN ORDER TO SATISFACTORILY EVALUATE ALL REACTIONS NEAR 14 MEV. PRESENTLY IT IS DIFFICULT TO ACCOUNT FOR ALL REACTION CROSS SECTIONS AND HAVE THEM SUM TO TOTAL. (STEWART/LANL)
M: NEW REQUEST.

3 LITHIUM 6 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

24	UP TO	15.0	MEV	20.0%	2	GER	J.DARVAS H.BROCKMANN	JUL JUL	722064F

Q: NEUTRON SPECTRA UP TO MAXIMUM ENERGIES ARE REQUIRED.
NEUTRON ANGULAR DISTRIBUTIONS AT A FEW ENERGIES WOULD BE USEFUL.
O: FOR CALCULATIONS OF NEUTRON TRANSPORT AND SHIELDING.

25	2.00 MEV	15.0	MEV	10.0%	2	JAP	A.TAKAHASHI Y.SEKI K.MAKI	OSA JAE HIT	832035F

Q: ENERGY-ANGLE DOUBLE DIFFERENTIAL CROSS SECTION REQUIRED WITH AN INCIDENT ENERGY STEP OF 0.5 MEV.
O: NEUTRON TRANSPORT AND TRITIUM PRODUCTION RATE CALCULATIONS. ANGULAR DISTRIBUTIONS OF INELASTICALLY SCATTERED NEUTRONS FOR ALL AVAILABLE LEVELS ALSO REQUIRED.

26	10.0 MEV	50.0	MEV	10.0%	3	JAP	S.CHIBA	JAE	872016F

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

3 LITHIUM 6 NEUTRON N,P

27	3.00 MEV	15.0	MEV	15.0%	1	ITY	C.COCEVA	BOL	792097F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED. ALSO PARTIAL CROSS SECTIONS FOR RESIDUAL NUCLEUS IN GROUND STATE AND FIRST EXCITED STATE NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 6 NEUTRON N,ND

28	UP TO	15.0	MEV	10.0%	2	GER	J.DARVAS H.BROCKMANN	JUL JUL	722151F

A: ENERGY RESOLUTION OF 0.2 TO 0.5 MEV WOULD BE SUFFICIENT.
O: FOR SHIELDING AND CALCULATION OF HEAT GENERATION.

29	UP TO	15.0	MEV	10.0%	1	CCP	I.N.GOLOVIN	KUR	724003F

O: NEUTRONICS CALCULATIONS AND ENERGY DEPOSITION IN BLANKET MATERIALS.

30	UP TO	20.0	MEV	15.0%	1	ITY	C.COCEVA	BOL	792098F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 6 NEUTRON N,T

31	500. KEV	3.00	MEV		2	USA	HALE	LAS	691011R

Q: ABSOLUTE VALUES REQUIRED.
A: ACCURACY RANGE 1. TO 3. PERCENT. ENERGY RESOLUTION MUST REPRODUCE TRUE SHAPE.
O: FOR USE AS STANDARD.
M: SUBSTANTIAL MODIFICATIONS.

32	1.00 KEV	100.	KEV	1. %	1	USA	HALE	LAS	721009R

O: FOR USE AS STANDARD BELOW 1 MEV.

33	100. KEV	3.00	MEV	3.0%	1	CCP	I.N.GOLOVIN	KUR	724002F

O: FOR TRITIUM BREEDING AND ENERGY DEPOSITION.

34	100. KEV	2.00	MEV	10.0%	2	UK	R.HANCOX	CUL	762245F

O: EVALUATION REQUIREMENT IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

3 LITHIUM 6 NEUTRON ANGULAR DISTRIBUTION OF TRITONS

35	500. KEV	3.00 MEV	5. %	2	USA	HALE	LAS			801291R

Q: ABSOLUTE CROSS SECTION AS A FUNCTION OF ANGLE.
O: NEEDED FOR USE OF 6-LI(N,ALPHA) AS STANDARD.
M: SUBSTANTIAL MODIFICATIONS.

3 LITHIUM 6 NEUTRON N,NT

36	UP TO	20.0 MEV	15.0%	1	ITY	C.COCEVA	BOL			792099F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 6 NEUTRON N,NALPHA

37	UP TO	16.0 MEV	15. %	2	PRC	ZHANG BENAI	IPM			873018F

Q: ENERGY-ANGULAR SPECTRUM OF (N,N'A).
NO SATISFACTORY AND COMPLETE EXPERIMENTAL RESULTS.
O: RESEARCH ON MECHANISM OF NUCLEAR INTERACTION
BETWEEN NEUTRON AND LIGHT NUCLEI.
M: NEW REQUEST.

3 LITHIUM 6 DEUTERON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

38	UP TO	10.0 MEV	5.0%	1	FR	C.A.PHILIS	BRC			812063F

Q: NEUTRONS EMITTED PER NON-ELASTIC PROCESS
SECONDARY ENERGY-ANGLE DISTRIBUTIONS REQUIRED

3 LITHIUM 6 TRITON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

39	UP TO	10.0 MEV	15.0%	1	FR	C.A.PHILIS	BRC			832001F

Q: STRUCTURES AROUND 0.35, 1.0, 2.0 AND 2.4 MEV
TO BE PRECISED
M: SUBSTANTIAL MODIFICATIONS.

3 LITHIUM 7 NEUTRON ELASTIC CROSS SECTION

40	10.0 MEV	50.0 MEV	10.0%	3	JAP	S.CHIBA	JAE			872015F

Q: COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS,
AND FOR INTERCOMPARISON OF EXPERIMENTS
A: ANGULAR DISTRIBUTION IS ALSO WANTED
O: NO DATA ABOVE 15 MEV
M: NEW REQUEST.

3 LITHIUM 7 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

41	2.00 MEV	15.0 MEV	10.0%	1	CCP	I.N.GOLOVIN	KUR			724005F

Q: REFINEMENT OF DATA BELOW 7 MEV AND ADDITIONAL DATA
ABOVE 7 MEV REQUIRED.
O: FOR TRITIUM BREEDING AND ENERGY DEFOSITION.

42	1.00 MEV	20.0 MEV	15.0%	1	ITY	C.COCEVA	BOL			792100F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 7 NEUTRON INELASTIC CROSS SECTION

43	UP TO	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724006F

Q: CROSS SECTION FOR 0.478 MEV LEVEL REQUIRED.
O: NEUTRONICS CALCULATIONS AND ENERGY DEPOSITION.

44	2.00 MEV	14.0 MEV	5.0 %	1	IND	V.R.NARGUNDKAR	TRM			833045F

A: ENERGY STEPS 0.5 MEV
O: FUSION BLANKET NEUTRONICS

45	6.00 MEV	15.0 MEV	10.0%	1	JAP	K.SHIBATA S.CHIBA	JAE JAE			872010F

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

46	10.0 MEV	50.0 MEV	10.0%	3	JAP	S.CHIBA	JAE		872014F

Q: COMPARISON BETWEEN EXPERIMENTS AND CALCULATIONS, AND FOR INTERCOMPARISON OF EXPERIMENTS
A: ANGULAR DISTRIBUTION IS ALSO WANTED
O: NO DATA ABOVE 15 MEV
M: NEW REQUEST.

3 LITHIUM 7 NEUTRON ANGULAR DIFFERENTIAL INELASTIC CROSS SECTION

47	1.00 MEV	20.0 MEV	15.0%	1	ITY	C.COCEVA	BOL		792101F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 7 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

48	UP TO	15.0 MEV	20.0%	3	UK	T.D.BEYNON R.HANCOX	BIR CUL		732119F

O: EVALUATION REQUIREMENT IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

3 LITHIUM 7 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

49	9.00 MEV	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR		724010F

Q: GAMMA RAY PRODUCTION CROSS SECTIONS AND GAMMA RAY SPECTRA ARE REQUIRED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

3 LITHIUM 7 NEUTRON N,2N

50	UP TO	15.0 MEV	20.0%	2	GER	J.DARVAS H.BROCKMANN	JUL JUL		722071F

Q: THREE OR FOUR DATA POINTS USEFUL.
O: FOR ESTIMATES OF NEUTRON MULTIPLICATION.

51	UP TO	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR		724009F

Q: SECONDARY ENERGY AND ANGULAR DISTRIBUTIONS AT 14 TO 15 MEV REQUIRED.
O: BLANKET NEUTRONICS CALCULATIONS.

52	8.00 MEV	15.0 MEV	20.0%	1	ITY	C.COCEVA	BOL		792102F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 7 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

53	2.00 MEV	15.0 MEV	5.0%	2	JAP	A.TAKAHASHI K.MAKI	OSA HIT		832037F

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSION REQUIRED.
A: HIGHER ACCURACY IS REQUIRED FROM DESIGN STUDY
O: NEUTRON TRANSPORT AND TRITIUM PRODUCTION 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
M: MODIFIED (PARTIALLY FULFILLED).

54	10.0 MEV	50.0 MEV	10.0%	3	JAP	S.CHIBA	JAE		872013F

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

3 LITHIUM 7 NEUTRON N,NP

55	8.50 MEV	15.0 MEV	20.0%	1	ITY	C.COCEVA	BOL		792103F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED. ALSO PARTIAL CROSS SECTIONS FOR RESIDUAL NUCLEUS IN GROUND STATE AND FIRST EXCITED STATE NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 7 NEUTRON N,D

56	8.00 MEV	15.0 MEV	20.0%	1	ITY	C.COCEVA	BOL		832048F

Q: (N,D) CROSS SECTION.
ALSO PARTIAL CROSS SECTIONS FOR RESIDUAL NUCLEUS IN GROUND STATE AND FIRST EXCITED STATE NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 7 NEUTRON N,ND

57 4.00 MEV 15.0 MEV 20.0% 1 ITY C.COCEVA BOL 792104F

Q: ANGULAR DISTRIBUTION OF REACTION PRODUCTS NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

3 LITHIUM 7 NEUTRON N,NT

58 UP TO 15.0 MEV 5.0% 1 CCP I.N.GOLOVIN KUR 724007F

O: FOR TRITIUM BREEDING AND ENERGY DEPOSITION.

59 10.0 MEV 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724008F

Q: SECONDARY ENERGY AND ANGULAR DISTRIBUTIONS REQUIRED.
O: NEUTRON TRANSMISSION CALCULATIONS.

60 UP TO 15.0 MEV 10.0% 2 UK T.D.BEYNON BIR 762246F

Q: ENERGY SPECTRA OF EMITTED PARTICLES NEEDED.
O: EVALUATION REQUIREMENT.IN PROGRESS
FOR EUROPEAN FUSION FILE (EFF)

61 4.00 MEV 12.0 MEV 5.0% 1 JAP A.TAKAHASHI OSA 832036F

Q: (N,NT) CROSS SECTION.
NEUTRON SPECTRA WITH 15 PERCENT ACCURACY ALSO REQUIRED.
O: TRITIUM BREEDING AND ENERGY DEPOSITION CALCULATIONS.
MET FOR 13 TO 15 MEV
M: MODIFIED (PARTIALLY FULFILLED).

62 UP TO 6.00 MEV 15. % 2 USA PEELLE ORL 861079R

A: INCIDENT ENERGY RESOLUTION: 200 KEV.
NEED 15 PERCENT ACCURACY FOR ESTIMATION OF GAS PRODUCTION.
O: FOR A POSSIBLE LI COOLED FAST REACTOR DESIGN.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY NEANDC. SEE APPENDIX A.

3 *LITHIUM 7* NEUTRON N,NALPHA

63 UP TO 16.0 MEV 15. % 2 PRC ZHANG BENAI IPM 873019F

Q: ENERGY-ANGULAR SPECTRUM OF (N,N'A).
NO SATISFACTORY AND COMPLETE EXPERIMENTAL RESULTS.
O: RESEARCH ON MECHANISM OF NUCLEAR INTERACTION BETWEEN NEUTRON AND LIGHT NUCLEI.
M: NEW REQUEST.

3 LITHIUM 7 PROTON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

64 UP TO 10.0 MEV 5.0% 1 FR C.A.PHILIS BRC 812062F

Q: NEUTRONS EMITTED PER NON-ELASTIC PROCESS
SECONDARY ENERGY-ANGLE DISTRIBUTIONS REQUIRED

3 LITHIUM 7 DEUTERON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

65 UP TO 10.0 MEV 5.0% 1 FR C.A.PHILIS BRC 812064F

Q: NEUTRONS EMITTED PER NON-ELASTIC PROCESS
SECONDARY ENERGY-ANGLE DISTRIBUTIONS REQUIRED
STRUCTURES AROUND 0.35, 1.0, 2.0 AND 2.4 MEV
TO BE PRECISED

3 LITHIUM 7 TRITON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

66 UP TO 10.0 MEV 15.0% 1 FR C.A.PHILIS BRC 832002F

M: SUBSTANTIAL MODIFICATIONS.

4 BERYLLIUM 9 NEUTRON TOTAL CROSS SECTION

67 1.00 MEV 10.0 MEV 1. % 2 USA SMITH ANL 861046S

A: INCIDENT ENERGY RESOLUTION: 100 KEV.
RESOLUTION SHOULD BE LE 100 KEV.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

4 BERYLLIUM 9 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

68 2.00 MEV 15.0 MEV 10.0% 2 CCP I.N.GOLOVIN KUR 724011F

O: FOR NEUTRON TRANSMISSION CALCULATIONS.

69	2.00	MEV	20.0	MEV	5. %	2	USA	SMITH	ANL	861049S

A: INCIDENT ENERGY RESOLUTION: 100 KEV.
ACCURACY SUFFICIENT TO PROVIDE NON-ELASTIC CROSS SECTION TO 5 PERCENT.
RESOLUTION LE 100 KEV.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

4 BERYLLIUM 9 NEUTRON INELASTIC CROSS SECTION

70	UP TO		15.0	MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR	724012F

O: NEUTRONICS CALCULATIONS FOR BLANKET AND SHIELD.

71	1.80	MEV	15.0	MEV	10.0%	1	ITY	C.COCEVA	BOL	832050F

Q: ALSO REQUIRED DIFFERENTIAL CROSS SECTION AND EMITTED NEUTRON SPECTRA DOWN TO 0.2 MEV.
A: RESOLUTION OF EMITTED NEUTRON ENERGY 20. PERCENT OR 0.50 MEV, WHICHEVER IS SMALLER.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

4 BERYLLIUM 9 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

72	2.00	MEV	10.0	MEV	5. %	2	USA	SMITH	ANL	861047S

A: 5 PERCENT ACCURACY ON DISCRETE INELASTIC.
10 PERCENT ON BREAKUP SPECTRUM.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

4 BERYLLIUM 9 NEUTRON PHOTON PRODUCTION CROSS SECTION IN INELASTIC SCAT.

73	8.00	MEV	15.0	MEV	10.0%	2	GER	J.DARVAS H.BROCKMANN	JUL JUL	722075F

Q: ENERGY DISTRIBUTION OF GAMMA RAYS REQUIRED.

4 BERYLLIUM 9 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

74	3.00	MEV	15.0	MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR	724015F

Q: GAMMA RAY SPECTRA ALSO REQUIRED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

4 BERYLLIUM 9 NEUTRON N,2N

75	UP TO		15.0	MEV	20.0%	1	GER	F.FROEHNER	KFK	722077F

Q: ANGULAR DISTRIBUTIONS AND ENERGY SPECTRA OF SECONDARY NEUTRONS AND GAMMA RAYS ALSO NEEDED.
O: RADIATION DAMAGE ESTIMATES.

76	UP TO		15.0	MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR	724013F

Q: ENERGY AND ANGULAR DISTRIBUTION OF SECONDARY NEUTRONS REQUIRED.
O: USE FOR NEUTRON MULTIPLICATION AND TRANSMISSION CALCULATIONS.

77	1.80	MEV	15.0	MEV	10.0%	1	ITY	C.COCEVA	BOL	832049F

Q: (N,2N) CROSS SECTION.
ALSO REQUIRED DIFFERENTIAL CROSS SECTION AND SPECTRA OF EMITTED NEUTRONS DOWN TO 0.2 MEV.
A: RESOLUTION OF EMITTED NEUTRON ENERGY 20. PERCENT OR 0.5 MEV, WHICHEVER IS SMALLER.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

78	2.00	MEV	14.0	MEV	5.0 %	1	IND	V.R.NARGUNDKAR	TRM	833046R

A: ENERGY STEPS 0.5 MEV
O: DATA NEEDED FOR FISSION REACTOR AND FUSION BLANKET NEUTRONICS

79	14.0	MEV	15.0	MEV	3. %	1	USA	CHENG	GA	861096F

A: IMPROVED PRECISION NEEDED.
M: NEW REQUEST.

80	UP TO		15.0	MEV	5.0%	1	FR	B.DUCHEMIN	SAC	872022F

Q: NEUTRON MULTIPLIERS
M: NEW REQUEST.

81	UP TO		16.0	MEV	15. %	2	PRC	ZHANG BENAI	IPM	873017F

Q: ENERGY-ANGULAR SPECTRUM OF (N,2N).
NO SATISFACTORY AND COMPLETE EXPERIMENTAL RESULTS.
O: RESEARCH ON MECHANISM OF NUCLEAR INTERACTION BETWEEN NEUTRON AND LIGHT NUCLEI.
M: NEW REQUEST.

4 BERYLLIUM 9 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

82 1.70 MEV 15.0 MEV 5.0% 2 JAP Y.SEKI JAE 832038F
A.TAKAHASHI OSA

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSION REQUIRED. CROSS SECTIONS FOR THE (N,2N) REACTIONS ALSO REQUIRED BY A.TAKAHASHI.
A: 3 % REQUIRED FOR (N,2N) CROSS SECTION HIGHER ACCURACY IS REQUIRED FROM DESIGN STUDY
O: BLANKET NEUTRONICS CALCULATIONS. ALSO FOR NEUTRON MULTIPLICATION CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

4 BERYLLIUM 9 NEUTRON N,P

83 13.0 MEV 15.0 MEV 15.0% 1 ITY C.COCEVA BOL 832046F

Q: (N,P) CROSS SECTION.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

4 BERYLLIUM 9 NEUTRON N,P DELAYED NEUTRON YIELD

84 14.0 MEV 16.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714037N

Q: DELAYED NEUTRON YIELD FROM BE-9 PRODUCED BY BETA DECAY OF LI-9 REACTION PRODUCT REQUIRED.
O: ALLOWANCE FOR BACKGROUND IN DELAYED NEUTRON COUNTING

4 BERYLLIUM 9 NEUTRON N,T

85 1.05 MEV 15.0 MEV 15.0% 1 ITY C.COCEVA BOL 832045F

O: BLANKET CALCULATIONS IN FUSION REACTORS.

4 BERYLLIUM 9 NEUTRON N,ALPHA

86 8.00 MEV 15.0 MEV 10.0% 1 GER F.FROEHNER KFK 722078F

Q: TOTAL ALPHA PRODUCTION REQUIRED.
O: CALCULATION OF NEUTRON TRANSPORT.

87 8.00 MEV 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724014F

O: FOR HELIUM ACCUMULATION CALCULATIONS.

88 700. KEV 15.0 MEV 20.0% 1 ITY C.COCEVA BOL 832047F

Q: (N,A) CROSS SECTION. ALSO PARTIAL CROSS SECTIONS FOR RESIDUAL NUCLEUS IN GROUND STATE AND FIRST EXCITED STATE NEEDED.
O: BLANKET CALCULATIONS IN FUSION REACTORS.

4 BERYLLIUM 9 ALPHA ALPHA,N

89 100. KEV 6.50 MEV 6. % 2 USA WALTON LAS 781168N

Q: THICK TARGET YIELDS REQUIRED.
A: RELATIVE ERROR OF 3.0 PERCENT NEEDED. ALPHA ENERGY RESOLUTION 100 KEV.

5 BORON 10 NEUTRON TOTAL CROSS SECTION

90 1.00 KEV 2.00 MEV 1. % 2 USA SMITH ANL 861060R

A: INCIDENT ENERGY RESOLUTION: 10 KEV.
O: NEEDED TO RESOLVE DISCREPANCY.
M: NEW REQUEST.

5 BORON 10 NEUTRON CAPTURE CROSS SECTION

91 25.3 MV 200. KEV 20.0% 1 UK M.G.SOWERBY HAR 832052R

O: REQUIRED FOR SCATTERED NEUTRON CORRECTION.

5 BORON 10 NEUTRON N,ALPHA

92 100. KEV 1.00 MEV 2.0% 1 UK M.G.SOWERBY HAR 642001R

Q: ALSO (N,ALPHA GAMMA).
A: ENERGY DEPENDENCE NEEDED MORE ACCURATELY.
O: USED AS A STANDARD IN CROSS SECTION MEASUREMENTS. MAY BE MET BY ENDF/B-VI STANDARDS EVALUATION

93 10.0 KEV 2.00 MEV 1 BLG A.FABRY MOL 682004R

A: ACCURACY 1 PERCENT TO 100 KEV, 3 PERCENT ABOVE.
O: STANDARD CROSS SECTION. CALCULATION OF STANDARD NEUTRON SPECTRUM.

94	1.00 KEV	100. KEV	1. %	1	USA	SMITH HEMMIG	ANL DOE			691364R

Q: ABSOLUTE VALUES REQUIRED.
ALPHA(0)/ALPHA(1) RATIO NEEDED FOR BOTH ALPHA AND GAMMA DETECTION.
O: NEEDED TO RESOLVE FBR DISCREPANCY IN C/E VALUES.
FOR USE AS STANDARD.
M: MODIFIED (PARTIALLY WITHDRAWN).

95	100. KEV	300. KEV	3. %	1	USA	SMITH HEMMIG	ANL DOE			691365R

Q: ABSOLUTE VALUES REQUIRED.
ALPHA(0)/ALPHA(1) RATIO NEEDED FOR BOTH ALPHA AND GAMMA DETECTION.
O: FOR USE AS STANDARD.

96	300. KEV	10.0 MEV	5. %	1	USA	SMITH HEMMIG	ANL DOE			691366R

Q: ABSOLUTE VALUES REQUIRED.
ALPHA(0)/ALPHA(1) RATIO NEEDED FOR BOTH ALPHA AND GAMMA DETECTION.
O: FOR USE AS STANDARD.

97	5.00 KEV	10.0 MEV		2	CCP	L.N.USACHEV	FEI			754025R

A: FROM 5.0 - 100 KEV ACCURACY 2 PERCENT.
O: STANDARD CROSS SECTION BELOW 100 KEV.
FOR MORE DETAIL SEE INTRODUCTION.

98	1.00 KEV	100. KEV	1. %	2	USA	CARLSON	NBS			861148R

O: TO IMPROVE ACCURACY OF STANDARD CROSS SECTION.
M: NEW REQUEST.

99	100. EV	1.00 MEV	1. %	1	DDR	K.DIETZE	ROS			873003R

A: INDICATION OF POSSIBLE UNDERESTIMATE OF THIS C.S. IN THE EXISTING STANDARD LIBRARIES ABOVE 100 KEV.
O: FOR USE AS STANDARD IN INTEGRAL EXPERIMENTS.
M: NEW REQUEST.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

6 CARBON NEUTRON ANGULAR DISTRIBUTION OF PHOTON FROM INELASTIC SCAT

100	5.00 MEV	20.0 MEV	5. %	2	USA	FU	ORL			741177R

Q: FOR 4.43 MEV GAMMAS ONLY.
MEASUREMENT NEEDED AT FOUR OR MORE ANGLES.
M: SUBSTANTIAL MODIFICATIONS.

6 CARBON ALPHA ALPHA,N

101	100. KEV	6.50 MEV	6. %	2	USA	WALTON	LAS			781169N

Q: THICK TARGET YIELDS REQUIRED.
A: RELATIVE ERROR OF 3.0 PERCENT NEEDED.
ALPHA ENERGY RESOLUTION 100 KEV.

6 CARBON 12 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

102	8.00 MEV	15.0 MEV	10.0%	2	CCP	I.N.GOLOVIN	KUR			724016F

O: NEUTRON TRANSMISSION CALCULATIONS.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

6 CARBON 12 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

103	7.00 MEV	15.0 MEV	10.0%	2	JAP	A.TAKAHASHI	OSA			832039F

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSION REQUIRED.
ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED FOR ALL AVAILABLE DISCRETE LEVELS ESPECIALLY WANTED.
O: NEUTRON TRANSPORT CALCULATIONS.
NOT MET FOR 7.62 MEV LEVEL CROSS SECTION AND (N,N'3A)
M: MODIFIED (PARTIALLY FULFILLED).

6 CARBON 12 NEUTRON N,ALPHA

104	UP TO	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR			724017F

O: NEUTRON ABSORPTION CALCULATIONS.

105	UP TO	50.0 MEV	10. %	2	USA	CASWELL	NBS		761111G

Q: MEASUREMENT AT THRESHOLD AND SEVERAL ENERGIES THROUGHOUT THE RANGE SHOULD BE SUFFICIENT. GAMMA-RAY PRODUCTION AND CHARGED-PARTICLE SPECTRA ARE OF INTEREST.
O: NEEDED FOR ENERGY DEPOSITION CALCULATIONS FOR RADIOTHERAPY.

6 CARBON 12 NEUTRON N,3ALPHA

106	UP TO	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR		724018F

Q: SECONDARY NEUTRON ENERGY DISTRIBUTION REQUIRED AT 14. MEV.
O: FOR BLANKET NEUTRONICS CALCULATIONS.

107	UP TO	50.0 MEV	10. %	2	USA	CASWELL	NBS		761112G

Q: MEASUREMENT AT THRESHOLD AND SEVERAL ENERGIES THROUGHOUT THE RANGE SHOULD BE SUFFICIENT. ALPHA SPECTRA ARE OF INTEREST.
O: NEEDED FOR ENERGY DEPOSITION CALCULATIONS FOR RADIOTHERAPY.
DISCREPANCY EXISTS AT 15 TO 20 MEV NEUTRON ENERGY BETWEEN EXPERIMENTAL DATA AND THEORETICAL CALCULATIONS OF SECONDARY PARTICLE ENERGY DEPOSITION SPECTRA.

6 CARBON 13 ALPHA ALPHA,N

108	UP TO	10.0 MEV	20.0%	2	JAP	N.YAMANO	SAE		792070R

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.

7 NITROGEN NEUTRON INELASTIC CROSS SECTION

109	UP TO	6.00 MEV	10.0%	2	UK	J.L.ROWLANDS	WIN		872046R

O: FOR FAST REACTORS
M: NEW REQUEST.

7 NITROGEN NEUTRON ABSORPTION CROSS SECTION

110	100. EV	1.00 MEV	10.0%	2	UK	J.L.ROWLANDS	WIN		872045R

O: FOR FAST REACTORS
M: NEW REQUEST.

7 NITROGEN 14 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

111	1.00 MEV	10.0 MEV	5.0%	2	FR	C.A.PHILIS	BRC		692015R

A: AVERAGE (1-COS) ACCURACY 10 PERCENT. ANGULAR RESOLUTION - 2.5 DEGREES UP TO 20 DEGREES, 5 DEGREES FROM 20 TO 180 DEGREES.
O: FOR AIR SCATTERING CALCULATION.
TO COMPLETE THE NEW EXPERIMENTAL RESULTS (CEA-N-2506, NEANDC(E) 204, INDC(FR) 69 -OCT 86) AT LOW ENERGIES. NEW EVALUATION TO BE DONE
M: MODIFIED (PARTIALLY FULFILLED).

7 NITROGEN 14 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

112	UP TO	15.0 MEV	10.0%	2	FR	C.A.PHILIS	BRC		692017R

O: FOR AIR SCATTERING CALCULATION.
TO COMPLETE NEW EXPERIMENTAL RESULTS (CEA-N-2506) - NEANDC(E) 204 - INDC(FR)69 -OCT.86) AT LOW ENERGIES. NEW EVALUATION TO BE DONE
M: SUBSTANTIAL MODIFICATIONS.

7 NITROGEN 14 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

113	1.00 KEV	15.0 MEV	10.0%	1	FR	C.A.PHILIS	BRC		792002R

O: EVALUATION SUFFICIENT

7 NITROGEN 14 NEUTRON N,P

114	5.00 MEV	14.0 MEV	20. %	1	USA	CHENG	GA		861174F

O: LONG-LIVED RADIONUCLIDE, 14-C (5730 YR), PRODUCED.
M: NEW REQUEST.

115 UP TO 20.0 MEV 10.0% 1 FR J.P.GROUILLER CAD 872023R

Q: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

8 OXYGEN NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

116 5.00 KEV 10.0 MEV 5. % 2 USA DEI BET 761051R

Q: TO RESOLVE DISCREPANCIES BETWEEN CALCULATED AND MEASURED MULTIPLICATION FACTORS IN SMALL CRITICAL FACILITIES.

8 OXYGEN NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

117 1.00 KEV 15.0 MEV 10.0% 2 FR C.A.PHILIS BRC 742028R

Q: FOR SHIELDING CALCULATION.

8 OXYGEN NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

118 6.00 MEV 12.0 MEV 10. % 1 USA CHENG GA 861150F

Q: MEASUREMENTS RECOMMENDED AT 6, 8, 10 AND 12 MEV.
M: NEW REQUEST.

8 OXYGEN ALPHA ALPHA,N

119 100. KEV 6.50 MEV 6. % 2 ,USA WALTON LAS 781170N

Q: THICK TARGET YIELDS REQUIRED.
A: RELATIVE ERROR OF 3.0 PERCENT NEEDED.
ALPHA ENERGY RESOLUTION 100 KEV.

120 4.40 MEV 6.10 MEV 30.0% 2 GER H.KUESTERS KFK 792254R

Q: THICK-TARGET YIELD FOR UO2 OR PUO2.
MEASUREMENT WANTED.
O: NEUTRON EMISSION FROM FUEL.

8 OXYGEN 16 NEUTRON N,ALPHA

121 UP TO 50.0 MEV 10. % 2 ·USA CASWELL NBS 761113G

Q: MEASUREMENT AT THRESHOLD AND SEVERAL ENERGIES THROUGHOUT THE RANGE SHOULD BE SUFFICIENT.
GAMMA-RAY PRODUCTION AND CHARGED-PARTICLE SPECTRA ARE OF INTEREST.
O: NEEDED FOR ENERGY DEPOSITION CALCULATIONS FOR RADIOTHERAPY.

8 OXYGEN 16 NEUTRON N,NALPHA

122 UP TO 50.0 MEV 10. % 2 USA CASWELL NBS 761114G

Q: MEASUREMENT AT THRESHOLD AND SEVERAL ENERGIES THROUGHOUT THE RANGE SHOULD BE SUFFICIENT.
GAMMA-RAY PRODUCTION AND CHARGED-PARTICLE SPECTRA ARE OF INTEREST.
O: NEEDED FOR ENERGY DEPOSITION CALCULATIONS FOR RADIOTHERAPY.

8 OXYGEN 16 NEUTRON N,N4ALPHA

123 UP TO 50.0 MEV 10. % 2 USA CASWELL NBS 761115G

Q: AT LEAST ONE MEASUREMENT IS NEEDED FOR NORMALIZATION.
MEASUREMENT AT THRESHOLD AND SEVERAL ENERGIES THROUGHOUT THE RANGE SHOULD BE SUFFICIENT.
ALPHA SPECTRA ARE OF INTEREST.
O: NEEDED FOR ENERGY DEPOSITION CALCULATIONS FOR RADIOTHERAPY.

8 OXYGEN 17 NEUTRON N,ALPHA

124 25.3 MV 15.0 MEV 30.0% 2 JAP T.KAWAKITA PNC 792073R

Q: EVALUATED DATA WANTED.
O: FOR EVALUATION OF QUANTITY OF C 14 FROM OXIDE FUEL IN FAST REACTOR. BOTH EVALUATIONS AND MEASUREMENTS ARE SCARCE.

125 UP TO 20.0 MEV 10.0% 1 FR J.P.GROUILLER CAD 872024R

Q: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

8 OXYGEN 17 ALPHA ALPHA,N

126	UP TO	10.0 MEV	20.0%	2	JAP	N.YAMANO	SAE		792072R

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 CYCLE PROCESS.

8 OXYGEN 18 NEUTRON N,ALPHA

127	1.50 MEV		30.0%	2	SWD	B.FREDIN ASEA-ATOM VAESTERAAS	AKA		792093R

Q: INCIDENT ENERGY: FISSION SPECTRUM
O: FOR THE CALCULATION OF THE C-15 PRODUCTION IN THE COOLING MEDIA OF BWR.

8 OXYGEN 18 PROTON P,N

128	1.00E-04 EV	10.0 MEV	10. %	1	HUN	T.PINTER	PAX		873005R

O: FOR REACTOR DOSIMETRY.
M: NEW REQUEST.

8 OXYGEN 18 ALPHA ALPHA,N

129	UP TO	9.00 MEV	10. %	3	USA	DEI	BET		661010R

A: INCIDENT ENERGY RESOLUTION: 200 KEV.
O: NEEDED FOR INTRINSIC SOURCE.

130	UP TO	10.0 MEV	20.0%	2	JAP	N.YAMANO	SAE		792074R

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.

9 FLUORINE 19 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

131	2.00 MEV	15.0 MEV	10.0%	2	CCP	I.N.GOLOVIN	KUR		724019F

O: USE IN COOLANT.

9 FLUORINE 19 NEUTRON INELASTIC CROSS SECTION

132	1.00 MEV	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR		724020F

O: NEUTRONICS CALCULATIONS FOR BLANKET AND SHIELD.

9 FLUORINE 19 NEUTRON ABSORPTION CROSS SECTION

133	25.3 MV	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR		724021F

Q: ALL NEUTRON ABSORPTION PROCESSES SHOULD BE INCLUDED.
O: NEUTRONICS CALCULATIONS AND ENERGY DEPOSITION IN COOLANT.

9 FLUORINE 19 NEUTRON CAPTURE CROSS SECTION

134	25.3 MV	15.0 MEV	20. %	2	USA	CHENG	GA		861099F

O: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENT.
M: NEW REQUEST.

9 FLUORINE 19 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

135	500. KEV	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR		724022F

Q: GAMMA RAY SPECTRA ALSO REQUIRED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

9 FLUORINE 19 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

136	6.00 MEV	12.0 MEV	10. %	2	USA	CHENG	GA		861094F

Q: DOUBLE DIFFERENTIAL DATA NEEDED FOR NEUTRON TRANSPORT CALCULATIONS.
A: MEASUREMENTS RECOMMENDED AT 6, 8, 10 AND 12 MEV.
M: NEW REQUEST.

9 FLUORINE 19 ALPHA ALPHA,N

137	UP TO	15.0 MEV	30.0%	2	FR	B.DUCHEMIN	SAC	732039R

Q: ENERGY DISTRIBUTION REQUIRED.
A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING OF ALPHA-EMITTING MATERIALS.

138	100. KEV	6.50 MEV	6. %	2	USA	WALTON	LAS	781171N

Q: THICK TARGET YIELDS REQUIRED.
A: RELATIVE ERROR OF 3.0 PERCENT NEEDED.
ALPHA ENERGY RESOLUTION 100 KEV.

11 SODIUM 22 NEUTRON CAPTURE CROSS SECTION

139	25.0 MV	15.0 MEV	15.0%	1	GER	H.KUESTERS	KFK	792194R

Q: EVALUATION WANTED.
O: REDUCTION OF NA22.

11 SODIUM 23 NEUTRON TOTAL CROSS SECTION

140	100. KEV	500. KEV	2.0%	2	UK	J.BUTLER	WIN	792120R

Q: ACCURACY FOR AVERAGE VALUE OF THE ERROR BETWEEN E AND 2E.
O: MEASUREMENTS PLANNED - HARWELL

11 SODIUM 23 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

141	10.0 KEV	15.0 MEV	10. %	2	USA	HEMMIG	DOE	741012R

A: 15 PERCENT IN ANGULAR DISTRIBUTION.

11 SODIUM 23 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

142	4.00 MEV	10.0 MEV	10. %	3	USA	SMITH	ANL	621006R

Q: TOTAL INTEGRAL OVER 4PI REQUIRED.
SPECTRA AT SEVERAL ANGLES IF SIGNIFICANTLY ANISOTROPIC.
A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
DELTA E(N') LE 10 PERCENT.

11 SODIUM 23 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

143	UP TO	2.00 MEV	5. %	2	USA	HEMMIG	DOE	741014R

A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
ACCURACY OF 15 PERCENT IN ENERGY SPECTRA.
DELTA E(N') - 10 PERCENT.

144	2.00 MEV	15.0 MEV	10. %	2	USA	HEMMIG	DOE	741015R

A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
ACCURACY OF 15 PERCENT IN ENERGY SPECTRA.
DELTA E(N') - 10 PERCENT.

11 SODIUM 23 NEUTRON CAPTURE CROSS SECTION

145	100. EV	100. KEV		2	UK	J.L.ROWLANDS	WIN	642002R

A: ACCURACY 10 PERCENT UP TO 10 KEV, 20 PERCENT ABOVE.
O: FOR FAST REACTORS.
DISCREPANCY IN RADIATION WIDTH DATA AT 3 KEV RESONANCE.

146	25.3 MV	4.00 KEV		2	CCP	M.N.NIKOLAEV	FEI	714002R

Q: CAPTURE WIDTH OF 2.9 KEV RESONANCE SHOULD BE MEASURED IN THREE DIFFERENT EXPERIMENTS. RESULTS SHOULD COINCIDE WITHIN LIMITS OF 5-7 PERCENT.
IF HIGH RPI CAPTURE WIDTH CONFIRMED, ENERGY DEPENDENCE OF CAPTURE CROSS SECTION SHOULD BE MEASURED FROM THERMAL TO RESONANCE REGION TO INVESTIGATE INTERFERENCE BETWEEN DIRECT AND RESONANCE CAPTURE.
MEASUREMENTS OF GAMMA RAY SPECTRA IN THERMAL AND 2.95 KEV REGIONS DESIRABLE FOR DECISION ABOUT EXISTENCE OF INTERFERENCE EFFECTS.
DIRECT MEASUREMENT OF THE EFFECTIVE RESONANCE INTEGRAL IN THE SODIUM MEDIUM FROM 24 KEV NEUTRON SOURCE SEEMS TO BE USEFUL FOR DECIDING THE QUESTION ABOUT THE 2.9 KEV RESONANCE CAPTURE WIDTH.
A: ACCURACY REQUIRED TO BETTER THAN 10. PERCENT.
O: FOR CALCULATION OF NA ACTIVATION IN LMFBR.
SEE ALSO GENERAL COMMENTS IN THE INTRODUCTION.

11 SODIUM 23 NEUTRON N,2N

147	UP TO	20.0 MEV	15. %	2	USA	HEMMIG	DOE		741020R

Q: NEEDED FOR COOLANT ACTIVATION.

148	UP TO	20.0 MEV	20.0%	2	FR	J.P.GROUILLER	CAD		872026R

Q: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

11 SODIUM 23 NEUTRON N,P

149	UP TO	20.0 MEV	10. %	2	USA	LARSON	ORL		801262R

Q: ACTIVATION MEASUREMENT TO GUIDE MODEL CALCULATIONS.

150	UP TO	20.0 MEV	20.0%	2	FR	J.P.GROUILLER	CAD		872025R

Q: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

11 SODIUM 23 NEUTRON N,ALPHA

151	UP TO	20.0 MEV	10. %	2	USA	LARSON	ORL		801263R

Q: ACTIVATION MEASUREMENT TO GUIDE MODEL CALCULATIONS.

11 SODIUM 23 NEUTRON SPECIAL QUANTITY (DESCRIPTION BELOW)

152	1.00 KEV	14.0 MEV	30. %	2	USA	BOWMAN	NBS		821052R

Q: ELECTRON EXCITATION OR REMOVAL INDUCED BY SUDDEN ACCELERATION OF NUCLEUS IN NEUTRON NUCLEUS SCATTER (N,N'E).
A: INCIDENT ENERGY RESOLUTION: 30. PERCENT.
O: NEUTRON SPECTRUM CALCULATION.

11 SODIUM 23 NEUTRON RESONANCE PARAMETERS

153	2.90 KEV	100. KEV		2	CCP	M.N.NIKOLAEV	FEI		714001R

Q: NEUTRON AND CAPTURE WIDTHS WANTED.
A: NEUTRON WIDTH FOR 2.95 KEV LEVEL WANTED WITH 5 PERCENT ACCURACY.
ALL OTHER WIDTHS REQUIRED WITH 10 PERCENT ACCURACY.
O: FOR FAST REACTOR CALCULATION.

13 ALUMINUM NEUTRON CAPTURE CROSS SECTION

154	6.00 MEV	16.0 MEV	8. %	3	PRC	ZHANG BENAI	IPM		873020R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

13 ALUMINUM NEUTRON CAPTURE GAMMA RAY SPECTRUM

155	6.00 MEV	16.0 MEV	15. %	3	PRC	ZHANG BENAI	IPM		873029R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

13 ALUMINUM 27 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

156	UP TO	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR		794011F

O: FOR NEUTRON TRANSPORT CALCULATIONS.

13 ALUMINUM 27 ALPHA ALPHA,N

157	100. KEV	6.50 MEV	6. %	2	USA	WALTON	LAS		781172N

Q: THICK TARGET YIELDS REQUIRED.
A: INCIDENT ENERGY RESOLUTION: 100 KEV.
RELATIVE ERROR OF 3.0 PERCENT NEEDED.
ALPHA ENERGY RESOLUTION 100 KEV.

14 SILICON NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

158	10.0	MEV	12.0	MEV	10. %	2	USA	CHENG	GA	861151F

Q: RECOMMEND MEASUREMENTS AT 10 AND 12 MEV.
M: NEW REQUEST.

14 SILICON 29 NEUTRON N,2P

159	14.0	MEV	15.0	MEV	20. %	2	USA	CHENG	GA	861100F

Q: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENTS FOR SI(C)-BASED FUSION REACTOR CONCEPTS
M: NEW REQUEST.

14 SILICON 30 NEUTRON CAPTURE CROSS SECTION

160	25.3	MV	10.0	MEV	20. %	2	USA	CHENG	GA	861101F

Q: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENTS FOR SI(C)-BASED FUSION REACTOR CONCEPTS
M: NEW REQUEST.

16 SULFUR NEUTRON ABSORPTION CROSS SECTION

161	25.3	MV			1. %	2	USA	CARLSON	NBS	861069R

A: THE MEASUREMENT COULD BE AT THERMAL OR FOR AN ENERGY RANGE WHICH INCLUDES THERMAL.
Q: TO IMPROVE DETERMINATION OF THERMAL CONSTANTS.
M: NEW REQUEST.

18 ARGON 36 NEUTRON CAPTURE CROSS SECTION

162	25.3	MV	1.00	MEV	20.0%	2	FR	E.FORT	CAD	872027R

Q: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

18 ARGON 40 NEUTRON CAPTURE CROSS SECTION

163	UP TO		10.0	MEV		2	JAP	M.KAWAI	NIG	712006R

A: ACCURACY REQUIRED TO BETTER THAN 20.0 PERCENT.
Q: FOR REACTOR HAZARD CALCULATION.

164	25.0	MV	15.0	MEV	15.0%	1	GER	H.KUESTERS	KFK	792195R

Q: EVALUATION WANTED.
Q: PRODUCTION OF AR41.

18 ARGON 40 NEUTRON N,2N

165	10.0	MEV	15.0	MEV	20. %	2	USA	CHENG	GA	861102F

Q: LONG-LIVED ACTIVATION PRODUCT, 39-AR (269 YR), PRODUCED.
M: NEW REQUEST.

19 POTASSIUM 39 NEUTRON N,P

166	10.0	MEV	15.0	MEV	20. %	2	USA	CHENG	GA	861104F

Q: LONG-LIVED ACTIVATION PRODUCT, 39-AR (269 YR), PRODUCED.
M: NEW REQUEST.

19 POTASSIUM 39 NEUTRON N,ALPHA

167	100.	KEV	15.0	MEV	20. %	2	USA	CHENG	GA	861103F

Q: LONG-LIVED ACTIVATION PRODUCT, 36-CL (3.01X10**5 YR), PRODUCED.
M: NEW REQUEST.

19 POTASSIUM 41 NEUTRON CAPTURE CROSS SECTION

168	25.3	MV	15.0	MEV	20. %	2	USA	CHENG	GA	861105F

Q: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENT.
M: NEW REQUEST.

20 CALCIUM NEUTRON CAPTURE CROSS SECTION

169 1.00 KEV 500. KEV 10. % 2 USA HEMMIG DOE 741029R

Q: FOR SHIELDING EFFECT OF CONCRETE.

20 CALCIUM NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

170 1.00 MEV 15.0 MEV 15.0% 3 JAP Y.SEKI JAE 832018F

Q: INCLUDED IN CONCRETE.
FOR SHIELDING DESIGN.

20 CALCIUM ALPHA ALPHA,N

171 100. KEV 6.50 MEV 6. % 2 USA WALTON LAS 781173N

Q: THICK TARGET YIELDS REQUIRED.
A: INCIDENT ENERGY RESOLUTION: 100 KEV.
RELATIVE ERROR OF 3.0 PERCENT NEEDED.
ALPHA ENERGY RESOLUTION 100 KEV.

20 CALCIUM 40 NEUTRON N,2P

172 8.00 MEV 15.0 MEV 20. % 2 USA CHENG GA 861106F

Q: LONG-LIVED ACTIVATION PRODUCT, 39-AR (269 YR),
PRODUCED.
M: NEW REQUEST.

20 CALCIUM 42 NEUTRON N,2N

173 12.0 MEV 15.0 MEV 20. % 3 USA CHENG GA 861107F

Q: LONG-LIVED ACTIVATION PRODUCT, 41-CA
(1.03X10**5 YR), PRODUCED.
M: NEW REQUEST.

20 CALCIUM 42 NEUTRON N,ALPHA

174 100. KEV 15.0 MEV 20. % 3 USA CHENG GA 861108F

Q: LONG-LIVED ACTIVATION PRODUCT, 39-AR (269 YR),
PRODUCED.
M: NEW REQUEST.

20 CALCIUM 43 NEUTRON N,2P

175 11.0 MEV 15.0 MEV 20. % 3 USA CHENG GA 861109F

Q: LONG-LIVED ACTIVATION PRODUCT, 42-AR (32.9 YR),
PRODUCED.
M: NEW REQUEST.

20 CALCIUM 43 NEUTRON N,NALPHA

176 8.00 MEV 15.0 MEV 20. % 3 USA CHENG GA 861110F

Q: LONG-LIVED ACTIVATION PRODUCT, 39-AR (269 YR),
PRODUCED.
M: NEW REQUEST.

20 CALCIUM 45 NEUTRON N,ALPHA

177 1.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861111F

Q: RADIOACTIVE TARGET 163.8 DAY
LONG-LIVED ACTIVATION PRODUCT, 42-AR (32.9 YR),
PRODUCED.
O: 48-TI(N,ALPHA)45-CA(N,ALPHA)42-AR CHAIN REACTION
CRITICAL FOR V-CR-TI ALLOY TO QUALIFY AS CLASS C
(SHALLOW-LAND BURIAL) WASTE MATERIAL.
M: NEW REQUEST.

22 TITANIUM NEUTRON CAPTURE CROSS SECTION

178 100. EV 100. KEV 20.0% 3 UK J.L.ROWLANDS WIN 692065R

O: FOR FAST REACTORS.

179 100. EV 500. KEV 20.0% 2 FR M.SALVATORES CAD 832004R

Q: FAST REACTOR CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

180 6.00 MEV 16.0 MEV 8. % 3 PRC ZHANG BENAI IPM 873025R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

22 TITANIUM NEUTRON CAPTURE GAMMA RAY SPECTRUM

181 6.00 MEV 16.0 MEV 15. % 3 PRC ZHANG BENAI IPM 873034R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

22 TITANIUM NEUTRON SPECIAL QUANTITY (DESCRIPTION BELOW)

182 UP TO 35.0 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 812002F

Q: FOR PRODUCTION OF SC-46.
REACTION INCLUDES TI-46(N,P), TI-47(N,D), TI-47(N,NP). FOR TI-46(N,P) THE ENERGY RANGE SHOULD EXTEND TO 20MEV
O: FOR HIGH ENERGY ACCELERATOR BASED NEUTRON SOURCES

183 UP TO 35.0 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 812003F

Q: FOR PRODUCTION OF SC-47.
REACTION INCLUDES TI-47(N,P), TI-48(N,D) AND TI-48(N,NP). FOR TI-47(N,P) THE ENERGY RANGE EXTENDS TO 20MEV.
O: FOR HIGH ENERGY ACCELERATOR BASED NEUTRON SOURCES

22 TITANIUM 46 NEUTRON N,2P

184 10.0 MEV 15.0 MEV 20. % 2 USA CHENG GA 861112F

O: ACTIVATION DATA NEEDED FOR RADIOACTIVITY ANALYSIS IN FUSION REACTORS.
M: NEW REQUEST.

22 TITANIUM 47 NEUTRON N,P

185 2.10 MEV 7.00 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 742127R

O: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.
GREATER THAN 10 PERCENT DISCREPANCY BETWEEN INTEGRAL AND DIFFERENTIAL MEASUREMENTS.

186 1.00 MEV 20.0 MEV 5. % 1 HUN E.M.ZSOLNAY BTU 873007R
E.J.SZONDI BTU

Q: THERE ARE SEVERAL DISCREPANCIES IN THE FILE3 (CROSS SECTION DATA) OF THE IRDF85.
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (0.1 MEV STEP ABOVE 1 MEV); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 10*10 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY. SHOULD BE INCLUDED IN NEW EDITION OF IRDF-85.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

22 TITANIUM 46 NEUTRON N,2P

187 13.0 MEV 15.0 MEV 20. % 2 USA CHENG GA 861113F

O: ACTIVATION DATA NEEDED FOR RADIOACTIVITY ANALYSIS IN FUSION REACTORS.
M: NEW REQUEST.

22 TITANIUM 48 NEUTRON N,ALPHA

188 3.00 MEV 14.0 MEV 18. % 1 USA CHENG GA 861175F

O: IMPORTANT FOR ANALYSIS OF LONG-LIVED 42-AR PRODUCTION: 48-TI(N,ALPHA)45-CA(N,ALPHA)42-AR.
M: NEW REQUEST.

23 VANADIUM — NEUTRON — ELASTIC CROSS SECTION

189	2.00 MEV	15.0 MEV	10.0%	1	CCP	I.N.GOLOVIN	KUR			724023F
						Q: POTENTIAL USE AS STRUCTURAL MATERIAL. FOR DETERMINATION OF NEUTRON TRANSMISSION.				
190	25.3 MV	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM			753040R
						Q: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.				

23 VANADIUM — NEUTRON — INELASTIC CROSS SECTION

191	UP TO	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM			753041R
						Q: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.				

23 VANADIUM — NEUTRON — ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

192	2.00 MEV	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724024F
						Q: NEUTRONICS CALCULATIONS FOR BLANKET AND SHIELD.				

23 VANADIUM — NEUTRON — CAPTURE CROSS SECTION

193	100. EV	100. KEV	10.0%	3	UK	J.L.ROWLANDS	WIN			692073R
						Q: FOR FAST REACTORS.				
194	1.00 KEV	2.00 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724027F
						Q: NEUTRON ABSORPTION, GAMMA RAY HEATING, AND PRODUCTION OF HIGHER ISOTOPES.				
195	14.0 MEV		15.0%	1	CCP	I.N.GOLOVIN	KUR			724028F
						Q: NEUTRON ABSORPTION, GAMMA RAY HEATING, AND PRODUCTION OF HIGHER ISOTOPES.				
196	25.3 MV	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM			753042R
						Q: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.				
197	100. EV	500. EV	20.0%	2	FR	M.SALVATORES	CAD			832005R
						Q: FAST REACTOR CALCULATIONS. M: SUBSTANTIAL MODIFICATIONS.				

23 VANADIUM — NEUTRON — TOTAL PHOTON PRODUCTION CROSS SECTION

198	300. KEV	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724029F
						Q: GAMMA RAY SPECTRUM ALSO WANTED. Q: GAMMA RAY HEATING CALCULATIONS.				

23 VANADIUM — NEUTRON — N,2N

199	2.00 MEV	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724025F
						Q: NEUTRON BLANKET CALCULATIONS.				
200	14.0 MEV		15.0%	1	CCP	I.N.GOLOVIN	KUR			724026F
						Q: ENERGY AND ANGULAR DEPENDENCE OF SECONDARY NEUTRONS REQUIRED. Q: NEUTRON BLANKET CALCULATIONS.				

23 VANADIUM — NEUTRON — N,P

201	UP TO	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724030F
						Q: FOR HYDROGEN ACCUMULATION CALCULATIONS.				

23 VANADIUM — NEUTRON — N,ALPHA

202	UP TO	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR			724031F
						Q: HELIUM ACCUMULATION CALCULATIONS.				

23 VANADIUM 50 — NEUTRON — N,2N

203	10.0 MEV	15.0 MEV	20. %	1	USA	CHENG	GA			861114F
						Q: MEDIUM-TERM ACTIVATION PRODUCT, 49-V(330 DAY), PRODUCED. M: NEW REQUEST.				

23 VANADIUM 51 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

204	1.50	MEV	14.0	MEV	5. %	3	USA	SMITH HEMMIG	ANL DOE	621011R

Q: TOTAL INTEGRAL OVER 4PI REQUIRED.
SPECTRA AT SEVERAL ANGLES IF SIGNIFICANTLY ANISOTROPIC.
O: NEEDED FOR ENDF/B-VI EVALUATION.

23 VANADIUM 51 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

205	6.00	MEV	12.0	MEV	10. %	1	USA	CHENG	GA	861152F

Q: RECOMMEND MEASUREMENTS AT 6, 8, 10 AND 12 MEV.
M: NEW REQUEST.

24 CHROMIUM NEUTRON TOTAL CROSS SECTION

206	1.00	KEV	20.0	MEV	3. %	2	USA	HEMMIG	DOE	721035R

A: 5 PERCENT ACCURACY MINIMA.
ENERGY RESOLUTION - SUFFICIENT TO RESOLVE MAJOR STRUCTURE.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

24 CHROMIUM NEUTRON ELASTIC CROSS SECTION

207	25.3	MV	20.0	MEV	3.0%	2	IND	S.B.GARG	TRM	753031R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

24 CHROMIUM NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

208	4.00	MEV	15.0	MEV	10. %	3	USA	HEMMIG	DOE	741032R

24 CHROMIUM NEUTRON INELASTIC CROSS SECTION

209		UP TO	20.0	MEV	3.0%	2	IND	S.B.GARG	TRM	753032R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

210		UP TO	15.0	MEV	30.0%	2	UK	R.HANCOX	CUL	762238F

O: EVALUATION REQUIREMENT.IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

24 CHROMIUM NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

211	4.00	MEV	15.0	MEV	10. %	2	USA	HEMMIG	DOE	661012R

Q: TOTAL INTEGRAL OVER 4PI REQUIRED.
SPECTRA AT SEVERAL ANGLES IF SIGNIFICANTLY ANISOTROPIC.
A: ENERGY RESOLUTION REQUIRED TO DETERMINE MAJOR STRUCTURE.

212		UP TO	15.0	MEV	20.0%	3	FR	M.SALVATORES	CAD	732040R

O: FOR FAST REACTOR CALCULATIONS.

24 CHROMIUM NEUTRON CAPTURE CROSS SECTION

213	100.	EV	100.	KEV	20.0%	1	UK	J.L.ROWLANDS	WIN	692082R

O: FOR FAST REACTORS.
REASSESSMENT OF EXISTING MEASURED DATA NEEDED

214	25.3	MV	200.	KEV	10.0%	1	GER	F.FROEHNER	KFK	692083R

Q: RESONANCE PARAMETERS ALSO REQUIRED PARTICULARY FOR CR-53.
ADDITIONAL CAPTURE MEASUREMENTS AND CAPTURE WIDTH DETERMINATIONS FOR INDIVIDUAL RESONANCES WANTED.
A: EMPHASIS ON ACCURATE (10 PERCENT) RADIATION WIDTHS FOR BROAD S LEVELS AND ON P LEVELS CONTRIBUTING TO DOPPLER COEFFICIENT.
O: CAPTURE WIDTHS NEEDED BECAUSE OF LARGE DISCREPANCIES BETWEEN DIRECTLY MEASURED INFINITE CAPTURE RESONANCE INTEGRAL AND THAT CALCULATED FROM DIFFERENTIAL CAPTURE MEASUREMENTS.

215	100.	EV	500.	KEV	10.0%	1	FR	M.SALVATORES	CAD	692084R

Q: NEED FOR RESONANCE PARAMETERS.
O: FAST REACTOR CALCULATIONS.

216	1.00	KEV	200.	KEV	15. %	2	USA	HEMMIG	DOE	721036R

Q: RESONANCE PARAMETERS NEEDED, ESPECIALLY GAMMA WIDTHS.
A: INCIDENT ENERGY RESOLUTION: 20. PERCENT.

217	25.3	MV	20.0	MEV	3.0%	2	IND	S.B.GARG	TRM	753033R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

218	25.3	MV	15.0	MEV	30.0%	2	UK	R.HANCOX	CUL	762247F

O: EVALUATION REQUIREMENT.IN PROGRESS
FOR EUROPEAN FUSION FILE (EFF)

219	6.00	MEV	16.0	MEV	8. %	3	PRC	ZHANG BENAI	IPM	873024R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

24 CHROMIUM NEUTRON CAPTURE GAMMA RAY SPECTRUM

220	6.00	MEV	16.0	MEV	15. %	3	PRC	ZHANG BENAI	IPM	873033R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

24 CHROMIUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

221	25.3	MV	15.0	MEV	10.0%	2	FR	B.DUCHEMIN	SAC	692080R

Q: GAMMA SPECTRA REQUIRED.
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV.
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: EVALUATION MAY BE SUFFICIENT.

222	UP TO	10.0	MEV	10.0%	1	FR	M.SALVATORES	CAD	832013R

Q: GAMMA SPECTRUM REQUIRED.
O: FAST REACTOR CALCULATIONS.

24 CHROMIUM NEUTRON N,2N

223	UP TO	15.0	MEV	20.0%	2	UK	R.HANCOX	CUL	792162F

O: EVALUATION REQUIREMENT.IN PROGRESS
FOR EUROPEAN FUSION FILE (EFF)

24 CHROMIUM NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

224	UP TO	15.0	MEV	10.0%	2	JAP	Y.SEKI	JAE	832024F

O: FOR NEUTRON TRANSPORT CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

225	6.00	MEV	12.0	MEV	20. %	1	USA	CHENG	GA	861153F

Q: MEASUREMENTS RECOMMENDED AT 6, 8, 10 AND 12 MEV.
M: NEW REQUEST.

24 CHROMIUM NEUTRON N,P

226					30.0%	3	UK	J.L.ROWLANDS	WIN	692086R

Q: FISSION SPECTRUM AVERAGE WANTED.
O: FOR FAST REACTORS.

227	UP TO	15.0	MEV	10.0%	1	FR	M.SALVATORES	CAD	712016R

O: FOR FAST REACTOR CALCULATIONS.

228	UP TO	15.0	MEV	25.0%	2	UK	R.HANCOX	CUL	762241F

O: EVALUATION REQUIREMENT.IN PROGRESS
FOR EUROPEAN FUSION FILE (EFF)

229	UP TO	15.0	MEV	10.0%	1	GER	H.KUESTERS	KFK	792199R

24 CHROMIUM — NEUTRON — N,ALPHA

230	3.00	MEV	15.0	MEV	10.0%	1	FR	M.SALVATORES	CAD	732041R
								O: FOR FAST REACTOR CALCULATIONS.		
231		UP TO	15.0	MEV	25.0%	2	UK	R.HANCOX	CUL	762243F
								O: EVALUATION REQUIREMENT IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)		
232		UP TO	15.0	MEV	30.0%	1	GER	H.KUESTERS	KFK	792200R
233		UP TO	14.0	MEV	20. %	2	USA	LARSON	ORL	861080R
								M: NEW REQUEST.		

24 CHROMIUM 50 — NEUTRON — CAPTURE CROSS SECTION

234	100.	EV	15.0	MEV	25.0%	1	GER	H.KUESTERS	KFK	792193R
								Q: EVALUATION WANTED. O: ACTIVATION OF COOLANT AND STRUCTURE AND HEAT GENERATION IN STRUCTURAL MATERIALS.		
235	25.3	MV	3.00	MEV	20.0%	1	FR	F.JOSSO	CAD	792252R
								A: QUOTED UNCERTAINTY AT TWO STANDARD DEVIATIONS. O: FOR FAST REACTOR FUEL CYCLE CALCULATION.		
236	25.3	MV	300.	KEV	10. %	2	USA	LARSON	ORL	861081R
								M: NEW REQUEST.		
237	300.	KEV	14.0	MEV	15. %	1	USA	CHENG	GA	861176F
								O: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENT. M: NEW REQUEST.		

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

24 CHROMIUM 50 — NEUTRON — N,2N

238	14.0	MEV	20.0	MEV	20. %	2	USA	LARSON	ORL	861082F
								M: NEW REQUEST.		

24 CHROMIUM 52 — NEUTRON — N,2N

239	14.0	MEV	20.0	MEV	20. %	2	USA	LARSON	ORL	861083F
								M: NEW REQUEST.		

24 CHROMIUM 52 — NEUTRON — N,P

240	10.0	MEV	18.0	MEV	25. %	2	USA	LARSON	ORL	861084F
								O: HYDROGEN PRODUCTION EVALUATION. M: NEW REQUEST.		

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

24 CHROMIUM 52 — NEUTRON — N,ALPHA

241	10.0	MEV	20.0	MEV	10. %	2	USA	CHENG	GA	861020F
								O: FOR CR EVALUATION (HETRICK/ORNL). M: NEW REQUEST.		

25 MANGANESE 55 — NEUTRON — CAPTURE CROSS SECTION

242	100.	EV	100.	KEV	20.0%	3	UK	J.L.ROWLANDS	WIN	682010R
								O: FOR FAST REACTORS.		
243	100.	EV	500.	EV	10.0%	2	FR	M.SALVATORES	CAD	832007R
								O: FAST REACTOR CALCULATIONS.		

244 1.00 EV 20.0 MEV 5. % 1 HUN E.M.ZSOLNAY BTU 873012R
E.J.SZONDI BTU

Q: THIS REACTION SHOULD BE INCLUDED IN THE IRDF-85
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY.
M: NEW REQUEST.

25 MANGANESE 55 NEUTRON N,2N

245 UP TO 16.0 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 742129R

O: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.
GREATER THAN 10 PERCENT DISCREPANCY BETWEEN INTEGRAL AND DIFFERENTIAL MEASUREMENTS.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

25 MANGANESE 55 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

246 6.00 MEV 12.0 MEV 20. % 2 USA CHENG GA 861154F

Q: MEASUREMENTS RECOMMENDED AT 6, 8, 10 AND 12 MEV.
M: NEW REQUEST.

25 MANGANESE 55 NEUTRON ENERGY-ANGLE DIFF. ALPHA-PRODUCTION CROSS SECTION

247 6.00 MEV 15.0 MEV 15. % 2 USA CHENG GA 861184F

Q: NEEDED FOR RADIATION DAMAGE ASSESSMENT. (LARSON/ORNL)
M: NEW REQUEST.

26 IRON GAMMA GAMMA,N

248 UP TO 20.0 MEV 30. % 2 USA CHENG GA 861155F

A: INCIDENT ENERGY RESOLUTION: 5. PERCENT.
O: IMPORTANT FOR STUDY OF FUSION DEVICES DURING HYDROGEN OPERATION. (DRIEMEYER/MOD)
M: NEW REQUEST.

26 IRON NEUTRON TOTAL CROSS SECTION

249 10.0 KEV 1.00 MEV 5.0% 2 CCP M.N.NIKOLAEV FEI 714003R

Q: CAREFUL MEASUREMENTS OF INTERFERENCE MINIMA NEEDED.
OBSERVATION OF P-WAVE RESONANCES IS WANTED.
A: TRANSMISSION MEASUREMENTS WITH POOR RESOLUTION BUT STRONG ATTENUATION OF THE PRIMARY BEAM ARE WANTED FOR MINIMA CS MEASUREMENTS.
HIGH RESOLUTION MEASUREMENTS ARE DESIRED FOR P-WAVE RESONANCE OBSERVATION AND RESONANCE PARAMETER DERIVATION.
O: FOR SHIELDING CALCULATION NEEDS AND EVALUATION OF THE TOTAL AND CAPTURE CROSS SECTIONS FOR FAST REACTOR CALCULATIONS.
COMPARISON OF THE S AND P-WAVE LEVEL DENSITIES IS VERY INTERESTING FROM THE POINT OF VIEW OF LEVEL DENSITY PARITY DEPENDENCE CONFIRMATION.

26 IRON NEUTRON ELASTIC CROSS SECTION

250 25.3 MV 20.0 MEV 3.0% 2 IND S.B.GARG TRM 753034R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

26 IRON NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

251 5.00 MEV 15.0 MEV 5. % 2 USA SMITH ANL 691086R

A: ENERGY RESOLUTION - TO AT LEAST RESOLVE INTERMEDIATE STRUCTURE.
O: FOR OFE AND RRT NEEDS.

252 500. EV 5.00 MEV 5.0% 1 FR M.SALVATORES CAD 832009R

O: FAST REACTOR CALCULATIONS.

26 IRON NEUTRON INELASTIC CROSS SECTION

253	UP TO	15.0 MEV	20.0%	2	UK	R.HANCOX	CUL		722102F
					Q: EVALUATION REQUIREMENT.IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)				
254	UP TO	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM		753035R
					Q: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.				

26 IRON NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

255	UP TO	14.0 MEV	5.0%	1	FR	M.SALVATORES	CAD		702007R
					Q: FINE STRUCTURE BELOW 2 MEV WANTED. Q: FOR FAST REACTOR CALCULATIONS.				
256	900. KEV	15.0 MEV	5.0%	2	CCP	M.N.NIKOLAEV	FEI		714004R
					Q: IN CONTINUUM REGION ENERGY DEPENDENCE OF NUCLEAR TEMPERATURE WANTED. IN THE REGION BELOW 3 MEV AVERAGE CHARACTERISTICS OF STRUCTURE IN THE CROSS SECTION ARE WANTED FOR EVALUATION OF SELF SHIELDING. TRANSMISSION MEASUREMENTS USING THE SELF-INDICATION METHOD WITH DETECTION OF GAMMA RAYS FROM INELASTIC SCATTERING ARE DESIRED. MEASUREMENTS SHOULD EXTEND TO PRIMARY-BEAM ATTENUATION DOWN TO 1/100 OR 1/1000. A: CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION THRESHOLD OF U-238 WANTED WITH 5.0 PERCENT ACCURACY. LEVEL EXCITATION CROSS SECTION DESIRED WITH 10 PERCENT ACCURACY. O: SEE GENERAL COMMENTS IN THE INTRODUCTION.				
257	2.00 MEV	15.0 MEV	10. %	2	USA	BARTINE	ORL		761075R
					O: TO RESOLVE SPECTRA MEASUREMENTS FROM STAINLESS STEEL.				

26 IRON NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

258	UP TO	10.0 MEV		1	UK	J.L.ROWLANDS J.BUTLER	WIN WIN		692098R
					A: ACCURACY REQUIRED IS 5 PERCENT TO 4 MEV AND 5 TO 10 PERCENT ABOVE O: EVALUATION REQUIREMENT. FURTHER MEASUREMENTS MIGHT BE REQUIRED				
259	UP TO	4.00 MEV	5.0%	1	GER	H.KUESTERS	KFK		792205R
260	4.00 MEV	15.0 MEV		1	GER	H.KUESTERS	KFK		792206R
					A: ACCURACY OF 5-30 PERCENT REQUIRED.				

26 IRON NEUTRON CAPTURE CROSS SECTION

261	100. EV	1.00 MEV		1	UK	J.L.ROWLANDS	WIN		692101R
					A: ACCURACY REQUIRED 10 PERCENT TO 100 KEV, 20. PERCENT ABOVE. O: FOR FAST REACTORS.				
262	100. EV	500. KEV	5.0%	1	FR	M.SALVATORES	CAD		692104R
					Q: RESONANCE PARAMETERS WANTED. O: FOR FAST REACTOR CALCULATIONS.				
263	500. EV	800. KEV	10.0%	1	CCP	M.N.NIKOLAEV	FEI		714005R
					Q: DESIRABLE TO USE EXPERIMENTAL METHODS WHICH ARE NOT VERY SENSITIVE TO SELF-SHIELDING AND TO CAPTURE-AFTER-SCATTERING EFFECTS. A: 20 PERCENT ABOVE 100 KEV WOULD BE VERY USEFUL. O: SEE GENERAL COMMENTS IN THE INTRODUCTION. FIRST PRIORITY BECAUSE IT IS DIFFICULT TO EVALUATE THE IRON CAPTURE CROSS SECTION TO REQUESTED ACCURACY FROM MACROSCOPIC EXPERIMENTS ONLY.				
264	25.3 MV	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM		753036R
					O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.				
265	25.3 MV	15.0 MEV	15.0%	2	UK	R.HANCOX	CUL		762248F
					O: EVALUATION REQUIREMENT. IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)				
266	6.00 MEV	16.0 MEV	8. %	3	PRC	ZHANG BENAI	IPM		873021R
					Q: GAMMA-RAY ENERGY REGION 10-22MEV. RADIATIVE CAPTURE CROSS-SECTION. NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE. A: ACCURACY 8-10%. O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY. M: NEW REQUEST.				

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

26 IRON NEUTRON CAPTURE GAMMA RAY SPECTRUM

267	6.00 MEV	16.0 MEV	15. %	3	PRC	ZHANG BENAI	IPM	873030R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

26 IRON NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

268	25.3 MV	15.0 MEV	10.0%	2	FR	B.OUCHEMIN	SAC	692096R

Q: GAMMA SPECTRA REQUIRED.
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV.
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATIONS.
EVALUATION MAY BE SUFFICIENT.

269	UP TO	10.0 MEV	10.0%	1	FR	M.SALVATORES	CAD	832011R

Q: GAMMA SPECTRUM REQUIRED.
O: FAST REACTOR CALCULATIONS.

26 IRON NEUTRON ENERGY DIFF. PHOTON-PRODUCTION CROSS SECTION

270	1.00 MEV	15.0 MEV	10.0%	2	CCP	I.N.GOLOVIN	KUR	794012F

O: FOR GAMMA-RAY HEATING AND SHIELDING CALCULATIONS.

26 IRON NEUTRON N,2N

271	UP TO	15.0 MEV	10.0%	2	UK	R.HANCOX	CUL	722106F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

26 IRON NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

272	UP TO	15.0 MEV	10.0%	2	JAP	Y.SEKI	JAE	832025F

O: FOR NEUTRON TRANSPORT CALCULATIONS.

273	UP TO	15.0 MEV	10.0%	2	JAP	A.TAKAHASHI	OSA	832042F

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR INELASTIC SCATTERING AND (N,2N) REACTIONS ARE ESPECIALLY WANTED.
O: NEUTRON TRANSPORT CALCULATIONS.
NOT MET FOR LOW ENERGY PART OF EMISSION SPECTRUM
M: MODIFIED (PARTIALLY FULFILLED).

274	6.00 MEV	15.0 MEV	5. %	1	USA	BERK	DOE	861185F

Q: MEASUREMENTS RECOMMENDED AT 6,8,10,12 AND 14 MEV.
M: NEW REQUEST.

26 IRON NEUTRON N,P

275	UP TO	15.0 MEV	10.0%	1	FR	M.SALVATORES	CAD	712026R

O: FOR FAST REACTOR CALCULATIONS.

276	UP TO	15.0 MEV	20.0%	2	UK	R.HANCOX	CUL	722107F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

277	UP TO	15.0 MEV	10.0%	1	GER	H.KUESTERS	KFK	792203R

26 IRON NEUTRON N,ALPHA

278	UP TO	15.0 MEV	20.0%	2	UK	R.HANCOX	CUL	722108F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

279	UP TO	15.0 MEV	10.0%	1	FR	M.SALVATORES	CAD	732042R

O: FOR FAST REACTOR CALCULATIONS.

280 UP TO 15.0 MEV 30.0% 1 GER H.KUESTERS KFK 792204R

26 IRON 54 NEUTRON CAPTURE CROSS SECTION

281 25.3 MV 3.00 MEV 20.0% 1 FR F.JOSSO CAD 792007R

A: QUOTED UNCERTAINTY AT TWO STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

26 IRON 54 NEUTRON N,P

282 25.3 MV 3.00 MEV 10.0% 1 FR F.JOSSO CAD 792008R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FAST REACTOR FUEL CYCLE CALCULATION.

26 IRON 54 NEUTRON N,ALPHA

283 UP TO 15.0 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 812008R

O: FEW EXPERIMENTAL DATA EXIST AND CURRENT EVALUATIONS ARE HEAVILY BASED ON CALCULATIONS. NEW AND SUPPLEMENTARY MEASUREMENTS ARE REQUESTED

284 UP TO 20.0 MEV 20.0% 2 FR J.P.GROUILLER CAD 872028R

O: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

26 IRON 56 NEUTRON CAPTURE CROSS SECTION

285 10.0 KEV 1.00 MEV 1 USA HEMMIG DOE 821033R

A: ENERGY AVERAGED ACCURACY TO 10-15 PERCENT.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

26 IRON 56 NEUTRON SPECIAL QUANTITY (DESCRIPTION BELOW)

286 1.00 KEV 14.0 MEV 30. % 2 USA BOWMAN NBS 821053R

Q: ELECTRON EXCITATION OR REMOVAL INDUCED BY SUDDEN ACCELERATION OF NUCLEUS IN NEUTRON-NUCLEUS SCATTER (N,N'E).
A: INCIDENT ENERGY RESOLUTION: 30. PERCENT.
O: NEUTRON SPECTRUM CALCULATIONS.

26 IRON 56 NEUTRON RESONANCE PARAMETERS

287 800. EV 1.00 MEV 10. % 1 USA FU ORL 861086R

Q: ENERGY REQUESTED IS A MAXIMUM VALUE ONLY. NEUTRON WIDTH, GAMMA-WIDTH, SPIN AND PARITY WANTED.
M: NEW REQUEST.

26 IRON 58 NEUTRON CAPTURE CROSS SECTION

288 25.3 MV 3.00 MEV 10.0% 1 FR F.JOSSO CAD 832003R

Q: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FAST REACOR FUEL CYCLE CALCULATION.

289 30.0 KEV 14.0 MEV 15. % 1 USA CHENG GA 861177F

O: IMPORTANT REACTION LEADING TOWARD PRODUCTION OF LONG-LIVED RADIONUCLIDE 60-FE [1.49*10**6YR]: 58-FE(N,GAMMA)59-FE(N,GAMMA)60-FE.
M: NEW REQUEST.

290 1.00 EV 20.0 MEV 5. % 1 HUN E.M.ZSOLNAY BTU 873008R
E.J.SZONDI BTU

Q: THERE ARE SEVERAL DISCREPANCIES IN THE FILE3 (CROSS SECTION DATA) OF THE IRDF85.
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY. SHOULD BE INCLUDED IN NEW EDITION OF IRDF-85.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

26 IRON 59 NEUTRON CAPTURE CROSS SECTION

291	25.3 MV	15.0 MEV	20. %	1	USA	CHENG	GA			861115F

Q: RADIOACTIVE TARGET 44.5 DAY
LONG-LIVED ACTIVATION PRODUCT, 60-FE
(1.49X10**6 YR), PRODUCED.
O: 58-FE(N,GAMMA)59-FE(N,GAMMA)60-FE MULTIPLE
REACTIONS ARE IMPORTANT FOR THE ASSESSMENT OF
WASTE DISPOSAL FOR IRON-BASED BLANKET MATERIALS.
M: NEW REQUEST.

27 COBALT 58 NEUTRON CAPTURE CROSS SECTION

292	0.50 EV	10.0 KEV	10. %	2	USA	DEI	BET			721045R

Q: 9.15 HR ISOMER
RESONANCE INTEGRAL NEEDED.
O: FOR INTERPRETATION OF 58-NI(N,P) FLUENCE
MONITOR DATA.

27 COBALT 59 NEUTRON CAPTURE CROSS SECTION

293	1.00 KEV	10.0 MEV	10. %	2	USA	SMITH	ANL			861087R

Q: ACTIVATION IS REQUIRED.
TO GROUND AND METASTABLE STATES.
O: FOR USE AS A FLUENCE MONITOR.
M: NEW REQUEST.

294	10.0 MEV	20.0 MEV		2	USA	SMITH	ANL			861170R

Q: ACTIVATION IS REQUIRED.
TO GROUND AND METASTABLE STATES.
A: ACCURACY RANGE 15. TO 20. PERCENT.
O: FOR USE AS A FLUENCE MONITOR.
M: NEW REQUEST.

295	25.3 MV	1.00 MEV	5.0%	1	FR	J.P.GROUILLER	CAD			872029R

Q: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

27 COBALT 59 NEUTRON N,3N

296	24.0 MEV	40.0 MEV	5.0%	2	EUR	NEUTRON DOSIMETRY GROUP			GEL	812010R

Q: MEASURED UP TO 24MEV. EXTENSION TO 40MEV REQUIRED
FOR HIGH ENERGY ACCELERATOR BASED NEUTRON SOURCES

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

27 COBALT 59 NEUTRON N,P

297	UP TO	25.0 MEV	5.0%	2	EUR	NEUTRON DOSIMETRY GROUP			GEL	812009R

Q: FOR HIGH ENERGY ACCELERATOR BASED NEUTRON SOURCES

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

27 COBALT 60 NEUTRON N,P

298	100. KEV	15.0 MEV	20. %	2	USA	CHENG	GA			861116F

Q: RADIOACTIVE TARGET 5.27 YR
LONG-LIVED ACTIVATION PRODUCT, 60-FE
(1.49X10**6 YR), PRODUCED.
M: NEW REQUEST.

28 NICKEL NEUTRON ELASTIC CROSS SECTION

299	25.3 MV	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM			753037R

Q: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

28 NICKEL — NEUTRON — DIFFERENTIAL ELASTIC CROSS SECTION

300	100. KEV	15.0 MEV	5. %	2	USA	SMITH HEMMIG	ANL DOE			721048R

A: ENERGY RESOLUTION - RESOLUTION OF INTERMEDIATE STRUCTURE PROBABLY ADEQUATE.
M: SUBSTANTIAL MODIFICATIONS.

301	500. EV	5.00 MEV	10.0%	1	FR	M.SALVATORES	CAD			832010R

O: FAST REACTOR CALCULATIONS.

28 NICKEL — NEUTRON — INELASTIC CROSS SECTION

302	UP TO	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM			753038R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

28 NICKEL — NEUTRON — ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

303	4.00 MEV	15.0 MEV	10. %	2	USA	HEMMIG	DOE			661024R

Q: TOTAL INTEGRAL OVER 4PI REQUIRED.
SPECTRA AT SEVERAL ANGLES IF SIGNIFICANTLY ANISOTROPIC.
A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
DELTA E(N') = 10 PERCENT.
ENERGY RESOLUTION REQUIRED TO DETERMINE MAJOR STRUCTURE.
O: FOR INCONEL SHIELD DESIGN.
M: SUBSTANTIAL MODIFICATIONS.

304	UP TO	15.0 MEV	10.0%	1	FR	M.SALVATORES	CAD			702008R

O: FOR FAST REACTOR CALCULATIONS.

28 NICKEL — NEUTRON — ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

305	UP TO	7.00 MEV		1	UK	J.L.ROWLANDS	WIN			642004R

A: ACCURACY REQUIRED 5.0 PERCENT BELOW 4.0 MEV, 5.0 TO 10.0 PERCENT ABOVE.
O: EVALUATION REQUIREMENT.
FOR FAST REACTORS.

306	UP TO	4.00 MEV	5.0%	1	GER	H.KUESTERS	KFK			792211R
307	4.00 MEV	15.0 MEV		1	GER	H.KUESTERS	KFK			792251R

A: ACCURACY OF 5-30 PERCENT REQUIRED.

28 NICKEL — NEUTRON — CAPTURE CROSS SECTION

308	100. EV	1.00 MEV		1	UK	J.L.ROWLANDS	WIN			692128R

A: ACCURACY REQUIRED 10 PERCENT TO 100 KEV, 20.0 PERCENT ABOVE
O: FOR FAST REACTORS.

309	25.3 MV	300. KEV	10.0%	1	GER	F.FROEHNER	KFK			692131R

A: HIGH RESOLUTION RESONANCE CROSS SECTIONS AND MULTILEVEL PARAMETERISATION WANTED. RADIATION WIDTHS SHOULD BE ACCURATE TO 10 PERCENT OR BETTER FOR BROAD S LEVELS AND FOR P LEVELS CONTRIBUTING TO DOPPLER COEFFICIENT.

310	100. EV	500. KEV	5.0%	1	FR	M.SALVATORES	CAD			702009R

Q: RESONANCE PARAMETERS WANTED.
O: FOR FAST REACTOR CALCULATIONS.

311	25.3 MV	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM			753039R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

312	25.3 MV	15.0 MEV	30.0%	2	UK	R.HANCOX	CUL			762249F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

313	600. KEV	10.0 MEV	10.0%	1	JAP	S.IIJIMA	NIG			872019R

Q: FISSION AND FUSION REACTOR CALCULATIONS
A: EXISTING DATA FOR 600 KEV - 1 MEV ARE DISCREPANT ABOUT 20%
O: NO DATA ARE AVAILABLE ABOVE 1 MEV
EVALUATED DATA ARE ALSO DISCREPANT BY A FACTOR OF 2 ABOVE 1 MEV
M: NEW REQUEST.

314	6.00	MEV	16.0	MEV	8. %	3	PRC	ZHANG BENAI	IPM	873022R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

28 NICKEL NEUTRON CAPTURE GAMMA RAY SPECTRUM

315	25.3	MV	600.	KEV	20. %	2	USA	HEMMIG	DOE	721052R

Q: ALL GAMMAS ARE OF INTEREST.
O: FOR SHIELDING AND GAMMA HEATING CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

316	6.00	MEV	16.0	MEV	15. %	3	PRC	ZHANG BENAI	IPM	873031R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

28 NICKEL NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

317	25.3	MV	15.0	MEV	10.0%	2	FR	B.DUCHEMIN	SAC	692125R

Q: GAMMA SPECTRA REQUIRED.
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV.
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR SHIELDING CALCULATIONS.
EVALUATION MAY BE SUFFICIENT.

318	UP TO		10.0	MEV	10.0%	1	FR	M.SALVATORES	CAD	832012R

Q: GAMMA SPECTRUM REQUIRED.
O: FAST REACTOR CALCULATIONS.

28 NICKEL NEUTRON N,2N

319	UP TO		15.0	MEV	30.0%	2	UK	R.HANCOX	CUL	762240F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

320	8.00	MEV	20.0	MEV	15.0%	2	JAP	S.IIJIMA	NIG	872017F

Q: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION
O: DISCREPANCY BETWEEN FREHAUT AND CALCULATED VALUES
M: NEW REQUEST.

28 NICKEL NEUTRON NEUTRON EMISSION CROSS SECTION

321	8.00	MEV	20.0	MEV	15.0%	2	JAP	S.IIJIMA	NIG	872018F

Q: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION
O: NO DATA AVAILABLE, EXCEPT AT 15 MEV
M: NEW REQUEST.

28 NICKEL NEUTRON N,P

322	UP TO		15.0	MEV	10.0%	1	FR	M.SALVATORES	CAD	702010R

O: FOR FAST REACTOR CALCULATIONS.

323	UP TO		15.0	MEV	20.0%	2	UK	R.HANCOX	CUL	762242F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

28 NICKEL NEUTRON N,ALPHA

324	UP TO		15.0	MEV	10.0%	1	FR	M.SALVATORES	CAD	732044R

O: FOR FAST REACTOR CALCULATIONS.

325	UP TO		15.0	MEV	30.0%	3	UK	R.HANCOX	CUL	762244F

O: EVALUATION REQUIREMENT.
IN PROGRESS FOR EUROPEAN FUSION FILE (EFF)

326 25.3 MV 20.0 MEV 10. % 2 USA LARSON ORL 861088R

O: FOR EVALUATION AND MODEL TESTING PURPOSES.
M: NEW REQUEST.

28 NICKEL 58 NEUTRON CAPTURE CROSS SECTION

327 25.3 MV 3.00 MEV 20.0% 1 FR F.JOSSO CAD 792010R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

328 2.00 MEV 15.0 MEV 20. % 2 USA CHENG GA 861178F

O: PRODUCTION OF LONG-LIVED RADIONUCLIDE, 59-NI (7.5*10**4YR).
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANOC. SEE APPENDIX A.

28 NICKEL 58 NEUTRON N,2N

329 UP TO 15.0 MEV 10.0% 2 UK J.BUTLER WIN 792121R

O: ACTIVATION DETECTOR.

330 20.0 MEV 30.0 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 812012R

O: FOR HIGH ENERGY ACCELERATOR BASED NEUTRON SOURCES

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANOC. SEE APPENDIX A.

28 NICKEL 58 NEUTRON N,P

331 UP TO 15.0 MEV 5. % 3 USA OEI BET 721055R

O: FOR USE AS FLUENCE MONITOR.

332 2.0% 1 EUR NEUTRON DOSIMETRY GROUP GEL 742115R

Q: AVERAGE CROSS SECTION IN A U-235 FISSION SPECTRUM DESIRED.
O: FOR NORMALIZATION OF AVERAGE CROSS SECTIONS FOR DOSIMETRY PURPOSES.

333 25.3 MV 3.00 MEV 10.0% 1 FR F.JOSSO CAD 792011R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

334 UP TO 25.0 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 812011R

O: FOR HIGH ENERGY ACCELERATOR BASED NEUTRON SOURCES

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

28 NICKEL 59 NEUTRON N,ALPHA

335 25.3 MV 10.0 MEV 25.0% 2 GER B.GOEL KFK 762251R

O: FOR NEUTRON DAMAGE PREDICTION.

336 5.00 KEV 14.0 MEV 10. % 2 USA LARSON ORL 861090F

Q: RADIOACTIVE TARGET 7.5X(10**4)YR
O: ALPHA CHANNEL IS OPEN AT ZERO NEUTRON ENERGY. IMPORTANT FOR HELIUM PRODUCTION.
M: NEW REQUEST.

28 NICKEL 59 NEUTRON RESONANCE PARAMETERS

337 25.3 MV 500. KEV 10. % 2 USA LARSON ORL 861091R

Q: RADIOACTIVE TARGET 7.5X(10**4)YR
O: ELASTIC, GAMMA, ALPHA AND PROTON WIDTHS.
M: NEW REQUEST.

28 NICKEL 60 NEUTRON N,2N

338 12.0 MEV 15.0 MEV 10. % 2 USA CHENG GA 861022F

O: EVALUATION NEEDS (HETRICK/ORNL).
M: NEW REQUEST.

339 12.0 MEV 20.0 MEV 2 JAP S.IIJIMA NIG 872020F

Q: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION
O: NO EXPERIMENTAL DATA
M: NEW REQUEST.

28 NICKEL 60 NEUTRON NEUTRON EMISSION CROSS SECTION

340 12.0 MEV 20.0 MEV 2 JAP S.IIJIMA NIG 872021F

Q: RADIATION DAMAGE STUDY AND FUSION NEUTRONICS CALCULATION
M: NEW REQUEST.

28 NICKEL 60 NEUTRON N,P

341 UP TO 20.0 MEV 10.0% 2 FR J.P.GROUILLER CAD 872030R

O: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

28 NICKEL 60 NEUTRON N,ALPHA

342 7.00 MEV 15.0 MEV 10. % 2 USA CHENG GA 861021F

O: EVALUATION NEEDS (METRICK/ORNL).
M: NEW REQUEST.

28 NICKEL 61 NEUTRON N,2P

343 10.0 MEV 15.0 MEV 20. % 2 USA CHENG GA 861117F

Q: LONG-LIVED ACTIVATION PRODUCT, 60-FE (1.49X10**6 YR), PRODUCED.
M: NEW REQUEST.

28 NICKEL 62 NEUTRON CAPTURE CROSS SECTION

344 25.3 MV 3.00 MEV 20.0% 1 FR F.JOSSO CAD 762139R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

345 200. KEV 15.0 MEV 20. % 1 USA CHENG GA 861179F

O: PRODUCTION OF LONG-LIVED RADIONUCLIDE, 63-NI (100.1 YR).
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

28 NICKEL 63 NEUTRON CAPTURE CROSS SECTION

346 1.00 MV 10.0 MEV 10. % 2 USA DEI BET 761053R

Q: RADIOACTIVE TARGET 100 YR
O: FLUX MONITOR FROM CU(N,P) REACTION.

28 NICKEL 63 NEUTRON N,ALPHA

347 100. KEV 15.0 MEV 20. % 1 USA CHENG GA 861118F

Q: RADIOACTIVE TARGET 100 YR
LONG-LIVED ACTIVATION PRODUCT, 60-FE (1.49X10**6 YR), PRODUCED.
M: NEW REQUEST.

28 NICKEL 64 NEUTRON N,2N

348 10.0 MEV 15.0 MEV 20. % 1 USA CHENG GA 861119F

Q: LONG-LIVED ACTIVATION PRODUCT, 63-NI (100.1 YR), PRODUCED.
O: NEEDED FOR THE ASSESSMENT OF ALLOWABLE NI LEVEL IN STRUCTURAL ALLOYS TO QUALIFY AS LOW ACTIVATION MATERIAL.
M: NEW REQUEST.

29 COPPER GAMMA GAMMA,N

349 UP TO 20.0 MEV 30. % 2 USA CHENG GA 861156F

A: INCIDENT ENERGY RESOLUTION: 5. PERCENT.
O: IMPORTANT FOR ANALYSIS OF FUSION DEVICES DURING HYDROGEN OPERATION. (DRIEMEYER/MDD)
M: NEW REQUEST.

29 COPPER NEUTRON TOTAL CROSS SECTION

350 1.00 KEV 2.00 MEV 1.0 % 2 USA CHENG GA 861157F

M: NEW REQUEST.

351 13.0 MEV 15.0 MEV 1.0 % 2 USA CHENG GA 861158F

O: EVALUATION NEEDS (YOUNG/LANL).
M: NEW REQUEST.

29 COPPER NEUTRON ELASTIC CROSS SECTION

352 8.00 MEV 15.0 MEV 10.0% 2 CCP I.N.GOLOVIN KUR 724032F

O: NEUTRON TRANSMISSION CALCULATIONS.

353 13.0 MEV 15.0 MEV 5.0 % 2 USA CHENG GA 861159F

O: EVALUATION NEEDS (YOUNG/LANL).
M: NEW REQUEST.

29 COPPER NEUTRON CAPTURE CROSS SECTION

354 6.00 MEV 16.0 MEV 8. % 3 PRC ZHANG BENAI IPM 873023R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

29 COPPER NEUTRON CAPTURE GAMMA RAY SPECTRUM

355 6.00 MEV 16.0 MEV 15. % 3 PRC ZHANG BENAI IPM 873032R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

29 COPPER NEUTRON PHOTON PRODUCTION CROSS SECTION IN INELASTIC SCAT.

356 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724033F

O: NEUTRONICS CALCULATIONS FOR BLANKET AND SHIELD.

29 COPPER NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

357 500. KEV 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724034F

Q: GAMMA RAY SPECTRA ALSO WANTED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

29 COPPER NEUTRON N,P

358 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724035F

O: HYDROGEN ACCUMULATION CALCULATIONS.

29 COPPER NEUTRON N,ALPHA

359 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724036F

O: HELIUM ACCUMULATION CALCULATIONS.

29 COPPER 63 NEUTRON N,P

360 UP TO 15.0 MEV 5. % 2 USA DEI BET 761055R

O: NEEDED FOR LONG TERM FLUX MONITOR.

29 COPPER 65 NEUTRON N,T

361 9.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861120F

Q: LONG-LIVED ACTIVATION PRODUCT, 63-NI (100.1 YR), PRODUCED.
O: CRITICAL FOR JUSTIFICATION FOR ISOTOPIC TAILORING OF COPPER TO MEET LOWER RESIDUAL ACTIVATION CRITERIA.
M: NEW REQUEST.

30 ZINC NEUTRON TOTAL CROSS SECTION

362 25.3 MV 15.0 MEV 15.0% 2 IND R.SHANKAR SINGH KAL 833049R

Q: FOR IMPURITIES ESTIMATIONS IN THE FUELS

30 ZINC NEUTRON CAPTURE CROSS SECTION

363 25.3 MV 15.0 MEV 15.0% 2 IND R.SHANKAR SINGH KAL 833050R

Q: FOR IMPURITIES ESTIMATIONS IN THE FUELS

30 ZINC 64 NEUTRON N,P

364 2.30 MEV 7.80 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 742131R

Q: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.
ABOUT 20 PERCENT DISCREPANCY BETWEEN INTEGRAL AND DIFFERENTIAL MEASUREMENTS.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

30 ZINC 64 NEUTRON N,2P

365 7.00 MEV 15.0 MEV 20. % 2 USA CHENG GA 861121F

Q: LONG-LIVED ACTIVATION PRODUCT, 63-NI (100.1 YR), PRODUCED.
M: NEW REQUEST.

30 ZINC 66 NEUTRON N,ALPHA

366 100. KEV 15.0 MEV 20. % 2 USA CHENG GA 861122F

Q: LONG-LIVED ACTIVATION PRODUCT, 63-NI (100.1 YR), PRODUCED.
M: NEW REQUEST.

32 GERMANIUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

367 UP TO 10.0 MEV 10. % 2 USA ROUSSIN ORL 861034S

Q: PHOTON PRODUCTION NEEDED TO PROPERLY INTERPRET DETECTOR RESPONSE ABOVE THE INELASTIC THRESHOLD.
M: NEW REQUEST.

36 KRYPTON 82 NEUTRON N,2N

368 11.0 MEV 15.0 MEV 20. % 3 USA CHENG GA 861123F

Q: LONG-LIVED ACTIVATION PRODUCT, 81-KR (2.1X10**5 YR), PRODUCED.
M: NEW REQUEST.

36 KRYPTON 82 NEUTRON N,ALPHA

369 100. KEV 15.0 MEV 20. % 3 USA CHENG GA 861124F

Q: LONG-LIVED ACTIVATION PRODUCT, 79-SE (LE 65000 YR), PRODUCED.
M: NEW REQUEST.

36 KRYPTON 83 NEUTRON N,NALPHA

370 7.00 MEV 15.0 MEV 20. % 3 USA CHENG GA 861125F

Q: LONG-LIVED ACTIVATION PRODUCT, 79-SE (LE 65000 YR), PRODUCED.
M: NEW REQUEST.

36 KRYPTON 83 NEUTRON RESONANCE PARAMETERS

371 1.00 MV 1.00 KEV 10. % 2 USA DEI BET 671190R
FEINER KAP

Q: FOR FISSION PRODUCT ABSORPTION CALCULATION.

36 KRYPTON 86 NEUTRON N,2N

372 10.0 MEV 15.0 MEV 20. % 3 USA CHENG GA 861126F

Q: LONG-LIVED ACTIVATION PRODUCT, 85-KR (10.72 YR), PRODUCED.
M: NEW REQUEST.

37 RUBIDIUM 84 NEUTRON N,2N

373 8.00 MEV 20.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873043R

Q: CROSS SECTION FOR 84RB(N,2N)83RB REACTIONS. NO DATA.
A: ACCURACY 10-20%.
O: DOSIMETRY.
M: NEW REQUEST.

39 YTTRIUM 89 NEUTRON TOTAL CROSS SECTION

374 14.0 MEV 20.0 MEV 1. % 3 USA SMITH ANL 861024R

A: INCIDENT ENERGY RESOLUTION: 500 KEV.
O: IMPORTANT FISSION PRODUCT.
M: NEW REQUEST.

39 YTTRIUM 89 NEUTRON CAPTURE CROSS SECTION

375 100. KEV 500. KEV 10. % 2 USA SMITH ANL 861028R

A: ENERGY-AVERAGE VALUES TO 10 PERCENT.
O: NEEDED TO CHECK DISCREPANT VALUES.
M: NEW REQUEST.

39 YTTRIUM 89 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

376 5.00 MEV 20.0 MEV 10. % 3 USA SMITH ANL 861025R

A: DETERMINE ANGLE-ENERGY SPECTRA AT 2 MEV INCIDENT-ENERGY INTERVALS.
M: NEW REQUEST.

39 YTTRIUM 89 NEUTRON N,P

377 UP TO 20.0 MEV 5. % 2 USA SMITH ANL 861026R

A: 10 PERCENT ACCURACY SHOULD BE SOUGHT TO THRESHOLD.
M: NEW REQUEST.

39 YTTRIUM 89 NEUTRON N,ALPHA

378 UP TO 20.0 MEV 10. % 3 USA SMITH ANL 861027R

M: NEW REQUEST.

40 ZIRCONIUM NEUTRON ELASTIC CROSS SECTION

379 5.00 MEV 15.0 MEV 10.0% 2 CCP I.N.GOLOVIN KUR 724037F

O: NEUTRON TRANSMISSION CALCULATIONS.

40 ZIRCONIUM NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

380 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724038F

O: NEUTRONICS CALCULATIONS FOR BLANKET AND SHIELD.

40 ZIRCONIUM NEUTRON CAPTURE CROSS SECTION

381 25.0 MV 2.50 KEV 5.00% 1 FR H.TELLIER SAC 762137R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: CLAD AND STRUCTURE MATERIAL

382 25.3 MV 3.00 MEV 10.0% 1 FR B.DUCHEMIN SAC 792017R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATIONS - EVALUATION MAY BE SUFFICIENT

40 ZIRCONIUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

383 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724039F

O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

384 25.3 MV 15.0 MEV 10.0% 1 FR B.DUCHEMIN SAC 792016R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATIONS - EVALUATION MAY BE SUFFICIENT

40 ZIRCONIUM NEUTRON N,2N

385 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724040F

Q: FOR NEUTRON MULTIPLICATION CALCULATIONS.

40 ZIRCONIUM NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

386 3.00 MEV 14.0 MEV 10. % 2 USA FEINER KAP 671003R

A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
DELTA E(N') = 10 PERCENT.
O: FOR DESIGN OF PRESSURIZED WATER REACTORS USING ZR.

387 3.00 MEV 14.0 MEV 10. % 2 USA SMITH ANL 671004R

A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
DELTA E(N') = 10 PERCENT.
O: NEEDED FOR IFR-FBR CONCEPT.

40 ZIRCONIUM NEUTRON N,P

388 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724041F

O: HYDROGEN ACCUMULATION CALCULATIONS.

40 ZIRCONIUM NEUTRON N,ALPHA

389 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724042F

O: HELIUM ACCUMULATION CALCULATIONS.

40 ZIRCONIUM NEUTRON CAPTURE RESONANCE INTEGRAL

390 0.50 EV 2. % 1 USA FEINER KAP 691143R
DEI BET

Q: ENERGY REQUESTED IS A MINIMUM VALUE ONLY.
SHIELDED INTEGRALS DOWN TO 0.4 TIMES DILUTE
INTEGRAL ALSO WANTED.
O: TO RESOLVE DISCREPANCIES IN EXISTING DATA.

391 0.50 EV 5.00% 1 FR H.TELLIER SAC 762136R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: CLAD AND STRUCTURE MATERIAL

40 ZIRCONIUM 93 NEUTRON N,ALPHA

392 100. KEV 15.0 MEV 20. % 1 USA CHENG GA 861127F

Q: RADIOACTIVE TARGET 1.53X10**6 YR
LONG-LIVED ACTIVATION PRODUCT, 90-SR, (28.6 YR),
PRODUCED.
M: NEW REQUEST.

40 ZIRCONIUM 94 NEUTRON N,2N

393 7.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861128F

Q: LONG-LIVED ACTIVATION PRODUCT, 93-ZR
(1.53X10**6 YR), PRODUCED.
M: NEW REQUEST.

40 ZIRCONIUM 94 NEUTRON N,NALPHA

394 4.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861129F

Q: LONG-LIVED ACTIVATION PRODUCT, 90-SR, (28.6 YR),
PRODUCED.
M: NEW REQUEST.

40 ZIRCONIUM 95 NEUTRON CAPTURE CROSS SECTION

395 1.00 EV 10.0 KEV 20. % 3 USA DEI BET 671010R

Q: RADIOACTIVE TARGET 64.0 DAY
THERMAL CROSS SECTION AND RI WANTED.
A: ENERGIES ABOVE 1 EV OF INTEREST TO GIVE -
10 PERCENT IN RI IF GT 1000 BARNS, 20 PERCENT
IF 100-1000 BARNS.
O: DECAYS TO IMPORTANT FISSION PRODUCT.

396 0.50 EV 10.0 KEV 2 USA FEINER KAP 671011R

Q: RADIOACTIVE TARGET 64.0 DAY
THERMAL CROSS SECTION AND RI WANTED.
A: ACCURACY -
10 PERCENT IF SIGMA GT 100 BARNS, 20 PERCENT
IF 10-100 BARNS.
ENERGIES ABOVE 1 EV OF INTEREST TO GIVE -
10 PERCENT IN RI IF GT 1000 BARNS, 20 PERCENT
IF 100-1000 BARNS.
O: DECAYS TO IMPORTANT FISSION PRODUCT.

397 25.3 MV 3 CAN W.H.WALKER CRC 691802R

A: ACCURACY REQUIRED 20 BARNS.
O: FISSION PRODUCT, UNKNOWN CROSS SECTION.

398 25.3 MV 5.0% 3 CCP S.A.SKVORTSOV KUR 704003N
O.A.MILLER KUR

Q: ALSO WANTED FOR .06 EV INCIDENT NEUTRONS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM
FISSION PRODUCT GAMMA RADIATION.

41 NIOBIUM 92 NEUTRON N,2N

399 8.00 MEV 20.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873044R

Q: CROSS SECTION FOR 92NB(N,2N)91(M)NB REACTIONS.
NO DATA.
A: ACCURACY 10-20%.
O: DOSIMETRY.
M: NEW REQUEST.

41 NIOBIUM 93 NEUTRON ELASTIC CROSS SECTION

400 25.3 MV 20.0 MEV 3.0% 2 IND S.B.GARG TRM 753043R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

41 NIOBIUM 93 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

401 1.00 MEV 15.0 MEV 10.0% 2 GER J.DARVAS JUL 722125F
H.BROCKMANN JUL

Q: ANGULAR DISTRIBUTIONS AT A FEW SELECTED ENERGIES
WOULD BE SUFFICIENT.
O: RADIATION DAMAGE ESTIMATES.

402 3.00 MEV 15.0 MEV 10.0% 1 CCP I.N.GOLOVIN KUR 724043F

O: NEUTRON TRANSMISSION CALCULATIONS.

403 10.0 MEV 20.0 MEV 5. % 3 USA SMITH ANL 861032F

A: INCIDENT ENERGY RESOLUTION: 5 PERCENT.
RESOLUTION CONSISTENT WITH OPTICAL MODEL.
SUFFICIENT ACCURACY TO PROVIDE NON-ELASTIC CROSS
SECTION TO 5 PERCENT (I.E., TO ANGLE-INTEGRATED
VALUES OF APROX.5 PERCENT).
M: NEW REQUEST.

41 NIOBIUM 93 NEUTRON INELASTIC CROSS SECTION

404 UP TO 25.0 MEV 10.0% 1 SWT F.HEGEDUES WUR 692155R

Q: FORMATION OF THE 16.1 YEAR ISOMER (E' = 29 KEV).
O: FOR FAST FLUX MEASUREMENTS.

405 UP TO 15.0 MEV 10.0% 2 GER J.DARVAS JUL 722126F
H.BROCKMANN JUL

Q: FORMATION OF 13.6 YEAR ISOMER WANTED.
O: CALCULATION OF HEAT GENERATION AND RADIOACTIVE
AFTERHEAT.

406 UP TO 8.00 MEV 5.0% 1 EUR NEUTRON DOSIMETRY GROUP GEL 742121R

Q: PRODUCTION OF 3.7 YEAR ISOMER NEEDED.
O: PROMISING FAST NEUTRON FLUENCE MONITOR DUE TO LOW
THRESHOLD ENERGY.

407 UP TO 20.0 MEV 3.0% 2 IND S.B.GARG TRM 753044R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

408 UP TO 15.0 MEV 10.0% 1 UK J.BUTLER WIN 792122R
J.L.ROWLANDS WIN

O: DETECTOR FOR DAMAGE MONITORING.
EVALUATION REQUIRED. MORE MEASUREMENTS MIGHT
BE NEEDED NEAR THRESHOLD

409	UP TO	20.0 MEV	10.0%	2	JAP	M.SASAKI K.SAKURAI	MAP JAE		812029R

Q: PRODUCTION OF 13.6 YR ISOMER
O: FOR NEUTRON DOSIMETRY.

410	500. KEV	15.0 MEV	10. %	2	USA	MCGARRY	NBS		821056R

A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
O: REACTOR PRESSURE VESSEL DOSIMETRY.
M: SUBSTANTIAL MODIFICATIONS.

411	UP TO	8.00 MEV	5.0%	1	FR	M.SALVATORES	CAD		832016R

O: FAST REACTOR CALCULATIONS.

412	2.00 MEV	3.50 MEV		2	USA	SMITH	ANL		861031F

Q: ACTIVATION CROSS SECTION NEEDED.
A: ACCURACY RANGE 5. TO 10. PERCENT.
O: TO RESOLVE EVALUATION DISCREPANCY.
M: NEW REQUEST.

413	10.0 KEV	10.0 MEV	5. %	1	HUN	F.DIVOS	PAX		873004R

O: FOR REACTOR DOSIMETRY.
M: NEW REQUEST.

414	10.0 KEV	20.0 MEV	5. %	1	HUN	E.M.ZSOLNAY E.J.SZONDI	BTU BTU		873006R

Q: THERE ARE SEVERAL DISCREPANCIES IN THE FILE33 (COVARIANCE DATA) OF THE IRDF85.
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY. SHOULD BE INCLUDED IN NEW EDITION OF IRDF-85.
M: NEW REQUEST.

415	1.00 MEV	20.0 MEV	7. %	1	PRC	CAI DUNJIU	AEP		873041R

Q: CROSS SECTION FOR 93NB(N,N')93(M)NB
NO DATA IN THE 6-20MEV NEUTRON ENERGY RANGE, EXCEPT 14MEV.
O: DOSIMETRY.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

41 NIOBIUM 93 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

416	UP TO	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR		724044F

O: NEUTRON CALCULATIONS FOR BLANKET AND SHIELD.

41 NIOBIUM 93 NEUTRON CAPTURE CROSS SECTION

417	100. EV	100. KEV	20.0%	3	UK	J.L.ROWLANDS	WIN		682020R

O: FOR FAST REACTORS.

418	10.0 MEV	15.0 MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR		724045F

O: HEAVIER ISOTOPE ACCUMULATION CALCULATIONS.

419	25.3 MV	20.0 MEV	3.0%	2	IND	S.B.GARG	TRM		753045R

O: REQUIRED FOR STRUCTURAL-MATERIAL CALCULATIONS.

420	100. EV	500. EV	20.0%	2	FR	M.SALVATORES	CAD		832006R

O: FAST REACTOR CALCULATIONS.

421	1.00 MEV	14.0 MEV	15. %	1	USA	CHENG	GA		861180F

O: PRODUCTION OF LONG-LIVED 94-NB (2.04X10**4YR) ACTIVITY.
M: NEW REQUEST.

422	UP TO	2.00 MEV	5. %	2	DDR	B.BOEHMER U.HAGEMANN	ROS ROS		873002R

Q: COVARIANCE DATA DESIRABLE.
A: ACCURACY NOT ACCHIEVED, AS YET.
O: REACTOR NEUTRON DOSIMETRY.
M: NEW REQUEST.

423	1.00	EV	20.0	MEV	5. %	1	HUN	E.M.ZSOLNAY E.J.SZONDI	BTU BTU	873009R

Q: THIS REACTION SHOULD BE INCLUDED IN THE IRDF-85
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

41 NIOBIUM 93 NEUTRON PHOTON PRODUCTION CROSS SECTION IN INELASTIC SCAT.

424	1.00	MEV	15.0	MEV	20.0%	2	GER	J.DARVAS H.BROCKMANN	JUL JUL	722130F

Q: ENERGY AND ANGULAR DISTRIBUTION OF GAMMA RAYS REQUIRED.
O: RADIATION DAMAGE ESTIMATES.

425		UP TO	15.0	MEV	5. %	1	DDR	B.BOEHMER U.HAGEMANN	ROS ROS	873001R

Q: COVARIANCE DATA DESIRABLE.
A: ACCURACY NOT ACCHIEVED, AS YET.
O: REACTOR PRESSURE VESSEL DOSIMETRY
M: NEW REQUEST.

41 NIOBIUM 93 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

426		UP TO	15.0	MEV	15.0%	1	CCP	I.N.GOLOVIN	KUR	724046F

O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

41 NIOBIUM 93 NEUTRON ENERGY DIFF. PHOTON-PRODUCTION CROSS SECTION

427	25.3	MV	20.0	MEV	10. %	3	USA	SMITH	ANL	861030F

A: BROAD RESOLUTION GAMMA SPECTRUM MEASUREMENTS NEEDED.
ACCURACY SUFFICIENT TO CONFIRM ENERGY CONSERVATION TO 10 PERCENT.
M: NEW REQUEST.

41 NIOBIUM 93 NEUTRON N,2N

428		UP TO	15.0	MEV	10.0%	1	CCP	I.N.GOLOVIN	KUR	724047F

Q: ENERGY AND ANGULAR DEPENDENCE OF SECONDARY NEUTRONS REQUIRED.
O: FOR NEUTRON MULTIPLICATION AND RADIATION DAMAGE ESTIMATES.

429		UP TO	15.0	MEV	5.0%	2	EUR	NEUTRON DOSIMETRY GROUP	GEL	742133R

O: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.
GREATER THAN 10 PERCENT DISCREPANCY BETWEEN INTEGRAL AND DIFFERENTIAL MEASUREMENTS.

STATUS

UNDER CONTINUOUS REVIEW NEANDC. SEE APPENDIX A.

41 NIOBIUM 93 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

430		UP TO	13.0	MEV	10.0%	2	JAP	A.TAKAHASHI	OSA	832043F

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSION REQUIRED.
O: FOR CALCULATION OF THE NEUTRON MULTIPLICATION IN FUSION BLANKETS.
MET FOR 14 MEV REGION
M: MODIFIED (PARTIALLY FULFILLED).

431	5.00	MEV	20.0	MEV	10. %	3	USA	SMITH	ANL	861029F

A: DETERMINE ANGLE-ENERGY SPECTRA AT 2 MEV INCIDENT-ENERGY INTERVALS.
M: NEW REQUEST.

41 NIOBIUM 93 NEUTRON N,P

432	3.00	MEV	15.0	MEV	20.0%	2	GER	J.DARVAS H.BROCKMANN	JUL JUL	722136F

O: RADIATION DAMAGE ESTIMATES, CALCULATION OF TRANSMUTATION RATES AND RADIOACTIVE AFTERHEAT.

41 NIOBIUM 93 NEUTRON N,P (CONTINUED)

433 UP TO 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724048F

O: HYDROGEN ACCUMULATION CALCULATIONS.

41 NIOBIUM 93 NEUTRON N,ALPHA

434 UP TO 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724049F

O: HELIUM ACCUMULATION CALCULATIONS.

41 NIOBIUM 93 NEUTRON CAPTURE RESONANCE INTEGRAL

435 1.00 EV 10.0 KEV 3.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 792106R

Q: PRODUCTION OF NB-94 (20000 YEARS) WANTED.
O: POSSIBLE LONG TERM FLUENCE MONITOR.

41 NIOBIUM 95 NEUTRON CAPTURE CROSS SECTION

436 25.3 MV 2 USA FEINER KAP 671012R

Q: RADIOACTIVE TARGET 35.1 DAY
THERMAL AVERAGE USEFUL.
A: ACCURACY - 20 PERCENT IF ABSORPTION CROSS SECTION
IS 10-100 BARNS, 10 PERCENT IF GREATER.
O: DECAYS TO IMPORTANT FISSION PRODUCT POISON.

42 MOLYBDENUM NEUTRON TOTAL CROSS SECTION

437 1.00 KEV 20.0 MEV 1. % 2 USA SMITH ANL 861042S

A: RESOLUTION SHOULD BE CONSISTENT WITH OPTICAL MODEL
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

42 MOLYBDENUM NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

438 1.00 MEV 15.0 MEV 10.0% 2 GER J.DARVAS JUL 722140F
H.BROCKMANN JUL

Q: DISTRIBUTIONS FOR ENERGY STEPS OF 10 TO 20 PERCENT
WOULD SUFFICE.
O: CONFIRMATION OF ANL DATA USEFUL.
RADIATION DAMAGE ESTIMATES.

439 3.00 MEV 15.0 MEV 10.0% 1 CCP I.N.GOLOVIN KUR 724050F

O: NEUTRON TRANSMISSION CALCULATIONS.

440 250. KEV 20.0 MEV 10. % 2 USA SMITH ANL 861043S

A: ANGLE-INTEGRATED ACCURACY LT 10 PERCENT.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

42 MOLYBDENUM NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

441 UP TO 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724051F

O: NEUTRON CALCULATIONS FOR BLANKET AND SHIELDING.

42 MOLYBDENUM NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

442 250. KEV 20.0 MEV 10. % 2 USA SMITH ANL 861044S

A: INCLUDE DISCRETE NEUTRON GROUPS BELOW E(X) =
3.0 MEV.
INCLUDE CONTINUUM SPECTRA ABOVE 3 MEV.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

42 MOLYBDENUM NEUTRON CAPTURE CROSS SECTION

443 100. EV 1.00 MEV 3 UK J.L.ROWLANDS WIN 692157R

A: ACCURACY 10 PERCENT TO 100 KEV, 20 PERCENT ABOVE.
O: FOR FAST REACTORS.

444 10.0 MEV 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724052F

O: HEAVY ISOTOPE ACCUMULATION CALCULATIONS.

445 100. EV 500. EV 10.0% 1 FR M.SALVATORES CAD 832008R

O: FAST REACTOR CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

446 1.00 KEV 1.50 MEV 10. % 2 USA SMITH ANL 861045S

A: 10 PERCENT ACCURACY IN ENERGY-AVERAGED VALUES.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

42 MOLYBDENUM NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

447 25.3 MV 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724053F

O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

42 MOLYBDENUM NEUTRON N,2N

448 UP TO 15.0 MEV 10.0% 2 GER J.DARVAS JUL 722146F
H.BROCKMANN JUL

Q: COUNTING OF OUTGOING NEUTRONS TO DETERMINE NEUTRON MULTIPLICATION BY TRANSMISSION IS REQUIRED, SINCE ACTIVITY IS PRODUCED BY MO-92 AND MO-100 ONLY.
O: CALCULATION OF NEUTRON MULTIPLICATION AND RADIATION DAMAGE.

449 UP TO 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724054F

Q: SECONDARY ENERGY SPECTRUM REQUIRED AT 14.0 MEV.
O: NEUTRON MULTIPLICATION CALCULATIONS.

42 MOLYBDENUM NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

450 1.00 MEV 15.0 MEV 10. % 2 JAP Y.SEKI JAE 762126F

Q: CROSS SECTION FOR EACH ISOTOPE ARE ALSO REQUESTED.
O: NEUTRON TRANSPORT CALCULATIONS

42 MOLYBDENUM NEUTRON N,P

451 1.50 MEV 15.0 MEV 20.0% 2 GER J.DARVAS JUL 722148F

O: RADIATION DAMAGE ESTIMATES, CALCULATION OF TRANSMUTATION RATES AND RADIOACTIVE AFTERHEAT.

452 UP TO 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724055F

O: HYDROGEN ACCUMULATION CALCULATIONS.

42 MOLYBDENUM NEUTRON N,ALPHA

453 UP TO 15.0 MEV 15.0% 1 CCP I.N.GOLOVIN KUR 724056F

O: HELIUM ACCUMULATION CALCULATIONS.

42 MOLYBDENUM 94 NEUTRON N,P

454 2.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861182F

O: PRODUCTION OF LONG-LIVED RADIONUCLIDE, 94-NB (2.03X10**4YR).
M: NEW REQUEST.

42 MOLYBDENUM 95 NEUTRON N,NP

455 9.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861130F

Q: LONG-LIVED ACTIVATION PRODUCT, -94NB (2.03X10**4 YR), PRODUCED.
O: THIS REACTION CROSS SECTION IS NEEDED TO ASSESS THE ALLOWABLE LEVEL OF MO IN STRUCTURAL ALLOYS TO QUALIFY IT AS A LOW ACTIVATION MATERIAL.
M: NEW REQUEST.

42 MOLYBDENUM 95 NEUTRON N,D

456 7.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861181F

O: PRODUCTION OF LONG-LIVED RADIONUCLIDE, 94-NB (2.03X10**4YR).
M: NEW REQUEST.

42 MOLYBDENUM 95 NEUTRON RESONANCE PARAMETERS

457 2.00 KEV 3.00 KEV 10.0% 2 JAP M.KAWAI NIG 832027R

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.
O: FOR BURN-UP CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

42 MOLYBDENUM 97 NEUTRON N,NALPHA

458 3.00 MEV 15.0 MEV 20. % 3 USA CHENG GA 861131F

Q: LONG-LIVED ACTIVATION PRODUCT, 93-ZR (1.53X10**6 YR), PRODUCED.
M: NEW REQUEST.

42 MOLYBDENUM 97 NEUTRON RESONANCE PARAMETERS

459 2.00 KEV 3.00 KEV 10.0% 2 JAP M.KAWAI NIG 832028R

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.
O: FOR BURN-UP CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

42 MOLYBDENUM 98 NEUTRON CAPTURE CROSS SECTION

460 1.00 EV 20.0 MEV 5. % 2 HUN E.M.ZSOLNAY BTU 873013R
E.J.SZONDI BTU

Q: THIS REACTION SHOULD BE INCLUDED IN THE IRDF-85
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY.
M: NEW REQUEST.

42 MOLYBDENUM 99 NEUTRON CAPTURE CROSS SECTION

461 1.00 MV 1.00 KEV 3 USA DEI BET 671013R
FEINER KAP

Q: RADIOACTIVE TARGET 66 HR
RESONANCE PARAMETERS ALSO WANTED.
A: ACCURACY -
10 PERCENT IF SIGMA GT 100 BARNS, 20 PERCENT IF 10-100 BARNS.
ENERGIES ABOVE 1 EV OF INTEREST TO GIVE -
10 PERCENT IN RI IF GT 1000 BARNS, 20 PERCENT IF 100-1000 BARNS.
O: DECAYS TO IMPORTANT FISSION PRODUCT.

462 25.3 MV 3 CAN W.H.WALKER CRC 691803R

A: ACCURACY REQUIRED 600 B.
O: FISSION PRODUCT, UNKNOWN CROSS SECTION.

44 RUTHENIUM 101 NEUTRON RESONANCE PARAMETERS

463 1.00 KEV 3.00 KEV 10.0% 2 JAP M.KAWAI NIG 832030R

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBIATL ANGULAR MOMENTUM WANTED.
O: FOR BURN-UP CALCULATION.
M: SUBSTANTIAL MODIFICATIONS.

44 RUTHENIUM 102 NEUTRON INELASTIC CROSS SECTION

464 UP TO 5.00 MEV 10.0% 2 UK J.L.ROWLANDS WIN 872047R

O: FOR FAST REACTORS
FOR VALIDATION OF THEORETICAL MODELS
M: NEW REQUEST.

44 RUTHENIUM 102 NEUTRON RESONANCE PARAMETERS

465 UP TO 3.00 KEV 20.0% 2 JAP S.IIJIMA NIG 812033N
H.MATSUNOBU SAE

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR FAST REACTOR BURN-UP CALCULATIONS
M: SUBSTANTIAL MODIFICATIONS.

44 RUTHENIUM 103 NEUTRON CAPTURE CROSS SECTION

466 1.00 MV 1.00 KEV 3 USA FEINER KAP 671015R

Q: RADIOACTIVE TARGET 39.4 DAY
A: ACCURACY -
10 PERCENT IF SIGMA GT 100 BARNS, 20 PERCENT IF 10-100 BARNS.
ENERGIES ABOVE 1 EV OF INTEREST TO GIVE -
10 PERCENT IN RI IF GT 1000 BARNS, 20 PERCENT IF 100-1000 BARNS.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

467 25.3 MV 3 CAN W.H.WALKER CRC 691804R

A: ACCURACY REQUIRED 35 B.
O: FISSION PRODUCT, UNKNOWN CROSS SECTION.

468 100. EV 500. KEV 20.0% 2 JAP S.IIJIMA NIG 792079N
H.MATSUNOBU SAE

Q: EXPERIMENTAL DATA REQUIRED.
O: FOR FAST REACTOR BURNUP CALCULATION,40 DAYS T(1/2)
NO DIFFERENTIAL OR INTEGRAL DATA EXIST.
VERY LARGE DISCREPANCIES BETWEEN EVALUATIONS.

44 RUTHENIUM 104 NEUTRON N,P

469 4.70 MEV 15.0 MEV 5. % 1 USA CHENG GA 861132F

O: FOR TOKOMAK FUSION TEST REACTOR DIAGNOSTICS
(KU/PPPL).
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

44 RUTHENIUM 104 NEUTRON RESONANCE PARAMETERS

470 UP TO 3.00 KEV 20.0% 2 JAP S.IIJIMA NIG 812034N
H.MATSUNOBU SAE

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH,
SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR FAST REACTOR BURN-UP CALCULATIONS
M: SUBSTANTIAL MODIFICATIONS.

44 RUTHENIUM 106 NEUTRON CAPTURE CROSS SECTION

471 25.3 MV 10.0% 3 CCP S.A.SKVORTSOV KUR 704006N
O.A.MILLER KUR

Q: ALSO WANTED FOR .06 EV INCIDENT NEUTRONS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM
FISSION PRODUCT GAMMA RADIATION.

45 RHODIUM 103 NEUTRON INELASTIC CROSS SECTION

472 500. KEV 10.0 MEV 10. % 2 USA MCGARRY NBS 821057R

A: INCIDENT ENERGY RESOLUTION: 10. PERCENT.
O: REACTOR PRESSURE VESSEL DOSIMETRY.
ABSOLUTE MEASUREMENT NEEDED.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

45 RHODIUM 105 NEUTRON CAPTURE CROSS SECTION

473 10.0 MV 500. EV 3 CAN W.H.WALKER CRC 691805R

A: ACCURACY 5. PERCENT TO 10 EV, 20 PERCENT ABOVE.
O: AVAILABLE DATA SUGGEST LARGE RESONANCE NEAR
CADMIUM CUT-OFF.
ADDITIONAL DATA NEEDED TO DETERMINE DEPENDANCE ON
NEUTRON TEMPERATURE AND EPITHERMAL FLUX.

46 PALLADIUM 104 NEUTRON RESONANCE PARAMETERS

474 UP TO 3.00 KEV 20.0% 2 JAP M.KAWAI NIG 832031R

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH,
SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.
O: FOR BURN-UP CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

46 PALLADIUM 105 NEUTRON RESONANCE PARAMETERS

475 UP TO 3.00 KEV 20.0% 2 JAP M.KAWAI NIG 832032R

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH,
SPIN AND ORBITAL ANGULAR MOMENTUM WANTED.
O: FOR BURN-UP CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

46 PALLADIUM 107 NEUTRON CAPTURE CROSS SECTION

476 25.3 MV 3 CAN W.H.WALKER CRC 691806R

A: ACCURACY REQUIRED 10 BARNS.
O: PU FISSION PRODUCT, UNKNOWN CROSS SECTION.

47 SILVER 109 NEUTRON N,2N

477	9.20 MEV	15.0 MEV	20. %	1	USA	CHENG	GA	861133F

Q: LONG-LIVED ACTIVATION PRODUCT 108-M-AG (127 YR), PRODUCED.
M: NEW REQUEST.

47 SILVER 109 NEUTRON N,P

478	UP TO	15.0 MEV	5. %	1	USA	CHENG	GA	861011F

O: FOR TOKAMAK FUSION TEST REACTOR NEUTRON DIAGNOSTICS.
EVALUATION AVAILABLE. (KU/PPPL)
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

47 SILVER 110 NEUTRON CAPTURE CROSS SECTION

479	1.00 EV	20.0 MEV	5. %	2	HUN	E.M.ZSOLNAY E.J.SZONDI	BTU BTU	873010R

Q: THIS REACTION SHOULD BE INCLUDED IN THE IRDF-85
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY.
M: NEW REQUEST.

48 CADMIUM 113 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

480	25.3 MV	1.00 KEV	20.0%	1	FR	B.DUCHEMIN	SAC	832017R

Q: GAMMA SPECTRA REQUIRED.
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV. QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR REPROCESSING PLANT SHIELDING CALCULATION. EVALUATION MAY BE SUFFICIENT.

49 INDIUM 115 GAMMA SPECIAL QUANTITY (DESCRIPTION BELOW)

481	500. KEV	10.0 MEV	20.0%	3	JAP	Y.OKA	TOK	792080R

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.

49 INDIUM 115 NEUTRON INELASTIC CROSS SECTION

482			2.0%	1	EUR	NEUTRON DOSIMETRY GROUP		GEL	742116R

Q: PRODUCTION OF IN-115 (4.5 HOUR) ISOMER. AVERAGE CROSS SECTION IN A U-235 FISSION SPECTRUM DESIRED.
O: FOR NORMALIZATION OF AVERAGE CROSS SECTIONS FOR DOSIMETRY PURPOSES.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

50 TIN NEUTRON TOTAL CROSS SECTION

483	25.3 MV	15.0 MEV	15.0%	2	IND	R.SHANKAR SINGH	KAL	833047R

O: FOR IMPURITIES ESTIMATIONS IN THE FUELS

50 TIN NEUTRON CAPTURE CROSS SECTION

484	25.3 MV	15.0 MEV	15.0%	2	IND	R.SHANKAR SINGH	KAL	833048R

O: FOR IMPURITIES ESTIMATIONS IN THE FUELS

50 TIN 116 NEUTRON ELASTIC CROSS SECTION

485	5.00 MEV	30.0 MEV	10.0%	3	JAP	S.CHIBA	JAE	872002R

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

50 TIN 116 NEUTRON INELASTIC CROSS SECTION

486 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872003R

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

50 TIN 118 NEUTRON ELASTIC CROSS SECTION

487 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872004R

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

50 TIN 118 NEUTRON INELASTIC CROSS SECTION

488 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872005R

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

50 TIN 120 NEUTRON ELASTIC CROSS SECTION

489 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872006R

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

50 TIN 120 NEUTRON INELASTIC CROSS SECTION

490 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872007R

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

50 TIN 124 NEUTRON ELASTIC CROSS SECTION

491 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872008R

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

50 TIN 124 NEUTRON INELASTIC CROSS SECTION

492 5.00 MEV 30.0 MEV 10.0% 3 JAP S.CHIBA JAE 872009R

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

50 TIN 126 NEUTRON CAPTURE CROSS SECTION

493 25.3 MV 3 CAN W.H.WALKER CRC 691807R

A: ACCURACY REQUIRED 120 BARNS.
O: FISSION PRODUCT, UNKNOWN CROSS SECTION.

51 ANTIMONY 125 NEUTRON CAPTURE CROSS SECTION

494 25.3 MV 3 CAN W.H.WALKER CRC 691808R

A: ACCURACY REQUIRED 300 BARNS.
O: FISSION PRODUCT, UNKNOWN CROSS SECTION.

51 ANTIMONY 127 NEUTRON CAPTURE CROSS SECTION

495 25.3 MV 3 CAN W.H.WALKER CRC 691809R

A: ACCURACY REQUIRED 4000 BARNS.
O: FISSION PRODUCT, UNKNOWN CROSS SECTION.

52 TELLURIUM 127 NEUTRON CAPTURE CROSS SECTION

496 1.00 MV 1.00 EV 20. % 2 USA FEINER KAP 671022R

Q: 109 DAY ISOMER
THERMAL AVERAGE OR 0.025 EV VALUE USEFUL.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

497 25.3 MV 3 CAN W.H.WALKER CRC 691810R

Q: FOR THE ISOMERIC STATE (105 D).
A: ACCURACY REQUIRED 900 BARNS.
O: FISSION PRODUCT.

52 TELLURIUM 129 NEUTRON CAPTURE CROSS SECTION

498 25.3 MV 3 CAN W.H.WALKER CRC 691811R

Q: FOR THE ISOMERIC STATE (33 D).
A: ACCURACY REQUIRED 1000 BARNS.
O: FISSION PRODUCT.

53 IODINE 127 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

499 0.00 EV 10.0 MEV 10. % 2 USA ROUSSIN ORL 861035S

O: PHOTON PRODUCTION NEEDED TO PROPERLY INTERPRET NAI DETECTOR RESPONSE.
M: NEW REQUEST.

53 IODINE 127 NEUTRON N,2N

500 10.0 MEV 14.6 MEV 5.0% 2 EUR NEUTRON DOSIMETRY GROUP GEL 742134R

O: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.
MORE THAN 25 PERCENT DISCREPANCY BETWEEN INTEGRAL AND DIFFERENTIAL MEASUREMENTS.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY *INDC* AND NEANDC. SEE APPENDIX A.

53 IODINE 133 NEUTRON CAPTURE CROSS SECTION

501 1.00 MV 1.00 KEV 20. % 2 USA DEI BET 671024R

Q: RADIOACTIVE TARGET 20.8 HR
A: ACCURACY 10 PERCENT IF SIGMA GT 9000 BARNS.
ABOVE 1 EV WANT RI TO 20 PERCENT IF IN RANGE 9000-90,000 BARNS, TO 10 PERCENT IF LARGER.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

54 XENON 131 NEUTRON CAPTURE CROSS SECTION

502 4.00 KEV 500. KEV 20.0% 1 JAP S.IIJIMA NIG 752014N
H.MATSUNOBU SAE

Q: FOR FAST REACTOR BURNUP CALCULATIONS.
RESONANCE PARAMETERS ARE KNOWN UP TO 4 KEV.

54 XENON 132 NEUTRON CAPTURE CROSS SECTION

503 100. EV 500. KEV 20.0% 2 JAP S.IIJIMA NIG 812038N
H.MATSUNOBU SAE

Q: FOR FAST REACTOR BURN-UP CALCULATIONS

54 XENON 132 NEUTRON RESONANCE PARAMETERS

504 UP TO 40.0 KEV 20.0% 2 JAP S.IIJIMA NIG 812039N
H.MATSUNOBU SAE

Q: ONLY 5 LEVELS BELOW 3.85 KEV ARE KNOWN
RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR FAST REACTOR BURN-UP CALCULATIONS

54 XENON 133 NEUTRON CAPTURE CROSS SECTION

505 1.00 MV 5.00 KEV 10. % 2 USA DEI BET 741088R

Q: RADIOACTIVE TARGET 5.245 DAY
THERMAL CROSS SECTION AND RI WANTED.
O: FOR FISSION PRODUCT POISON CALCULATIONS.

54 XENON 134 NEUTRON RESONANCE PARAMETERS

506	UP TO	40.0	KEV	20.0%	2	JAP	M.KAWAI	NIG		832033R

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL ANGULAR MOMENTUM WANTED. VERY FEW EXPERIMENTAL DATA.
O: FOR BURN-UP CALCULATIONS.

54 XENON 135 NEUTRON CAPTURE CROSS SECTION

507	1.00	MV	5.00	EV	2. %	2	USA	DEI	BET	741089R

Q: RADIOACTIVE TARGET 9.09 HR
A: THERMAL CROSS SECTION WANTED TO 2 PERCENT.
O: FOR FISSION PRODUCT POISON CALCULATIONS.

508	5.00	EV	5.00	KEV	5. %	2	USA	DEI	BET	741224R

Q: RADIOACTIVE TARGET 9.09 HR
A: THERMAL CROSS SECTION WANTED TO 2 PERCENT.
O: FOR FISSION PRODUCT POISON CALCULATIONS.

509	1.00	MV	5.00	EV	3. %	2	USA	FEINER	KAP	761070R

Q: RADIOACTIVE TARGET 9.09 HR
A: THERMAL CROSS SECTION WANTED TO 2 PERCENT.
O: FOR FISSION PRODUCT POISON CALCULATIONS.

54 XENON 135 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

510	25.3	MV	1.00	KEV	20.0%	1	FR	B.DUCHEMIN	SAC	812059R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV.
O: FOR INSTRUMENTATION AND SHIELDING CALCULATIONS EVALUATION MAY BE SUFFICIENT

55 CESIUM 133 NEUTRON CAPTURE CROSS SECTION

511	25.3	MV			3.0%	2	CCP	S.A.SKVORTSOV O.A.MILLER	KUR KUR	704007N

Q: ALSO WANTED FOR .06 EV INCIDENT NEUTRONS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM FISSION PRODUCT GAMMA RADIATION.

55 CESIUM 133 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

512	0.00	EV	10.0	MEV	10. %	2	USA	ROUSSIN	ORL	861033S

O: PHOTON PRODUCTION NEEDED TO PROPERLY INTERPRET NAI DETECTOR RESPONSE.
M: NEW REQUEST.

55 CESIUM 134 NEUTRON CAPTURE CROSS SECTION

513	25.3	MV			3.0%	2	CCP	S.A.SKVORTSOV O.A.MILLER	KUR KUR	704008N

Q: ALSO WANTED FOR .06 EV INCIDENT NEUTRONS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM FISSION PRODUCT GAMMA RADIATION.

514	25.3	MV			3.0%	1	JAP	H.OKASHITA	JAE	722022N

Q: RESONANCE INTEGRAL ALSO WANTED.
O: FOR BURN UP CALCULATION FROM NON-DESTRUCTIVE MEASUREMENT.

55 CESIUM 135 NEUTRON CAPTURE CROSS SECTION

515	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	752016R

O: FOR FAST REACTOR BURNUP CALCULATIONS. EVALUATIONS ARE VERY DISCREPANT.

55 CESIUM 135 NEUTRON RESONANCE PARAMETERS

516	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812040N

Q: RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR FAST REACTOR BURN-UP CALCULATIONS

55 CESIUM 137 NEUTRON CAPTURE CROSS SECTION

517 25.3 MV 10.0% 2 CCP S.A.SKVORTSOV KUR 704013N
O.A.MILLER KUR

Q: ALSO WANTED FOR .06 EV INCIDENT NEUTRONS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM FISSION PRODUCT GAMMA RADIATION.

56 BARIUM 137 NEUTRON N,P

518 400. KEV 15.0 MEV 20. % 3 USA CHENG GA 861134F

Q: LONG-LIVED ACTIVATION PRODUCT 137-CS (30.17 YR), PRODUCED.
M: NEW REQUEST.

56 BARIUM 138 NEUTRON N,NP

519 9.00 MEV 15.0 MEV 20. % 2 USA CHENG GA 861135F

Q: LONG-LIVED ACTIVATION PRODUCT 137-CS (30.17 YR), PRODUCED.
M: NEW REQUEST.

56 BARIUM 140 NEUTRON CAPTURE CROSS SECTION

520 25.3 MV 5.0% 3 CCP S.A.SKVORTSOV KUR 704015N
O.A.MILLER KUR

Q: ALSO WANTED FOR .06 EV INCIDENT NEUTRONS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM FISSION PRODUCT GAMMA RADIATION.

57 LANTHANUM 139 NEUTRON CAPTURE CROSS SECTION

521 1.00 EV 20.0 MEV 5. % 3 HUN E.M.ZSOLNAY BTU 873014R
E.J.SZONDI BTU

Q: THIS REACTION SHOULD BE INCLUDED IN THE IRDF-85
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY.
M: NEW REQUEST.

57 LANTHANUM 140 GAMMA RAY YIELD

522 1.0% 2 CCP S.A.SKVORTSOV KUR 704016N
O.A.MILLER KUR

Q: YIELD OF GAMMA QUANTA PER BETA DECAY EVENT WANTED FOR 328.8 AND 815.8 KEV GAMMAS.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM FISSION PRODUCT GAMMA RADIATION.

58 CERIUM 144 GAMMA RAY YIELD

523 1.0% 2 CCP S.A.SKVORTSOV KUR 704018N
O.A.MILLER KUR

Q: YIELD OF GAMMA QUANTA PER BETA DECAY EVENT WANTED FOR 133.5 KEV GAMMA.
O: FOR ASSAY OF U AND PU IN FUEL ELEMENTS FROM FISSION PRODUCT GAMMA RADIATION.

60 NEODYMIUM 143 NEUTRON CAPTURE CROSS SECTION

524 0.50 EV 1.00 KEV 5. % 2 USA DEI BET 861002R

Q: RESONANCE INTEGRAL WANTED.
A: IMPROVED PRECISION NEEDED.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.
M: NEW REQUEST.

60 NEODYMIUM 145 NEUTRON CAPTURE CROSS SECTION

525 0.50 EV 1.00 KEV 10. % 2 USA DEI BET 861003R

Q: RESONANCE INTEGRAL WANTED.
A: IMPROVED PRECISION NEEDED.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.
M: NEW REQUEST.

60 NEODYMIUM 147 NEUTRON CAPTURE CROSS SECTION

526 1.00 MV 1.00 KEV 2 USA FEINER KAP 671039R

Q: RADIOACTIVE TARGET 11 DAY
THERMAL CROSS SECTION AND RI WANTED.
A: ACCURACY RANGE 5. TO 10. PERCENT.

527 1.00 MV 1.00 KEV 2 USA DEI BET 671040R

Q: RADIOACTIVE TARGET 11 DAY
THERMAL CROSS SECTION AND RI WANTED.
A: ACCURACY RANGE 5. TO 10. PERCENT.

528 25.3 MV 3 CAN W.H.WALKER CRC 691812R

A: REQUIRED WITH 350 BARN ACCURACY.
O: FISSION PRODUCT WITH UNKNOWN CROSS SECTION.

529 10.0 MV 5.00 KEV 10.0% 1 FR H.TELLIER SAC 732076R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: BURN UP PHYSICS.

61 PROMETHIUM 147 NEUTRON CAPTURE CROSS SECTION

530 100. EV 500. KEV 10.0% 1 JAP S.IIJIMA NIG 752019N
H.MATSUNOBU SAE

61 PROMETHIUM 148 NEUTRON CAPTURE CROSS SECTION

531 1.00 MV 1.00 KEV 10. % 2 USA DEI BET 671046R

Q: RADIOACTIVE TARGET 5.37 DAY
THERMAL CROSS SECTION AND RI WANTED.
LOOK FOR 1/V ABOVE 1 EV.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

532 1.00 MV 1.00 EV 10. % 2 USA FEINER KAP 671048R

Q: RADIOACTIVE TARGET 5.37 DAY
THERMAL CROSS SECTION AND RI WANTED.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

533 1.00 MV 1.00 KEV 10. % 2 USA DEI BET 861004R

Q: 41.3 DAY ISOMER
THERMAL CROSS SECTION AND RI WANTED.
A: IMPROVED PRECISION NEEDED.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.
M: NEW REQUEST.

61 PROMETHIUM 149 NEUTRON CAPTURE CROSS SECTION

534 1.00 MV 1.00 KEV 2 USA DEI BET 861005R

Q: RADIOACTIVE TARGET 53.1 HR
THERMAL CROSS SECTION AND RI WANTED TO 10 PERCENT ACCURACY.
A: RI WANTED TO 10 PERCENT IF GT 10,000 BARNS,
20 PERCENT IF 1,000- 10,000 BARNS.
M: NEW REQUEST.

61 PROMETHIUM 151 NEUTRON CAPTURE CROSS SECTION

535 1.00 MV 1.00 KEV 10. % 2 USA DEI BET 671057R

Q: RADIOACTIVE TARGET 28.4 HR
THERMAL CROSS SECTION AND RI WANTED.
A: ENERGIES ABOVE 1 EV OF INTEREST TO GIVE RI TO 10 PERCENT.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

62 SAMARIUM 144 NEUTRON RESONANCE PARAMETERS

536 1.00 MV 500. KEV 20.0% 3 JAP T.NAKAGAWA JAE 872001R

Q: FOR SYSTEMATIC STUDY OF AVERAGE RESONANCE PARAMETERS, SO,DO FOR SM ISOTOPES
O: NO DATA EXIST
M: NEW REQUEST.

62 SAMARIUM 149 NEUTRON CAPTURE CROSS SECTION

537 25.0 KEV 5.0% 1 JAP S.IIJIMA NIG 752020N
H.MATSUNOBU SAE

O: FOR FAST REACTOR BURNUP CALCULATIONS.
DISCREPANCY BETWEEN STEK DATA AND RECENT DIFFERENTIAL DATA.
ONE ABSOLUTE DATA POINT AT 25 KEV REQUIRED.

62 SAMARIUM 149 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

538	25.3	MV	1.00	KEV	20.0%	1	FR	B.DUCHEMIN	SAC	812060R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV.
O: FOR INSTRUMENTATION AND SHIELDING CALCULATIONS- EVALUATION MAY BE SUFFICIENT

62 SAMARIUM 151 NEUTRON CAPTURE CROSS SECTION

539	1.00	MV	1.00	KEV	5. %	2	USA	DEI	BET	671054R

Q: RADIOACTIVE TARGET 90 YR
THERMAL CROSS SECTION AND RI WANTED.
A: INCIDENT ENERGY RESOLUTION: 5. PERCENT.
ENERGIES ABOVE 1 EV OF INTEREST TO GIVE RI TO 10 PERCENT.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

540	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	752021R

O: FOR FAST REACTOR BURNUP CALCULATIONS.
NO KEV DATA.

541	10.0	MV	1.00	MEV	20.0%	1	GER	H.KUESTERS	KFK	792225R

Q: MEASUREMENT WANTED

62 SAMARIUM 151 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

542	25.3	MV	1.00	KEV	20.0%	1	FR	B.DUCHEMIN	SAC	812061R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV.
O: FOR INSTRUMENTATION AND SHIELDING CALCULATIONS- EVALUATION MAY BE SUFFICIENT

62 SAMARIUM 153 NEUTRON CAPTURE CROSS SECTION

543	1.00	MV	1.00	KEV		2	USA	DEI FEINER	BET KAP	671061R

Q: RADIOACTIVE TARGET 46.7 HR
THERMAL CROSS SECTION AND RI WANTED.
A: ACCURACY - 10 PERCENT IF SIGMA GT 30,000 BARNS, 20 PERCENT IF LOWER.
ENERGIES ABOVE 1 EV OF INTEREST TO GIVE - 10 PERCENT IN RI IF GT 300 BARNS, 20 PERCENT IF 30-300 BARNS.
O: FOR CALCULATION OF FISSION PRODUCT POISONS.

544	25.3	MV				3	CAN	W.H.WALKER	CRC	691814R

A: REQUIRED WITH A 10000 BARN ACCURACY.
O: FISSION PRODUCT WITH UNKNOWN CROSS SECTION.

63 EUROPIUM 151 NEUTRON CAPTURE CROSS SECTION

545	1.00	KEV	1.00	MEV	5. %	2	USA	HEMMIG	DOE	741099R

63 EUROPIUM 152 NEUTRON CAPTURE CROSS SECTION

546	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812041N

Q: NO KEV DATA
O: FOR CONTROL ROD AND THERMAL REACTOR BURN UP CALCULATIONS.

63 EUROPIUM 152 NEUTRON RESONANCE PARAMETERS

547	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812042N

Q: NO DATA EXIST EXCEPT THOSE BY VERTENBNJE ET AL (1977) IN 0.88 TO 17 EV
RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR CONTROL ROD AND THERMAL REACTOR BURN-UP CALCULATIONS.

63 EUROPIUM 153 NEUTRON CAPTURE CROSS SECTION

548	25.3	MV			10.0%	1	BLG	L.LEENDERS	MOL	812065N

O: FOR BURN UP MEASUREMENTS FROM NON-DESTRUCTIVE FUEL ANALYSIS.

63 EUROPIUM 153 NEUTRON CAPTURE GAMMA RAY SPECTRUM

549	1.00	KEV	1.00	MEV	10. %	2	USA	HEMMIG	DOE	741106R

63 EUROPIUM 153 NEUTRON CAPTURE RESONANCE INTEGRAL

550	0.50	EV	1.00	MEV	5.0%	1	BLG	L.LEENDERS	MOL	812066N

O: FOR BURN UP MEASUREMENTS FROM NON-DESTRUCTIVE FUEL ANALYSIS.

63 EUROPIUM 154 NEUTRON CAPTURE CROSS SECTION

551	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812043N

Q: NO EXPERIMENTAL DATA.
O: FOR CONTROL ROD AND THERMAL REACTOR BURN-UP CALCULATIONS

552	25.3	MV			2.0%	1	BLG	L.LEENDERS	MOL	812067N

Q: HALF-LIFE ALSO REQUIRED TO 1 PERCENT ACCURACY.
O: FOR BURN UP MEASUREMENTS FROM NON-DESTRUCTIVE FUEL ANALYSIS.

63 EUROPIUM 154 NEUTRON RESONANCE PARAMETERS

553	100.	EV	500.	KEV	10.0%	1	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812044N

Q: INSUFFICIENT RESONANCE DATA.
RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR CONTROL ROD AND THERMAL REACTOR BURN-UP CALCULATIONS

63 EUROPIUM 154 NEUTRON CAPTURE RESONANCE INTEGRAL

554	0.50	EV	1.00	MEV	20.0%	1	BLG	L.LEENDERS	MOL	812068N

O: FOR BURN UP MEASUREMENTS FROM NON-DESTRUCTIVE FUEL ANALYSIS.

63 EUROPIUM 155 NEUTRON CAPTURE CROSS SECTION

555	100.	EV	500.	KEV	20.0%	2	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812045N

Q: NO EXPERIMENTAL DATA
O: FOR FAST REACTOR BURN-UP CALCULATIONS

63 EUROPIUM 155 NEUTRON RESONANCE PARAMETERS

556	100.	EV	500.	KEV	20.0%	2	JAP	S.IIJIMA H.MATSUNOBU	NIG SAE	812046N

Q: INSUFFICIENT RESONANCE DATA.
RESONANCE ENERGY, NEUTRON WIDTH, RADIATIVE WIDTH, SPIN AND ORBITAL MOMENTUM WANTED.
O: FOR FAST REACTOR BURN-UP CALCULATIONS

63 EUROPIUM 156 NEUTRON CAPTURE CROSS SECTION

557	25.3	MV				3	CAN	W.H.WALKER	CRC	691815R

A: REQUIRED WITH A 700 BARN ACCURACY.
O: FISSION PRODUCT WITH UNKNOWN CROSS SECTION.

64 GADOLINIUM 152 NEUTRON CAPTURE CROSS SECTION

558	25.3	MV	100.	KEV		1	USA	SCHENTER	HED	861075R

Q: RADIOACTIVE TARGET 1.1X(10**14)YR
SIGMA(N,GAMMA) RESONANCE PARAMETERS UP TO 1 KEV.
SIGMA(AVG) (E) FOR E GE 1 KEV.
A: ACCURACY RANGE 5. TO 10. PERCENT.
M: NEW REQUEST.

64 GADOLINIUM 153 NEUTRON CAPTURE CROSS SECTION

559	25.3	MV	100.	KEV		1	USA	SCHENTER	HED	861076R

Q: RADIOACTIVE TARGET 241.6 DAY
SIGMA(N,GAMMA) RESONANCE INTEGRAL AND THERMAL.
SIGMA(AVG) (E) FOR E GE 1 KEV IF POSSIBLE.
A: ACCURACY RANGE 20. TO 40. PERCENT.
M: NEW REQUEST.

68 ERBIUM 166 NEUTRON CAPTURE CROSS SECTION

560 1.00 MV 5.00 KEV 2 USA MATHEWS GA 861077R

A: 3 PERCENT ACCURACY BELOW 1 EV, 5 PERCENT ACCURACY ABOVE 1 EV.
O: BURNABLE POISON FOR THERMAL REACTORS.
M: NEW REQUEST.

68 ERBIUM 167 NEUTRON CAPTURE CROSS SECTION

561 1.00 MV 2.00 KEV 2 USA MATHEWS GA 861078R

A: 3 PERCENT ACCURACY BELOW 1 EV, 5 PERCENT ACCURACY ABOVE 1 EV.
O: BURNABLE POISON FOR THERMAL REACTORS.
M: NEW REQUEST.

69 THULIUM 168 NEUTRON N,2N

562 8.00 MEV 20.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873045R

Q: CROSS SECTION FOR 168TM(N,2N)167TM REACTIONS.
NO DATA.
A: ACCURACY 10-20%.
O: DOSIMETRY.
M: NEW REQUEST.

72 HAFNIUM NEUTRON ACTIVATION CROSS SECTION

563 14.0 MEV 50.0% 1 UK R.HANCOX CUL 872049F

Q: PRODUCTION OF HF178M(31Y) AND HF179M(25.1D)
O: MEASUREMENT REQUEST
WORK IN PROGRESS
PATRICK ET AL (AERE)
M: NEW REQUEST.

72 HAFNIUM 176 NEUTRON CAPTURE CROSS SECTION

564 1.00 MV 5.00 KEV 2 USA DEI BET 621026R
FEINER KAP

A: ACCURACY - THERMAL VALUE: 20 PERCENT TO 1 EV:
40 PERCENT,
- 10-100 EV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 10 PERCENT,
- 100 EV-5 KEV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 20 PERCENT,
- AVERAGE P-WAVE GAMMA(GAMMA) TO 20 PERCENT,
- S-WAVE STRENGTH FUNCTION TO 40 PERCENT.
O: TO RESOLVE DISCREPANCIES IN RI.
FOR MONTE CARLO BURN-UP CALCULATIONS.

565 10.0 MV 5.00 KEV 10.0% 1 FR H.TELLIER SAC 732088R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: REACTOR CALCULATIONS.

72 HAFNIUM 177 NEUTRON CAPTURE CROSS SECTION

566 1.00 MV 5.00 KEV 2 USA DEI BET 621028R
FEINER KAP

A: ACCURACY - TO 1 EV: 4 PERCENT,
- 10-100 EV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 10 PERCENT,
- 100 EV-5 KEV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 20 PERCENT,
- 5.89, 6.57, 8.87 EV: WIDTHS TO 5 PERCENT,
- AVERAGE P-WAVE GAMMA(GAMMA) TO 20 PERCENT,
- S-WAVE STRENGTH FUNCTION TO 20 PERCENT.
O: TO RESOLVE DISCREPANCIES IN RI.
FOR MONTE CARLO BURN-UP CALCULATIONS.

567 10.0 MV 5.00 KEV 5.0% 1 FR H.TELLIER SAC 692302R

Q: RESONANCE INTEGRAL ALSO WANTED.
A: ACCURACY 1 PERCENT AT THERMAL AND 5 PERCENT FOR RESONANCE INTEGRAL.
QUOTED ACCURACIES AT 2 STANDARD DEVIATIONS.
O: EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.

72 HAFNIUM 178 NEUTRON CAPTURE CROSS SECTION

568 1.00 MV 5.00 KEV 2 USA DEI BET 621030R
FEINER KAP

A: ACCURACY - TO 1 EV: 5 PERCENT.
- 10-100 EV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 10 PERCENT,
- 100 EV- 5 KEV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 20 PERCENT,
- 7.78 EV: WIDTHS TO 3 PERCENT,
- AVERAGE P-WAVE GAMMA(GAMMA) TO 20 PERCENT,
- S-WAVE STRENGTH FUNCTION TO 20 PERCENT.
O: TO RESOLVE DISCREPANCIES IN RI.
FOR MONTE CARLO BURN-UP CALCULATIONS.

569	10.0	MV	5.00	KEV	5.0%	1	FR	H.TELLIER	SAC	692304R

Q: RESONANCE INTEGRAL ALSO WANTED.
A: ACCURACY 1 PERCENT AT THERMAL AND 5 PERCENT FOR RESONANCE INTEGRAL.
QUOTED ACCURACIES AT 2 STANDARD DEVIATIONS.
O: EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.

72 HAFNIUM 179 NEUTRON CAPTURE CROSS SECTION

570	1.00	MV	5.00	KEV		2	USA	DEI FEINER	BET KAP	621032R

A: ACCURACY - TO 1 EV: 5 PERCENT.
- 10-100 EV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 10 PERCENT,
- 100 EV- 5 KEV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 20 PERCENT,
- 5.68 EV: WIDTHS TO 5 PERCENT,
- AVERAGE P-WAVE GAMMA(GAMMA) TO 20 PERCENT,
- S-WAVE STRENGTH FUNCTION TO 20 PERCENT.
O: TO RESOLVE DISCREPANCIES IN RI.
FOR MONTE CARLO BURN-UP CALCULATIONS.

571	10.0	MV	5.00	KEV	5.0%	1	FR	H.TELLIER	SAC	692305R

Q: RESONANCE INTEGRAL ALSO WANTED.
A: ACCURACY 1 PERCENT AT THERMAL AND 5 PERCENT FOR RESONANCE INTEGRAL.
QUOTED ACCURACIES AT 2 STANDARD DEVIATIONS.
O: EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.

72 HAFNIUM 179 NEUTRON ACTIVATION CROSS SECTION

572	1.00	MEV	20.0	MEV	10. %	2	PRC	CAI DUNJIU	AEP	873047R

Q: 179HF(N,N')179(M)HF REACTION EXCITATION FUNCTION
NO DATA.
O: DOSIMETRY.
M: NEW REQUEST.

72 HAFNIUM 180 NEUTRON CAPTURE CROSS SECTION

573	1.00	MV	5.00	KEV		2	USA	DEI FEINER	BET KAP	671080R

A: ACCURACY - LT 1 EV: 4 PERCENT,
10-100 EV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 10 PERCENT, 100 EV- 5 KEV: GAMMA(TOT), GAMMA(N), GAMMA(GAMMA) TO 20 PERCENT. AVERAGE P-WAVE GAMMA(GAMMA) TO 20 PERCENT. S-WAVE STRENGTH FUNCTION TO 20 PERCENT.
O: TO RESOLVE DISCREPANCIES IN RI.
FOR MONTE CARLO BURN-UP CALCULATIONS.

574	10.0	MV	5.00	KEV	5.0%	1	FR	H.TELLIER	SAC	732089R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: REACTOR CALCULATIONS.

72 HAFNIUM 180 NEUTRON N,2N

575	UP TO		20.0	MEV	10. %	2	PRC	CAI DUNJIU	AEP	873046R

Q: 180HF(N,2N)179(M)HF REACTION EXCITATION FUNCTION
NO DATA.
O: DOSIMETRY.
M: NEW REQUEST.

73 TANTALUM NEUTRON N,P

576	14.0	MEV			50.0%	1	UK	R.HANCOX	CUL	872048F

Q: PRODUCTION OF HF178M(31Y) AND HF179M(25.1D)
O: MEASUREMENT REQUEST
WORK IN PROGRESS
PATRICK ET AL (AERE)
M: NEW REQUEST.

73 TANTALUM 181 NEUTRON TOTAL CROSS SECTION

577	1.00	KEV	20.0	MEV	1. %	2	USA	SMITH	ANL	8610395

A: RESOLUTION SHOULD BE CONSISTENT WITH OPTICAL MODEL
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

73 TANTALUM 181 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

578 140. KEV 20.0 MEV 10. % 2 USA SMITH ANL 861040S

A: ANGLE-INTEGRATED ACCURACY LT 10 PERCENT.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

73 TANTALUM 181 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

579 140. KEV 20.0 MEV 10. % 2 USA SMITH ANL 861041S

A: INCLUDE DISCRETE NEUTRON GROUPS BELOW E(X) = 3.0 MEV.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

73 TANTALUM 181 NEUTRON CAPTURE CROSS SECTION

580 25.3 MV 1.00 MEV 15.0% 2 FR J.P.GROUILLER CAD 872031R

O: LMFBR FUEL CYCLE CALCULATIONS
M: NEW REQUEST.

74 TUNGSTEN NEUTRON CAPTURE CROSS SECTION

581 6.00 MEV 16.0 MEV 8. % 3 PRC ZHANG BENAI IPM 873026R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

74 TUNGSTEN NEUTRON CAPTURE GAMMA RAY SPECTRUM

582 6.00 MEV 16.0 MEV 15. % 3 PRC ZHANG BENAI IPM 873035R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

74 TUNGSTEN NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

583 6.00 MEV 12.0 MEV 10. % 1 USA CHENG GA 861095F

Q: DOUBLE DIFFERENTIAL DATA NEEDED FOR NEUTRON TRANSPORT CALCULATIONS.
A: MEASUREMENTS RECOMMENDED AT 6, 8, 10 AND 12 MEV.
M: NEW REQUEST.

74 TUNGSTEN NEUTRON ACTIVATION CROSS SECTION

584 14.0 MEV 50.0% 1 UK R.HANCOX CUL 872050F

Q: PRODUCTION OF HF178M(31Y) AND HF179M(25.1D)
O: MEASUREMENT REQUEST
WORK IN PROGRESS
PATRICK ET AL (AERE)
M: NEW REQUEST.

74 TUNGSTEN 180 NEUTRON N,NP

585 7.00 MEV 15.0 MEV 20. % 2 USA CHENG GA 861137F

O: ACTIVATION DATA NEEDED FOR ETR RADIOACTIVITY ANALYSIS.
M: NEW REQUEST.

74 TUNGSTEN 180 NEUTRON N,D

586 5.00 MEV 15.0 MEV 20. % 2 USA CHENG GA 861138F

O: ACTIVATION DATA NEEDED FOR ETR RADIOACTIVITY ANALYSIS.
M: NEW REQUEST.

74 TUNGSTEN 180 NEUTRON N,ALPHA

587 25.3 MV 15.0 MEV 20. % 2 USA CHENG GA 861136F

O: ACTIVATION DATA NEEDED FOR ETR RADIOACTIVITY ANALYSIS.
M: NEW REQUEST.

74 TUNGSTEN 182 NEUTRON N,NALPHA

588 100. KEV 15.0 MEV 20. % 1 USA CHENG GA 861139F

Q: ACTIVATION DATA LEADING TO PRODUCTION OF META STABLE NUCLIDE, 178-M-HF(31 YR), IS NEEDED.
M: NEW REQUEST.

74 TUNGSTEN 183 NEUTRON N,P

589 UP TO 15.0 MEV 5. % 1 USA CHENG GA 861012F

O: FOR TOKAMAK FUSION TEST REACTOR NEUTRON DIAGNOSTICS.
EVALUATION AVAILABLE. (KU/PPPL)
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

74 TUNGSTEN 186 NEUTRON CAPTURE CROSS SECTION

590 1.00 EV 20.0 MEV 5. % 2 HUN E.M.ZSOLNAY BTU 873011R
E.J.SZONDI BTU

Q: THIS REACTION SHOULD BE INCLUDED IN THE IRDF-85
A: THE CROSS SECTION DATA SHOULD BE AVAILABLE IN THE 640 GROUPS SAND-II ENERGY STRUCTURE (45 GROUPS/DECADE BELOW 1 MEV, 0.1 MEV STEP ABOVE); THE CORRESPONDING COVARIANCE INFORMATION SHOULD BE GIVEN IN NOT LESS THAN 15*15 GROUPS STRUCTURE.
O: RADIATION DAMAGE INVESTIGATION; NEUTRON REACTOR DOSIMETRY.
M: NEW REQUEST.

74 TUNGSTEN 186 NEUTRON N,NALPHA

591 100. KEV 15.0 MEV 20. % 1 USA CHENG GA 861140F

Q: LONG-LIVED ACTIVATION PRODUCT, 182-HF (9X10**6YR), PRODUCED.
M: NEW REQUEST.

75 RHENIUM NEUTRON TOTAL CROSS SECTION

592 1.00 KEV 20.0 MEV 1. % 2 USA SMITH ANL 861048S

A: RESOLUTION CONSISTENT WITH OPTICAL MODEL.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

75 RHENIUM NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

593 130. KEV 20.0 MEV 10. % 2 USA SMITH ANL 861036S

A: ANGLE-INTEGRATED ACCURACY LT 10 PERCENT.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

75 RHENIUM NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

594 130. KEV 20.0 MEV 10. % 2 USA SMITH ANL 861037S

A: INCLUDE DISCRETE NEUTRON GROUPS BELOW E(X) = 3.0 MEV.
INCLUDE CONTINUUM SPECTRA ABOVE 3 MEV.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

75 RHENIUM NEUTRON CAPTURE CROSS SECTION

595 1.00 KEV 1.50 MEV 10. % 2 USA SMITH ANL 861038S

A: 10 PERCENT ACCURACY IN ENERGY-AVERAGED VALUES.
O: FOR HIGH-TEMPERATURE AND SPACE SYSTEMS.
M: NEW REQUEST.

75 RHENIUM 185 NEUTRON CAPTURE CROSS SECTION

596 25.3 MV 10.0 KEV 5.0% 3 FR H.TELLIER SAC 872032R

O: CONTROL ROD CALCULATION
M: NEW REQUEST.

75 RHENIUM 187 NEUTRON CAPTURE CROSS SECTION

597 25.3 MV 10.0 KEV 5.0% 3 FR H.TELLIER SAC 872033R

O: CONTROL ROD CALCULATION
M: NEW REQUEST.

78 PLATINUM NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

598	10.0 MV	10.0 EV	10. %	2	USA	CARLSON	NBS			781177R

Q: FOR SCATTERING CORRECTIONS IN PLATINUM FISSION DEPOSIT BACKINGS.

79 GOLD 197 NEUTRON CAPTURE CROSS SECTION

599	200. KEV	3.50 MEV		2	USA	CARLSON	NBS			861146R

A: ACCURACY RANGE 2. TO 3. PERCENT.
O: TO IMPROVE ACCURACY OF STANDARD CROSS SECTION.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

79 GOLD 197 NEUTRON N,3N

600	UP TO	40.0 MEV	5.0%	2	EUR	NEUTRON DOSIMETRY GROUP			GEL	832054F

Q: (N,3N) CROSS SECTION.
O: FOR HIGH ENERGY ACCELERATOR-BASED NEUTRON SOURCES, FUSION.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

80 MERCURY 199 NEUTRON INELASTIC CROSS SECTION

601	500. KEV	20.0 MEV	10.0%	3	JAP	K.SAKURAI	JAE			812030R

Q: PRODUCTION CROSS SECTION FOR 42.6 MIN ISOMER THROUGH INELASTIC SCATTERING.
O: FOR NEUTRON DOSIMETRY.

82 LEAD GAMMA GAMMA,N

602	UP TO	20.0 MEV	20. %	3	USA	CHENG	GA			861160F

A: INCIDENT ENERGY RESOLUTION: 5. PERCENT.
O: USEFUL FOR INITIAL PHASES OF FUSION REACTOR OPERATION. (DRIEMEYER/MOD)
M: NEW REQUEST.

82 LEAD NEUTRON CAPTURE CROSS SECTION

603	6.00 MEV	16.0 MEV	8. %	3	PRC	ZHANG BENAI	IPM			873027R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

82 LEAD NEUTRON CAPTURE GAMMA RAY SPECTRUM

604	6.00 MEV	16.0 MEV	15. %	3	PRC	ZHANG BENAI	IPM			873036R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

82 LEAD NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

605	25.3 MV	16.0 MEV	10.0%	2	FR	B.DUCHEMIN	SAC			692319R

Q: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV
A: NEUTRON AND GAMMA ENERGY RESOLUTION 500 KEV. QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATION.
NEW EVALUATION TO BE DONE IF NEW EXPERIMENTAL DATA.

606	25.3 MV	15.0 MEV	15.0%	2	CCP	I.N.GOLOVIN	KUR			724057F

Q: GAMMA RAY SPECTRA REQUIRED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

607	1.00 KEV	15.0 MEV	10.0%	2	FR	M.SALVATORES	CAD			792022R

O: FOR FAST REACTOR CALCULATIONS.

82 LEAD | NEUTRON | N,2N

608 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724058F

Q: POSSIBLE USE AS NEUTRON MULTIPLIER.

609 14.0 MEV 15.0 MEV 3. % 1 USA CHENG GA 861097F

A: IMPROVED ACCURACY DESIRED.
M: NEW REQUEST.

82 LEAD | NEUTRON | N,3N

610 14.2 MEV 15.0 MEV 10. % 2 USA CHENG GA 861098F

Q: CONTRIBUTES TO PB NEUTRON MULTIPLICATION REACTIONS
M: NEW REQUEST.

82 LEAD | NEUTRON | NEUTRON EMISSION CROSS SECTION

611 500. KEV 16.0 MEV 10.0% 2 FR B.DUCHEMIN SAC 692318R

Q: SECONDARY ENERGY-ANGLE DISTRIBUTIONS REQUIRED.
ENERGY STEP - 500 KEV(INCIDENT NEUTRONS).
A: ENERGY RESOLUTION - 250 KEV(EMITTED NEUTRONS)
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATION.
NEW EVALUATION TO BE DONE IF NEW EXPERIMENTAL DATA.

82 LEAD | NEUTRON | ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

612 UP TO 15.0 MEV 5.0% 1 JAP A.TAKAHASHI OSA 832044F
K.MAKI HIT

Q: ENERGY-ANGLE DIFFERENTIAL CROSS SECTIONS FOR TOTAL NEUTRON EMISSION REQUIRED.
A: FOR (N,2N) CROSS SECTION, 3% IS WANTED
O: FOR CALCULATION OF THE NEUTRON MULTIPLICATION IN FUSION BLANKETS.
HIGHER ACCURACY IS REQUIRED FROM DESIGN STUDY
PARTIALLY MET FOR 14 MEV REGION
M: MODIFIED (PARTIALLY FULFILLED).

613 6.00 MEV 12.0 MEV 5. % 1 USA CHENG GA 861161F

Q: MEASUREMENTS RECOMMENDED AT 6, 8, 10 AND 12 MEV.
O: NECESSARY TO ACCURATELY CALCULATE NEUTRON MULTIPLICATION.
M: NEW REQUEST.

82 LEAD 204 | NEUTRON | N,2N

614 9.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861141F

O: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENTS FOR LI-PB BASED FUSION REACTOR CONCEPTS.
M: NEW REQUEST.

82 LEAD 204 | NEUTRON | N,P

615 100. KEV 15.0 MEV 20. % 1 USA CHENG GA 861142F

O: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENTS FOR LI-PB BASED FUSION REACTOR CONCEPTS.
M: NEW REQUEST.

82 LEAD 206 | NEUTRON | N,NO

616 13.0 MEV 15.0 MEV 20. % 1 USA CHENG GA 861144F

O: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENTS FOR LI-PB BASED FUSION REACTOR CONCEPTS.
M: NEW REQUEST.

82 LEAD 206 | NEUTRON | N,T

617 7.00 MEV 15.0 MEV 20. % 1 USA CHENG GA 861143F

O: ACTIVATION DATA NEEDED FOR AFTERHEAT AND SAFETY ASSESSMENTS FOR LI-PB BASED FUSION REACTOR CONCEPTS.
M: NEW REQUEST.

83 BISMUTH 208 NEUTRON N,2N

618 7.00 MEV 15.0 MEV 20. % 3 USA CHENG GA 861014F

Q: RADIOACTIVE TARGET 3.68X10**5 YR
LONG-LIVED ACTIVATION PRODUCT, 207-BI
(32.2 YR), PRODUCED.
M: NEW REQUEST.

83 BISMUTH 209 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

619 25.3 MV 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724059F

Q: GAMMA RAY SPECTRA REQUIRED.
O: GAMMA RAY HEATING AND SHIELDING CALCULATIONS.

83 BISMUTH 209 NEUTRON N,2N

620 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724060F

O: POSSIBLE USE AS NEUTRON MULTIPLIER.

83 BISMUTH 209 ALPHA ALPHA,2N

621 20.0 MEV 60.0 MEV 10. % 3 PRC CAI DUNJIU AEP 873042M

Q: CROSS SECTION FOR 209BI(A,2N)211AT.
CROSS SECTION FOR BI+A REACTION.
NO DATA.
O: MEDICAL RADIOISOTOPE PRODUCTION.
M: NEW REQUEST.

90 THORIUM 230 NEUTRON CAPTURE CROSS SECTION

622 25.3 MV 1.00 MEV 10. % 2 USA BARTINE ORL 781196R

Q: RADIOACTIVE TARGET 7.54X(10**4)YR
O: KEY REACTION FOR PRODUCTION OF U-232.

90 THORIUM 232 SPONTANEOUS ENERGY SPECTRUM OF FISSION NEUTRONS

623 UP TO 14.0 MEV 10. % 3 USA CHENG GA 861164F

Q: RADIOACTIVE TARGET 1.41X(10**10)YR
O: ENERGY AND ANGULAR DISTRIBUTION OF FISSION
NEUTRONS NEEDED FOR FUSION HYBRID APPLICATIONS.
M: NEW REQUEST.

90 THORIUM 232 NEUTRON CAPTURE CROSS SECTION

624 1.00 KEV 1.00 MEV 3.0% 3 UK J.L.ROWLANDS WIN 692329R

O: FOR FAST REACTORS.

625 4.00 KEV 10.0 MEV 1 GER H.KUESTERS KFK 692330R

A: ACCURACY 5 PERCENT TO 2 MEV AND 10 PERCENT ABOVE.

626 25.3 MV 3.00 MEV 10.0% 3 FR F.JOSSO CAD 762140R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

90 THORIUM 232 NEUTRON N,2N

627 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724061F

O: POSSIBLE USE AS NEUTRON MULTIPLIER.

628 UP TO 15.0 MEV 5. % 2 USA DEI BET 761065R

Q: RADIOACTIVE TARGET 1.41X(10**10)YR
O: FOR CALCULATION OF FUEL ACTIVITY IN 232-TH CYCLE
REACTORS.

629 11.0 MEV 15.0 MEV 5. % 3 USA CHENG GA 861162F

Q: RADIOACTIVE TARGET 1.41X(10**10)YR
O: FOR HYBRID SYSTEM DESIGN.
M: NEW REQUEST.

90 THORIUM 232 NEUTRON N,3N

630 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724062F

O: POSSIBLE USE AS NEUTRON MULTIPLIER.

631 11.0 MEV 15.0 MEV 10. % 3 USA CHENG GA 861163F

Q: RADIOACTIVE TARGET 1.41X(10**10)YR
O: FOR HYBRID SYSTEM DESIGN.
M: NEW REQUEST.

90 THORIUM 232 NEUTRON FISSION CROSS SECTION

632	1.50 MEV	7.20 MEV	5.0%	2	EUR	NEUTRON DOSIMETRY GROUP		GEL	742135R

Q: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.
GREATER THAN 10 PERCENT DISCREPANCY BETWEEN INTEGRAL AND DIFFERENTIAL MEASUREMENTS.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

90 THORIUM 232 NEUTRON ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS

633		2. %	1	USA	DEI	BET			781182R

Q: RADIOACTIVE TARGET 1.41X(10**10)YR
NEED FAST GROUP YIELDS AND SPECTRA.
O: TO VERIFY EXISTING EVALUATIONS.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

90 THORIUM 232 NEUTRON RESONANCE PARAMETERS

634	UP TO 10.0 KEV	10.0%	1	GER	H.KUESTERS	KFK			692323R

Q: RADIATION WIDTH NEEDED.

91 PROTACTINIUM 233 NEUTRON ABSORPTION CROSS SECTION

635	25.3 MV	500. EV	5.0%	1	GER	H.KUESTERS	KFK		692333R
						MAERKL	SRE		

91 PROTACTINIUM 233 NEUTRON CAPTURE CROSS SECTION

636	500. EV	3.00 MEV	15.0%	2	FR	M.SALVATORES	CAD		762142R

Q: FOR FAST REACTOR CALCULATIONS.

91 PROTACTINIUM 233 NEUTRON FISSION CROSS SECTION

637	500. EV	3.00 MEV	15.0%	2	FR	M.SALVATORES	CAD		762141R

Q: FOR FAST REACTOR CALCULATIONS.

91 PROTACTINIUM 233 NEUTRON ABSORPTION RESONANCE INTEGRAL

638	0.50 EV		10.0%	1	GER	H.KUESTERS	KFK		692334R
						MAERKL	SRE		

92 URANIUM 233 NEUTRON TOTAL CROSS SECTION

639	60.0 EV	100. KEV	3. %	2	USA	STEWART	LAS		791001R

Q: RADIOACTIVE TARGET 1.592X(10**8)YR
O: NEEDED TO COVER THE UNRESOLVED RANGE AND OVERLAP THE RECENT ANL DATA WHICH BEGINS AT 42 KEV.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 233 NEUTRON ELASTIC CROSS SECTION

640	1.00 MV	1.00 EV	5. %	2	USA	CARLSON	NBS		861070R

Q: RADIOACTIVE TARGET 1.592X(10**8)YR
A: SUITABLE MEASUREMENTS AT THERMAL MAY BE ACCEPTABLE
O: WELL-CHARACTERIZED SAMPLES MUST BE USED.
EXTINCTION EFFECTS MUST BE DETERMINED.
FOR DETERMINATION OF THE THERMAL CONSTANTS.
M: NEW REQUEST.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 233 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

641	1.00 MEV	7.00 MEV		3	USA	SMITH	ANL		671086R

Q: RADIOACTIVE TARGET 1.592X(10**8)YR
A: ACCURACY RANGE 10. TO 20. PERCENT.
M: SUBSTANTIAL MODIFICATIONS.

92 URANIUM 233 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

642 UP TO 5.00 MEV 20.0% 3 UK J.L.ROWLANDS WIN 692339R

O: FOR FAST REACTORS.

92 URANIUM 233 NEUTRON CAPTURE CROSS SECTION

643 100. EV 200. KEV 2 USA PEELLE ORL 761081R

Q: RADIOACTIVE TARGET 1.592X(10**5)YR
MOST IMPORTANT BELOW 30 KEV WHERE THERE ARE NO DATA.
A: ACCURACY RANGE 5. TO 10. PERCENT.

644 500. EV 3.00 MEV 10.0% 2 FR M.SALVATORES CAD 762143R

O: FOR FAST REACTOR CALCULATIONS.

645 60.0 EV 500. KEV 2 USA STEWART LAS 791002R

Q: RADIOACTIVE TARGET 1.592X(10**5)YR
A: ACCURACY RANGE 5. TO 8. PERCENT.
O: NEEDED TO COVER THE UNRESOLVED RANGE AND TO EXTEND TO HIGHER ENERGIES.
NO DATA AVAILABLE ABOVE 2 KEV EXCEPT ALPHA MEASUREMENTS OF DIVEN.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 233 NEUTRON N,2N

646 UP TO 15.0 MEV 10.0% 1 FR C.A.PHILIS BRC 692341R

647 UP TO 15.0 MEV 10.0% 2 FR F.JOSSO CAD 792030R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

92 URANIUM 233 NEUTRON ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

648 1.00 MEV 3 USA STEWART LAS 791004R

Q: RADIOACTIVE TARGET 1.592X(10**5)YR
ABSOLUTE CROSS SECTIONS REQUIRED.
MEASURE AT SEVERAL ANGLES AND DETECT LOW ENERGY NEUTRONS.
A: ACCURACY RANGE 5. TO 10. PERCENT.

92 URANIUM 233 NEUTRON FISSION CROSS SECTION

649 60.0 EV 100. KEV 2 USA STEWART LAS 791003R

Q: RADIOACTIVE TARGET 1.592X(10**5)YR
MEASUREMENTS RELATIVE TO -235U NOT DESIRED DUE TO LARGE CROSS SECTION FLUCTUATIONS.
A: ACCURACY RANGE 5. TO 8. PERCENT.
O: NEEDED TO COVER THE UNRESOLVED RANGE AND OVERLAP THE RATIO MEASUREMENTS OF CARLSON.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 233 NEUTRON CAPTURE TO FISSION RATIO (ALPHA)

650 1.00 KEV 100. KEV 5.0% 3 UK J.L.ROWLANDS WIN 692346R

O: FOR FAST REACTORS.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 233 NEUTRON NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)

651 10.0 MV 0.20 EV 0.5% 3 UK J.L.ROWLANDS WIN 692345R

Q: VALUE RELATIVE TO 25.3 MV ETA WANTED.
A: ACCURACY IS FOR AVERAGE VALUES IN 0.02 EV STEPS.
O: FOR THERMAL REACTORS.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A

92 URANIUM 233 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION

652 25.3 MV 5. % 1 USA DEI BET 741116R

Q: RADIOACTIVE TARGET 1.592X(10**5)YR
O: TO RESOLVE DISCREPANCIES.

92 URANIUM 233 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION (CONTINUED)

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 233 NEUTRON ENERGY SPECTRUM OF FISSION NEUTRONS

653	100. KEV		2.0%	3	UK	J.L.ROWLANDS	WIN	792123R
					A: 2 PERCENT ACCURACY ON MEAN FISS. SPECTRUM ENERGY. 10 PERCENT ACCURACY WANTED ON NUMBER OF NEUTRONS ABOVE 5 MEV AND ON NUMBER BELOW 0.25 MEV.				
					O: FOR FAST REACTORS.				
654	UP TO	3.00 MEV	1. %	3	USA	SMITH	ANL	861062R
					Q: RADIOACTIVE TARGET 1.592X(10**5)YR SPECTRUM RELATIVE TO 252-CF.				
					M: NEW REQUEST.				

92 URANIUM 233 NEUTRON FISSION PRODUCT MASS YIELD SPECTRUM

655	25.3 MV		1.0%	3	CAN	W.H.WALKER	CRC	711801R
					Q: YIELD OF XE-135 WANTED.			
					O: FOR CALCULATION OF FISSION PRODUCT ABSORPTION.			

92 URANIUM 234 NEUTRON CAPTURE CROSS SECTION

656	UP TO	10.0 KEV	5.0%	3	FR	H.TELLIER	SAC	732094R
					A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.			
657	1.00 MV	2.00 EV	3. %	2	USA	PEELLE	ORL	861092R
					Q: RADIOACTIVE TARGET 2.45X(10**5)YR			
					M: NEW REQUEST.			
658	2.00 EV	10.0 KEV	6. %	2	USA	PEELLE	ORL	861165R
					Q: RADIOACTIVE TARGET 2.45X(10**5)YR			
					M: NEW REQUEST.			
659	10.0 KEV	1.00 MEV	10. %	2	USA	PEELLE	ORL	861166R
					Q: RADIOACTIVE TARGET 2.45X(10**5)YR			
					M: NEW REQUEST.			

92 URANIUM 234 NEUTRON N,2N

660	UP TO	15.0 MEV	10.0%	1	FR	J.SALVY	BRC	682050R

92 URANIUM 234 NEUTRON N,3N

661	UP TO	15.0 MEV	15.0%	1	FR	J.SALVY	BRC	682051R

92 URANIUM 234 NEUTRON ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS

662			5. %	1	USA	DEI	BET	781187R
					Q: RADIOACTIVE TARGET 2.45X(10**5)YR NEED FAST GROUP YIELDS AND SPECTRA.			
					O: NO MEASUREMENTS AVAILABLE. FOR NON-DESTRUCTIVE ASSAY OF U-233-TH-232 FUEL			

92 URANIUM 235 NEUTRON TOTAL CROSS SECTION

663	1.00 MV	1.00 EV	0.5 %	1	USA	HEMMIG	DOE	821004R
					Q: RADIOACTIVE TARGET 7.038X(10**8)YR			
					O: NEEDED TO DETERMINE THE THERMAL SHAPE ACCURATELY.			

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 235 NEUTRON ELASTIC CROSS SECTION

664			10.0%	2	UK	J.L.ROWLANDS	WIN	692360R
					Q: THERMAL AVERAGE INCIDENT ENERGY.			
					O: FOR LONG TERM IMPROVEMENT OF THE ABSORPTION CROSS SECTION.			

92 URANIUM 235 NEUTRON ELASTIC CROSS SECTION (CONTINUED)

665 1.00 MV 1.00 EV 5. % 2 USA CARLSON NBS 861071R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
A: SUITABLE MEASUREMENTS AT THERMAL MAY BE ACCEPTABLE
O: WELL-CHARACTERIZED SAMPLES MUST BE USED.
EXTINCTION EFFECTS MUST BE DETERMINED.
FOR DETERMINATION OF THE THERMAL CONSTANTS.
M: NEW REQUEST.

STATUS
THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.
STATUS

92 URANIUM 235 NEUTRON INELASTIC CROSS SECTION

668 UP TO 30.0 MEV 10.0% 2 FR J.SALVY BRC 742070R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

667 800. KEV 5.00 MEV 2 CCP L.N.USACHEV FEI 754024R

A: FROM 0.8 - 1.4 MEV ACCURACY 15 PERCENT.
FROM 1.4 - 2.5 MEV ACCURACY 17 PERCENT.
FROM 2.5 - 5.0 MEV ACCURACY 30 PERCENT.
O: NEED FOR FAST REACTOR CALCULATION.
FOR MORE DETAIL SEE INTRODUCTION.

92 URANIUM 235 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

668 UP TO 15.0 MEV 2 CCP M.N.NIKOLAEV FEI 714006R

Q: CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION
THRESHOLDS OF U-238 (7 PERCENT ACCURACY) AND OF
PU-240 OR NP-237 (10 PERCENT ACCURACY) WANTED.
EXCITATION CROSS SECTION FOR LOW LYING LEVELS
REQUESTED WITH 15 PERCENT ACCURACY.
TEMPERATURES OF THE INELASTIC SCATTERING SPECTRA
AS WELL AS DIRECT AND PRE-EQUILIBRIUM MECHANISM
CONTRIBUTIONS IN THE CONTINUUM ARE OF INTEREST.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

92 URANIUM 235 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

669 UP TO 30.0 MEV 20.0% 2 FR J.SALVY BRC 742071R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

92 URANIUM 235 NEUTRON CAPTURE CROSS SECTION

670 1.00 KEV 10.0 MEV 1 FR J.SALVY BRC 742078R

A: ACCURACY 5 PERCENT UP TO 3 MEV, 20 PERCENT
ABOVE.
O: FOR CRITICAL ASSEMBLIES.

671 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754007R

A: FROM 5.0 - 100 KEV ACCURACY 4.0 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 10 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 50 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

672 1.00 MV 1.00 EV 0.5 % 1 USA HEMMIG DOE 821006R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
O: NEEDED TO DETERMINE THE THERMAL SHAPE ACCURATELY.

STATUS
THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.
STATUS

92 URANIUM 235 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

673 1.00 KEV 20.0 MEV 10.0% 1. FR J.SALVY BRC 742069R

O: FOR SHIELDING.

92 URANIUM 235 NEUTRON N,3N

674 UP TO 30.0 MEV 10.0% 1 FR J.SALVY BRC 742072R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

92 URANIUM 235 NEUTRON N,4N

675 UP TO 30.0 MEV 10.0% 1 FR C.A.PHILIS BRC 872034R

Q: THEORETICAL NUCLEAR MODELLING
M: NEW REQUEST.

92 URANIUM 235 NEUTRON ENERGY DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION

676 100. KEV 14.0 MEV 1 USA HEMMIG DOE 821028R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
SPECTRUM OF EMITTED NEUTRONS NEEDED AT SEVERAL ENERGIES.
A: ACCURACY RANGE 10. TO 15. PERCENT.

92 URANIUM 235 NEUTRON FISSION CROSS SECTION

677 1.00 MEV 5.00 MEV 1.5% 2 UK M.G.SOWERBY HAR 692368R

A: ACCURACY FOR AVERAGE VALUE OF THE ERROR BETWEEN E AND 2E.
O: STANDARD
MAY BE MET BY ENDF/B-VI STANDARDS

678 5.00 KEV 7.00 MEV 2.0% 2 CCP M.N.NIKOLAEV FEI 714007R

Q: BELOW 20 KEV MEASUREMENTS OF TRANSMISSION CURVES BY FLAT RESPONSE DETECTOR AND BY SELF DETECTION METHOD WITH FISSION DETECTOR WANTED FOR SELFSHIELDING EVALUATION.
THESE CURVES MUST BE MEASURED WITH ATTENUATIONS OF THE PRIMARY BEAM DOWN TO 1. PERCENT.
AVERAGE CS IN FISSION NEUTRON SPECTRUM OF CF-252 TIMES NU-BAR OF CF-252 IS OF GREAT INTEREST FOR REDUCING THE DEPENDENCE OF THE ACCURACY OF NEUTRON PRODUCTION CALCULATIONS UPON THE ACCURACY OF THE CF-252 NU-BAR STANDARD (REQUIRED ACCURACY 1 PERCENT).
A: ACCURACY DETERMINED BY USE OF THIS CROSS SECTION AS STANDARD IN FISSION AND CAPTURE MEASUREMENTS FOR OTHER ISOTOPES.
IF MEASUREMENT IS ABSOLUTE AND PU-239 AND U-238 FISSION CROSS SECTIONS ARE MEASURED RELATIVE TO U-235 FISSION, THEN 2.0 PERCENT ACCURACY IS REQUIRED.
BEST ACCURACY OF 1.5 PERCENT DESIRABLE IN 1.2 TO 2.5 MEV REGION BECAUSE OF U-238 FISSION CROSS SECTION NORMALIZATION.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
REQUEST CONSIDERED FULFILLED, WHEN AT LEAST THREE MEASUREMENTS WITH DIFFERENT METHODS AGREE WITHIN REQUESTED ACCURACY.

679 10.0 MEV 30.0 MEV 5.0% 1 FR J.SALVY BRC 742073R

M: MODIFIED (PARTIALLY FULFILLED).

680 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754008R

A: FROM 5.0 - 100 KEV ACCURACY 1.0 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 1.0 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 1.0 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
STANDARD CS ABOVE 100 KEV.
FOR MORE DETAIL SEE INTRODUCTION.

681 7.50 EV 30.0 KEV 1. % 1 USA CARLSON NBS 801294R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
O: 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.
TO RESOLVE DISCREPANCY IN RECENT CROSS SECTION MEASUREMENTS.

682 30.0 KEV 14.0 MEV 1.0 % 1 USA HEMMIG DOE 821003R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
RATIO TO H(N,P) AND 10-B (N,ALPHA) AND POSSIBLY OTHER STANDARDS.

683 1.00 MV 1.00 EV 0.5 % 1 USA HEMMIG DOE 821005R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
O: NEEDED TO DETERMINE THE THERMAL SHAPE ACCURATELY.

684 14.0 MEV 20.0 MEV 1. % 2 USA CARLSON NBS 861149R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
O: TO IMPROVE ACCURACY OF STANDARD CROSS SECTION.
M: NEW REQUEST.

STATUS----------STATUS

FAST AND THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 235 NEUTRON CAPTURE TO FISSION RATIO (ALPHA)

685 100. EV 1.00 MEV 5.0% 2 UK J.L.ROWLANDS WIN 692373R

A: ACCURACY FOR AVERAGE VALUE OF THE ERROR BETWEEN E AND 2E.
O: FOR FAST REACTORS.

686 100. EV 800. KEV 7.0% 1 CCP M.N.NIKOLAEV FEI 714008R

Q: FOR EVALUATION OF THE DIFFERENCES IN THE CAPTURE- AND FISSION-RESONANCE SELF SHIELDING. MEASUREMENTS OF TRANSMISSION CURVES WITH FLAT-RESPONSE DETECTOR AND BY SELF-INDICATION METHOD WITH CAPTURE AND FISSION DETECTORS IN THE TEMP-ERATURE RANGE 70-2500 DEGREES K ARE WANTED.
A: IN REGION 1-100 KEV BETTER ACCURACY DESIRABLE (ABOUT 5 PERCENT). IN THE TRANSMISSION MEASUREMENTS ATTENUATION OF AT LEAST 1/100 WANTED.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION. ALSO NEEDED FOR COMPARISON WITH ALPHA PU-239 FOR TEST OF MEASUREMENT METHODS. AT LEAST THREE DIFFERENT RESULTS MUST COINCIDE WITHIN REQUESTED ACCURACY.

687 1.00 MV 1.00 EV 1. % 1 USA DEI BET 721077R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR CAPTURE CROSS SECTION EQUALLY USEFUL.
O: EXPERIMENTAL UNCERTAINTIES NEED VERIFICATION.

688 1.00 KEV 1.00 MEV 2 USA SMITH ANL 861063R

Q: RADIOACTIVE TARGET 7.038X(10**5)YR
A: ACCURACY RANGE 5. TO 10. PERCENT. DISCREPANCIES ARE TOO LARGE.
M: NEW REQUEST.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 235 NEUTRON NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)

689 10.0 MV 0.40 EV 0.5% 1 UK J.L.ROWLANDS WIN 692370R

Q: VALUE RELATIVE TO 25.3 MV ETA WANTED.
A: ACCURACY IS FOR AVERAGE VALUES IN 20 MV STEPS UP TO 0.2 EV, AND IN 50 MV STEPS ABOVE.
O: FOR TEMPERATURE COEFFICIENT WORK. ANALYSIS OF MEASUREMENTS IS IN PROGRESS (HARWELL)

690 1.00 MV 1.00 EV .4 % 1 USA DEI BET 741119R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR SHAPE ESPECIALLY IMPORTANT AT LOW ENERGY. USE TECHNIQUE OTHER THAN MANGANESE BATH.

691 1.00 MV 50.0 MV 1.0% 1 FR H.TELLIER SAC 872036R

O: TEMPERATURE COEFFICIENT CALCULATION FOR THERMAL REACTORS
M: NEW REQUEST.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A

92 URANIUM 235 NEUTRON NEUTRONS EMITTED PER FISSION (NU BAR)

692 25.3 MV 2.50 MEV 0.5% 2 CCP M.N.NIKOLAEV FEI 714009R

Q: RATIO TO CF-252 NU REQUIRED.
A: ABSOLUTE MEASUREMENTS OF U-235 NU-BAR FOR THERMAL NEUTRONS WITH ACCURACY NOT WORSE THAN 0.5 PER-CENT AS WELL AS ETA MEASUREMENTS WOULD BE USEFUL FOR LOWERING THE DEPENDENCE ON THE CF-252 STANDARD. ENERGY DEPENDENCE OF NU IS WANTED WITH 0.7 LETHARGY RESOLUTION IN THE REGION BELOW 2.5 MEV.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

693 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754010R

A: FROM 5.0 - 100 KEV ACCURACY 1.0 PERCENT. FROM 0.1 - 0.8 MEV ACCURACY 1.0 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 1.0 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.

694 1.00 MV 1.00 EV .2 % 1 USA DEI BET 781189R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR MEASUREMENTS RELATIVE TO U-233, PU-239 AND CF-252 WANTED.

695 1.00 MV 20.0 EV 0.5% 1 FR E.FORT CAD 872035R

Q: VALUE RELATIVE TO 252CF NU
O: EVALUATION PROBLEM RELATIVE TO ENERGY DEPENDENCE
M: NEW REQUEST.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 235 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION

696	0.00	EV	20.0	MEV	3. %	1	USA	DEI	BET	741120R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
FOR THE ENTIRE ENERGY RANGE.
O: TO RESOLVE UNCERTAINTIES IN AVAILABLE DATA.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 235 NEUTRON ENERGY SPECTRUM OF FISSION NEUTRONS

697	25.3	MV	3.00	MEV	1. %	3	USA	SMITH HEMMIG	ANL DOE	691256R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
O: VERIFICATION OF FISSION SPECTRUM.
SPECTRUM RELATIVE TO 252-CF.

698	100.	KEV			2.0%	2	UK	J.L.ROWLANDS A.WHITTAKER	WIN BNF	692376R

A: INCIDENT ENERGY, ABOUT 100 KEV.
ACCURACY FOR AVERAGE E'.
ACCURACY 10 PERCENT ON NUMBER OF NEUTRONS
ABOVE 5 MEV AND BELOW .25 MEV.
LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY.
O: FOR FAST REACTORS.
FOR REACTION RATE ANALYSIS.
EVALUATION NEEDED BEFORE FURTHER MEASUREMENTS

699	25.3	MV			1. %	1	USA	DEI	BET	721080R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
NEED SHAPE OF NEUTRON ENERGY DISTRIBUTION FROM
100 KEV TO 15 MEV.
A: RELATIVE PEAK TO 1 PERCENT.
O: NEEDED FOR CRITICALITY CALCULATIONS.

700		UP TO	30.0	MEV	5.0%	1	FR	J.SALVY	BRC	742077R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

92 URANIUM 235 NEUTRON SPECTRUM OF PROMPT GAMMA RAYS EMITTED IN FISSION

701	25.3	MV	14.0	MEV	2.0 %	3	CCP	S.S.KOVALENKO	RI	734001N

Q: YIELD AND SPECTRA WANTED FOR 5 TO 15 MEV GAMMAS.
A: 10.0 KEV GAMMA RESOLUTION WANTED.
O: FOR ASSAY OF U IN FUEL ELEMENTS FROM PROMPT
GAMMAS.

92 URANIUM 235 NEUTRON FISSION PRODUCT MASS YIELD SPECTRUM

702	25.3	MV			1.0%	2	CCP	S.A.SKVORTSOV O.A.MILLER	KUR KUR	704022N

Q: YIELDS OF ZR-95 AND RU-106 ARE REQUIRED.
O: FOR ASSAY OF U IN SPENT FUEL ELEMENTS BY
THE FISSION PRODUCT GAMMA RAYS.

703	25.3	MV			1.0%	3	CAN	W.H.WALKER	CRC	711802R

Q: YIELD OF XE-135 WANTED.
O: CALCULATION OF FISSION PRODUCT POISONS.

704	25.3	MV			1. %	1	USA	DEI FEINER	BET KAP	781192R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
NUCLIDES OF INTEREST ARE RH-105,XE-135,CS-135
CS-137,ND-147,SM-149 AND EU-153.
O: DATA NEEDED TO IMPROVE ACCURACY OF PREDICTED
FISSION PRODUCT POISONING.

92 URANIUM 235 NEUTRON RESONANCE PARAMETERS

705	25.3	MV	200.	EV	10. %	2	USA	DEI	BET	691263R

Q: RADIOACTIVE TARGET 7.038X(10**8)YR
MULTILEVEL FIT WHERE FEASIBLE.
O: VERIFICATION OF EXISTING DATA USEFUL.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 236 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

706 UP TO 5.00 MEV 10.0% 2 CCP M.N.NIKOLAEV FEI 714012R

Q: CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION THRESHOLDS OF U-236 AND U-238 WANTED. THIN SPHERE TRANSMISSION MEASUREMENTS WITH CF-252 SOURCE AND FISSION THRESHOLD DETECTORS WOULD BE USEFUL.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

92 URANIUM 236 NEUTRON CAPTURE CROSS SECTION

707 1.00 KEV 10.0 MEV 1 FR J.SALVY BRC 682060R

A: ACCURACY 10 PERCENT TO 3 MEV, 20 PERCENT ABOVE
O: FOR RESONANCE SELF SHIELDING.

708 500. EV 1.40 MEV 7.0% 2 CCP M.N.NIKOLAEV FEI 714015R

Q: RATIO WANTED RELATIVE TO U-235 FISSION.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

STATUS

UNDER CONTINUOUS REVIEW BY INDC. SEE APPENDIX A.

92 URANIUM 236 NEUTRON FISSION CROSS SECTION

709 100. KEV 5.00 MEV 5.0% 2 CCP M.N.NIKOLAEV FEI 714013R

Q: RATIO WANTED RELATIVE TO U-235.
AVERAGE CS IN FISSION NEUTRON SPECTRUM OF CF-252 TIMES NU-BAR OF CF-252 WOULD BE VERY USEFUL (REQUIRED ACCURACY 1 PERCENT).
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

92 URANIUM 236 NEUTRON RESONANCE PARAMETERS

710 10.0 EV 5.00 KEV 2 CCP M.N.NIKOLAEV FEI 714011R

Q: NEUTRON AND CAPTURE WIDTHS WANTED FOR EVALUATION OF SELFSHIELDING IN RESOLVED RESONANCE REGION.
A: OBSERVATION OF AT LEAST 50 PERCENT OF P-WAVE RESONANCES IN THE ENERGY INTERVAL TO 1 KEV IS DESIRED.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
STATISTICAL ANALYSIS OF MEASURED RESONANCE PARAMETERS WANTED.
AVERAGE S AND P WAVE RESONANCE PARAMETERS SHOULD BE DERIVED.

92 URANIUM 238 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

711 300. KEV 10.0 MEV 5. % 1 USA SMITH ANL 691408R
HEMMIG DOE
SMITH ANL

Q: RADIOACTIVE TARGET 4.468X(10**9)
M: SUBSTANTIAL MODIFICATIONS.

712 1.00 KEV 30.0 MEV 5.0% 2 FR C.A.PHILIS BRC 742082R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

92 URANIUM 238 NEUTRON INELASTIC CROSS SECTION

713 UP TO 15.0 MEV 5.0% 1 FR M.SALVATORES CAD 692387R

Q: ALTERNATE QUANTITY - NONELASTIC CROSS SECTION.
O: FOR FAST REACTOR CALCULATIONS.

714 1.20 MEV 2.00 MEV 10.0% 2 GER F.FROEHNER KFK 692393R

Q: LEVEL EXCITATION CROSS SECTIONS FOR THE 45 AND 148 KEV LEVELS WANTED.

715 UP TO 30.0 MEV 5.0% 2 FR C.A.PHILIS BRC 742083R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

716 100. KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754021R

A: FROM 0.1 - 0.8 MEV ACCURACY 3.0 PERCENT.
FROM 0.8 - 1.4 MEV ACCURACY 3.0 PERCENT.
FROM 1.4 - 2.5 MEV ACCURACY 3.0 PERCENT.
FROM 2.5 - 5.0 MEV ACCURACY 10 PERCENT.
FROM 5.0 - 6.5 MEV ACCURACY 7.0 PERCENT.
FROM 6.5 - 10 MEV ACCURACY 10 PERCENT.
O: NEED FOR FAST REACTOR CALCULATION.
FOR MORE DETAIL SEE INTRODUCTION.

717 UP TO 10.0 MEV 1 USA HEMMIG DOE 821029R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
TOTAL INELASTIC CROSS SECTION NEEDED.
A: ACCURACY RANGE 5. TO 7. PERCENT.
ACCURACY SHOULD BE SUFFICIENT TO
DETERMINE BROAD GROUP (E.G. 29 GROUP)
TRANSFER MATRIX ELEMENTS TO 7-10 PERCENT.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 238 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

718 UP TO 15.0 MEV 5.0% 1 FR M.SALVATORES CAD 692391R

Q: SEPARATION OF LEVELS UP TO 2 MEV REQUIRED.
A: ACCURACY ON NUCLEAR TEMPERATURE ABOVE 2 MEV.
O: FOR FAST REACTOR CALCULATIONS.

719 50.0 KEV 15.0 MEV 1 CCP M.N.NIKOLAEV FEI 714018R

Q: DECISION ABOUT TOTAL INELASTIC CROSS SECTION AT
1.0 TO 2.5 MEV WANTED.
TEMPERATURE FOR INELASTIC NEUTRONS WANTED AT THE
HIGHER ENERGIES.
SPECTRA AND CROSS SECTION FOR DIRECT INELASTIC
SCATTERING PROCESSES TO BE INVESTIGATED IN THE
MEV REGION AS WELL AS DIRECT MECHANISM CONTRIB-
UTIONS.
A: CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION
THRESHOLD OF U-238 WANTED TO 1.5 - 2.0 PERCENT.
CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION
THRESHOLD OF PU-240 OR NP-237 WANTED TO 3 - 5
PERCENT.
EXCITATION CS FOR FIRST LEVEL ABOVE THRESHOLD TO 2
MEV SHOULD BE MEASURED WITH 5 PERCENT ACCURACY.
NEUTRON SPECTRA TO BE MEASURED WITH 5 PERCENT
ACCURACY AT 2.515 MEV.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
PRECISION MEASUREMENTS OF MENTIONED INTEGRAL
PARAMETERS IN SHELL TRANSMISSION EXPERIMENTS
WITH CF-252 NEUTRON SOURCE AND U-238 AND NP-237
FISSION THRESHOLD DETECTORS AS WELL AS BY
NEUTRON SPECTROMETER SEEMS VERY USEFUL.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 238 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

720 500. KEV 5.00 MEV 5.0% 1 UK J.L.ROWLANDS WIN 692392R

O: FOR FAST REACTORS.
EVALUATION NEEDED BEFORE FURTHER MEASUREMENTS

721 UP TO 30.0 MEV 5.0% 2 FR C.A.PHILIS BRC 742084R

M: SUBSTANTIAL MODIFICATIONS.

722 500. KEV 5.00 MEV 5.0% 1 GER H.KUESTERS KFK 792219R

92 URANIUM 238 NEUTRON NON-ELASTIC CROSS SECTION

723 10.0 KEV 15.0 MEV 2 CCP M.N.NIKOLAEV FEI 714017R

A: DIRECT MEASUREMENTS BY SHELL TRANSMISSION
DESIRABLE WITH 3-5 PERCENT ACCURACY.
O: FOR EVALUATION OF INELASTIC SCATTERING CROSS
SECTION FOR FAST REACTORS.

92 URANIUM 238 NEUTRON CAPTURE CROSS SECTION

724 1.00 EV 1.00 KEV 5. % 1 USA HEMMIG DOE 691419R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
O: FOR FAST REACTOR CALCULATIONS.

725 1.00 KEV 300. KEV 1. % 1 USA SMITH ANL 691420R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
O: FOR FAST REACTOR CALCULATIONS.

726 300. KEV 500. KEV 1.5 % 1 USA SMITH ANL 691423R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
O: FOR FAST REACTOR CALCULATIONS.

727 500. KEV 10.0 MEV 2.5 % 1 USA SMITH ANL 691426R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
O: FOR FAST REACTOR CALCULATIONS.

728	5.00	MV	6.00	EV		1	UK	J.L.ROWLANDS	WIN	692401R

A: ACCURACY REQUIRED .03 BARNS.
O: FOR THERMAL REACTORS.
ASSESSMENT OF GEEL MEASUREMENTS NEEDED BEFORE FURTHER MEASUREMENTS

729	10.0	KEV	2.00	MEV	3.0%	1	UK	J.L.ROWLANDS	WIN	692405R

A: ACCURACY FOR AVERAGE VALUE OF THE ERROR BETWEEN E AND 2E.
O: MAY BE MET BY ENDF/B-VI STANDARDS EVALUATION

730	500.	EV	1.40	MEV	3.0%	1	CCP	M.N.NIKOLAEV	FEI	714022R

Q: RATIO TO U-235 FISSION CS IS WANTED.
ABSOLUTE MEASUREMENTS OR RATIOS TO B-10(N,ALPHA) AND LI-6(N,ALPHA) CROSS SECTIONS WOULD ALSO BE USEFUL, AND AT HIGHER ENERGIES THE RATIO TO THE NP-237 FISSION CS.
TRANSMISSION MEASUREMENTS WITH FLAT-RESPONSE DETECTOR AND BY THE SELF-INDICATION METHOD WITH CAPTURE GAMMA-RAY DETECTOR IN THE TEMPERATURE RANGE 70-2500 DEGREES K ARE DESIRED FOR EVALUATION OF SELF-SHIELDING AND DOPPLER EFFECTS.
SPHERICAL TRANSMISSION TIME-OF-FLIGHT MEASUREMENTS SEEM TO BE A USEFUL INDEPENDENT METHOD FOR DETERMINING THE RELIABILITY OF CAPTURE CROSS-SECTION DATA.
A: BETWEEN 1 AND 100 KEV INFORMATION ON RESONANCE SELFSHIELDING FACTORS (SEE BOOK BY ABAGYAN ET AL., CONSULTANTS BUREAU, NEW YORK,1964) WITH 2 PERCENT ACCURACY AND AVERAGED OVER 0.2 LETHARGY INTERVALS DESIRED.
TEMPERATURE DIFFERENCES OF SELFSHIELDING FACTORS MUST BE KNOWN WITH 7 PERCENT ACCURACY.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
FIRST PRIORITY BECAUSE IT IS DIFFICULT TO INTERPRET THE DOPPLER-EFFECT AND SELF-SHIELDING FACTORS FROM MACROSCOPIC DATA ONLY.

731	5.00	KEV	10.0	MEV		2	CCP	L.N.USACHEV	FEI	754005R

A: FROM 5.0 - 100 KEV ACCURACY 2.0 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 3.0 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 9.0 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

732	10.0	MV	1.00	EV	2.0%	2	FR	H.TELLIER	SAC	792036R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: TO CHECK CAREFULLY IF THE CAPTURE CROSS SECTION IS 1/V DEPENDENT OR NOT

733	10.0	KEV	80.0	KEV	3.0%	2	GER	H.KUESTERS	KFK	792220R
734	1.00	EV	1.00	KEV	5. %	1	USA	SMITH	ANL	861064R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR RATIO TO 239-PU (N,F).
O: KEY QUANTITY FOR FBR BREEDING.
M: NEW REQUEST.

735	1.00	KEV	10.0	KEV	3. %	1	USA	SMITH	ANL	861167R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR RATIO TO 239-PU (N,F).
O: KEY QUANTITY FOR FBR BREEDING.
M: NEW REQUEST.

736	10.0	KEV	200.	KEV	2. %	1	USA	SMITH	ANL	861168R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR RATIO TO 239-PU (N,F).
O: KEY QUANTITY FOR FBR BREEDING.
M: NEW REQUEST.

737	200.	KEV	1.00	MEV	3. %	1	USA	SMITH	ANL	861169R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR RATIO TO 239-PU (N,F).
O: KEY QUANTITY FOR FBR BREEDING.
M: NEW REQUEST.

738	6.00	MEV	16.0	MEV	8. %	3	PRC	ZHANG BENAI	IPM	873028R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
RADIATIVE CAPTURE CROSS-SECTION.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 8-10%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 238 NEUTRON CAPTURE GAMMA RAY SPECTRUM

739 6.00 MEV 16.0 MEV 15. % 3 PRC ZHANG BENAI IPM 873037R

Q: GAMMA-RAY ENERGY REGION 10-22MEV.
GAMMA-RAY SPECTRUM.
NO SATISFACTORY EXPERIMENTAL DATA AVAILABLE.
A: ACCURACY 15-20%.
O: RESEARCH ON REACTION MECHANISM AND NUCLEAR TECHNOLOGY.
M: NEW REQUEST.

92 URANIUM 238 NEUTRON ENERGY DISTRIBUTION OF PHOTON FROM INELASTIC SCAT

740 100. KEV 6.00 MEV 10. % 3 PRC ZHANG BENAI IPM 873038R

Q: GAMMA-RAY MAIN ENERGY REGION 0.1-10 MEV.
ENERGY SPECTRUM OF GAMMA-RAYS FROM INELASTIC SCATTERING.
NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW.
A: ACCURACY 10-15%.
O: GAMMA-RAY SHIELDING RESEARCH.
M: NEW REQUEST.

92 URANIUM 238 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

741 25.0 MV 5.00 MEV 20.0% 2 UK J.L.ROWLANDS WIN 712066R

Q: GAMMA SPECTRUM WANTED.
A: LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY AND PHOTON SPECTRUM.
O: EVALUATION REQUIREMENT.
FOR STUDY OF ACTIVATION AND HEAT RELEASE IN CORE.

742 UP TO 10.0 MEV 10.0% 1 FR M.SALVATORES CAD 832014R

Q: GAMMA SPECTRUM REQUIRED.
O: FAST REACTOR CALCULATIONS.

92 URANIUM 238 NEUTRON N,2N

743 UP TO 20.0 MEV 2 CCP M.N.NIKOLAEV FEI 714019R

Q: SECONDARY ENERGY DISTRIBUTION REQUIRED.
A: ACCURACY 5 TO 10 PERCENT WANTED.
ENERGY SPECTRA OF SECONDARY NEUTRONS DESIRABLE WITH 5 PERCENT ACCURACY AND 0.2 RESOLUTION IN LETHARGY.
O: FOR FAST REACTORS.

744 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724063F

O: POSSIBLE USE AS NEUTRON MULTIPLIER.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 238 NEUTRON N,3N

745 UP TO 15.0 MEV 15.0% 2 CCP I.N.GOLOVIN KUR 724064F

O: POSSIBLE USE AS NEUTRON MULTIPLIER.

746 14.0 MEV 20.0 MEV 20. % 2 USA SMITH ANL 801002R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
A: ENERGY RESOLUTION 10 PERCENT.

747 UP TO 30.0 MEV 10.0% 1 FR C.A.PHILIS BRC 872037R

O: THEORETICAL NUCLEAR MODELLING
M: NEW REQUEST.

92 URANIUM 238 NEUTRON N,4N

748 UP TO 30.0 MEV 10.0% 1 FR C.A.PHILIS BRC 872038R

O: THEORETICAL NUCLEAR MODELLING
M: NEW REQUEST.

92 URANIUM 238 NEUTRON FISSION CROSS SECTION

749 2.0% 2 UK J.L.ROWLANDS WIN 712067R

Q: FISSION SPECTRUM AVERAGE WANTED.
O: EVALUATION REQUIREMENT.
FOR FAST AND THERMAL REACTORS.

750 800. KEV 15.0 MEV 1 CCP M.N.NIKOLAEV FEI 714020R

Q: RATIO TO U-235 FISSION CS IS WANTED.
ABSOLUTE MEASUREMENTS AND MEASUREMENT OF THE RATIO TO THE NP-237 FISSION CS WOULD BE VERY USEFUL.
AVERAGE CS IN FISSION-NEUTRON SPECTRUM OF CF-252 TIMES NU-BAR OF CF-252 IS OF GREAT INTEREST FOR REDUCING THE DEPENDENCE OF THE ACCURACY OF *NEUTRON* PRODUCTION CALCULATIONS UPON THE ACCURACY OF THE CF-252 NU-BAR STANDARD (REQUIRED ACCURACY 1 PERCENT).
A: REQUESTED ACCURACIES - 5 PERCENT BELOW 1.3 MEV, AND ABOVE 6.5 MEV, AND 2 PERCENT BETWEEN 1.3 AND 6.5 MEV.
ABSOLUTE VALUES WITH 2 TO 3 PERCENT ACCURACY.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
AT LEAST THREE DIFFERENT MEASUREMENTS WITH THESE ACCURACIES WANTED.
FIRST PRIORITY BECAUSE HIGH ACCURACY OF THE U-238 FISSION CS IS IMPORTANT IN CONNECTION WITH THE USE OF THIS CS AS A CONVENIENT STANDARD FOR THRESHOLD-REACTION MEASUREMENTS.

751 10.0 MEV 30.0 MEV 3.0% 1 FR C.A.PHILIS BRC 742086R

O: FOR CRITICAL ASSEMBLIES.
M: MODIFIED (PARTIALLY FULFILLED).

752 UP TO 20.0 MEV 2.00% 1 BAN M.M.KASIM BAN 833002R

O: FOR NEUTRON DOSIMETRY

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 238 NEUTRON NEUTRONS EMITTED PER FISSION (NU BAR)

753 UP TO 30.0 MEV 1.0% 1 FR C.A.PHILIS BRC 742088R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

92 URANIUM 238 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION

754 UP TO 5.00 MEV 1 USA HEMMIG DOE 821014R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
A: ACCURACY RANGE 3. TO 5. PERCENT.
THIS MUST BE AN ABSOLUTE MEASUREMENT.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

92 URANIUM 238 NEUTRON ENERGY SPECTRUM OF FISSION NEUTRONS

755 2.00 MEV 2.0% 3 UK J.L.ROWLANDS WIN 692400R

A: INCIDENT ENERGY, ABOUT 2 MEV.
ACCURACY FOR AVERAGE E'.
ACCURACY 10 PERCENT ON NUMBER OF NEUTRONS ABOVE 5.0 MEV AND BELOW 0.25 MEV.
LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY.
O: EVALUATION REQUIREMENT.
FOR FAST REACTORS.

756 UP TO 30.0 MEV 5.0% 1 FR C.A.PHILIS BRC 742089R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

757 UP TO 10.0 MEV 1 USA HEMMIG DOE 821031R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
PROMPT FISSION NEUTRON SPECTRUM WITH REFERENCE TO THAT OF 252-CF WITH AN ACCURACY OF E(AVG) TO 1-1.5 PERCENT. AN ABSOLUTE MEASUREMENT OF THE SHAPE OF THE SPECTRUM MAY BE NECESSARY.

92 URANIUM 238 NEUTRON RESONANCE PARAMETERS

758	UP TO	5.00 KEV		1	CCP	M.N.NIKOLAEV	FEI		714016R

Q: OBSERVATION OF VERY WEAK P-WAVE RESONANCES IS DESIRED.
RESOLUTION OF 90 PERCENT OF P-WAVE RESONANCES CONTROLLED BY PORTER-THOMAS DISTRIBUTION AND LEVEL SPACING DISTRIBUTION AND ALL S-WAVE RESONANCES BELOW 5 KEV IS DESIRED.
O: CAREFUL IDENTIFICATION OF S AND P WAVE RESONANCES NEEDED FOR DETERMINATION OF P WAVE STRENGTH FUNCTION.
REQUEST CONNECTED WITH PROBLEM OF SELFSHIELDING EVALUATION IN UNRESOLVED RESONANCE REGION.
ATTENTION TO BE PAID TO THE PROBABLE DIFFERENCE BETWEEN THE 1/2 (+) AND 1/2 (-) LEVEL DENSITIES.
FIRST PRIORITY BECAUSE INVESTIGATION OF THE PARITY DEPENDENCE OF LEVEL DENSITY IS OF INTEREST FROM A SCIENTIFIC AS WELL AS FROM A PRACTICAL POINT OF VIEW.

759	6.00 EV	10.0 KEV	3.0%	1	UK	J.L.ROWLANDS	WIN		732113R

A: ACCURACY IS FOR THE AVERAGE ERROR BETWEEN E AND 2E.
BROAD RESOLUTION MEASUREMENTS COULD SUFFICE.
O: FOR FAST REACTORS.
TO GIVE SHIELDED CROSS SECTIONS TO 3 PERCENT.
TO GIVE DOPPLER CHANGE TO 5 PERCENT FOR TEMPERATURES BETWEEN 300 AND 2000 DEGREES K.
EVALUATION IN PROGRESS AT HARWELL

760	1.00 KEV	30.0 KEV		1	USA	HEMMIG	DOE		821013R

Q: RADIOACTIVE TARGET 4.468X(10**9)YR
RESONANCE PARAMETERS AND CAPTURE CROSS SECTION.
O: THICK SAMPLE TRANSMISSION AND SELF-INDICATION DATA DESIRABLE; NEED RESOLVED AND UNRESOLVED PARAMETER TO COMPUTE GROUP CROSS SECTIONS TO 3.0 PERCENT ACCURACY FOR VARIOUS SELF-SHIELDING CONDITIONS.

STATUS

UNDER CONTINUOUS REVIEW BY NEANDC. SEE APPENDIX A.

93 NEPTUNIUM 237 SPONTANEOUS ALPHA HALF LIFE

761			.5 %	2	USA	GILLIAM	NBS		761123R

Q: RADIOACTIVE TARGET 2.14X(10**6)YR
O: FOR MASS DETERMINATION OF FISSIONABLE DEPOSITS.

93 NEPTUNIUM 237 NEUTRON CAPTURE CROSS SECTION

762	500. EV	5.00 MEV	15.0%	2	CCP	L.N.USACHEV	FEI		794006R

Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

763	UP TO	15.0 MEV	10.0%	2	EUR	NEUTRON DOSIMETRY GROUP		GEL	812015R

Q: TO BE INCLUDED IN IRDF FILE
O: FOR NEUTRON DOSIMETRY USING SPECTRUM UNFOLDING METHODS.

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

93 NEPTUNIUM 237 NEUTRON N,2N

764			15.0%	2	CCP	L.N.USACHEV	FEI		794008R

Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

93 NEPTUNIUM 237 NEUTRON SPECIAL QUANTITY (DESCRIPTION BELOW)

765	7.00 MEV	12.0 MEV	25.0%	2	UK	A.WHITTAKER J.L.ROWLANDS	BNF WIN		812050R

Q: PRODUCTION OF PU-236
O: FOR ESTIMATION OF PU-236 IN IRRADIATED FUEL AND SAMPLES.

93 NEPTUNIUM 237 NEUTRON FISSION CROSS SECTION

766	50.0 KEV	7.00 MEV	2. %	1	USA	GILLIAM	NBS		781178R

Q: RADIOACTIVE TARGET 2.14X(10**6)YR
O: FOR MATERIALS DOSIMETRY.
THIS NUCLIDE IS AN IMPORTANT STANDARD FOR MEASUREMENTS IN BOTH FAST AND THERMAL REACTORS.

767 8.00 MEV 15.0 MEV 5.0% 1 EUR NEUTRON DOSIMETRY GROUP GEL 812017R

O: FOR SURVEILLANCE OF DAMAGE IN PRESSURE VESSELS
USING CS-137 WITH LONG HALF LIFE
SEE ALSO REQUEST AT LOWER ENERGIES 812016

768 UP TO 20.0 MEV 1.00% 1 BAN M.M.KASIM BAN 833001R

O: FOR NEUTRON DOSIMETRY

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

93 NEPTUNIUM 238 NEUTRON CAPTURE CROSS SECTION

769 1.00 KEV 2.00 MEV 50.0% 2 FR F.JOSSO CAD 792040R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

93 NEPTUNIUM 239 NEUTRON N,2N

770 UP TO 15.0 MEV 50.0% 2 FR F.JOSSO CAD 792042R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

94 PLUTONIUM 236 NEUTRON CAPTURE CROSS SECTION

771 1.00 KEV 2.00 MEV 20.0% 1 FR F.JOSSO CAD 792253R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATIONS.

94 PLUTONIUM 236 NEUTRON FISSION CROSS SECTION

772 1.00 KEV 2.00 MEV 10.0% 1 FR F.JOSSO CAD 792045R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

94 PLUTONIUM 237 NEUTRON CAPTURE CROSS SECTION

773 1.00 KEV 2.00 MEV 50.0% 3 FR M.SALVATORES CAD 792046R

O: FOR FAST REACTOR CALCULATIONS.

94 PLUTONIUM 237 NEUTRON FISSION CROSS SECTION

774 1.00 KEV 2.00 MEV 50.0% 3 FR M.SALVATORES CAD 792047R

O: FOR FAST REACTOR CALCULATIONS.

94 PLUTONIUM 238 GAMMA TOTAL NEUTRON YIELD

775 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714046N

O: PHOTONUCLEAR ASSAY OF PU.

94 PLUTONIUM 238 GAMMA FISSION CROSS SECTION

776 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714044N

O: FOR PHOTONUCLEAR ASSAY OF PU.

94 PLUTONIUM 238 GAMMA FISSION PRODUCT MASS YIELD SPECTRUM

777 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714045N

O: PHOTONUCLEAR ASSAY OF PU.

94 PLUTONIUM 238 NEUTRON CAPTURE CROSS SECTION

778 1.00 KEV 10.0 MEV 20.0% 2 FR J.SALVY BRC 742093R

94 PLUTONIUM 238 NEUTRON N,2N

779 UP TO 20.0 MEV 10.0% 1 FR J.SALVY BRC 682062R

94 PLUTONIUM 238 NEUTRON N,2N (CONTINUED)

780	UP TO	15.0	MEV	15.0%	1	FR	F.JOSSO	CAD	792048R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

781	UP TO	16.0	MEV	10. %	2	PRC	CAI DUNJIU	AEP	873048R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 238 NEUTRON N,3N

782	UP TO	16.0	MEV	10. %	2	PRC	CAI DUNJIU	AEP	873052R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 238 NEUTRON FISSION CROSS SECTION

783	1.00 KEV	3.00	MEV	15.0%	1	FR	F.JOSSO	CAD	732095R

Q: VALUE RELATIVE TO U-235 FISSION CROSS SECTION.
A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

94 PLUTONIUM 239 NEUTRON TOTAL CROSS SECTION

784	1.00 KEV	50.0	KEV	2. %	1	JAP	M.KAWAI	NIG	762210R

O: FISSION REACTOR CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

785	1.00E-04 EV	1.00	EV	1. %	1	USA	HEMMIG	DOE	821007R

Q: RADIOACTIVE TARGET 24119 YR
O: NEEDED TO DETERMINE THE THERMAL SHAPE ACCURATELY.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON ELASTIC CROSS SECTION

786				10.0%	2	UK	J.L.ROWLANDS	WIN	692416R

Q: THERMAL AVERAGE INCIDENT ENERGY.
O: FOR LONG TERM IMPROVEMENT OF THE ABSORPTION CROSS SECTION.

787	1.00 MV	1.00	EV	5. %	2	USA	CARLSON	NBS	861072R

Q: RADIOACTIVE TARGET 24119 YR
A: SUITABLE MEASUREMENTS AT THERMAL MAY BE ACCEPTABLE
O: WELL-CHARACTERIZED SAMPLES MUST BE USED.
EXTINCTION EFFECTS MUST BE DETERMINED.
FOR DETERMINATION OF THE THERMAL CONSTANTS.
M: NEW REQUEST.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

788	1.00 KEV	30.0	MEV	5.0%	1	FR	C.A.PHILIS	BRC	742095R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

94 PLUTONIUM 239 NEUTRON INELASTIC CROSS SECTION

789	UP TO	30.0	MEV	10.0%	2	FR	C.A.PHILIS	BRC	742097R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

790	800. KEV	5.00	MEV		2	CCP	L.N.USACHEV	FEI	754023R

A: FROM 0.8 - 1.4 MEV ACCURACY 15 PERCENT.
FROM 1.4 - 2.5 MEV ACCURACY 17 PERCENT.
FROM 2.5 - 5.0 MEV ACCURACY 30 PERCENT.
O: NEED FOR FAST REACTOR CALCULATION.
FOR MORE DETAIL SEE INTRODUCTION.

94 PLUTONIUM 239 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

791 UP TO 15.0 MEV 2 CCP M.N.NIKOLAEV FEI 714023R

A: CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION THRESHOLDS OF U-238 AND OF PU-240 OR NP-237 DESIRED WITH 10 PERCENT ACCURACY.
EXCITATION CROSS SECTION FOR LOW LYING LEVELS REQUIRED WITH 15 PERCENT ACCURACY.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

94 PLUTONIUM 239 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

792 UP TO 30.0 MEV 20.0% 2 FR J.SALVY BRC 742098R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

94 PLUTONIUM 239 NEUTRON CAPTURE CROSS SECTION

793 1.00 KEV 10.0 MEV 1 FR J.SALVY BRC 742104R

A: ACCURACY 5 PERCENT TO 3 MEV, 20 PERCENT ABOVE.
O: FOR CRITICAL ASSEMBLIES.

794 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754012R

A: FROM 5.0 - 100 KEV ACCURACY 4.0 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 10 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 50 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

STATUS STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

795 120. KEV 20.0% 2 UK J.L.ROWLANDS WIN 692418R

Q: GAMMA SPECTRUM WANTED.
A: INCIDENT ENERGY, ABOUT 120 KEV.
LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY AND PHOTON SPECTRUM.
O: FOR STUDY OF ACTIVATION AND HEAT RELEASE IN CORE.

796 1.00 KEV 20.0 MEV 10.0% 1 FR J.SALVY BRC 742096R

O: FOR SHIELDING.

797 25.3 MV 15.0 MEV 5.0% 1 FR B.DUCHEMIN SAC 792049R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATIONS - EVALUATION MAY BE SUFFICIENT

798 UP TO 10.0 MEV 10.0% 1 FR M.SALVATORES CAD 832015R

Q: GAMMA SPECTRUM REQUIRED.
O: FAST REACTOR CALCULATIONS.

94 PLUTONIUM 239 NEUTRON N,2N

799 UP TO 30.0 MEV 5.0% 1 FR C.A.PHILIS BRC 682067R

M: SUBSTANTIAL MODIFICATIONS.

800 UP TO 15.0 MEV 15.0% 2 FR F.JOSSO CAD 762152R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

801 UP TO 20.0 MEV 10.0% 2 FR E.FORT CAD 872039R

O: FISSION REACTORS - FUEL CYCLE EVALUATION PROBLEM
M: NEW REQUEST.

802 UP TO 16.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873049R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 239 NEUTRON N,3N

803 UP TO 30.0 MEV 20.0% 1 FR J.SALVY BRC 682068R

M: SUBSTANTIAL MODIFICATIONS.

804 UP TO 16.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873053R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 239 NEUTRON N,4N

805 UP TO 30.0 MEV 20.0% 1 FR C.A.PHILIS BRC 872043R

O: THEORETICAL NUCLEAR MODELLING
M: NEW REQUEST.

94 PLUTONIUM 239 NEUTRON FISSION CROSS SECTION

806 1.00 KEV 15.0 MEV 1.5% 3 UK J.L.ROWLANDS WIN 692426R

Q: RATIO TO U-235 FISSION CROSS SECTION ACCEPTABLE.
A: ACCURACY FOR AVERAGE VALUE OF THE ERROR BETWEEN E AND 2E.
O: FOR FAST REACTORS.
MAY BE MET BY ENDF/B-VI STANDARDS EVALUATION

807 1.00 KEV 4.00 MEV 1 CCP M.N.NIKOLAEV FEI 714024R

Q: RATIO TO U-235 FISSION CS IS WANTED BUT ABSOLUTE MEASUREMENT AND MEASUREMENT OF RATIOS TO B-10 (N,ALPHA), LI-6(N,ALPHA) CROSS SECTIONS AND OTHER STANDARDS WOULD BE VERY USEFUL.
BELOW 30 KEV MEASUREMENTS OF TRANSMISSION CURVES BY FLAT RESPONSE DETECTOR AND BY SELF DETECTION METHOD WITH FISSION DETECTOR WANTED FOR SELFSHIELDING EVALUATION.
THESE CURVES MUST BE MEASURED WITH ATTENUATIONS OF THE PRIMARY BEAM DOWN TO 1 PERCENT.
A: ACCURACY REQUIRED TO BETTER THAN 2.0 PERCENT.
OPTIMUM PRECISION OF 1.5 PERCENT DESIRED IN REGION 20 KEV TO 1 MEV.
LETHARGY RESOLUTION OF ABOUT 0.2 CONSIDERED SUFFICIENT FOR SUCH MEASUREMENTS.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
REQUEST CONSIDERED FULFILLED, WHEN AT LEAST THREE MEASUREMENTS WITH DIFFERENT METHODS AGREE WITHIN REQUESTED ACCURACY.
FIRST PRIORITY BECAUSE IT IS DIFFICULT TO INTERPRET THE SELF-SHIELDING FACTORS FROM MACROSCOPIC DATA ONLY.

808 10.0 MEV 30.0 MEV 5.0% 1. FR C.A.PHILIS BRC 742099R

M: MODIFIED (PARTIALLY FULFILLED).

809 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754009R

A: FROM 5.0 - 100 KEV ACCURACY 1.0 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 1.0 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 3.0 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

810 500. EV 200. KEV 3. % 1 JAP M.KAWAI NIG 762211R

O: FISSION REACTOR CALCULATIONS.
CORE DESIGN AND ANALYSIS.
LARGE DISCREPANCIES BETWEEN EXPERIMENTAL DATA FROM 50 KEV TO 1.0 MEV.
M: SUBSTANTIAL MODIFICATIONS.

811 1.00 KEV 100. KEV 2.0% 1 GER H.KUESTERS KFK 792221R

812 10.0 MV 1.00 EV 1. % 2 USA WESTON ORL 861171R

Q: RADIOACTIVE TARGET 24119 YR
M: NEW REQUEST.

813 1.00 KEV 1.00 MEV 2.0% 1 FR E.FORT CAD 872041R

O: EVALUATION PROBLEMS
M: NEW REQUEST.

814 14.0 MEV 2. % 1 PRC ZHOU DELIN AEP 873056R

O: FISSION REACTORS
M: NEW REQUEST.

STATUS

FAST AND THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON CAPTURE TO FISSION RATIO (ALPHA)

815 1.00 EV 50.0 KEV 4. % 2 USA SMITH ANL 691315R
HEMMIG DOE

Q: RADIOACTIVE TARGET 24119 YR
CAPTURE CROSS SECTION EQUALLY USEFUL.

816	600.	KEV	10.0	MEV	10. %	2	USA	SMITH HEMMIG	ANL DOE	691317R

Q: RADIOACTIVE TARGET 24119 YR
CAPTURE CROSS SECTION EQUALLY USEFUL.

817	100.	EV	800.	KEV	7.0%	1	CCP	M.N.NIKOLAEV	FEI	714025R

Q: FOR EVALUATION OF DIFFERENCES IN CAPTURE AND FISSION-RESONANCE SELF SHIELDING.
MEASUREMENTS OF TRANSMISSION CURVES WITH FLAT-RESPONSE DETECTOR AND BY SELF-INDICATION METHOD WITH CAPTURE AND FISSION DETECTORS ARE WANTED.
BEAM ATTENUATION DOWN TO 1 PERCENT WANTED.
A: IN REGION 1 TO 100 KEV, 4 TO 5 PERCENT ACCURACY DESIRABLE.
LETHARGY RESOLUTION OF 0.2 SUFFICIENT FOR REGION 0.1 TO 30 KEV.
AT LEAST THREE DIFFERENT REQUESTS MUST COINCIDE WITHIN REQUESTED ACCURACY.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
FIRST PRIORITY BECAUSE IT IS DIFFICULT TO INTERPRET THE SELF-SHIELDING FACTORS FROM MACROSCOPIC DATA ONLY.

818	10.0	MV	1.00	EV	2. %	2	USA	WESTON	ORL	861172R

Q: RADIOACTIVE TARGET 24119 YR
M: NEW REQUEST.

STATUS----------STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)

819	10.0	MV	0.50	EV	0.75%	1	UK	J.L.ROWLANDS	WIN	642006R

Q: VALUE RELATIVE TO 25.3 MV ETA WANTED.
A: ACCURACY IS FOR AVERAGE VALUES IN 20 MV STEPS.
O: FOR TEMPERATURE COEFFICIENT WORK.

820	1.00	MV	50.0	MV	1.0%	1	FR	H.TELLIER	SAC	872042R

Q: TEMPERATURE COEFFICIENT CALCULATION FOR THERMAL REACTORS
M: NEW REQUEST.

STATUS----------STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON NEUTRONS EMITTED PER FISSION (NU BAR)

821	UP TO		1.00	MEV	0.5 %	1	JAP	M.KAWAI	NIG	702037R

A: ACCURACY REQUIRED TO BETTER THAN 0.2 PERCENT IF POSSIBLE.
O: FOR FAST REACTOR AND HYBRID FUSION REACTOR CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

822	25.3	MV	2.50	MEV	0.5%	2	CCP	M.N.NIKOLAEV	FEI	714026R

Q: RATIO TO CF-252 NU REQUIRED.
ABSOLUTE MEASUREMENTS OF NU-BAR AND ETA FOR THERMAL NEUTRONS WITH ACCURACY OF AT LEAST 0.5 PERCENT WOULD BE VERY USEFUL FOR LOWERING THE DEPENDENCE OF PU-239 NU-BAR RESULTS FROM THE CF-252 NU-BAR STANDARD.
A: ENERGY DEPENDENCE OF NU IS WANTED WITH 0.7 PERCENT ACCURACY.
ENERGY RESOLUTION OF 10. PERCENT REQUIRED BELOW 2.5 MEV.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

823	5.00	KEV	10.0	MEV		2	CCP	L.N.USACHEV	FEI	754011R

A: FROM 5.0 - 100 KEV ACCURACY 1.0 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 1.0 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 1.0 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

824	400.	EV	15.0	KEV	1.0%	1	FR	E.FORT	CAD	872040R

Q: VALUE RELATIVE TO 252CF NU
O: EVALUATION PROBLEM RELATIVE TO ENERGY DEPENDENCE
M: NEW REQUEST.

STATUS----------STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION

825	25.3	MV	5.00	MEV	5. %	3	USA	SMITH	ANL	761090R

Q: RADIOACTIVE TARGET 24119 YR

826 25.3 MV 10.0 MEV 5. % 2 JAP T.MURATA NIG 762048N

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

STATUS STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 239 NEUTRON ENERGY SPECTRUM OF FISSION NEUTRONS

827 100. KEV 2.0% 1 UK J.L.ROWLANDS WIN 692433R

A: INCIDENT ENERGY, ABOUT 100 KEV.
ACCURACY 2 PERCENT AVERAGE E'.
10 PERCENT ON THE NUMBER OF NEUTRONS ABOVE 5 MEV AND BELOW .25 MEV.
LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY.
O: FOR FAST REACTORS.
FOR REACTION RATE ANALYSIS.
MAY BE MET BY EXISTING MEASUREMENTS

828 UP TO 30.0 MEV 5.0% 1 FR C.A.PHILIS BRC 742103R

O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

94 PLUTONIUM 239 NEUTRON SPECTRUM OF PROMPT GAMMA RAYS EMITTED IN FISSION

829 25.3 MV 14.0 MEV 2.0 % 3 CCP S.S.KOVALENKO RI 734002N

Q: YIELD AND SPECTRA WANTED FOR 5 TO 15 MEV GAMMAS.
A: 10.0 KEV GAMMA RESOLUTION WANTED.
O: FOR ASSAY OF PU IN FUEL ELEMENTS FROM PROMPT GAMMAS.

94 PLUTONIUM 239 NEUTRON FISSION PRODUCT MASS YIELD SPECTRUM

830 25.3 MV 1.0% 1 CCP S.A.SKVORTSOV KUR 704020N
O.A.MILLER KUR

Q: YIELDS OF CS-133 AND CS-137 WANTED.
O: FOR ASSAY OF PU IN SPENT FUEL ELEMENTS BY THE FISSION PRODUCT GAMMA RAYS.

831 25.3 MV 1.0% 2 CCP S.A.SKVORTSOV KUR 704023N
O.A.MILLER KUR

Q: YIELDS OF ZR-95, RU-106, BA-140 AND CE-144 ARE REQUIRED.
O: FOR ASSAY OF PU IN SPENT FUEL ELEMENTS BY THE FISSION PRODUCT GAMMA RAYS.

832 25.3 MV 1.0% 3 CAN W.H.WALKER CRC 711803R

Q: YIELD OF XE-135 WANTED.
O: FOR CALCULATION OF FISSION PRODUCT ABSORPTION.

94 PLUTONIUM 240 NEUTRON TOTAL CROSS SECTION

833 5.00 KEV 20.0 MEV 1 USA HEMMIG DOE 821035R

Q: RADIOACTIVE TARGET 6570 YR
M: SUBSTANTIAL MODIFICATIONS.

94 PLUTONIUM 240 NEUTRON DIFFERENTIAL ELASTIC CROSS SECTION

834 500. KEV 10.0 MEV 10. % 3 USA SMITH ANL 861065R

Q: RADIOACTIVE TARGET 6570 YR
A: ANGLE-INTEGRATED ACCURACY.
M: NEW REQUEST.

94 PLUTONIUM 240 NEUTRON ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

835 UP TO 5.00 MEV 10.0% 2 CCP M.N.NIKOLAEV FEI 714029R

A: CROSS SECTION FOR INELASTIC REMOVAL BELOW FISSION THRESHOLDS OF U-238 AND PU-240 OR NP-237 WANTED WITH 10 PERCENT ACCURACY.
EXCITATION CS FOR LOW-LYING LEVELS REQUIRED WITH ACCURACY OF 15 PERCENT.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

836 UP TO 5.00 MEV 3 USA SMITH ANL 861066R

Q: RADIOACTIVE TARGET 6570 YR
A: ACCURACY RANGE 10. TO 15. PERCENT.
M: NEW REQUEST.

94 PLUTONIUM 240 NEUTRON ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION

837 UP TO 4.00 MEV 40.0% 2 UK J.L.ROWLANDS WIN 692443R

O: FOR FAST REACTORS.
MAY BE MET BY EXISTING DATA
EVALUATION NEEDED

94 PLUTONIUM 240 NEUTRON CAPTURE CROSS SECTION

838 500. EV 1.00 MEV 15. % 2 USA SMITH ANL 691389R

Q: RADIOACTIVE TARGET 6570 YR
A: ACCURACY OF 15 PERCENT WOULD BE USEFUL.
O: FOR FAST REACTOR CALCULATIONS.
M: SUBSTANTIAL MODIFICATIONS.

839 500. EV 1.00 MEV 5.00% 2 FR M.SALVATORES CAD 692451R

Q: ABSOLUTE VALUES USEFUL BUT REQUEST CONCERNS MAINLY
RELATIVE VALUES VERSUS ENERGY OR RELATIVE VALUES
TO U-238 CAPTURE OR U-235 FISSION.
O: FOR FAST REACTOR CALCULATIONS.

840 500. EV 1.40 MEV 7.0% 2 CCP M.N.NIKOLAEV FEI 714032R

Q: RATIO TO U-235 FISSION CS WANTED BUT RATIOS TO
B-10, LI-6, HE-3 AND OTHER STANDARDS WOULD BE
VERY USEFUL.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION

841 500. EV 5.00 MEV 4.0% 2 CCP L.N.USACHEV FEI 794001R

Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM
REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

842 25.3 MV 100. EV 2. % 1 USA HEMMIG DOE 821020R

Q: RADIOACTIVE TARGET 6570 YR
A: IMPROVED PRECISION NEEDED FOR THERMAL REACTORS.

94 PLUTONIUM 240 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

843 120. KEV 20.0% 3 UK J.L.ROWLANDS WIN 692442R

Q: GAMMA SPECTRUM WANTED.
A: INCIDENT ENERGY, ABOUT 120 KEV.
LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY AND
PHOTON SPECTRUM.
O: FOR STUDY OF ACTIVATION AND HEAT RELEASE IN CORE.

844 25.3 MV 15.0 MEV 10.0% 3 FR B.DUCHEMIN SAC 792050R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS
THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN
1 MEV
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATIONS - EVALUATION MAY BE
SUFFICIENT

94 PLUTONIUM 240 NEUTRON N,2N

845 UP TO 16.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873050R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW
ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY
TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 240 NEUTRON N,3N

846 UP TO 16.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873054R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW
ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY
TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 240 NEUTRON FISSION CROSS SECTION

847 100. KEV 5.00 MEV 5.0% 2 CCP M.N.NIKOLAEV FEI 714030R

Q: RATIO TO U-235 OR NP-237 FISSION CS WANTED.
MEASUREMENT OF AVERAGE CS IN FISSION-NEUTRON
SPECTRUM OF CF-252 TIMES NU-BAR OF CF-252 WITH
ACCURACY OF 2 PERCENT IS DESIRED.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

848 1.00 KEV 100. KEV 3. % 3 USA HEMMIG DOE 721090R

Q: 6570 YR
RATIO TO 10-B(N,ALPHA) OR 6-LI(N,ALPHA) WANTED.
A: ACCURACY OF 5 PERCENT USEFUL.

849 UP TO 30.0 MEV 2 FR J.SALVY BRC 742105R

A: ACCURACY 5 PERCENT TO 1 KEV, 2 PERCENT ABOVE.
O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

850 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754003R

A: FROM 0.1 - 0.8 MEV ACCURACY 5.0 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 4.0 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

94 PLUTONIUM 240 NEUTRON NEUTRONS EMITTED PER FISSION (NU BAR)

851 UP TO 5.00 MEV 1.0% 2 CCP M.N.NIKOLAEV FEI 714031R

Q: RATIO TO CF-252 NU-BAR WANTED.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.

852 UP TO 30.0 MEV 2 FR J.SALVY BRC 742106R

A: ACCURACY 2 PERCENT TO 1 KEV, 1 PERCENT ABOVE.
O: FOR CRITICAL ASSEMBLIES.
M: SUBSTANTIAL MODIFICATIONS.

94 PLUTONIUM 240 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION

853 25.3 MV 10.0 MEV 5. % 2 JAP T.MURATA NIG 762049N

Q: THE REQUESTED QUANTITIES ARE THE GROUP HALF LIVES AND GROUP YIELDS (NORMALIZED TO 1 FISSION) WHICH CAN 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

STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 240 NEUTRON ENERGY SPECTRUM OF FISSION NEUTRONS

854 UP TO 15.0 MEV 3.0% 2 FR M.SALVATORES CAD 732098R

A: ACCURACY FOR AVERAGE E' RELATIVE TO AVERAGE E'
U-235 OR PU-239.
O: FOR FAST REACTOR CALCULATIONS.

94 PLUTONIUM 240 NEUTRON RESONANCE PARAMETERS

855 10.0 EV 5.00 KEV 2 CCP M.N.NIKOLAEV FEI 714028R

Q: NEUTRON AND CAPTURE WIDTHS WANTED FOR EVALUATION OF SELF SHIELDING IN RESOLVED RESONANCE REGIONS AND EVALUATION OF AVERAGE RESONANCE PARAMETERS.
SELF-INDICATION CAPTURE MEASUREMENTS ARE DESIRED FOR P-WAVE RESONANCE OBSERVATION.
O: AVERAGE S AND P WAVE RESONANCE PARAMETERS SHOULD BE DERIVED.
STATISTICAL ANALYSIS OF MEASURED RESONANCE PARAMETERS WANTED.
SEE ALSO GENERAL COMMENTS IN THE INTRODUCTION.

856 1.00 EV 0.5 % 2 USA HEMMIG DOE 821021R

Q: RADIOACTIVE TARGET 6570 YR
O: RESONANCE STRONGLY INFLUENCES THERMAL CROSS SECTION EVALUATION. THERE IS DISCREPANCY BETWEEN DIFFERENTIAL AND INTEGRAL DATA.

94 PLUTONIUM 240 MISC

857 0.3% 2 GER V.SCHNEIDER ALK 702079N

Q: SPECIFIC DECAY HEAT IN WATTS/GRAM REQUIRED.
PERCENTAGE OF HEAT CARRIED OFF BY LONG RANGE PARTICLES (X-RAYS,GAMMA RAYS) USEFUL.
O: FOR CALORIMETRIC PU DETERMINATION.

94 PLUTONIUM 241 GAMMA TOTAL NEUTRON YIELD

858 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714049N

O: FOR PHOTONUCLEAR ASSAY OF PU.

94 PLUTONIUM 241 GAMMA FISSION CROSS SECTION

859 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714047N

O: FOR PHOTONUCLEAR ASSAY OF PU.

94 PLUTONIUM 241 GAMMA FISSION PRODUCT MASS YIELD SPECTRUM

860 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714048N

O: FOR PHOTONUCLEAR ASSAY OF PU.

94 PLUTONIUM 241 NEUTRON TOTAL CROSS SECTION

861 1.00 MV 1.00 EV 0.5 % 1 USA HEMMIG DOE 821010R

Q: RADIOACTIVE TARGET 14.4 YR
O: NEEDED TO DETERMINE THE THERMAL SHAPE ACCURATELY.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON ELASTIC CROSS SECTION

862 1.00 MV 1.00 EV 5. % 2 USA CARLSON NBS 861073R

Q: RADIOACTIVE TARGET 14.4 YR
A: SUITABLE MEASUREMENTS AT THERMAL MAY BE ACCEPTABLE
O: WELL-CHARACTERIZED SAMPLES MUST BE USED.
EXTINCTION EFFECTS MUST BE DETERMINED.
FOR DETERMINATION OF THE THERMAL CONSTANTS.
M: NEW REQUEST.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON CAPTURE CROSS SECTION

863 500. EV 5.00 MEV 7.0% 2 CCP L.N.USACHEV FEI 794002R

Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

864 120. KEV 20.0% 3 UK J.L.ROWLANDS WIN 692460R

Q: GAMMA SPECTRUM WANTED.
A: INCIDENT ENERGY, ABOUT 120 KEV.
LOW RESOLUTION ADEQUATE FOR INCIDENT ENERGY AND PHOTON SPECTRUM.
O: FOR STUDY OF ACTIVATION AND HEAT RELEASE IN CORE.

865 25.3 MV 15.0 MEV 10.0% 3 FR B.DUCHEMIN SAC 792051R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR SHIELDING CALCULATIONS - EVALUATION MAY BE SUFFICIENT

94 PLUTONIUM 241 NEUTRON N,2N

866 UP TO 16.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873051R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 241 NEUTRON N,3N

867 UP TO 16.0 MEV 10. % 2 PRC CAI DUNJIU AEP 873055R

Q: NO SATISFACTORY EXPERIMENTAL DATA UP TO NOW ACCURACY 10-15%
O: RESEARCH ON FISSION MECHANISM AND FISSION ENERGY TECHNOLOGY.
M: NEW REQUEST.

94 PLUTONIUM 241 NEUTRON FISSION CROSS SECTION

868	UP TO	5.00	KEV	5.0%	2	FR	H.TELLIER	SAC		732099R
							A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS. O: REACTOR CALCULATIONS.			
869	10.0 EV	30.0	KEV	2. %	2	USA	DONCALS	WEW		761042R
							Q: RADIOACTIVE TARGET 14.4 YR			
870	1.00 EV	1.00	MEV	1-5.%	1	RUM	S.RAPEANU	RUM		763007R
871	500. EV	5.00	MEV	5.0%	2	CCP	L.N.USACHEV	FEI		794009R
							Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED. O: FOR FAST-REACTOR BURN-UP CALCULATION. SEE GENERAL COMMENTS.			
872	25.3 MV	10.0	EV	2. %	2	USA	HEMMIG	DOE		821022R
							Q: RADIOACTIVE TARGET 14.4 YR RATIO TO 235-U AND 239-PU WOULD BE USEFUL.			
873	20.0 KEV	400.	KEV	3.0 %	2	USA	HEMMIG	DOE		821023R
							Q: RADIOACTIVE TARGET 14.4 YR			

STATUS----------STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON CAPTURE TO FISSION RATIO (ALPHA)

874	1.00 KEV	2.00	MEV	6.0 %	2	USA	HEMMIG	DOE		691332R
							Q: RADIOACTIVE TARGET 14.4 YR			
875	25.3 MV			1.0%	2	FR	H.TELLIER	SAC		702043R
							A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS. O: EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.			
876	10.0 MV	1.00	KEV		2	USA	WESTON	ORL		861173R
							Q: RADIOACTIVE TARGET 14.4 YR A: ACCURACY RANGE 2. TO 4. PERCENT. 2 PERCENT ACCURACY DESIRED FROM .01 EV TO 1.0 EV. M: NEW REQUEST.			

STATUS----------STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)

877	10.0 MV	15.0	EV		2	UK	J.L.ROWLANDS	WIN		642007R
							Q: VALUE RELATIVE TO 25.3 MV ETA WANTED. A: ACCURACY 2 PERCENT TO 1 EV, 6 PERCENT ABOVE. O: FOR THERMAL REACTORS. EVALUATION REQUIREMENT.			
878	25.3 MV			1.0%	2	FR	H.TELLIER	SAC		692464R
							A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS. O: FOR THERMAL REACTOR CALCULATIONS. EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.			

STATUS----------STATUS

THERMAL VALUE UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON DELAYED NEUTRONS EMITTED PER FISSION

879	25.3 MV	10.0	MEV	5. %	2	JAP	T.MURATA	NIG		762050N
							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.			

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

94 PLUTONIUM 241 NEUTRON FISSION PRODUCT MASS YIELD SPECTRUM

880 25.3 MV 5.0% 3 CCP S.A.SKVORTSOV KUR 704021N
O.A.MILLER KUR

Q: YIELD OF RU-144 WANTED.
O: FOR ASSAY OF PU IN FUEL ELEMENTS BY MEANS OF FISSION PRODUCT GAMMA RADIATION.

881 25.3 MV 1.0% 3 CAN W.H.WALKER CRC 711804R

Q: YIELD OF XE-135 WANTED.
O: FOR CALCULATION OF FISSION PRODUCT ABSORPTION.

94 PLUTONIUM 241 MISC

882 1.5% 2 GER V.SCHNEIDER ALK 702073N

Q: SPECIFIC DECAY HEAT IN WATTS/GRAM REQUIRED. PERCENTAGE OF HEAT CARRIED OFF BY LONG RANGE PARTICLES (X-RAYS,GAMMA RAYS) USEFUL.
O: FOR CALORIMETRIC PU DETERMINATION.

94 PLUTONIUM 242 NEUTRON TOTAL CROSS SECTION

883 10.0 KEV 15.0 MEV 10.0% 1 GER F.FROEHNER KFK 792255R

A: 5-10 PERCENT ENERGY RESOLUTION SUFFICIENT
O: FOR CONSISTENT EVALUATION OF PARTIAL CROSS SECTION NO DATA AVAILABLE ABOVE 600KEV, DATA BELOW 150KEV DIFFICULT TO RECONCILE WITH OPTICAL MODEL

94 PLUTONIUM 242 NEUTRON CAPTURE CROSS SECTION

884 25.3 MV 5.0% 1 FR H.TELLIER SAC 702047R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.

885 UP TO 5.00 KEV 5.0% 2 FR H.TELLIER SAC 702048R

A: ACCURACY FOR RATIO TO THERMAL CROSS SECTION. QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: EVALUATION MAY SUFFICE IF IT EXPLAINS DISCREPANCIES.

886 1.00 KEV 3.00 MEV 20.0% 1 FR F.JOSSO CAD 712102R

Q: RELATIVE VALUES VERSUS ENERGY OR TO U-238 CAPTURE.
A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

887 10.0 MV 4.00 EV 10.0% 2 UK J.L.ROWLANDS WIN 792168R

O: FOR STUDIES OF PLUTONIUM RECYCLE. EVALUATION REQUIREMENT.

888 500. EV 5.00 MEV 15.0% 2 CCP L.N.USACHEV FEI 794003R

Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION. SEE GENERAL COMMENTS.

94 PLUTONIUM 242 NEUTRON TOTAL PHOTON PRODUCTION CROSS SECTION

889 25.3 MV 15.0 MEV 10.0% 3 FR B.DUCHEMIN SAC 792052R

Q: GAMMA SPECTRA REQUIRED
A: ENERGY RESOLUTION OF 250 KEV FOR GAMMA RAYS LESS THAN 1 MEV AND 500 KEV FOR ENERGIES GREATER THAN 1 MEV
O: FOR SHIELDING CALCULATIONS - EVALUATION MAY BE SUFFICIENT

94 PLUTONIUM 242 NEUTRON FISSION CROSS SECTION

890 1.00 EV 1.00 MEV 1-5.% 1 RUM S.RAPEANU RUM 763008R

94 PLUTONIUM 242 NEUTRON RESONANCE PARAMETERS

891 2.60 EV 5.0% 2 FR H.TELLIER SAC 872044R

Q: RESONANCE PARAMETERS OF THE 2.6 EV RESONANCE
O: SELF-SHIELDING CALCULATION FOR TIGHT PITCH LATTICES
M: NEW REQUEST.

94 PLUTONIUM 243 NEUTRON CAPTURE CROSS SECTION

892 1.00 KEV 3.00 MEV 50.0% 3 FR M.SALVATORES CAD 792054R

Q: FOR FAST REACTOR CALCULATIONS.

95 AMERICIUM 241 GAMMA TOTAL NEUTRON YIELD

893 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714052N

Q: FOR PHOTONUCLEAR ASSAY OF PU.

95 AMERICIUM 241 GAMMA FISSION CROSS SECTION

894 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714051N

Q: FOR PHOTONUCLEAR ASSAY OF PU.

95 AMERICIUM 241 GAMMA FISSION PRODUCT MASS YIELD SPECTRUM

895 UP TO 10.0 MEV 10.0% 2 CCP V.K.MARKOV GAC 714050N

Q: FOR PHOTONUCLEAR ASSAY OF PU.

95 AMERICIUM 241 NEUTRON TOTAL CROSS SECTION

896 25.3 MV 1.00 MEV 10.0% 1 GER F.FROEHNER KFK 792256R

A: 5-10 PERCENT ENERGY RESOLUTION SUFFICIENT
Q: NEEDED FOR CONSISTENT EVALUATIONS OF PARTIAL CROSS SECTIONS. EXISTING THERMAL CROSS SECTIONS SHOULD BE CHECKED

897 25.3 MV 2. % 2 PRC ZHOU DELIN AEP 873058R

Q: FISSION REACTORS
M: NEW REQUEST.

95 AMERICIUM 241 NEUTRON CAPTURE CROSS SECTION

898 100. EV 100. KEV 8.0% 1 UK J.L.ROWLANDS WIN 712109R

Q: FOR FAST REACTORS.
DISCREPANCIES BETWEEN EXISTING MEASUREMENTS

899 500. KEV 1.00 MEV 1 JAP R.YUMOTO PNC 752033R
H.MATSUNOBU SAE
T.HOJUYAMA JAP

Q: PRODUCTION OF AM-242 AND AM-242 M WANTED
A: ACCURACY 10.0 PERCENT BELOW 1 MEV, 20.0 PERCENT IN THE MEV REGION.
Q: REACTOR BURN-UP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.
M: SUBSTANTIAL MODIFICATIONS.

900 25.3 MV 2. % 2 PRC ZHOU DELIN AEP 873057R

Q: FISSION REACTORS
M: NEW REQUEST.

95 AMERICIUM 241 NEUTRON NEUTRONS EMITTED PER FISSION (NU BAR)

901 25.3 MV 10.0 MEV 5.0% 1 GER B.GOEL KFK 712104R

A: 10 PERCENT ACCURACY BELOW 100EV AND ABOVE 1.0MEV
Q: FOR FAST REACTOR DESIGN.

95 AMERICIUM 241 MISC

902 25.3 MV 100. KEV 8.0% 1 UK J.L.ROWLANDS WIN 792142R

Q: BRANCHING RATIO.
Q: FOR FAST REACTORS.

95 AMERICIUM 242 NEUTRON TOTAL CROSS SECTION

903 25.3 MV 15.0 MEV 10.0% 1 GER F.FROEHNER KFK 792257R

A: 5-10 PERCENT ENERGY RESOLUTION SUFFICIENT FOR AVERAGES.
Q: THERMAL CROSS SECTIONS, RESONANCES AND ABOVE 1KEV AVERAGE PARAMETERS NEEDED FOR CONSISTENT EVALUATION OF PARTIAL CROSS SECTIONS.

95 AMERICIUM 242 NEUTRON CAPTURE CROSS SECTION

904	25.3	MV			3	CAN	W.H.WALKER	CRC	711805R

Q: FOR 16 HOUR ISOMER.
A: ACCURACY REQUIRED 500 B.
O: UNKNOWN CROSS SECTION.

905	10.0	MV	5.00	KEV	10.0%	2	FR	H.TELLIER	SAC	732101R

Q: FOR METASTABLE STATE OF AM-242 (152 YEARS).
A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: FOR BURN UP PHYSICS.
EVALUATION MAY BE SUFFICIENT.

906	25.3	MV	100.	KEV		2	JAP	R.YUMOTO H.MATSUNOBU R.SHINDO	PNC SAE JAE	752036R

Q: WANTED FOR GROUND AND ISOMERIC STATES.
A: ACCURACY REQUIRED 5 TO 20 PERCENT.
O: REACTOR BURN-UP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE BUILD-UP IN SPENT FUEL.
NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

907	500.	EV	5.00	MEV	20.0%	2	CCP	L.N.USACHEV	FEI	794004R

Q: TARGET IN METASTABLE STATE.
AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

95 AMERICIUM 242 NEUTRON FISSION CROSS SECTION

908	500.	EV	5.00	MEV	20.0%	2	CCP	L.N.USACHEV	FEI	794010R

Q: TARGET IN METASTABLE STATE.
AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

95 AMERICIUM 243 NEUTRON TOTAL CROSS SECTION

909	25.3	MV	15.0	MEV	10.0%	1	GER	F.FROEHNER	KFK	792258R

A: 5-10 PERCENT ENERGY RESOLUTION SUFFICIENT
O: THERMAL CROSS SECTIONS, RESONANCES AND ABOVE 5KEV
AVERAGE PARAMETERS NEEDED FOR CONSISTENT
EVALUATION OF PARTIAL CROSS SECTIONS.

95 AMERICIUM 243 NEUTRON ABSORPTION CROSS SECTION

910	25.3	MV			5.0%	2	FR	H.TELLIER	SAC	712113R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.

95 AMERICIUM 243 NEUTRON CAPTURE CROSS SECTION

911	500.	EV	5.00	MEV	20.0%	2	CCP	L.N.USACHEV	FEI	794005R

Q: AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
O: FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

912	100.	EV	100.	KEV	10.0%	3	UK	J.L.ROWLANDS	WIN	832051R

O: FOR FAST REACTORS.

95 AMERICIUM 243 NEUTRON FISSION CROSS SECTION

913	25.3	MV	14.0	MEV		3	USA	CARLSON	NBS	861074R

Q: RADIOACTIVE TARGET 7380 YR
A: ACCURACY RANGE 10. TO 15. PERCENT.
O: PREVIOUS MEASUREMENTS ARE NOT CONSISTENT.
M: NEW REQUEST.

95 AMERICIUM 243 NEUTRON ABSORPTION RESONANCE INTEGRAL

914					10.0%	2	FR	H.TELLIER	SAC	712114R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.

96 CURIUM 242 NEUTRON CAPTURE CROSS SECTION

915	10.0	MV	5.00	KEV	10.0%	2	FR	H.TELLIER	SAC	732107R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: BURN UP PHYSICS.

916 25.3 MV 100. KEV 2 JAP R.YUMOTO PNC 752042R
H.MATSUNOBU SAE
T.HOJUYAMA JAP

A: ACCURACY REQUIRED 10 TO 20 PERCENT.
O: REACTOR BURN-UP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

917 500. EV 200. KEV 50.0% 2 FR F.JOSSO CAD 762154R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

918 10.0 KEV 1.00 MEV 2 USA SMITH ANL 861067R

Q: RADIOACTIVE TARGET 163 DAY
A: ACCURACY RANGE 10. TO 20. PERCENT.
O: NEEDED FOR FUEL CYCLE CALCULATIONS.
M: NEW REQUEST.

96 CURIUM 242 NEUTRON FISSION CROSS SECTION

919 1.50 MEV 20.0 MEV 1 JAP R.YUMOTO PNC 752041R
H.MATSUNOBU SAE
T.HOJUYAMA JAP

A: ACCURACY REQUIRED 10 TO 20 PERCENT.
O: REACTOR BURN-UP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.
M: SUBSTANTIAL MODIFICATIONS.

96 CURIUM 243 NEUTRON CAPTURE CROSS SECTION

920 20.0 EV 100. KEV 2 JAP R.YUMOTO PNC 752047R
H.MATSUNOBU SAE

A: ACCURACY REQUIRED 10 TO 20 PERCENT.
O: REACTOR BURN-UP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.

96 CURIUM 243 NEUTRON FISSION CROSS SECTION

921 3.00 MEV 20.0 MEV 2 JAP R.YUMOTO PNC 752045R
H.MATSUNOBU SAE

A: ACCURACY REQUIRED 10 TO 20 PERCENT.
O: REACTOR BURN-UP CALCULATIONS AND ESTIMATION OF TRANS-URANIUM NUCLIDE BUILD-UP IN SPENT FUEL. NEUTRON SHIELDING OF SPENT-FUEL TRANSPORT CASK.
M: SUBSTANTIAL MODIFICATIONS.

96 CURIUM 244 NEUTRON TOTAL CROSS SECTION

922 1.00 KEV 15.0 MEV 10.0% 2 GER F.FROEHNER KFK 792259R

A: 5-10 PERCENT ENERGY RESOLUTION SUFFICIENT
O: NEEDED FOR CONSISTENT EVALUATION OF PARTIAL CROSS SECTIONS.

96 CURIUM 244 NEUTRON CAPTURE CROSS SECTION

923 10.0 MV 5.00 KEV 10.0% 2 FR H.TELLIER SAC 732109R

A: QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
O: BURN UP PHYSICS.

924 500. EV 15.0 MEV 20.0% 1 FR F.JOSSO CAD 762157R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

925 10.0 KEV 1.00 MEV 2 USA SMITH ANL 861068R

Q: RADIOACTIVE TARGET 18.1 YR
A: ACCURACY RANGE 10. TO 20. PERCENT.
O: NEEDED FOR FUEL CYCLE CALCULATIONS.
M: NEW REQUEST.

96 CURIUM 244 NEUTRON FISSION CROSS SECTION

926 500. EV 15.0 MEV 20.0% 1 FR F.JOSSO CAD 732108R

Q: VALUE RELATIVE TO U-235 FISSION CROSS SECTION.
A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

96 CURIUM 246 NEUTRON CAPTURE CROSS SECTION

927 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792058R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

96 CURIUM 247 NEUTRON CAPTURE CROSS SECTION

928 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792060R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

96 CURIUM 248 NEUTRON CAPTURE CROSS SECTION

929 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792062R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

97 BERKELIUM 249 NEUTRON CAPTURE CROSS SECTION

930 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792064R

A: QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
O: FOR FAST REACTOR FUEL CYCLE CALCULATION.

98 CALIFORNIUM 252 SPONTANEOUS NEUTRONS EMITTED PER FISSION (NU BAR)

931 0.3% 1 FR E.FORT CAD 712119R

O: DISCREPANCY BETWEEN DIFFERENTIAL AND MAXWELL
SPECTRUM EXPERIMENTS HAVE TO BE RESOLVED
FOR 2200M/S DATA.

932 1 CCP M.N.NIKOLAEV FEI 714033R

A: ACCURACY NOT WORSE THAN 0.3 PERCENT.
MUST BE GUARANTEED BY AGREEMENT WITHIN 0.5 PERCENT
OF AT LEAST FOUR EXPERIMENTS CARRIED OUT BY NOT
LESS THAN TWO DIFFERENT METHODS.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
FIRST PRIORITY BECAUSE IT IS DIFFICULT TO
RECONCILE THIS STANDARD WITH MACROSCOPIC
EXPERIMENTS.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

98 CALIFORNIUM 252 SPONTANEOUS ENERGY SPECTRUM OF FISSION NEUTRONS

933 2.0% 2 UK M.G.SOWERBY HAR 732117R

A: ACCURACY FOR MEAN SPECTRUM ENERGY.
10 PERCENT ACCURACY WANTED FOR THE NUMBER OF
NEUTRONS ABOVE 5 MEV AND BELOW .25 MEV.
O: STANDARD.
MAY BE MET BY EVALUATIONS IN PROGRESS

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

FISSION PRODUCTS NEUTRON INELASTIC CROSS SECTION

934 800. KEV 5.00 MEV 2 CCP L.N.USACHEV FEI 754022R

A: FROM 0.8 - 1.4 MEV ACCURACY 13 PERCENT.
FROM 1.4 - 2.5 MEV ACCURACY 15 PERCENT.
FROM 2.5 - 5.0 MEV ACCURACY 30 PERCENT.
O: NEED FOR FAST REACTOR CALCULATION.
FOR MORE DETAIL SEE INTRODUCTION.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

FISSION PRODUCTS NEUTRON CAPTURE CROSS SECTION

935 5.00 KEV 10.0 MEV 2 CCP L.N.USACHEV FEI 754015R

A: FROM 5.0 - 100 KEV ACCURACY 7 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 14 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 48 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

STATUS----------STATUS

UNDER CONTINUOUS REVIEW BY INDC AND NEANDC. SEE APPENDIX A.

STEEL NEUTRON CAPTURE CROSS SECTION

936	500.	EV	800.	KEV	1	CCP	M.N.NIKOLAEV	FEI	714035R

Q: RATIOS WANTED RELATIVE TO U-235 FISSION, B-10, LI-6, HE-3 AND H-1 STANDARDS.
A: 10 PERCENT BELOW, 20 PERCENT ABOVE 100 KEV WANTED.
O: SEE GENERAL COMMENTS IN THE INTRODUCTION.
ANALYSIS OF FAST CRITICAL ASSEMBLIES INDICATES THAT THE CAPTURE CROSS SECTION OF STAINLESS STEEL IS MUCH GREATER THAN CALCULATED FROM MICROSCOPIC DATA.
FIRST PRIORITY BECAUSE IT IS DIFFICULT TO EVALUATE STEEL CAPTURE CROSS SECTION TO REQUESTED ACCURACY FROM MACROSCOPIC EXPERIMENTS ONLY.

937	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV	FEI	754018R

A: FROM 5.0 - 100 KEV ACCURACY 11 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 15 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 20 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
O: NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

V. INDEX OF SATISFIED AND WITHDRAWN REQUESTS

The following index lists all requests which appeared in the previous edition but which, since then, have been removed from the request file. For convenient cross-reference, the WRENDA reference number (see Section II.A.) of each request is listed in parentheses next to the identification number.

To remove a request from the file, the requestor may declare it either "satisfied" (if he considers that newly available data meets the expressed need) or "withdrawn" (if it is to be removed for any other reason).

There would be two separate lists: one for "satisfied" and the other for "withdrawn" requests.

LIST OF SATISFIED REQUESTS

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3 LITHIUM 7 — NEUTRON — N,NT

	12.0 MEV	15.0 MEV	3 %	1	USA	BERK	DOE		841001

TRITIUM PRODUCTION CROSS SECTION NEEDED.
KEY CROSS SECTION FOR TRITIUM BREEDING.

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6 CARBON — NEUTRON — ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION

(119)	9.00 MEV	15.0 MEV	10. %	2	USA	BERK	DOE		781043F

RECOMMEND MEASUREMENTS AT 10, 12 AND 14 MEV.
FOR SHIELDING AND TRANSPORT STUDIES OF NEXT GENERATION D-T REACTOR DESIGNS.

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8 OXYGEN — ALPHA — ALPHA,N

(152)	UP TO	15.0 MEV	20.0%	2	FR	F.JOSSO	CAD		762138R

QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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8 OXYGEN 16 — NEUTRON — TOTAL CROSS SECTION

(156)	5.00 KEV	10.0 MEV		2	CCP	L.N.USACHEV	FEI		754016R

FROM 5.0 - 100 KEV ACCURACY 10 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 6 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 10 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

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8 OXYGEN 16 — NEUTRON — N,ALPHA

(159)	UP TO	15.0 MEV		2	USA	BERK	DOE		801069F

ACCURACY TO 10 PERCENT NEAR 15 MEV AND 50 PERCENT NEAR 2.5 MEV.

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8 OXYGEN 18 — ALPHA — ALPHA,N

(169)	4.00 MEV	7.50 MEV	30.0%	2	FR	B.DUCHEMIN	SAC		692029R

SECONDARY ENERGY DISTRIBUTION REQUIRED.
RESOLUTION FOR E AND E', 1.0 MEV.
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
FOR SHIELDING OF ALPHA EMITTING SAMPLES.
NEW EVALUATION TO BE DONE IF NEW EXPERIMENTAL DATA.

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11 SODIUM 23 — NEUTRON — CAPTURE CROSS SECTION

(189)	5.00 KEV	10.0 MEV		2	CCP	L.N.USACHEV	FEI		754017R

FROM 5.0 - 100 KEV ACCURACY 44 PERCENT.
FROM 0.1 - 0.8 MEV ACCURACY 50 PERCENT.
FROM 0.8 - 4.5 MEV ACCURACY 50 PERCENT.
ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER.
NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

LIST OF SATISFIED REQUESTS

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12 MAGNESIUM 24 NEUTRON N,P

5.00 MEV 15.0 MEV 5. % 1 USA BERK DOE 841003F
DOSIMETRY CROSS SECTION FOR FUSION APPLICATIONS.

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13 ALUMINUM 27 NEUTRON N,2N

(203) UP TO 16.0 MEV 10. % 1 USA CHENG GA 801119F
(N,2N) CROSS SECTION FOR PRODUCTION OF 6-SEC.
ISOMER. THIS IS A HIGH THRESHOLD REACTION,
NORMALIZE WITH A 14 MEV MEASUREMENT.
NEEDED TO RESOLVE EXPERIMENTAL DISCREPANCIES
AND FOR USE IN FUSION DIAGNOSTICS.

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13 ALUMINUM 27 NEUTRON TOTAL PROTON PRODUCTION CROSS SECTION

(207) 9.00 MEV 15.0 MEV 10. % 3 USA DORAN HED 801057F
MEASURE (N,NP) CROSS SECTION.
MATERIALS DAMAGE CALCULATIONS.

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13 ALUMINUM 27 NEUTRON TOTAL ALPHA PRODUCTION CROSS SECTION

(212) 9.00 MEV 15.0 MEV 10. % 3 USA DORAN HED 801056F
MATERIALS DAMAGE CALCULATIONS AND DOSIMETRY.

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14 SILICON NEUTRON TOTAL PROTON PRODUCTION CROSS SECTION

(217) 9.00 MEV 15.0 MEV 20. % 2 USA BERK DOE 781054F
ESTIMATE OF (N,NP) COMPONENT NEEDED.
RECOMMEND MEASUREMENTS AT 10, 12 AND 14 MEV.
FOR RADIATION DAMAGE STUDIES OF NEXT GENERATION
D-T REACTOR DESIGNS.

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14 SILICON NEUTRON TOTAL ALPHA PRODUCTION CROSS SECTION

(218) 9.00 MEV 15.0 MEV 20. % 2 USA BERK DOE 781063F
RECOMMEND MEASUREMENTS AT 10, 12 AND 14 MEV.
FOR RADIATION DAMAGE STUDIES OF NEXT GENERATION
D-T REACTOR DESIGNS.

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23 VANADIUM NEUTRON INELASTIC CROSS SECTION

(251) 3.00 MEV 14.0 MEV 10.0% 2 FR B.DUCHEMIN SAC 732013F
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
POTENTIAL CONSTITUENT OF CONTAINMENT VESSEL.

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23 VANADIUM NEUTRON N,2N

(263) UP TO 14.0 MEV 10.0% 2 FR B.DUCHEMIN SAC 732014F
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
POTENTIAL CONSTITUENT OF CONTAINMENT VESSEL.

LIST OF SATISFIED REQUESTS

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23 VANADIUM 51 — NEUTRON — TOTAL PROTON PRODUCTION CROSS SECTION

(272) 9.00 MEV 15.0 MEV 20. % 3 USA DORAN HED 781026F
ESTIMATE OF (N,NP) COMPONENT NEEDED.
FOR MATERIAL DAMAGE CALCULATIONS.

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23 VANADIUM 51 — NEUTRON — TOTAL ALPHA PRODUCTION CROSS SECTION

(274) 9.00 MEV 15.0 MEV 20. % 2 USA DORAN HED 781211F
FOR MATERIAL DAMAGE CALCULATIONS.

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24 CHROMIUM — NEUTRON — TOTAL PROTON PRODUCTION CROSS SECTION

(305) 9.00 MEV 15.0 MEV 20. % 2 USA BERK DOE 781058F
RECOMMEND MEASUREMENTS AT 10, 12 AND 14 MEV.
FOR RADIATION DAMAGE STUDIES OF NEXT GENERATION
D-T REACTOR DESIGNS.

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24 CHROMIUM — NEUTRON — TOTAL ALPHA PRODUCTION CROSS SECTION

(313) 9.00 MEV 15.0 MEV 20. % 2 USA BERK DOE 781067F
RECOMMEND MEASUREMENTS AT 10, 12 AND 14 MEV.
FOR RADIATION DAMAGE STUDIES OF NEXT GENERATION
D-T REACTOR DESIGNS.

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26 IRON — NEUTRON — TOTAL PROTON PRODUCTION CROSS SECTION

(380) 9.00 MEV 15.0 MEV 20. % 3 USA DORAN HED 781024F
FOR MATERIAL DAMAGE CALCULATIONS.
FOR RADIATION DAMAGE STUDIES OF NEXT GENERATION
D-T REACTOR DESIGNS.

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26 IRON — NEUTRON — TOTAL ALPHA PRODUCTION CROSS SECTION

(388) 9.00 MEV 15.0 MEV 10. % 3 USA DORAN HED 801066F
TOTAL HELIUM PRODUCTION CROSS SECTION FOR
DOSIMETRY AND RADIATION DAMAGE STUDIES.

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28 NICKEL 58 — NEUTRON — TOTAL CROSS SECTION

(458) 1.00 MEV 15.0 MEV 10.0% 2 FR E.FORT CAD 792012R
EVALUATION PROBLEMS

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28 NICKEL 58 — NEUTRON — ELASTIC CROSS SECTION

(459) 1.00 MEV 15.0 MEV 10.0% 2 FR E.FORT CAD 792013R
EVALUATION PROBLEMS

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28 NICKEL 62 — NEUTRON — TOTAL CROSS SECTION

(484) 1.00 MEV 15.0 MEV 10.0% 2 FR E.FORT CAD 792014R
EVALUATION PROBLEMS

LIST OF SATISFIED REQUESTS

28 NICKEL 62			NEUTRON			ELASTIC CROSS SECTION				
(485)	1.00	MEV	15.0	MEV	10.0%	2	FR	E.FORT EVALUATION PROBLEMS	CAD	792015R
29 COPPER			NEUTRON			ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION				
(503)	9.00	MEV	15.0	MEV	5. %	1	USA	BERK FOR SHIELDING AND TRANSPORT STUDIES OF NEXT GENERATION D-T REACTOR DESIGNS. RECOMMEND MEASUREMENTS AT 8, 10, 12 AND 14 MEV.	DOE	781046F
29 COPPER			NEUTRON			TOTAL PROTON PRODUCTION CROSS SECTION				
(505)	9.00	MEV	15.0	MEV	20. %	3	USA	DORAN FOR MATERIAL DAMAGE CALCULATIONS AND NEXT GENERATION D-T REACTOR DESIGNS.	HED	781028F
29 COPPER			NEUTRON			TOTAL PROTON PRODUCTION CROSS SECTION				
(506)	15.0	MEV	30.0	MEV	20. %	3	USA	DORAN FOR MATERIAL DAMAGE CALCULATIONS AND NEXT GENERATION D-T REACTOR DESIGNS.	HED	781229F
29 COPPER			NEUTRON			TOTAL ALPHA PRODUCTION CROSS SECTION				
(508)	9.00	MEV	15.0	MEV	20. %	2	USA	DORAN FMIT DOSIMETRY, ACTIVATION AND RADIATION DAMAGE STUDIES.	HED	781064F
30 ZINC 64			NEUTRON			N,P				
	5.00	MEV	15.0	MEV	5. %	1	USA	BERK DOSIMETRY CROSS SECTION FOR FUSION APPLICATIONS.	DOE	841004F
47 SILVER 109			NEUTRON			CAPTURE CROSS SECTION				
(656)	3.00	KEV	1.00	MEV	10.0%	1	FR	E.FORT REACTOR CALCULATIONS	CAD	792018R
49 INDIUM 115			NEUTRON			INELASTIC CROSS SECTION				
	800.	KEV	3.00	MEV	5. %	2	USA	BERK RADIOACTIVE TARGET 4.41X(10**14)YR ACTIVATION IS REQUIRED, REACTION TO ISOMERIC STATE (4.49HR). MORE ACCURATE CROSS SECTIONS ARE NEEDED FOR DOSIMETRY.	DOE	841005F

LIST OF SATISFIED REQUESTS

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49 INDIUM 115 — NEUTRON — INELASTIC CROSS SECTION

14.0 MEV — 5. % — 2 — USA — BERK — DOE — 841006F
RADIOACTIVE TARGET 4.41X(10**14)YR
ACTIVATION IS REQUIRED, REACTION TO ISOMERIC STATE (4.49HR).
MORE ACCURATE CROSS SECTIONS ARE NEEDED FOR DOSIMETRY.

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63 EUROPIUM 151 — NEUTRON — CAPTURE CROSS SECTION

(745) 1.00 EV 2.00 MEV 10.0% — 2 — FR — M.SALVATORES — CAD — 792019R
FOR FAST REACTOR CALCULATIONS.

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63 EUROPIUM 153 — NEUTRON — CAPTURE CROSS SECTION

(750) 1.00 EV 5.00 KEV 10.0% — 3 — FR — H.TELLIER — SAC — 732085R
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
REACTOR CALCULATIONS.

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63 EUROPIUM 153 — NEUTRON — CAPTURE CROSS SECTION

(752) 1.00 EV 2.00 MEV 10.0% — 2 — FR — M.SALVATORES — CAD — 792020R
FOR FAST REACTOR CALCULATIONS.

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79 GOLD 197 — NEUTRON — CAPTURE CROSS SECTION

(805) 500. KEV 5.00 MEV 5.0% — 2 — FR — E.FORT — CAD — 792021R
STANDARD CROSS SECTION

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82 LEAD — NEUTRON — INELASTIC CROSS SECTION

(814) 3.00 MEV 15.0 MEV 15.0% — 2 — FR — B.DUCHEMIN — SAC — 792024F
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
NEUTRON MULTIPLIER

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82 LEAD — NEUTRON — N,2N

(821) UP TO 15.0 MEV 15.0% — 2 — FR — B.DUCHEMIN — SAC — 792023F
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
NEUTRON MULTIPLIER

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92 URANIUM 235 — NEUTRON — NEUTRONS EMITTED PER FISSION (NU BAR)

(996) UP TO 5.00 MEV 1.0% — 2 — CCP — M.N.NIKOLAEV — FEI — 714014R
SEE GENERAL COMMENTS IN THE INTRODUCTION.

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92 URANIUM 238 — NEUTRON — N,2N

(1043) 25.0% — 2 — CCP — L.N.USACHEV — FEI — 794007R
AVERAGE CROSS SECTION IN A FAST-REACTOR SPECTRUM REQUESTED.
FOR FAST-REACTOR BURN-UP CALCULATION.
SEE GENERAL COMMENTS.

LIST OF SATISFIED REQUESTS

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92 URANIUM 238 — NEUTRON — FISSION CROSS SECTION

(1051) 800. KEV 10.0 MEV — 2 CCP — L.N.USACHEV FEI — 754019R
FROM 0.8 - 10. MEV ACCURACY 1.8 PERCENT.
NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

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92 URANIUM 238 — NEUTRON — NEUTRONS EMITTED PER FISSION (NU BAR)

(1058) UP TO 5.00 MEV 0.7% — 2 CCP — M.N.NIKOLAEV FEI — 714021R
RATIO TO CF-252 NU WANTED.
ENERGY DEPENDENCE MUST BE KNOWN WITH 0.7 PERCENT ACCURACY AND ABOUT 10 PERCENT ENERGY RESOLUTION.
SEE GENERAL COMMENTS IN THE INTRODUCTION.

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92 URANIUM 238 — NEUTRON — NEUTRONS EMITTED PER FISSION (NU BAR)

(1060) 800. KEV 10.0 MEV — 2 CCP — L.N.USACHEV FEI — 754020R
FROM 0.8 - 10. MEV ACCURACY 1.0 PERCENT.
NEED FOR FAST REACTOR CALCULATIONS.
FOR MORE DETAIL SEE INTRODUCTION.

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93 NEPTUNIUM 236 — NEUTRON — CAPTURE CROSS SECTION

(1070) 1.00 KEV 1.00 MEV 50.0% — 3 FR — M.SALVATORES CAD — 792038R
FOR FAST REACTOR CALCULATIONS.

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93 NEPTUNIUM 236 — NEUTRON — FISSION CROSS SECTION

(1071) 1.00 KEV 1.00 MEV 50.0% — 3 FR — M.SALVATORES CAD — 792037R
FOR FAST REACTOR CALCULATIONS.

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93 NEPTUNIUM 237 — NEUTRON — N,2N

(1076) UP TO 15.0 MEV 15.0% — 1 FR — F.JOSSO CAD — 762147R
QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATIONS.

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93 NEPTUNIUM 238 — NEUTRON — FISSION CROSS SECTION

(1084) 1.00 KEV 2.00 MEV 50.0% — 2 FR — F.JOSSO CAD — 792041R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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93 NEPTUNIUM 239 — NEUTRON — FISSION CROSS SECTION

(1088) 1.00 KEV 2.00 MEV 50.0% — 2 FR — M.SALVATORES CAD — 762149R
FOR FAST REACTOR CALCULATIONS.

LIST OF SATISFIED REQUESTS

94 PLUTONIUM 240			NEUTRON		CAPTURE CROSS SECTION				
(1193)	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV FEI FROM 5.0 - 100 KEV ACCURACY 7.0 PERCENT. FROM 0.1 - 0.8 MEV ACCURACY 14 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 46 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER. NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.		754006R
94 PLUTONIUM 240			NEUTRON		NEUTRONS EMITTED PER FISSION (NU BAR)				
(1208)	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV FEI FROM 0.1 - 0.8 MEV ACCURACY 3 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 2 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER. NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.		754004R
94 PLUTONIUM 241			NEUTRON		CAPTURE CROSS SECTION				
(1227)	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV FEI FROM 5.0 - 100 KEV ACCURACY 18 PERCENT. FROM 0.1 - 0.8 MEV ACCURACY 30 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 50 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER. NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.		754001R
94 PLUTONIUM 241			NEUTRON		FISSION CROSS SECTION				
(1235)	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV FEI FROM 5.0 - 100 KEV ACCURACY 3.7 PERCENT. FROM 0.1 - 0.8 MEV ACCURACY 5.0 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 9.7 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER. NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.		754002R
94 PLUTONIUM 241			NEUTRON		NEUTRONS EMITTED PER FISSION (NU BAR)				
(1247)	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV FEI FROM 5.0 - 100 KEV ACCURACY 1.2 PERCENT. FROM 0.1 - 0.8 MEV ACCURACY 2.3 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 4.0 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER. NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.		754013R
94 PLUTONIUM 242			NEUTRON		CAPTURE CROSS SECTION				
(1261)	5.00	KEV	10.0	MEV	2	CCP	L.N.USACHEV FEI FROM 5.0 - 100 KEV ACCURACY 30 PERCENT. FROM 0.1 - 0.8 MEV ACCURACY 30 PERCENT. FROM 0.8 - 4.5 MEV ACCURACY 50 PERCENT. ABOVE 4.5 MEV REQUIREMENTS 2 TIMES WEAKER. NEED FOR FAST REACTOR CALCULATIONS. FOR MORE DETAIL SEE INTRODUCTION.		754014R

LIST OF SATISFIED REQUESTS

94 PLUTONIUM 242		NEUTRON		FISSION CROSS SECTION					
(1266)	1.00 KEV	3.00 MEV	20.0%	1	FR	F.JOSSO	CAD		792053R
						QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FUEL CYCLE CALCULATIONS.			
95 AMERICIUM 241		NEUTRON		ABSORPTION CROSS SECTION					
(1275)	25.3 MV		5.0%	2	FR	H.TELLIER	SAC		712106R
						QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.			
95 AMERICIUM 241		NEUTRON		CAPTURE CROSS SECTION					
(1281)	1.00 KEV	3.00 MEV	10.0%	1	FR	F.JOSSO	CAD		762153R
						BRANCHING RATIO, AM-242, AM-242M QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FUEL CYCLE CALCULATION.			
95 AMERICIUM 241		NEUTRON		ABSORPTION RESONANCE INTEGRAL					
(1288)			10.0%	2	FR	H.TELLIER	SAC		712107R
						QUOTED ACCURACY AT 2 STANDARD DEVIATIONS.			
95 AMERICIUM 243		NEUTRON		CAPTURE CROSS SECTION					
(1305)	1.00 KEV	3.00 MEV	20.0%	1	FR	F.JOSSO	CAD		732104R
						QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FUEL CYCLE CALCULATIONS.			
95 AMERICIUM 243		NEUTRON		FISSION CROSS SECTION					
(1311)	1.00 KEV	3.00 MEV	20.0%	1	FR	F.JOSSO	CAD		712111R
						RELATIVE TO U-235 FISSION. QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FUEL CYCLE CALCULATION.			
95 AMERICIUM 243		NEUTRON		NEUTRONS EMITTED PER FISSION (NU BAR)					
(1313)	500. EV	15.0 MEV	25.0%	2	FR	F.JOSSO	CAD		712112R
						RELATIVE TO CF-252 NU. QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FULE CYCLE CALCULATIONS.			
96 CURIUM 243		NEUTRON		FISSION CROSS SECTION					
(1332)	500. EV	15.0 MEV	50.0%	2	FR	F.JOSSO	CAD		762155R
						QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FUEL CYCLE CALCULATION.			
96 CURIUM 245		NEUTRON		CAPTURE CROSS SECTION					
(1342)	500. EV	200. KEV	50.0%	2	FR	F.JOSSO	CAD		762159R
						QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS. FOR FAST REACTOR FUEL CYCLE CALCULATION.			

LIST OF SATISFIED REQUESTS

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96 CURIUM 245 — NEUTRON — FISSION CROSS SECTION

(1344) 500. EV 15.0 MEV 50.0% 2 FR F.JOSSO CAD 762158R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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96 CURIUM 246 — NEUTRON — FISSION CROSS SECTION

(1349) 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792059R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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96 CURIUM 247 — NEUTRON — FISSION CROSS SECTION

(1353) 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792061R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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96 CURIUM 248 — NEUTRON — FISSION CROSS SECTION

(1356) 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792063R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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97 BERKELIUM 249 — NEUTRON — FISSION CROSS SECTION

(1358) 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792065R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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98 CALIFORNIUM 249 — NEUTRON — CAPTURE CROSS SECTION

(1359) 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792066R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

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98 CALIFORNIUM 249 — NEUTRON — FISSION CROSS SECTION

(1360) 1.00 KEV 3.00 MEV 50.0% 3 FR F.JOSSO CAD 792067R
QUOTED UNCERTAINTY AT 2 STANDARD DEVIATIONS.
FOR FAST REACTOR FUEL CYCLE CALCULATION.

FISSION PRODUCTS — NEUTRON — CAPTURE CROSS SECTION

(1375) 100. EV 100. KEV 20.0% 2 CCP M.N.NIKOLAEV FEI 714036R
AVERAGE CAPTURE CROSS SECTION FOR LUMPED FISSION
PRODUCTS, STABLE, LONG-LIVED AND EQUILIBRIUM
FISSION PRODUCTS
DATA FOR FISSION PRODUCTS OF U-235, U-238,
PU-239 AND PU-240 ARE OF GREAT INTEREST.
SEE GENERAL COMMENTS IN THE INTRODUCTION.

LIST OF WITHDRAWN REQUESTS

(3)	832023G	JAP	1	HYDROGEN 1	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(4)	821001R	USA	1	HYDROGEN 1	NEUTRON	CAPTURE CROSS SECTION
(6)	812018F	JAP	1	HYDROGEN 2	NEUTRON	ENERGY-ANGLE DIFF.2 NEUTRON-PRODUCTION CROSS SECT.
(9)	691001R	USA	2	HELIUM 3	NEUTRON	N,P
(10)	691003R	USA	2	HELIUM 3	NEUTRON	N,P
(11)	691004R	USA	2	HELIUM 3	NEUTRON	N,P
(13)	801234F	USA	2	HELIUM 3	NEUTRON	N,P
(14)	801300F	USA	2	HELIUM 3	NEUTRON	N,P
(15)	801235F	USA	2	HELIUM 3	NEUTRON	N,NP
(16)	801301F	USA	2	HELIUM 3	NEUTRON	N,NP
(17)	801233F	USA	2	HELIUM 3	NEUTRON	N,2P
(18)	801302F	USA	2	HELIUM 3	NEUTRON	N,2P
(33)	691009R	USA	3	LITHIUM 6	NEUTRON	N,T
(35)	692004R	GER	3	LITHIUM 6	NEUTRON	N,T
(38)	742024F	BLG	3	LITHIUM 6	NEUTRON	N,T
(39)	762053F	JAP	3	LITHIUM 6	NEUTRON	N,T
(41)	801290R	USA	3	LITHIUM 6	NEUTRON	N,T
(44)	801205F	USA	3	LITHIUM 6	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(45)	801303F	USA	3	LITHIUM 6	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(49)	732003F	FR	3	LITHIUM 7	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(65)	732004F	FR	3	LITHIUM 7	NEUTRON	N,NT
(67)	821046F	USA	3	LITHIUM 7	NEUTRON	N,NT
(79)	801020F	USA	4	BERYLLIUM 9	NEUTRON	N,2N
(82)	621002R	USA	4	BERYLLIUM 9	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(89)	762063F	JAP	4	BERYLLIUM 9	NEUTRON	N,ALPHA
(91)	801089F	USA	4	BERYLLIUM 9	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(93)	801116F	USA	4	BERYLLIUM 10	NEUTRON	N,NALPHA
(94)	741001R	USA	5	BORON	NEUTRON	TOTAL CROSS SECTION
(95)	741003R	USA	5	BORON	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(96)	741005R	USA	5	BORON	NEUTRON	ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION
(97)	741007R	USA	5	BORON	NEUTRON	ENERGY-ANGLE DIFF. PHOTON-PRODUCTION CROSS SECTION
(99)	781156F	USA	5	BORON 10	NEUTRON	ENERGY-ANGLE DIFF. PHOTON-PRODUCTION CROSS SECTION
(100)	732006F	FR	5	BORON 10	NEUTRON	N,2N
(101)	732007F	FR	5	BORON 10	NEUTRON	N,3N
(107)	691373R	USA	5	BORON 10	NEUTRON	N,ALPHA
(108)	691374R	USA	5	BORON 10	NEUTRON	N,ALPHA
(109)	691375R	USA	5	BORON 10	NEUTRON	N,ALPHA
(111)	792187R	GER	5	BORON 10	NEUTRON	N,ALPHA
(112)	801238F	USA	5	BORON 10	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(113)	801304F	USA	5	BORON 10	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(114)	801048F	USA	5	BORON 10	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)

LIST OF WITHDRAWN REQUESTS

(115)	781157F	USA	5 BORON 11	NEUTRON	ENERGY-ANGLE DIFF. PHOTON-PRODUCTION CROSS SECTION
(116)	801221F	USA	5 BORON 11	NEUTRON	N,ALPHA
(117)	801305F	USA	5 BORON 11	NEUTRON	N,ALPHA
(120)	781061F	USA	6 CARBON	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(121)	801051F	USA	6 CARBON	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(125)	832041F	JAP	6 CARBON 12	NEUTRON	N,P
(128)	832040F	JAP	6 CARBON 12	NEUTRON	N,NALPHA
(130)	741174R	USA	6 CARBON 12	NEUTRON	N,N3ALPHA
(132)	762065F	JAP	6 CARBON 12	NEUTRON	N,N3ALPHA
(133)	821051R	USA	6 CARBON 12	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(134)	801117F	USA	6 CARBON 13	NEUTRON	N,ALPHA
(136)	741009R	USA	7 NITROGEN	NEUTRON	CAPTURE CROSS SECTION
(137)	781097F	USA	7 NITROGEN	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(138)	801041F	USA	7 NITROGEN	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(139)	832053R	UK	7 NITROGEN	ALPHA	ALPHA,N
(143)	781085F	USA	7 NITROGEN 14	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(144)	761050R	USA	8 OXYGEN	NEUTRON	ELASTIC CROSS SECTION
(145)	661028R	USA	8 OXYGEN	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(148)	781089F	USA	8 OXYGEN	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
	841002	USA	8 OXYGEN	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(149)	781113F	USA	8 OXYGEN	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(150)	781101F	USA	8 OXYGEN	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(151)	801042F	USA	8 OXYGEN	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(154)	792119R	UK	8 OXYGEN	ALPHA	ALPHA,N
(158)	762066F	JAP	8 OXYGEN 16	NEUTRON	N,ALPHA
(161)	762067F	JAP	8 OXYGEN 16	NEUTRON	N,NALPHA
(163)	792071F	JAP	8 OXYGEN 16	TRITON	T,N
(164)	832022R	JAP	8 OXYGEN 17	NEUTRON	N,P
(173)	741169R	USA	9 FLUORINE 19	NEUTRON	ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION
(175)	741170R	USA	9 FLUORINE 19	NEUTRON	ABSORPTION CROSS SECTION
	741180R	USA	9 FLUORINE 19	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(177)	781087F	USA	9 FLUORINE 19	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(186)	801113F	USA	11 SODIUM 23	NEUTRON	ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION
(190)	801222F	USA	11 SODIUM 23	NEUTRON	CAPTURE CROSS SECTION
(191)	801306F	USA	11 SODIUM 23	NEUTRON	CAPTURE CROSS SECTION
(193)	801027F	USA	11 SODIUM 23	NEUTRON	N,2N
	741181R	USA	12 MAGNESIUM	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
	741189F	USA	12 MAGNESIUM	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
	741190F	USA	12 MAGNESIUM	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(198)	781174N	USA	12 MAGNESIUM	ALPHA	ALPHA,N
(199)	801224F	USA	12 MAGNESIUM 24	NEUTRON	N,P
(200)	801307F	USA	12 MAGNESIUM 24	NEUTRON	N,P

LIST OF WITHDRAWN REQUESTS

(202)	762075F	JAP	13 ALUMINUM 27	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(204)	821071F	USA	13 ALUMINUM 27	NEUTRON	N,2N
(205)	781078F	USA	13 ALUMINUM 27	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(206)	801054F	USA	13 ALUMINUM 27	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(208)	801308F	USA	13 ALUMINUM 27	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(209)	762072F	JAP	13 ALUMINUM 27	NEUTRON	N,D
(210)	762073F	JAP	13 ALUMINUM 27	NEUTRON	N,T
(211)	821070F	USA	13 ALUMINUM 27	NEUTRON	N,ALPHA
(213)	801309F	USA	13 ALUMINUM 27	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(215)	792164R	UK	14 SILICON	NEUTRON	CAPTURE CROSS SECTION
(216)	781045F	USA	14 SILICON	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
	741191F	USA	14 SILICON	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
	741192F	USA	14 SILICON	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(219)	801044F	USA	14 SILICON	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(220)	741021R	USA	16 SULFUR	NEUTRON	TOTAL CROSS SECTION
(221)	741025R	USA	16 SULFUR	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(224)	801114F	USA	19 POTASSIUM	NEUTRON	ENERGY-ANGLE DIFFERENTIAL INELASTIC CROSS SECTION
(225)	821069F	USA	19 POTASSIUM 39	NEUTRON	N,2N
(226)	792076R	JAP	19 POTASSIUM 39	NEUTRON	N,P
(227)	792128R	UK	19 POTASSIUM 41	NEUTRON	N,P
(228)	821072F	USA	19 POTASSIUM 41	NEUTRON	N,P
(232)	691065R	USA	21 SCANDIUM 45	NEUTRON	CAPTURE CROSS SECTION
(233)	801072F	USA	22 TITANIUM	GAMMA	GAMMA,P
(236)	762083F	JAP	22 TITANIUM	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(237)	781039F	USA	22 TITANIUM	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(238)	781027F	USA	22 TITANIUM	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(239)	781223F	USA	22 TITANIUM	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(240)	762082F	JAP	22 TITANIUM	NEUTRON	N,ALPHA
(241)	781212F	USA	22 TITANIUM	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(242)	781224F	USA	22 TITANIUM	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(245)	821075F	USA	22 TITANIUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(246)	821088F	USA	22 TITANIUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(247)	821079F	USA	22 TITANIUM 46	NEUTRON	N,P
(260)	762089F	JAP	23 VANADIUM	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(264)	762085F	JAP	23 VANADIUM	NEUTRON	N,2N
(266)	732015F	FR	23 VANADIUM	NEUTRON	N,P
(268)	732016F	FR	23 VANADIUM	NEUTRON	N,ALPHA
(270)	781038F	USA	23 VANADIUM 51	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(271)	781086F	USA	23 VANADIUM 51	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(273)	781225F	USA	23 VANADIUM 51	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(275)	781226F	USA	23 VANADIUM 51	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(276)	801085F	USA	23 VANADIUM 51	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)

LIST OF WITHDRAWN REQUESTS

(278)	821040F	USA	24 CHROMIUM	NEUTRON	TOTAL CROSS SECTION
(281)	732017F	FR	24 CHROMIUM	NEUTRON	INELASTIC CROSS SECTION
(293)	762094F	JAP	24 CHROMIUM	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(295)	732018F	FR	24 CHROMIUM	NEUTRON	N,2N
(297)	781049F	USA	24 CHROMIUM	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(298)	781218F	USA	24 CHROMIUM	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
	841007	USA	24 CHROMIUM	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(302)	732019F	FR	24 CHROMIUM	NEUTRON	N,P
(306)	781215F	USA	24 CHROMIUM	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(307)	732020F	FR	24 CHROMIUM	NEUTRON	N,ALPHA
(310)	792108R	BLG	24 CHROMIUM	NEUTRON	N,ALPHA
(312)	801125R	USA	24 CHROMIUM	NEUTRON	N,ALPHA
(314)	781216F	USA	24 CHROMIUM	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(315)	801046F	USA	24 CHROMIUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(316)	821073F	USA	24 CHROMIUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(317)	821074F	USA	24 CHROMIUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(318)	792129R	UK	24 CHROMIUM 50	NEUTRON	CAPTURE CROSS SECTION
(321)	801124R	USA	24 CHROMIUM 50	NEUTRON	CAPTURE CROSS SECTION
(322)	801123R	USA	24 CHROMIUM 50	NEUTRON	N,2N
(323)	801122R	USA	24 CHROMIUM 52	NEUTRON	N,2N
(324)	821080F	USA	24 CHROMIUM 52	NEUTRON	N,2N
(325)	692088R	GER	24 CHROMIUM 52	NEUTRON	N,P
(326)	801126R	USA	24 CHROMIUM 52	NEUTRON	N,P
(327)	821084F	USA	24 CHROMIUM 52	NEUTRON	N,P
(328)	821081F	USA	24 CHROMIUM 53	NEUTRON	N,3N
(329)	821083F	USA	24 CHROMIUM 54	NEUTRON	N,4N
(330)	801101F	USA	25 MANGANESE	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(331)	741195R	USA	25 MANGANESE 55	NEUTRON	TOTAL CROSS SECTION
(335)	801022F	USA	25 MANGANESE 55	NEUTRON	N,2N
	841008	USA	25 MANGANESE 55	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(336)	821043F	USA	26 IRON	GAMMA	GAMMA,N
(339)	691085R	USA	26 IRON	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(341)	691087R	USA	26 IRON	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(342)	692094R	GER	26 IRON	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(345)	732021F	FR	26 IRON	NEUTRON	INELASTIC CROSS SECTION
(347)	762099F	JAP	26 IRON	NEUTRON	INELASTIC CROSS SECTION
(348)	661017R	USA	26 IRON	NEUTRON	ENERGY DIFFERENTIAL INELASTIC CROSS SECTION
(349)	692100F	GER	26 IRON	NEUTRON	ENERGY DIFFERENTIAL INELASTIC CROSS SECTION
(361)	792201R	GER	26 IRON	NEUTRON	CAPTURE CROSS SECTION
(362)	792202R	GER	26 IRON	NEUTRON	CAPTURE CROSS SECTION
(363)	741179R	USA	26 IRON	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(364)	741184R	USA	26 IRON	NEUTRON	CAPTURE GAMMA RAY SPECTRUM

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(365)	761039R	USA	26	IRON	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(367)	762104F	JAP	26	IRON	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(371)	732022F	FR	26	IRON	NEUTRON	N,2N
(372)	781048F	USA	26	IRON	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
	841009	USA	26	IRON	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(377)	732023F	FR	26	IRON	NEUTRON	N,P
(378)	781018F	USA	26	IRON	NEUTRON	N,P
(381)	781227F	USA	26	IRON	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(383)	732024F	FR	26	IRON	NEUTRON	N,ALPHA
(385)	781019F	USA	26	IRON	NEUTRON	N,ALPHA
(386)	792109R	BLG	26	IRON	NEUTRON	N,ALPHA
(389)	801310F	USA	26	IRON	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(390)	821076F	USA	26	IRON	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
	741043R	USA	26	IRON 54	NEUTRON	RESONANCE PARAMETERS
(396)	741046R	USA	26	IRON 56	NEUTRON	RESONANCE PARAMETERS
(397)	812031R	JAP	26	IRON 57	NEUTRON	INELASTIC CROSS SECTION
(398)	821034R	USA	26	IRON 57	NEUTRON	INELASTIC CROSS SECTION
(401)	721046R	USA	27	COBALT 58	NEUTRON	CAPTURE CROSS SECTION
(402)	792196R	GER	27	COBALT 58	NEUTRON	CAPTURE CROSS SECTION
(403)	812049N	BLG	27	COBALT 58	NEUTRON	CAPTURE CROSS SECTION
(404)	691106R	USA	27	COBALT 59	NEUTRON	CAPTURE CROSS SECTION
(405)	781015F	USA	27	COBALT 59	NEUTRON	N,3N
(407)	781016F	USA	27	COBALT 59	NEUTRON	N,4N
(408)	781017F	USA	27	COBALT 59	NEUTRON	N,P
(410)	821082F	USA	27	COBALT 59	NEUTRON	N,P
(411)	821077F	USA	27	COBALT 59	NEUTRON	N,ALPHA
(412)	801004F	USA	27	COBALT 59	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(413)	801311F	USA	27	COBALT 59	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(415)	692120R	GER	28	NICKEL	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(416)	692122F	GER	28	NICKEL	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(419)	732025F	FR	28	NICKEL	NEUTRON	INELASTIC CROSS SECTION
(421)	762105F	JAP	28	NICKEL	NEUTRON	INELASTIC CROSS SECTION
(430)	741053R	USA	28	NICKEL	NEUTRON	CAPTURE CROSS SECTION
(433)	792207R	GER	28	NICKEL	NEUTRON	CAPTURE CROSS SECTION
(434)	792208R	GER	28	NICKEL	NEUTRON	CAPTURE CROSS SECTION
(436)	762111F	JAP	28	NICKEL	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(439)	732026F	FR	28	NICKEL	NEUTRON	N,2N
(441)	781037F	USA	28	NICKEL	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(442)	781044F	USA	28	NICKEL	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(444)	732027F	FR	28	NICKEL	NEUTRON	N,P
(446)	792209R	GER	28	NICKEL	NEUTRON	N,P
(447)	781025F	USA	28	NICKEL	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION

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(448)	781228F USA	28 NICKEL	NEUTRON		TOTAL PROTON PRODUCTION CROSS SECTION
(449)	732028F FR	28 NICKEL	NEUTRON		N,ALPHA
(452)	792110F BLG	28 NICKEL	NEUTRON		N,ALPHA
(453)	792210R GER	28 NICKEL	NEUTRON		N,ALPHA
(454)	801147R USA	28 NICKEL	NEUTRON		N,ALPHA
(455)	781062F USA	28 NICKEL	NEUTRON		TOTAL ALPHA PRODUCTION CROSS SECTION
(456)	801064F USA	28 NICKEL	NEUTRON		TOTAL ALPHA PRODUCTION CROSS SECTION
(457)	801019F USA	28 NICKEL	NEUTRON		SPECIAL QUANTITY (DESCRIPTION BELOW)
(461)	801136R USA	28 NICKEL	58	NEUTRON	CAPTURE CROSS SECTION
(462)	781020F USA	28 NICKEL	58	NEUTRON	N,2N
(465)	781021F USA	28 NICKEL	58	NEUTRON	N,3N
(470)	821054R USA	28 NICKEL	58	NEUTRON	N,P
(471)	801003F USA	28 NICKEL	58	NEUTRON	N,T
(472)	741056R USA	28 NICKEL	58	NEUTRON	RESONANCE PARAMETERS
(473)	801135R USA	28 NICKEL	58	NEUTRON	RESONANCE PARAMETERS
(474)	742023R BLG	28 NICKEL	59	NEUTRON	N,ALPHA
(476)	801128F USA	28 NICKEL	59	NEUTRON	N,ALPHA
(477)	801127R USA	28 NICKEL	59	NEUTRON	RESONANCE PARAMETERS
(478)	781023F USA	28 NICKEL	60	NEUTRON	N,P
(479)	801009F USA	28 NICKEL	60	NEUTRON	N,T
(480)	741059R USA	28 NICKEL	60	NEUTRON	RESONANCE PARAMETERS
(481)	801141R USA	28 NICKEL	60	NEUTRON	RESONANCE PARAMETERS
(482)	741062R USA	28 NICKEL	61	NEUTRON	RESONANCE PARAMETERS
(483)	801142R USA	28 NICKEL	61	NEUTRON	RESONANCE PARAMETERS
(487)	792130R UK	28 NICKEL	62	NEUTRON	CAPTURE CROSS SECTION
(488)	741065R USA	28 NICKEL	62	NEUTRON	RESONANCE PARAMETERS
(489)	801157R USA	28 NICKEL	62	NEUTRON	RESONANCE PARAMETERS
(491)	741068R USA	28 NICKEL	64	NEUTRON	RESONANCE PARAMETERS
(492)	801143R USA	28 NICKEL	64	NEUTRON	RESONANCE PARAMETERS
(493)	821044F USA	29 COPPER		GAMMA	GAMMA,N
(494)	821037F USA	29 COPPER		NEUTRON	TOTAL CROSS SECTION
(495)	821038F USA	29 COPPER		NEUTRON	TOTAL CROSS SECTION
(497)	821039F USA	29 COPPER		NEUTRON	ELASTIC CROSS SECTION
(498)	821049F USA	29 COPPER		NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(501)	762113F JAP	29 COPPER		NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(502)	781040F USA	29 COPPER		NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(509)	781230F USA	29 COPPER		NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(510)	801049F USA	29 COPPER		NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(511)	821078F USA	29 COPPER		NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(512)	671001R USA	29 COPPER	63	NEUTRON	CAPTURE CROSS SECTION
(513)	691132R USA	29 COPPER	63	NEUTRON	CAPTURE CROSS SECTION
(514)	761056R USA	29 COPPER	63	NEUTRON	CAPTURE CROSS SECTION

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(516)	792111R	BLG	29 COPPER 63	NEUTRON	N,ALPHA
(519)	792077R	JAP	30 ZINC 64	NEUTRON	CAPTURE CROSS SECTION
(520)	792197R	GER	30 ZINC 64	NEUTRON	CAPTURE CROSS SECTION
(522)	801070F	USA	30 ZINC 64	NEUTRON	N,P
(523)	801111R	USA	35 BROMINE 81	NEUTRON	CAPTURE CROSS SECTION
(524)	801121R	USA	36 KRYPTON	NEUTRON	RESONANCE PARAMETERS
(525)	801104R	USA	36 KRYPTON 78	NEUTRON	CAPTURE CROSS SECTION
(526)	801105R	USA	36 KRYPTON 80	NEUTRON	CAPTURE CROSS SECTION
(527)	761116G	USA	36 KRYPTON 82	NEUTRON	CAPTURE CROSS SECTION
(528)	801106R	USA	36 KRYPTON 82	NEUTRON	CAPTURE CROSS SECTION
(530)	801033F	USA	39 YTTRIUM 89	NEUTRON	N,2N
(531)	801032F	USA	39 YTTRIUM 89	NEUTRON	N,3N
(532)	801034F	USA	39 YTTRIUM 89	NEUTRON	N,P
(535)	671005R	USA	40 ZIRCONIUM	NEUTRON	CAPTURE CROSS SECTION
(536)	761057R	USA	40 ZIRCONIUM	NEUTRON	CAPTURE CROSS SECTION
(546)	801207F	USA	40 ZIRCONIUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(549)	801035F	USA	40 ZIRCONIUM 90	NEUTRON	N,3N
(550)	801120R	USA	40 ZIRCONIUM 91	NEUTRON	RESONANCE PARAMETERS
(551)	752004R	JAP	40 ZIRCONIUM 93	NEUTRON	CAPTURE CROSS SECTION
(552)	801266R	USA	40 ZIRCONIUM 93	NEUTRON	CAPTURE CROSS SECTION
(553)	792068R	JAP	40 ZIRCONIUM 93	NEUTRON	RESONANCE PARAMETERS
(558)	801267R	USA	40 ZIRCONIUM 95	NEUTRON	CAPTURE CROSS SECTION
(559)	741074R	USA	40 ZIRCONIUM 96	NEUTRON	RESONANCE PARAMETERS
(567)	762117F	JAP	41 NIOBIUM 93	NEUTRON	INELASTIC CROSS SECTION
(569)	792190R	GER	41 NIOBIUM 93	NEUTRON	INELASTIC CROSS SECTION
(570)	801260F	USA	41 NIOBIUM 93	NEUTRON	INELASTIC CROSS SECTION
(581)	812027F	JAP	41 NIOBIUM 93	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(582)	792112R	BLG	41 NIOBIUM 93	NEUTRON	N,N
(583)	722134F	GER	41 NIOBIUM 93	NEUTRON	N,2N
(586)	801028F	USA	41 NIOBIUM 93	NEUTRON	N,2N
(587)	781222F	USA	41 NIOBIUM 93	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(591)	762119F	JAP	41 NIOBIUM 93	NEUTRON	N,P
(592)	781105F	USA	41 NIOBIUM 93	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(593)	781219F	USA	41 NIOBIUM 93	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(595)	762121F	JAP	41 NIOBIUM 93	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(596)	781093F	USA	41 NIOBIUM 93	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(597)	781220F	USA	41 NIOBIUM 93	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(598)	801088F	USA	41 NIOBIUM 93	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(600)	792131R	UK	41 NIOBIUM 94	NEUTRON	CAPTURE CROSS SECTION
(604)	732029F	FR	42 MOLYBDENUM	NEUTRON	INELASTIC CROSS SECTION
(610)	762131F	JAP	42 MOLYBDENUM	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(613)	732030F	FR	42 MOLYBDENUM	NEUTRON	N,2N

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(615)	781084F	USA	42	MOLYBDENUM	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(616)	692159R	GER	42	MOLYBDENUM	NEUTRON	N,P
(619)	732031F	FR	42	MOLYBDENUM	NEUTRON	N,P
(620)	762129F	JAP	42	MOLYBDENUM	NEUTRON	N,P
(621)	781108F	USA	42	MOLYBDENUM	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(622)	722149F	GER	42	MOLYBDENUM	NEUTRON	N,ALPHA
(624)	732032F	FR	42	MOLYBDENUM	NEUTRON	N,ALPHA
(625)	762130F	JAP	42	MOLYBDENUM	NEUTRON	N,ALPHA
(626)	781096F	USA	42	MOLYBDENUM	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(627)	801102F	USA	42	MOLYBDENUM	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(628)	792078F	JAP	42	MOLYBDENUM 92	NEUTRON	N,NP
(629)	762133F	JAP	42	MOLYBDENUM 94	NEUTRON	N,2N
(634)	832029R	JAP	43	TECHNETIUM 99	NEUTRON	RESONANCE PARAMETERS
(639)	801272R	USA	44	RUTHENIUM 103	NEUTRON	CAPTURE CROSS SECTION
(642)	801273R	USA	44	RUTHENIUM 106	NEUTRON	CAPTURE CROSS SECTION
(643)	692477R	GER	45	RHODIUM 103	NEUTRON	INELASTIC CROSS SECTION
(644)	792191R	GER	45	RHODIUM 103	NEUTRON	INELASTIC CROSS SECTION
(645)	801258F	USA	45	RHODIUM 103	NEUTRON	INELASTIC CROSS SECTION
(647)	712044R	DEN	45	RHODIUM 103	NEUTRON	CAPTURE CROSS SECTION
(648)	732058R	FR	45	RHODIUM 103	NEUTRON	CAPTURE CROSS SECTION
(651)	812035N	JAP	46	PALLADIUM 105	NEUTRON	RESONANCE PARAMETERS
(654)	752012R	JAP	46	PALLADIUM 107	NEUTRON	CAPTURE CROSS SECTION
(655)	801274R	USA	46	PALLADIUM 107	NEUTRON	CAPTURE CROSS SECTION
(657)	732063R	FR	48	CADMIUM 113	NEUTRON	CAPTURE CROSS SECTION
(660)	692180R	GER	49	INDIUM 115	NEUTRON	INELASTIC CROSS SECTION
(662)	792192R	GER	49	INDIUM 115	NEUTRON	INELASTIC CROSS SECTION
(665)	781041F	USA	50	TIN	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(666)	781083F	USA	50	TIN	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(667)	781029F	USA	50	TIN	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(668)	781231F	USA	50	TIN	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(669)	781214F	USA	50	TIN	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(670)	781232F	USA	50	TIN	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(672)	792082R	JAP	51	ANTIMONY 124	NEUTRON	CAPTURE CROSS SECTION
(679)	792223R	GER	53	IODINE 129	NEUTRON	CAPTURE CROSS SECTION
(680)	812036N	JAP	53	IODINE 129	NEUTRON	CAPTURE CROSS SECTION
(681)	812037N	JAP	53	IODINE 129	NEUTRON	RESONANCE PARAMETERS
(683)	762004N	JAP	53	IODINE 135		GAMMA RAY YIELD
(684)	801107R	USA	54	XENON 124	NEUTRON	CAPTURE CROSS SECTION
(685)	801108R	USA	54	XENON 126	NEUTRON	CAPTURE CROSS SECTION
(686)	801109R	USA	54	XENON 128	NEUTRON	CAPTURE CROSS SECTION
(687)	801110R	USA	54	XENON 129	NEUTRON	CAPTURE CROSS SECTION
(688)	732064R	FR	54	XENON 131	NEUTRON	CAPTURE CROSS SECTION

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(690)	801277R	USA	54	XENON 131	NEUTRON	CAPTURE CROSS SECTION
(693)	712045R	DEN	54	XENON 133	NEUTRON	CAPTURE CROSS SECTION
(696)	732065R	FR	54	XENON 135	NEUTRON	CAPTURE CROSS SECTION
(701)	671029R	USA	54	XENON 135	NEUTRON	ENERGY DIFF. PHOTON-PRODUCTION CROSS SECTION
(705)	762024N	JAP	55	CESIUM 134	NEUTRON	CAPTURE CROSS SECTION
(706)	792224R	GER	55	CESIUM 134	NEUTRON	CAPTURE CROSS SECTION
(708)	801278R	USA	55	CESIUM 135	NEUTRON	CAPTURE CROSS SECTION
(711)	832034R	JAP	56	BARIUM 137	NEUTRON	RESONANCE PARAMETERS
(715)	801279R	USA	58	CERIUM 144	NEUTRON	CAPTURE CROSS SECTION
(718)	732075R	FR	60	NEODYMIUM 146	NEUTRON	CAPTURE CROSS SECTION
(720)	712046R	DEN	60	NEODYMIUM 147	NEUTRON	CAPTURE CROSS SECTION
(722)	732077R	FR	60	NEODYMIUM 148	NEUTRON	CAPTURE CROSS SECTION
(723)	712047R	DEN	61	PROMETHIUM 147	NEUTRON	CAPTURE CROSS SECTION
(725)	801280R	USA	61	PROMETHIUM 147	NEUTRON	CAPTURE CROSS SECTION
(728)	792226R	GER	61	PROMETHIUM 148	NEUTRON	CAPTURE CROSS SECTION
(730)	732079R	FR	62	SAMARIUM 147	NEUTRON	CAPTURE CROSS SECTION
(731)	712048R	DEN	62	SAMARIUM 149	NEUTRON	CAPTURE CROSS SECTION
(735)	732082R	FR	62	SAMARIUM 151	NEUTRON	CAPTURE CROSS SECTION
(738)	801282R	USA	62	SAMARIUM 151	NEUTRON	CAPTURE CROSS SECTION
(742)	732084R	FR	63	EUROPIUM 151	NEUTRON	CAPTURE CROSS SECTION
	741102R	USA	63	EUROPIUM 151	NEUTRON	CAPTURE CROSS SECTION
(744)	761076R	USA	63	EUROPIUM 151	NEUTRON	CAPTURE CROSS SECTION
	741100R	USA	63	EUROPIUM 151	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(746)	761077R	USA	63	EUROPIUM 152	NEUTRON	CAPTURE CROSS SECTION
(749)	671064R	USA	63	EUROPIUM 153	NEUTRON	CAPTURE CROSS SECTION
(751)	741105R	USA	63	EUROPIUM 153	NEUTRON	CAPTURE CROSS SECTION
(755)	722039N	JAP	63	EUROPIUM 154	NEUTRON	CAPTURE CROSS SECTION
(760)	722015N	JAP	63	EUROPIUM 155		GAMMA RAY YIELD
(761)	712050R	DEN	63	EUROPIUM 155	NEUTRON	CAPTURE CROSS SECTION
(765)	732086R	FR	64	GADOLINIUM 155	NEUTRON	CAPTURE CROSS SECTION
(766)	712051R	DEN	64	GADOLINIUM 157	NEUTRON	CAPTURE CROSS SECTION
(767)	732087R	FR	64	GADOLINIUM 157	NEUTRON	CAPTURE CROSS SECTION
(768)	821047R	USA	66	DYSPROSIUM 162	NEUTRON	TOTAL CROSS SECTION
(769)	801031F	USA	69	THULIUM 169	NEUTRON	N,2N
(770)	801030F	USA	69	THULIUM 169	NEUTRON	N,3N
(771)	801251F	USA	69	THULIUM 169	NEUTRON	N,4N
(772)	801029F	USA	69	THULIUM 169	NEUTRON	N,5N
(773)	621024R	USA	72	HAFNIUM	NEUTRON	CAPTURE CROSS SECTION
(774)	832026R	JAP	72	HAFNIUM	NEUTRON	CAPTURE CROSS SECTION
(777)	832020R	JAP	72	HAFNIUM 176	NEUTRON	CAPTURE CROSS SECTION
(780)	832019R	JAP	72	HAFNIUM 177	NEUTRON	CAPTURE CROSS SECTION
(787)	691192R	USA	73	TANTALUM 181	NEUTRON	CAPTURE CROSS SECTION

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(788)	691193R	USA	73 TANTALUM 181	NEUTRON	CAPTURE CROSS SECTION
(789)	741111R	USA	73 TANTALUM 181	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(790)	801018F	USA	73 TANTALUM 181	NEUTRON	ENERGY DIFF. PHOTON-PRODUCTION CROSS SECTION
(791)	801017F	USA	73 TANTALUM 181	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(792)	801099F	USA	73 TANTALUM 181	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(793)	732033F	FR	74 TUNGSTEN	NEUTRON	INELASTIC CROSS SECTION
(794)	732034F	FR	74 TUNGSTEN	NEUTRON	N,2N
(795)	661040R	USA	74 TUNGSTEN	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(796)	801055F	USA	74 TUNGSTEN	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(797)	732035F	FR	74 TUNGSTEN	NEUTRON	N,P
(798)	801058F	USA	74 TUNGSTEN	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(799)	801312F	USA	74 TUNGSTEN	NEUTRON	TOTAL PROTON PRODUCTION CROSS SECTION
(800)	732037F	FR	74 TUNGSTEN	NEUTRON	N,ALPHA
(801)	801059F	USA	74 TUNGSTEN	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(802)	832021M	JAP	77 IRIDIUM 191	NEUTRON	CAPTURE CROSS SECTION
(804)	721073R	USA	79 GOLD 197	NEUTRON	CAPTURE CROSS SECTION
(806)	781010F	USA	79 GOLD 197	NEUTRON	N,2N
(807)	781011F	USA	79 GOLD 197	NEUTRON	N,3N
(809)	781012F	USA	79 GOLD 197	NEUTRON	N,4N
(810)	781013F	USA	79 GOLD 197	NEUTRON	N,5N
(811)	801065F	USA	79 GOLD 197	NEUTRON	TOTAL ALPHA PRODUCTION CROSS SECTION
(813)	821045F	USA	82 LEAD	GAMMA	GAMMA,N
(815)	741186F	USA	82 LEAD	NEUTRON	CAPTURE GAMMA RAY SPECTRUM
(818)	762134F	JAP	82 LEAD	NEUTRON	TOTAL PHOTON PRODUCTION CROSS SECTION
(822)	801021F	USA	82 LEAD	NEUTRON	N,2N
(823)	812070F	GER	82 LEAD	NEUTRON	ENERGY-ANGLE DIFF.2 NEUTRON-PRODUCTION CROSS SECT.
(824)	801011F	USA	82 LEAD	NEUTRON	N,3N
(826)	631005R	USA	82 LEAD	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(827)	781050F	USA	82 LEAD	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
	841010	USA	82 LEAD	NEUTRON	ENERGY-ANGLE DIFF. NEUTRON-EMISSION CROSS SECTION
(829)	801045F	USA	82 LEAD	NEUTRON	SPECIAL QUANTITY (DESCRIPTION BELOW)
(830)	792091F	JAP	82 LEAD 206	NEUTRON	N,ALPHA
(833)	821041F	USA	83 BISMUTH 209	NEUTRON	N,2N
(835)	821048F	USA	90 THORIUM 232	SPONTANEOUS	ENERGY SPECTRUM OF FISSION NEUTRONS
(836)	761080R	USA	90 THORIUM 232	NEUTRON	TOTAL CROSS SECTION
(837)	781181R	USA	90 THORIUM 232	NEUTRON	TOTAL CROSS SECTION
(838)	781197R	USA	90 THORIUM 232	NEUTRON	TOTAL CROSS SECTION
(839)	692325R	GER	90 THORIUM 232	NEUTRON	ENERGY DIFFERENTIAL INELASTIC CROSS SECTION
(840)	621034R	USA	90 THORIUM 232	NEUTRON	CAPTURE CROSS SECTION
(841)	621035R	USA	90 THORIUM 232	NEUTRON	CAPTURE CROSS SECTION
(844)	732090R	FR	90 THORIUM 232	NEUTRON	CAPTURE CROSS SECTION
(846)	692326R	GER	90 THORIUM 232	NEUTRON	N,2N

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(849)	781161F	USA	90 THORIUM 232	NEUTRON	N,2N
(850)	792026F	FR	90 THORIUM 232	NEUTRON	N,2N
(852)	781162F	USA	90 THORIUM 232	NEUTRON	N,3N
(853)	792027F	FR	90 THORIUM 232	NEUTRON	N,3N
(854)	692328R	GER	90 THORIUM 232	NEUTRON	FISSION CROSS SECTION
(855)	732091R	FR	90 THORIUM 232	NEUTRON	FISSION CROSS SECTION
(857)	792025F	FR	90 THORIUM 232	NEUTRON	FISSION CROSS SECTION
(858)	792136R	UK	90 THORIUM 232	NEUTRON	FISSION CROSS SECTION
(861)	792214R	GER	90 THORIUM 232	NEUTRON	RESONANCE PARAMETERS
(862)	691219R	USA	91 PROTACTINIUM 231	NEUTRON	CAPTURE CROSS SECTION
(863)	761066R	USA	91 PROTACTINIUM 231	NEUTRON	CAPTURE CROSS SECTION
(864)	781183R	USA	91 PROTACTINIUM 231	NEUTRON	ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS
(866)	761059R	USA	91 PROTACTINIUM 233	NEUTRON	CAPTURE CROSS SECTION
(868)	812051R	FR	91 PROTACTINIUM 233	NEUTRON	CAPTURE CROSS SECTION
(871)	761067R	USA	92 URANIUM 232	NEUTRON	CAPTURE CROSS SECTION
(872)	792028R	FR	92 URANIUM 232	NEUTRON	CAPTURE CROSS SECTION
(873)	792029R	FR	92 URANIUM 232	NEUTRON	FISSION CROSS SECTION
(874)	761082R	USA	92 URANIUM 233	NEUTRON	TOTAL CROSS SECTION
(878)	692350R	GER	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(879)	692352R	GER	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(880)	732093R	FR	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(881)	741112R	USA	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(882)	741114R	USA	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(886)	792083R	JAP	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(887)	792217R	GER	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(888)	812052R	FR	92 URANIUM 233	NEUTRON	CAPTURE CROSS SECTION
(889)	671088R	USA	92 URANIUM 233	NEUTRON	N,2N
(892)	792092R	JAP	92 URANIUM 233	NEUTRON	N,2N
(894)	691226R	USA	92 URANIUM 233	NEUTRON	FISSION CROSS SECTION
(895)	692342R	GER	92 URANIUM 233	NEUTRON	FISSION CROSS SECTION
(896)	692343R	GER	92 URANIUM 233	NEUTRON	FISSION CROSS SECTION
(897)	692344R	FR	92 URANIUM 233	NEUTRON	FISSION CROSS SECTION
(898)	732092R	FR	92 URANIUM 233	NEUTRON	FISSION CROSS SECTION
(899)	781184R	USA	92 URANIUM 233	NEUTRON	FISSION CROSS SECTION
(901)	621039R	USA	92 URANIUM 233	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
(902)	621040R	USA	92 URANIUM 233	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
(903)	621041R	USA	92 URANIUM 233	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
	671090R	USA	92 URANIUM 233	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
	671196R	USA	92 URANIUM 233	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
(907)	741113R	USA	92 URANIUM 233	NEUTRON	NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)
(908)	691443R	USA	92 URANIUM 233	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(909)	691444R	USA	92 URANIUM 233	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)

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(910)	691445R	USA	92 URANIUM 233	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(911)	692486R	GER	92 URANIUM 233	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(913)	781185R	USA	92 URANIUM 233	NEUTRON	ENERGY SPECTRUM OF FISSION NEUTRONS
(916)	781191R	USA	92 URANIUM 233	NEUTRON	FISSION PRODUCT MASS YIELD SPECTRUM
(917)	671195R	USA	92 URANIUM 233	NEUTRON	RESONANCE PARAMETERS
(918)	671200R	USA	92 URANIUM 233	NEUTRON	RESONANCE PARAMETERS
(919)	691400R	USA	92 URANIUM 234	NEUTRON	CAPTURE CROSS SECTION
(920)	691401R	USA	92 URANIUM 234	NEUTRON	CAPTURE CROSS SECTION
(921)	691402R	USA	92 URANIUM 234	NEUTRON	CAPTURE CROSS SECTION
(922)	691403R	USA	92 URANIUM 234	NEUTRON	CAPTURE CROSS SECTION
(923)	692356R	GER	92 URANIUM 234	NEUTRON	CAPTURE CROSS SECTION
(925)	792031R	FR	92 URANIUM 234	NEUTRON	CAPTURE CROSS SECTION
(928)	692353R	GER	92 URANIUM 234	NEUTRON	FISSION CROSS SECTION
(929)	792032R	FR	92 URANIUM 234	NEUTRON	FISSION CROSS SECTION
(933)	742067R	FR	92 URANIUM 235	NEUTRON	ELASTIC CROSS SECTION
(934)	691237R	USA	92 URANIUM 235	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(935)	742068R	FR	92 URANIUM 235	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(939)	721076R	USA	92 URANIUM 235	NEUTRON	ENERGY DIFFERENTIAL INELASTIC CROSS SECTION
(941)	682055R	JAP	92 URANIUM 235	NEUTRON	CAPTURE CROSS SECTION
(942)	692378R	GER	92 URANIUM 235	NEUTRON	CAPTURE CROSS SECTION
(949)	691245R	USA	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
	691449R	USA	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
	691450R	USA	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
	691451R	USA	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
(950)	692366R	GER	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
(955)	792188R	GER	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
(956)	801185F	USA	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
(958)	821002R	USA	92 URANIUM 235	NEUTRON	FISSION CROSS SECTION
(964)	671100R	USA	92 URANIUM 235	NEUTRON	NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)
(967)	792218R	GER	92 URANIUM 235	NEUTRON	NEUTRONS EMITTED PER NEUTRON ABSORPTION (ETA)
(968)	691253R	USA	92 URANIUM 235	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(970)	742075R	FR	92 URANIUM 235	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(974)	762046N	JAP	92 URANIUM 235	NEUTRON	DELAYED NEUTRONS EMITTED PER FISSION
(979)	691260R	USA	92 URANIUM 235	NEUTRON	ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS
(981)	701029N	USA	92 URANIUM 235	NEUTRON	DELAYED GAMMA SPECTRUM FROM FISSION PRODUCTS
(985)	691262R	USA	92 URANIUM 235	NEUTRON	RESONANCE PARAMETERS
(987)	702025R	FR	92 URANIUM 235	NEUTRON	RESONANCE PARAMETERS
(990)	692381R	GER	92 URANIUM 236	NEUTRON	CAPTURE CROSS SECTION
(991)	712064R	FR	92 URANIUM 236	NEUTRON	CAPTURE CROSS SECTION
(993)	692380R	GER	92 URANIUM 236	NEUTRON	FISSION CROSS SECTION
(994)	712062R	FR	92 URANIUM 236	NEUTRON	FISSION CROSS SECTION
(997)	781188R	USA	92 URANIUM 236	NEUTRON	ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS

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(999)	792034R FR	92 URANIUM 237	NEUTRON	CAPTURE CROSS SECTION
(1000)	792035R FR	92 URANIUM 237	NEUTRON	FISSION CROSS SECTION
(1001)	742081R FR	92 URANIUM 238	NEUTRON	ELASTIC CROSS SECTION
(1002)	691407R USA	92 URANIUM 238	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(1004)	691468R USA	92 URANIUM 238	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(1011)	691270R USA	92 URANIUM 238	NEUTRON	ENERGY DIFFERENTIAL INELASTIC CROSS SECTION
(1020)	691422R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1022)	691425R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1024)	691428R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1025)	691435R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1026)	691436R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1027)	691437R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1029)	692403R GER	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1032)	742087R FR	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1034)	761085R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1037)	821025R USA	92 URANIUM 238	NEUTRON	CAPTURE CROSS SECTION
(1040)	721079R USA	92 URANIUM 238	NEUTRON	ENERGY-ANGLE DIFF. PHOTON-PRODUCTION CROSS SECTION
(1044)	801001R USA	92 URANIUM 238	NEUTRON	N,2N
(1047)	801090F USA	92 URANIUM 238	NEUTRON	N,3N
(1052)	801296R USA	92 URANIUM 238	NEUTRON	FISSION CROSS SECTION
(1053)	801297R USA	92 URANIUM 238	NEUTRON	FISSION CROSS SECTION
(1054)	801298R USA	92 URANIUM 238	NEUTRON	FISSION CROSS SECTION
(1055)	801299R USA	92 URANIUM 238	NEUTRON	FISSION CROSS SECTION
(1057)	691275R USA	92 URANIUM 238	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1061)	701035N USA	92 URANIUM 238	NEUTRON	DELAYED NEUTRONS EMITTED PER FISSION
(1062)	762047N JAP	92 URANIUM 238	NEUTRON	DELAYED NEUTRONS EMITTED PER FISSION
(1075)	671112R USA	93 NEPTUNIUM 237	NEUTRON	N,2N
(1078)	812069N BLG	93 NEPTUNIUM 237	NEUTRON	N,2N
(1085)	762148R FR	93 NEPTUNIUM 239	NEUTRON	CAPTURE CROSS SECTION
(1086)	792138R UK	93 NEPTUNIUM 239	NEUTRON	CAPTURE CROSS SECTION
(1089)	792137R UK	93 NEPTUNIUM 239	NEUTRON	FISSION CROSS SECTION
(1090)	792043R FR	93 NEPTUNIUM 240	NEUTRON	CAPTURE CROSS SECTION
(1091)	792044R FR	93 NEPTUNIUM 240	NEUTRON	FISSION CROSS SECTION
(1096)	762009N JAP	94 PLUTONIUM 238		GAMMA RAY YIELD
(1104)	732097R FR	94 PLUTONIUM 238	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1105)	762010N JAP	94 PLUTONIUM 239		GAMMA RAY YIELD
(1106)	761088R USA	94 PLUTONIUM 239	NEUTRON	TOTAL CROSS SECTION
(1109)	821015R USA	94 PLUTONIUM 239	NEUTRON	TOTAL CROSS SECTION
(1111)	742094R FR	94 PLUTONIUM 239	NEUTRON	ELASTIC CROSS SECTION
(1112)	691303R USA	94 PLUTONIUM 239	NEUTRON	DIFFERENTIAL ELASTIC CROSS SECTION
(1116)	821030R USA	94 PLUTONIUM 239	NEUTRON	INELASTIC CROSS SECTION
(1118)	721084R USA	94 PLUTONIUM 239	NEUTRON	ENERGY DIFFERENTIAL INELASTIC CROSS SECTION

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(1120)	712082R GER	94 PLUTONIUM 239	NEUTRON	CAPTURE CROSS SECTION
(1123)	821009R USA	94 PLUTONIUM 239	NEUTRON	CAPTURE CROSS SECTION
(1129)	691306R USA	94 PLUTONIUM 239	NEUTRON	N,2N
(1132)	821027R USA	94 PLUTONIUM 239	NEUTRON	ENERGY DIFFERENTIAL NEUTRON-EMISSION CROSS SECTION
(1133)	691467R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1134)	691471R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1137)	721085R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1138)	721086R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1139)	741125R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1142)	761038R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1143)	761040R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1144)	761089R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1147)	821008R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1148)	821016R USA	94 PLUTONIUM 239	NEUTRON	FISSION CROSS SECTION
(1152)	812032R JAP	94 PLUTONIUM 239	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
(1153)	821017R USA	94 PLUTONIUM 239	NEUTRON	CAPTURE TO FISSION RATIO (ALPHA)
(1155)	661050R USA	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1158)	742101R FR	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1160)	761041R USA	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1161)	761126R USA	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1162)	761127R USA	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1163)	781190R USA	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1164)	821018R USA	94 PLUTONIUM 239	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)
(1169)	761091R USA	94 PLUTONIUM 239	NEUTRON	ENERGY SPECTRUM OF FISSION NEUTRONS
(1170)	781186R USA	94 PLUTONIUM 239	NEUTRON	ENERGY SPECTRUM OF FISSION NEUTRONS
(1171)	792222R GER	94 PLUTONIUM 239	NEUTRON	ENERGY SPECTRUM OF FISSION NEUTRONS
(1172)	821032R USA	94 PLUTONIUM 239	NEUTRON	ENERGY SPECTRUM OF FISSION NEUTRONS
(1173)	691312R USA	94 PLUTONIUM 239	NEUTRON	ENERGY SPECTRUM OF DELAYED FISSION NEUTRONS
(1175)	701043N USA	94 PLUTONIUM 239	NEUTRON	DELAYED GAMMA SPECTRUM FROM FISSION PRODUCTS
(1176)	671125R USA	94 PLUTONIUM 239	NEUTRON	FISSION PRODUCT MASS YIELD SPECTRUM
(1177)	671126R USA	94 PLUTONIUM 239	NEUTRON	FISSION PRODUCT MASS YIELD SPECTRUM
(1181)	741126R USA	94 PLUTONIUM 239	NEUTRON	FISSION PRODUCT MASS YIELD SPECTRUM
(1182)	762011N JAP	94 PLUTONIUM 240		GAMMA RAY YIELD
(1183)	801264R USA	94 PLUTONIUM 240	NEUTRON	TOTAL CROSS SECTION
(1185)	821036R USA	94 PLUTONIUM 240	NEUTRON	INELASTIC CROSS SECTION
(1189)	691390R USA	94 PLUTONIUM 240	NEUTRON	CAPTURE CROSS SECTION
(1191)	692453R GER	94 PLUTONIUM 240	NEUTRON	CAPTURE CROSS SECTION
(1199)	721088R USA	94 PLUTONIUM 240	NEUTRON	FISSION CROSS SECTION
(1200)	721089R USA	94 PLUTONIUM 240	NEUTRON	FISSION CROSS SECTION
(1202)	742022R GER	94 PLUTONIUM 240	NEUTRON	FISSION CROSS SECTION
(1205)	762213R JAP	94 PLUTONIUM 240	NEUTRON	FISSION CROSS SECTION
(1209)	761092R USA	94 PLUTONIUM 240	NEUTRON	DELAYED NEUTRONS EMITTED PER FISSION

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(1212)	691391R	USA	94 PLUTONIUM 240	NEUTRON	RESONANCE PARAMETERS	
(1216)	762012N	JAP	94 PLUTONIUM 241		GAMMA RAY YIELD	
(1249)	821024R	USA	94 PLUTONIUM 241	SPONTANEOUS	ENERGY SPECTRUM OF FISSION NEUTRONS	
(1220)	692455R	GER	94 PLUTONIUM 241	NEUTRON	TOTAL CROSS SECTION	
(1221)	801265R	USA	94 PLUTONIUM 241	NEUTRON	TOTAL CROSS SECTION	
(1223)	712095R	UK	94 PLUTONIUM 241	NEUTRON	ABSORPTION CROSS SECTION	
(1224)	712096R	UK	94 PLUTONIUM 241	NEUTRON	ABSORPTION CROSS SECTION	
(1225)	671132R	USA	94 PLUTONIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1226)	692471R	GER	94 PLUTONIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1229)	821012R	USA	94 PLUTONIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1232)	691328R	USA	94 PLUTONIUM 241	NEUTRON	FISSION CROSS SECTION	
	721094R	USA	94 PLUTONIUM 241	NEUTRON	FISSION CROSS SECTION	
(1234)	742013R	GER	94 PLUTONIUM 241	NEUTRON	FISSION CROSS SECTION	
(1239)	821011R	USA	94 PLUTONIUM 241	NEUTRON	FISSION CROSS SECTION	
(1246)	692466R	GER	94 PLUTONIUM 241	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)	
(1252)	721140R	USA	94 PLUTONIUM 241	NEUTRON	RESONANCE PARAMETERS	
(1253)	721141R	USA	94 PLUTONIUM 241	NEUTRON	RESONANCE PARAMETERS	
(1259)	721098R	USA	94 PLUTONIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1260)	721143R	USA	94 PLUTONIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1267)	691334R	USA	94 PLUTONIUM 242	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)	
(1269)	792055R	FR	94 PLUTONIUM 243	NEUTRON	FISSION CROSS SECTION	
(1274)	792057R	FR	95 AMERICIUM 241	NEUTRON	INELASTIC CROSS SECTION	
(1276)	671136R	USA	95 AMERICIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1278)	741127R	USA	95 AMERICIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1279)	742108R	FR	95 AMERICIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1282)	792228R	GER	95 AMERICIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1283)	792230R	GER	95 AMERICIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1284)	792231R	GER	95 AMERICIUM 241	NEUTRON	CAPTURE CROSS SECTION	
(1285)	742107R	FR	95 AMERICIUM 241	NEUTRON	FISSION CROSS SECTION	
(1287)	792232R	GER	95 AMERICIUM 241	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)	
(1291)	691341R	USA	95 AMERICIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1294)	732102R	FR	95 AMERICIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1296)	792234R	GER	95 AMERICIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1298)	732100R	FR	95 AMERICIUM 242	NEUTRON	FISSION CROSS SECTION	
(1299)	792233R	GER	95 AMERICIUM 242	NEUTRON	FISSION CROSS SECTION	
(1301)	792235R	GER	95 AMERICIUM 242	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)	
(1304)	721101R	USA	95 AMERICIUM 243	NEUTRON	CAPTURE CROSS SECTION	
(1306)	741128R	USA	95 AMERICIUM 243	NEUTRON	CAPTURE CROSS SECTION	
(1307)	792237R	GER	95 AMERICIUM 243	NEUTRON	CAPTURE CROSS SECTION	
(1309)	812047N	JAP	95 AMERICIUM 243	NEUTRON	CAPTURE CROSS SECTION	
(1312)	792236R	GER	95 AMERICIUM 243	NEUTRON	FISSION CROSS SECTION	
(1314)	792238R	GER	95 AMERICIUM 243	NEUTRON	NEUTRONS EMITTED PER FISSION (NU BAR)	

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(1316)	671139R USA	96 CURIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1320)	792240R GER	96 CURIUM 242	NEUTRON	CAPTURE CROSS SECTION	
(1321)	792241R GER	96 CURIUM 242	NEUTRON	N,2N	
(1322)	732105R FR	96 CURIUM 242	NEUTRON	FISSION CROSS SECTION	
(1324)	792239R GER	96 CURIUM 242	NEUTRON	FISSION CROSS SECTION	
(1325)	732106R FR	96 CURIUM 242	NEUTRON	NEUTRONS EMITTED PER FISSION	(NU BAR)
(1326)	792242R GER	96 CURIUM 242	NEUTRON	NEUTRONS EMITTED PER FISSION	(NU BAR)
(1327)	671192R USA	96 CURIUM 242	NEUTRON	RESONANCE PARAMETERS	
(1329)	762156R FR	96 CURIUM 243	NEUTRON	CAPTURE CROSS SECTION	
(1330)	792248R GER	96 CURIUM 243	NEUTRON	CAPTURE CROSS SECTION	
(1333)	792247R GER	96 CURIUM 243	NEUTRON	FISSION CROSS SECTION	
(1337)	792244R GER	96 CURIUM 244	NEUTRON	CAPTURE CROSS SECTION	
(1338)	792245R GER	96 CURIUM 244	NEUTRON	N,2N	
(1340)	792243R GER	96 CURIUM 244	NEUTRON	FISSION CROSS SECTION	
(1341)	792246R GER	96 CURIUM 244	NEUTRON	NEUTRONS EMITTED PER FISSION	(NU BAR)
(1343)	792250R GER	96 CURIUM 245	NEUTRON	CAPTURE CROSS SECTION	
(1345)	792249R GER	96 CURIUM 245	NEUTRON	FISSION CROSS SECTION	
(1346)	671146R USA	96 CURIUM 246	NEUTRON	TOTAL CROSS SECTION	
(1347)	691350R USA	96 CURIUM 246	NEUTRON	CAPTURE CROSS SECTION	
(1350)	671149R USA	96 CURIUM 247	NEUTRON	CAPTURE CROSS SECTION	
(1352)	671148R USA	96 CURIUM 247	NEUTRON	FISSION CROSS SECTION	
(1354)	671147R USA	96 CURIUM 247	NEUTRON	RESONANCE PARAMETERS	
(1361)	691357R USA	98 CALIFORNIUM 250	NEUTRON	CAPTURE CROSS SECTION	
(1362)	671153R USA	98 CALIFORNIUM 250	NEUTRON	FISSION CROSS SECTION	
(1363)	671152R USA	98 CALIFORNIUM 250	NEUTRON	RESONANCE PARAMETERS	
(1364)	671154R USA	98 CALIFORNIUM 251	NEUTRON	CAPTURE CROSS SECTION	
(1365)	741132R USA	98 CALIFORNIUM 251	NEUTRON	FISSION CROSS SECTION	
(1366)	761106R USA	98 CALIFORNIUM 251	NEUTRON	RESONANCE PARAMETERS	
(1369)	821019R USA	98 CALIFORNIUM 252	SPONTANEOUS	NEUTRONS EMITTED PER FISSION	(NU BAR)
(1371)	792189R GER	98 CALIFORNIUM 252	SPONTANEOUS	ENERGY SPECTRUM OF FISSION NEUTRONS	
(1372)	821026R USA	98 CALIFORNIUM 252	SPONTANEOUS	ENERGY SPECTRUM OF FISSION NEUTRONS	
(1373)	741129R USA	98 CALIFORNIUM 252	NEUTRON	FISSION CROSS SECTION	

APPENDICES

APPENDIX A

Review Reports by INDC and NEANDC

The two technical subcommittees of the International Nuclear Data Committee (INDC), the Subcommittee on Nuclear Standard Reference Data and the Subcommittee on Discrepancies in Important Nuclear Data and Evaluations have assumed a continuing responsibility for the review of particularly important nuclear data. The Nuclear Energy Agency Nuclear Data Committee (NEANDC) has two similar Subcommittees on Standards and on Data of Special Interest with reviewing responsibilities similar to those of the two INDC Subcommittees. These Subcommittees of INDC and NEANDC cooperate in establishing and updating a common file of review reports. In many cases, these reports contain detailed estimates of data uncertainties.

Whenever a request for a quantity under review appears in WRENDA, the review is mentioned in a status comment. Exceptions to this are requests for fission product and transactinium isotope nuclear data. These data are under continuous review by INDC and NEANDC, but requests for these data are so numerous that it has been decided to omit repetitious references to such review from the actual request list.

The reports of the Standards and Discrepancies Subcommittees of the INDC will continue to be sent to all WRENDA Requestors in order to provide them with a continuous up-to-date review of their requests.

The next issue of the WRENDA request list is planned to be published in 1991. Requests for the latest information on quantities under review should be sent to

Dr. J.J. Schmidt
INDC Scientific Secretary
Nuclear Data Section
International Atomic Energy Agency
P.O. Box 100
A-1400 Vienna, Austria

QUANTITY	Reviewed by: INDC	NEANDC
H(n,n) cross section	x	x
^{6}Li(n,t) cross section	x	x
^{7}Li(n,n't)	-	x
^{10}B(n,α) cross section	x	x
C(n,n) cross section	x	x
^{197}Au(n,γ) cross section	x	x
^{235}U(n,f) cross section	x	x
^{235}U fission fragment anisotropies	x	-
^{238}U(n,f) cross section	x	x
^{27}Al(n,α) cross section	x	x
^{252}Cf nu-bar	x	x
^{252}Cf fission neutron spectrum	x	x
Thermal parameters for ^{233}U, ^{235}U, ^{239}Pu, ^{241}Pu (σ_T, σ_S, σ_A, σ_f, σ_γ, α, η, γ_t)	x	x
Actinide half-lives for ^{233}U, ^{234}U, ^{235}U, ^{238}U, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu, ^{244}Pu, ^{252}Cf	x	x
^{236}U(n,γ) fast capture cross section	x	-
^{237}Np nu-bar	x	-
^{235}U resonance α	-	x
^{235}U, ^{239}Pu resonance parameters	x	x
^{241}Pu resonance parameters	x	-
^{238}U(n,γ) cross section	x	x
^{238}U(n,n') cross section	x	x
^{238}U resonance parameters	-	x
^{239}Pu(n,f) cross section	x	x

QUANTITY	Reviewed by: INDC	NEANDC
^{235}U, ^{239}Pu decay power	x	x
^{241}Am fission resonance integral	x	-
$^{59}Co(n,2n)^{58}Co$	-	x
$^{93}Nb(n,n')^{93m}Nb$ cross section	x	x
$^{93}Nb(n,2n)^{92m}Nb$	-	x
$^{103}Rh(n,n')^{103m}Rh$ cross section	x	x
Cr, Fe, Ni capture cross section	x	x
Cr, Ni total and inelastic scattering cross section	x	x
Fission product nuclear data	x	x
Transactinium isotope nuclear data (TND)	x	x
Reactor dosimetry cross sections	x	x
Discrepancies and gaps in major CPND for fusion, (D,T), (T,T), etc.	x	-
Delayed neutron emitters: ^{232}Th, ^{233}U, ^{235}U, ^{238}U, ^{239}Pu, ^{240}Pu, ^{241}Pu	x	x

APPENDIX B

List of Country Codes

BAN	BANGLA DESH
BLG	BELGIUM
CAN	CANADA
CCP	SOVIET UNION
DDR	GERMAN DEMOCRATIC REPUBLIC
DEN	DENMARK
EUR	COMMISSION OF THE EUROPEAN COMMUNITIES
FR	FRANCE
GER	FEDERAL REPUBLIC OF GERMANY
HUN	HUNGARY
IND	INDIA
ITY	ITALY
JAP	JAPAN
PRC	PEOPLES REPUBLIC OF CHINA
RUM	ROMANIA
SWD	SWEDEN
SWT	SWITZERLAND
UK	UNITED KINGDOM
USA	UNITED STATES

APPENDIX C

List of Laboratory Codes

AEP	(CNDC) ATOMIC ENERGY INSTITUTE, P.O.BOX275(41) BEIJING	PRC
AKA	ASEA-ATOM, VAESTERAS	SWD
ALK	ALKEM GMBH, LEOPOLDSHAFEN	GER
ANL	ARGONNE NATIONAL LABORATORY, LEMONT, ILLINOIS	USA
BAN	BANGLADESH	BAN
BET	WESTINGHOUSE, BETTIS ATOMIC POWER LAB., PITTSBURGH, PA.	USA
BIR	UNIVERSITY OF BIRMINGHAM, ENGLAND	UK
BNF	BRITISH NUCLEAR FUELS LTD. SELLAFIELDS CUMBRIA	UK
BNL	BROOKHAVEN NATIONAL LABORATORY, UPTON, NEW YORK	USA
BNW	BATTELLE NORTHWEST LABORATORY, RICHLAND, WASHINGTON	USA
BOL	COMISION NACIONAL DE ENERGIA ATOMICA, BOLOGNA	ITY
BRC	CEN BRUYERE LE CHATEL	FR
BTU	BUDAPEST TRAINING REACTOR, TECH.UNIV. H-1521 BUDAPEST	HUN
CAD	CADARACHE, BOUCHES-DU-RHONE	FR
CRC	CHALK RIVER NUCLEAR LABORATORIES, ONTARIO	CAN
CUL	CULHAM LABORATORY, UNITED KINGDOM	UK
DOE	US DEPARTMENT OF ENERGY, WASHINGTON, D.C.	USA
FEI	FIZIKO-ENERGETICHESKIJ INSTITUT, OBNINSK	CCP
GA	GENERAL ATOMIC, SAN DIEGO, CALIFORNIA	USA
GAC	INSTITUTE FOR GEO- AND ANALYTIC CHEMISTRY, MOSCOW	CCP
GEB	GENERAL ELECTRIC, BRDO, SUNNYVALE, CALIF.	USA
GEL	B.C.M.N. EURATOM, GEEL	EUR
HAR	UK ATOMIC ENERGY RESEARCH ESTABLISHMENT, HARWELL	UK
HED	HANFORD ENGINEERING DEVELOPMENT LAB., RICHLAND, WASH.	USA
HIT	ENERGY RESEARCH LABORATORY, HITACHI LTD. JAPAN	JAP
IPM	INST. OF APP.PHYSICS AND COMP.MATH. P.O.BOX 8009 BEIJING	PRC
JAE	JAPAN ATOMIC ENERGY RESEARCH INSTITUTE, TOKAI	JAP
JAP	JAPAN	JAP
JUL	KERNFORSCHUNGSANLAGE, JUELICH	GER
KAL	KALPAKKUM REACTOR RESEARCH CENTRE, KALPAKKAM, TAMILNADU	IND
KAP	KNOLLS ATOMIC POWER LABORATORY, SCHENECTADY, NEW YORK	USA
KFK	KERNFORSCHUNGSZENTRUM, KARLSRUHE	GER
KTO	KYOTO UNIVERSITY	JAP
KUR	I.V. KURCHATOV ATOMIC ENERGY INST., MOSCOW	CCP
LAS	LOS ALAMOS SCIENTIFIC LABORATORY, NEW MEXICO	USA
MAP	MITSUBISHI A.P.I., INC.	JAP
MDD	MCDONNELL DOUGLAS ASTRONAUTICS COMPANY	USA
MOL	C.E.N., MOL	BLG
NAG	UNIVERSITY OF NAGOYA	JAP
NBS	NATIONAL BUREAU OF STANDARDS, WASHINGTON, D.C.	USA
NIG	NIPPON ATOMIC INDUSTRY GROUP	JAP
ORL	OAK RIDGE NATIONAL LABORATORY, TENNESSEE	USA
OSA	OSAKA UNIV.,OSAKA	JAP
PAX	NUCLEAR POWER STATION PAKS,7031,PF71	HUN
PNC	POWER REACTOR AND NUCLEAR FUEL DEV. CORP.	JAP
RI	KHLOPIN RADIUM INSTITUTE, LENINGRAD	CCP
RIS	RISO, ROSKILDE	DEN
RL	RICHLAND OPERATIONS OFFICE, RICHLAND, WASHINGTON	USA
ROS	ROSSENDORF BEI DRESDEN	DDR
RUM	ROMANIA	RUM
SAC	C.E.N. SACLAY, GIF-SUR-YVETTE	FR
SAE	SUMITOMO ATOMIC ENERGY INDUSTRIES, LTD., TOKYO	JAP
SRE	SIEMENS REAKTORENTWICKLUNG, ERLANGEN	GER
SRL	SAVANNAH RIVER LABORATORIES, AIKEN, S.C.	USA
TOK	UNIVERSITY OF TOKYO	JAP

List of Laboratory Code (Continued)

TOS	TOSHIBA RESEARCH AND DEVELOPMENT CENTER	JAP
TRM	BHABHA ATOMIC RESEARCH CENTRE, TROMBAY	IND
UKW	WINDSCALE REACTOR DEVELOPMENT LABS., UKAEA	UK
WEW	WESTINGHOUSE ADVANCED REACTOR DIVISION, PITTSBURG, PA.	USA
WIN	UK ATOMIC ENERGY ESTABLISHMENT, WINFRITH	UK
WUR	EIDG. INSTITUT FUER REAKTORFORSCHUNG, WUERENLINGEN	SWT

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LIST OF ELEMENTS

ACTINIUM	AC	89	HAFNIUM	HF	72	POTASSIUM	K	19
ALUMINUM	AL	13	HAHNIUM	HA	105	PRASEODYMIUM	PR	59
AMERICIUM	AM	95	HELIUM	HE	2	PROMETHIUM	PM	61
ANTIMONY	SB	51	HOLMIUM	HO	67	PROTACTINIUM	PA	91
ARGON	AR	18	HYDROGEN	H	1	RADIUM	RA	88
ARSENIC	AS	33	INDIUM	IN	49	RADON	RN	86
ASTATINE	AT	85	IODINE	I	53	RHENIUM	RE	75
BARIUM	BA	56	IRIDIUM	IR	77	RHODIUM	RH	45
BERKELIUM	BK	97	IRON	FE	26	RUBIDIUM	RB	37
BERYLLIUM	BE	4	KRYPTON	KR	36	RUTHENIUM	RU	44
BISMUTH	BI	83	KURCHATOVIUM	KU	104	SAMARIUM	SM	62
BORON	B	5	LANTHANUM	LA	57	SCANDIUM	SC	21
BROMINE	BR	35	LAWRENCIUM	LR	103	SELENIUM	SE	34
CADMIUM	CD	48	LEAD	PB	82	SILICON	SI	14
CALCIUM	CA	20	LITHIUM	LI	3	SILVER	AG	47
CALIFORNIUM	CF	98	LUTETIUM	LU	71	SODIUM	NA	11
CARBON	C	6	MAGNESIUM	MG	12	STRONTIUM	SR	38
CERIUM	CE	58	MANGANESE	MN	25	SULFUR	S	16
CESIUM	CS	55	MENDELEVIUM	MD	101	TANTALUM	TA	73
CHLORINE	CL	17	MERCURY	HG	80	TECHNETIUM	TC	43
CHROMIUM	CR	24	MOLYBDENUM	MO	42	TELLURIUM	TE	52
COBALT	CO	27	NEODYMIUM	ND	60	TERBIUM	TB	65
COPPER	CU	29	NEON	NE	10	THALLIUM	TL	81
CURIUM	CM	96	NEPTUNIUM	NP	93	THORIUM	TH	90
DYSPROSIUM	DY	66	NICKEL	NI	28	THULIUM	TM	69
EINSTEINIUM	ES	99	NIOBIUM	NB	41	TIN	SN	50
ERBIUM	ER	68	NITROGEN	N	7	TITANIUM	TI	22
EUROPIUM	EU	63	NOBELIUM	NO	102	TUNGSTEN	W	74
FERMIUM	FM	100	OSMIUM	OS	76	URANIUM	U	92
FLUORINE	F	9	OXYGEN	O	8	VANADIUM	V	23
FRANCIUM	FR	87	PALLADIUM	PD	46	XENON	XE	54
GADOLINIUM	GD	64	PHOSPHORUS	P	15	YTTERBIUM	YB	70
GALLIUM	GA	31	PLATINUM	PT	78	YTTRIUM	Y	39
GERMANIUM	GE	32	PLUTONIUM	PU	94	ZINC	ZN	30
GOLD	AU	79	POLONIUM	PO	84	ZIRCONIUM	ZR	40