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The ORNL Integral Experiment to Provide Data for Evaluating Magnetic-Fusion-Energy Shielding Concepts

Part I: Attenuation Measurements

G. T. Chapman
G. L. Morgan
J. W. McConnell

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THE ORNL INTEGRAL EXPERIMENT TO PROVIDE DATA FOR EVALUATING MAGNETIC-FUSION-ENERGY SHIELDING CONCEPTS. PART I: ATTENUATION MEASUREMENTS

G. T. Chapman, G. L. Morgan,* and J. W. McConnell

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*Present address: Los Alamos Scientific Laboratory, Los Alamos, New Mexico 87545

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CONTENTS

Abstract 1

I. Introduction 2

II. The Facility 3

IV. Neutron Source-Strength Calibration and Monitoring 11

V. Detector Calibration and Instrumentation 18

VI. Presentation of the Data 28

VII. The Systematic Uncertainties Associated with the Data 38

VIII. Conclusions. 41

IX. Acknowledgements 46

References 147

Appendix A. FORTRAN Program for Calculating $T(d,n)^4He$ Kinematics 150

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ABSTRACT

Integral experiments to measure the energy spectra of neutrons and gamma rays due to the transport of approximately 14-MeV $T(d,n)^4He$ neutrons through laminated stainless-steel and borated-polyethylene shield configurations have been performed at the Oak Ridge National Laboratory. An NE-213 detector and conventional pulse-shape-discrimination circuitry were used to record the pulse-height distributions from which the energy spectra were derived. Descriptions of the facility and experimental techniques are given in this paper along with tables and curves showing the results of the measurements.

I. INTRODUCTION

It is important in calculating complex shields, such as those proposed for the fusion reactors, to ascertain that the available neutron cross-section data and the calculational methods used to estimate the neutron and photon transport are reliable. Work[1,2,3] was started at the Oak Ridge National Laboratory (ORNL) in September 1976 to provide data needed to test this reliability.

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* Present address: Los Alamos Scientific Laboratory, Los Alamos, New Mexico 87545

For this work, which is reported here, a small accelerator provided a source of 14-MeV neutrons via the $T(d,n)^4He$ reaction, and a well-calibrated NE-213 scintillation spectrometer was used to measure the pulse-height spectra of the neutron and gamma-ray radiations transported through and/or created in shields of stainless steel and borated polyethylene. The accelerator targets(4) and the NE-213 detector were made at ORNL.

The pulse-height spectra (PHS) were unfolded to produce energy spectra using the computer program FERD(5,6,7) and detector response matrices measured for this detector at the Oak Ridge Electron Linear Accelerator (ORELA).(8) The results were satisfactorily compared with spectra calculations(2,9) using two-dimensional discrete-ordinate radiation transport methods incorporating 53-neutron, 21-gamma-ray energy-group cross-section data sets derived from the VITAMIN-C data set (ENDF/B-4).(10)

This report presents a detailed description of the facility, experimental procedures, and the data obtained for test shields varying in thickness from zero to about 4×10^3 kg/m^2. The data are presented in both graphical and tabular form.

II. THE FACILITY

The facility, designed and built specifically for conducting the measurements described here, was located in two rooms of Bldg. 6025 at ORNL. Since this building was primarily an office complex, it was necessary to provide adequate shielding to meet all Health Physics requirements for such a location as well as that needed to reduce the backgrounds produced by neutron scattering and/or capture in the room. Figure 1 shows a "cut-away" drawing of the facility as configured for these attenuation measurements. A typical test shield, consisting of a number of sample slabs, is shown in place in the so-called background shield. The background shield was constructed of solid concrete blocks to provide a minimum of one meter of shielding around the test shield in all directions except in the forward direction toward the NE-213 detector.

The design of the facility as shown in Fig. 1 was based on a preconstruction computer analysis(11,12) using the two-dimensional radiation transport code DOT,(13) incorporating a 45-neutron, 16-gamma-ray energy group cross-section data file with the scattering cross sections represented by a P_3 Legendre expansion. These calculations, using the room model shown in Fig. 2, indicated that a significant source of scattered neutrons could be expected from those neutrons streaming through the hole in the background shield through which the accelerator drift tube

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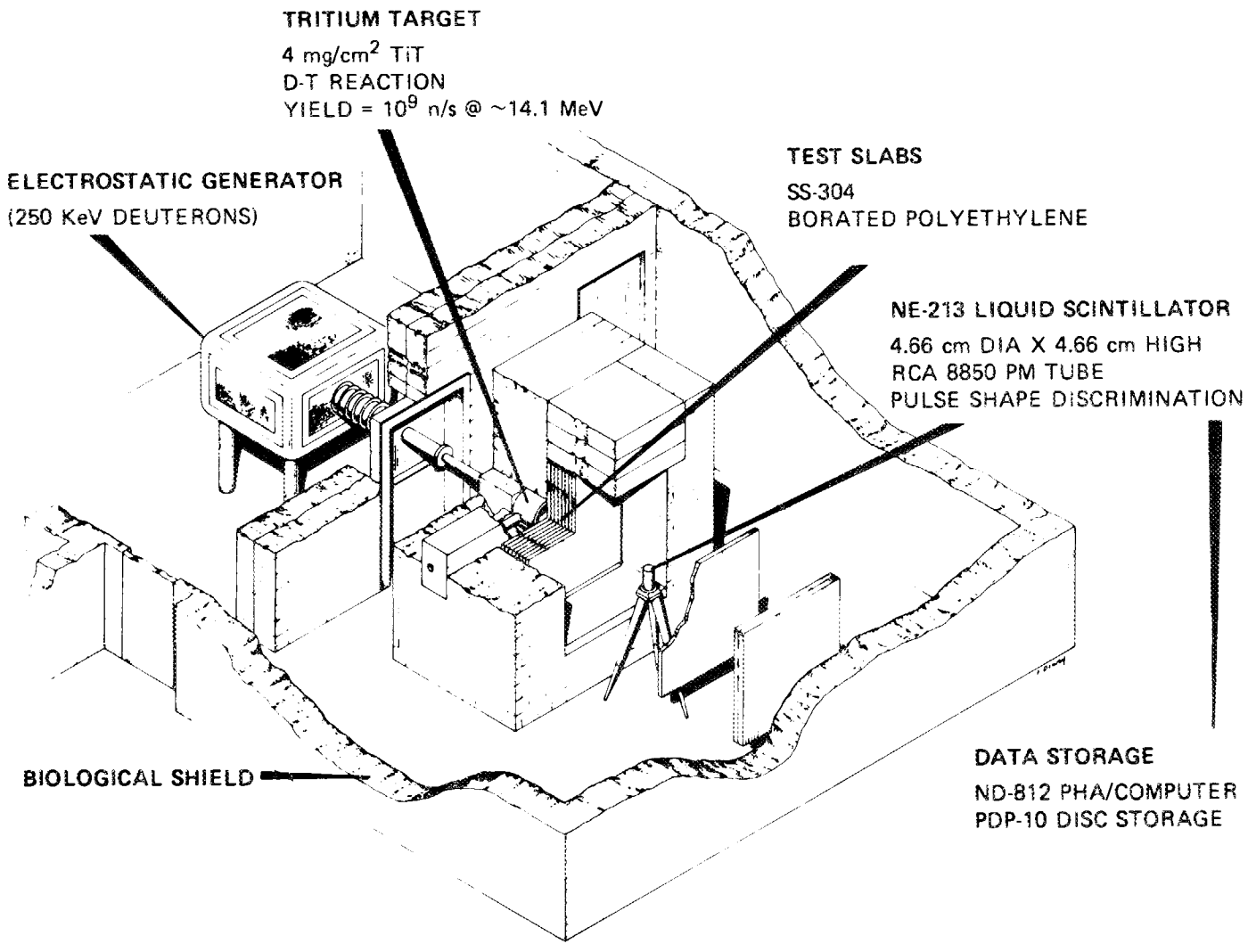

Fig. 1 Artist's rendition of the experimental facility.

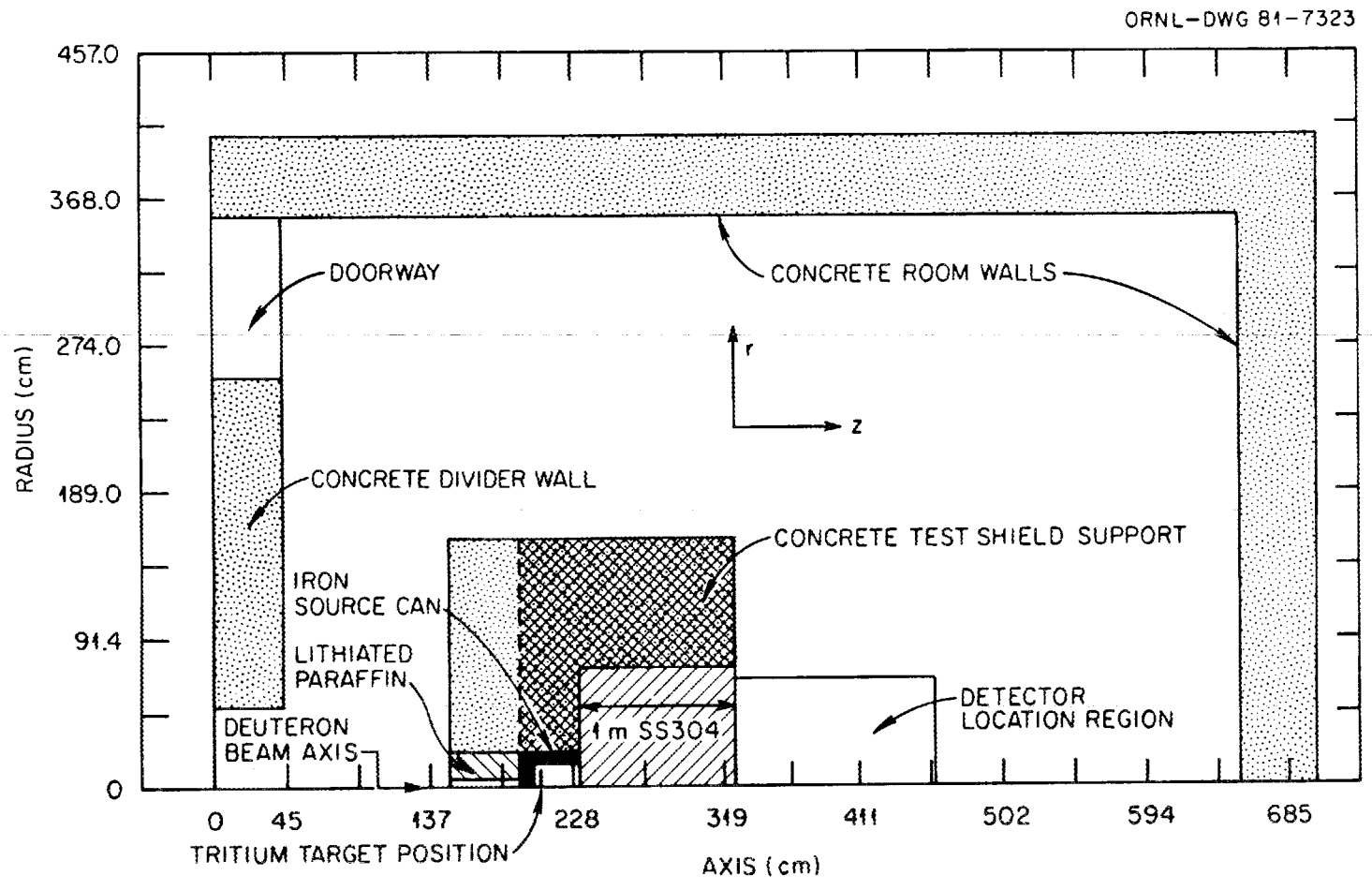

Fig. 2 Two-dimensional calculational model of the full room geometry (taken from ref. 12). The concrete and lithiated paraffin regions shown to the left of the dotted line in the Test Shield Support were added following the initial neutronics analysis of the facility. The origin for the experiment coordinate system was at the TiT target position.

passes and subsequently scattering around the background shield to reach the NE-213 detector. In addition, a large thermal-neutron flux and gamma-ray background were anticipated to arise from those neutrons which enter the walls of the room and are thermalized or elastically scattered in the concrete of the walls. The first problem was reduced to insignificance by filling the hole with lithiated paraffin which was shaped to fit as close as practical to the drift tube and by the addition of concrete at the back of the shield. The second problem was solved satisfactorily by permanently mounting two 5.08-cm-thick slabs of iron on the wall directly behind the NE-213 detector (far right in Fig. 2) and by suspending a 5.08-cm-thick stainless-steel slab 50 cm behind the detector to simulate *in situ* measurements. The instrument response with the backup slab is assumed to be comparable to that with the detector located within the shield. A comparison of the neutron flux patterns in the preliminary and final designs with a thick shield is shown in ref. 12, Figs. 4 and 10.

For the experiments to simulate the expected first-wall neutron spectrum from a fusion reactor, it was necessary to modify the shape of the neutron energy spectrum emitted by the $T(d,n)^4He$ reaction to produce a component of neutrons below 14 MeV. This was accomplished by enclosing the target in a cylindrical can of iron with a wall thickness of 7.5 cm. The base of the cylindrical can was also made of the

same iron material but contained a 7.62-cm-diam hole to allow an opening for the drift tube. The other end of the cylinder was open. The inside dimensions of the can were 30 cm in diameter by 30 cm long, with the target located at a distance of 5 cm from the inside wall of the base where it was positioned in a vertical plane at an angle of 45° to the incident deuteron beam. The calculated spectrum for this configuration, as shown in Fig. 3,[12] was characterized by a very strong 14-MeV peak with a component of low-energy neutrons and agreed well with a fusion-reactor spectrum above about 0.5 MeV.[14] In addition to modifying the spectrum, the can also provided some collimation of the source neutrons to reduce the spreading of these neutrons in the test shield.

A right-handed coordinate system was established for the measurements in which the origin was at the center of the accelerator target, the positive z axis was in the direction of the NE-213 detector region, and the y axis was vertically upward. All detector and slab locations reported here were referenced to this coordinate system.

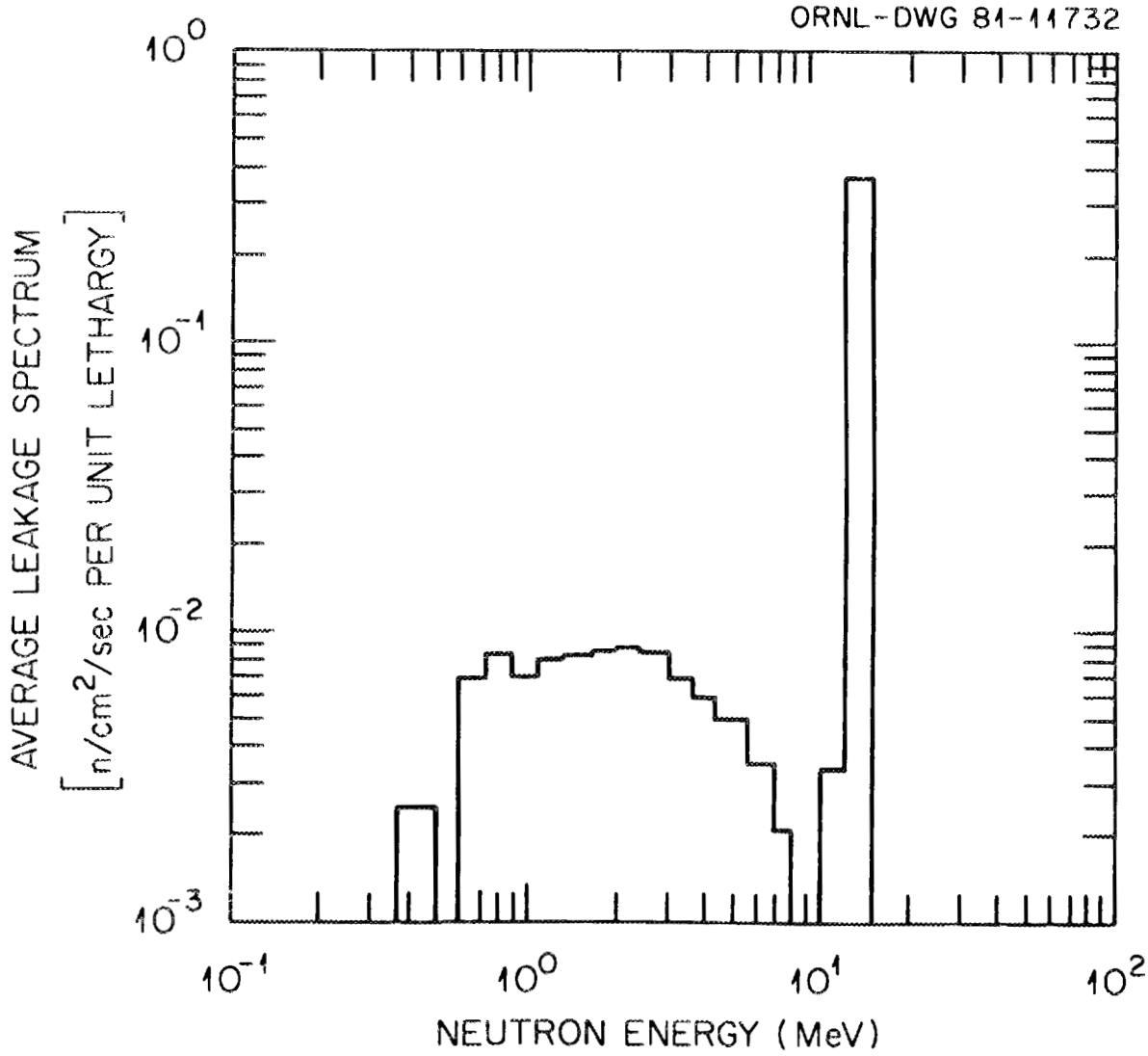

Fig. 3 Calculated neutron spectrum at the mouth of the iron source can (taken from ref. 12).

The sample slabs used to build each test-shield configuration consisted of stainless steel and borated polyethylene. The slabs were 152 cm square with an average thickness* of 5.20 cm for the stainless steel and 5.06 cm for the borated polyethylene. The borated polyethylene had not been used previously, but the stainless steel was obtained from the ORNL Tower Shielding Facility where it had been exposed to the neutrons from the TSF reactor and had retained some of the induced activity (primarily ^{60}Co). The important elemental composition and density of each of these materials are shown in Table 1.

III. TARGET PREPARATION

The accelerator targets were prepared by E. H. Kobisk and his co-workers at the ORNL Isotope Research Materials Laboratory. The process, which is described in ref. 4, involves evaporating the titanium (tritium sorber) onto a copper substrate under very carefully controlled conditions to produce a uniform coating of the desired thickness. The coated substrate is heated in a tritium atmosphere to about 450°C and then allowed to cool to less than 200°C while still in the tritium environment. As the material cools, the tritium is sorbed into the titanium metal. The resulting "thick" targets contain about 4 mg/cm^2 of TiT in a

---

* See a discussion of the systematic uncertainties in Sect. VII.

Table 1

Elemental composition
of the test shield materials

Borated Polyethylene*

H	11.6%
B	5.0%
C	61.2%
O	22.2%

Density = 0.94 g/cm3
(No error quoted)

Stainless Steel (Type 304)+

Ni	9.69% - 9.85%
Cr	18.72% - 19.10%
Mn	1.04% - 1.65%
Si	0.33% - 0.65%
C	0.024% - 0.085%
O_2	0.013% - 0.021%
Fe	68.1% - 69.3%

Density = 7.88 ± 0.01 g/cm3

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* Supplied by vendor (Reactor Experiments, Inc.). A local measurement of the density gave a value of 0.96 ± 0.01 gm/cm3.

\+ F. J. Muckenthaler, private communication

1.905-cm-diam area on a substrate consisting of a copper disk which is 0.0254 cm thick and 3.175 cm in diameter. For uniformity, 20 such targets were produced as a batch and the data reported here were taken using only targets from this batch.

Figure 4 shows the production target holder used for this work. A small holdup volume in the target cover assured that a 0.156-cm thick layer of continually flowing water would always be in contact with the back of the target for cooling. Each target was capable of producing adequate neutron yield ($>10^8$ n/sec) for these measurements for about 27 hours of accelerator operation before replacement was required. In all, less than ten targets were required for the work reported here, including those used for the initial accelerator studies and calibrations.

IV. NEUTRON SOURCE-STRENGTH CALIBRATION AND MONITORING

For the deuteron energies used in this work ($E_d < 300$ keV), the $T(d,n)^4He$ reaction is essentially isotropic in the center-of-mass system.[15] Counting the associated alpha particles emitted into a known solid angle gives an accurate determination of the neutron source strength.[16] The only calibration constant necessary is the solid angle transformation factor[17] (lab to center-of-mass) for the reaction angle at which the alpha particle is observed. This

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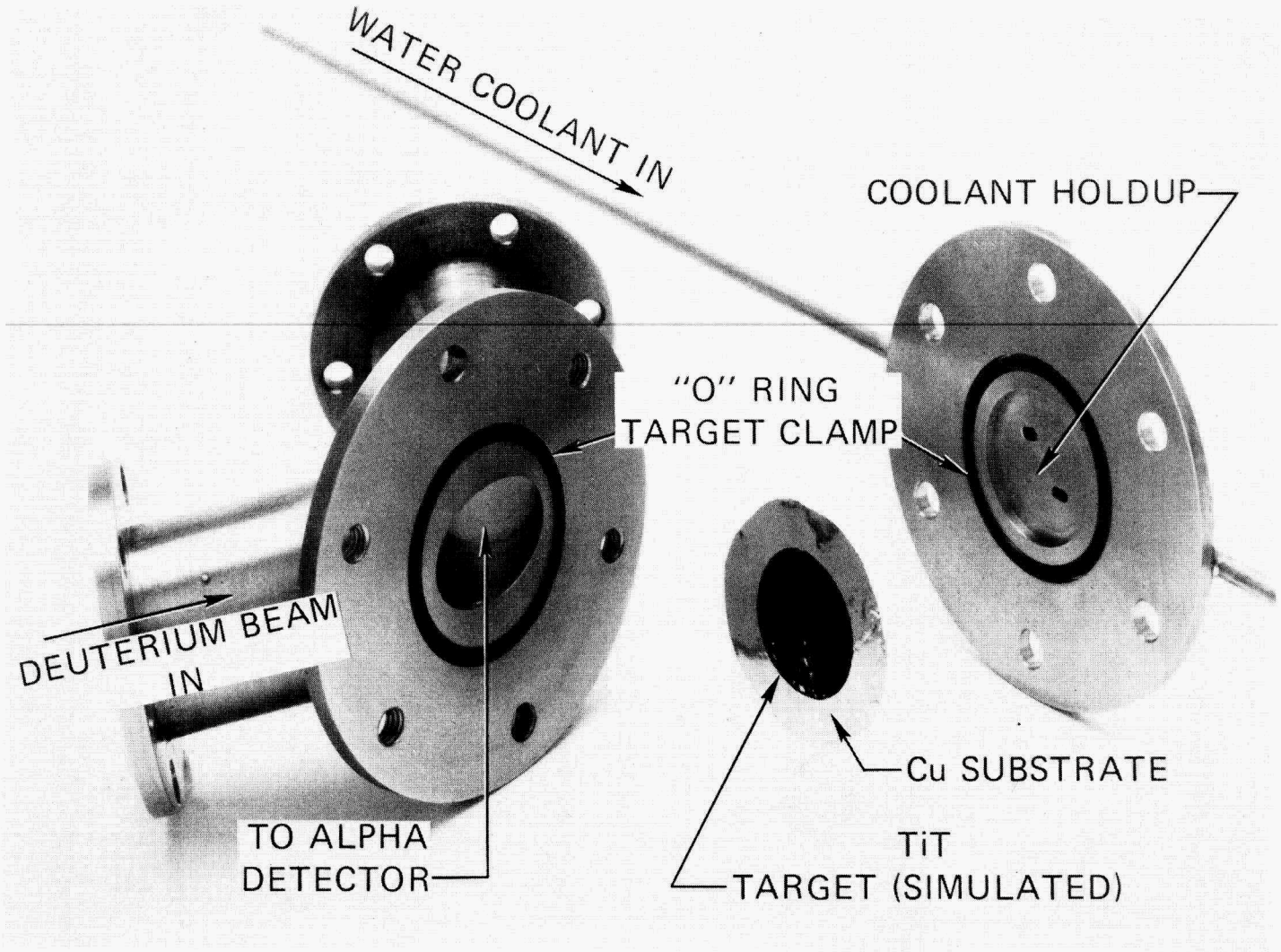

Fig. 4 The production target holder used for taking the data.

transformation factor is dependent on the deuteron energy and is calculated using the $T(d,n)^4He$ cross section as a function of energy,[18] the stopping power of the target (TiT), and the relative molecular fractions (D_1^+, D_2^+, D_3^+) of the incident beam.

The initial test of this technique was carried out at 0.20 MV accelerator voltage and using a very low mass target holder (Fig. 5) in which the alpha particles were detected by a surface-barrier detector at an angle of 165° to the z axis and a distance of about 30 cm. The detector was protected from scattered deuterons by a foil of aluminized mylar with a thickness of 3.8×10^{-4} cm (0.52 mg/cm^2) located at the detector surface. Pulse height distributions of the alpha particle interactions in the detector showed a very clean peak, well isolated from noise and free of background. The source strength thus determined was compared with a simultaneous measurement of the neutrons at 0° (Fig. 6) using the calibrated NE-213 detector [with a calculation of the 0° neutron-solid-angle transformation factor which, for this work, was taken directly from the solution of kinematic equations for the $T(d,n)^4He$ reaction]. Figure 6 illustrates the calibration neutron spectrum unfolded just as were the unknown spectra. The area under the curve was obtained by fitting a quadratic to successive sets of three data points within the region of the curve and by performing an integration on the polynomial over the energy range of interest. Agreement was within 3% which was within the

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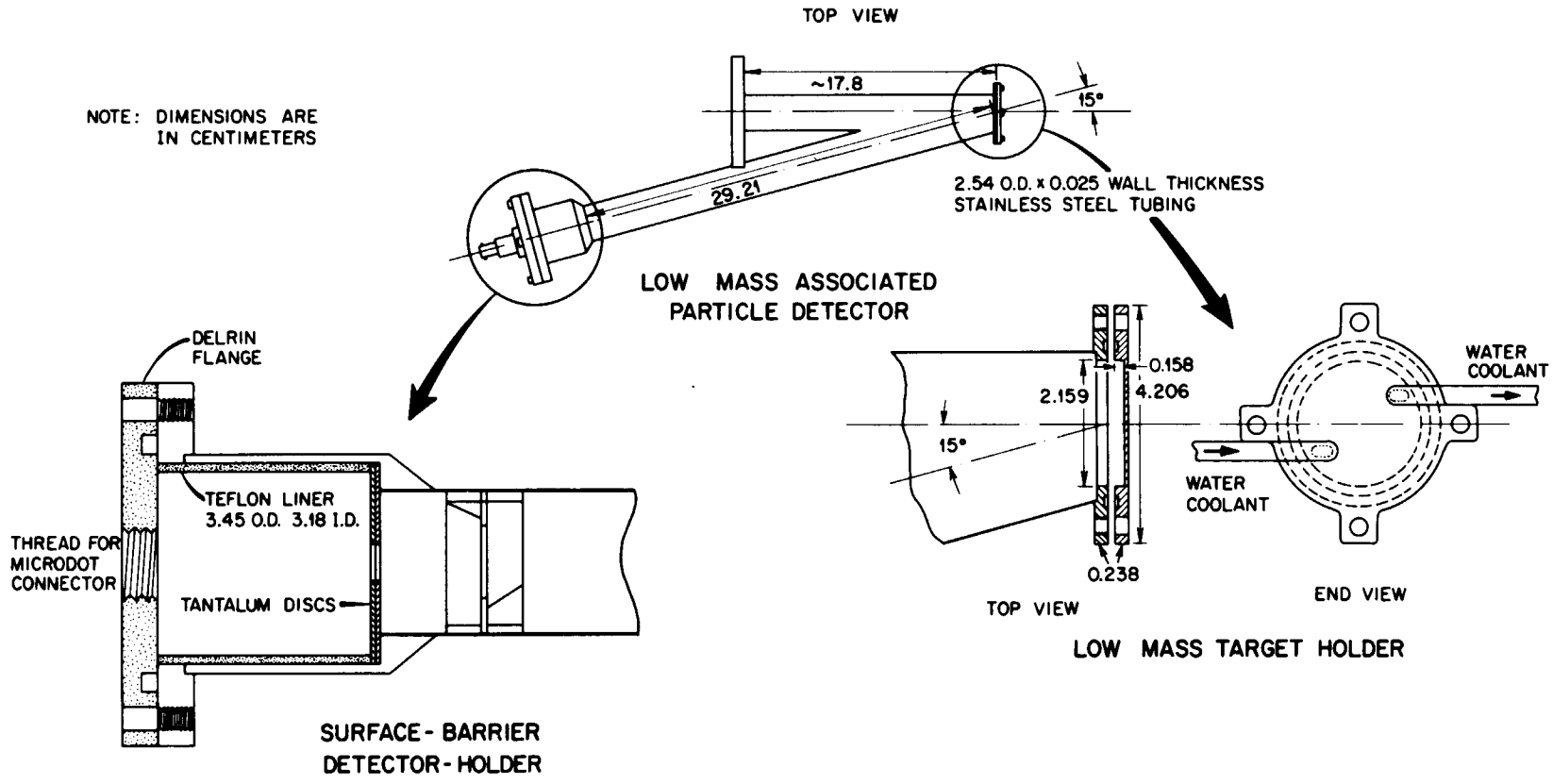

Fig. 5 The low-mass associated particle detector used to calibrate the accelerator target. The solid-state detector was against the tantalum disk shown in the detector holder.

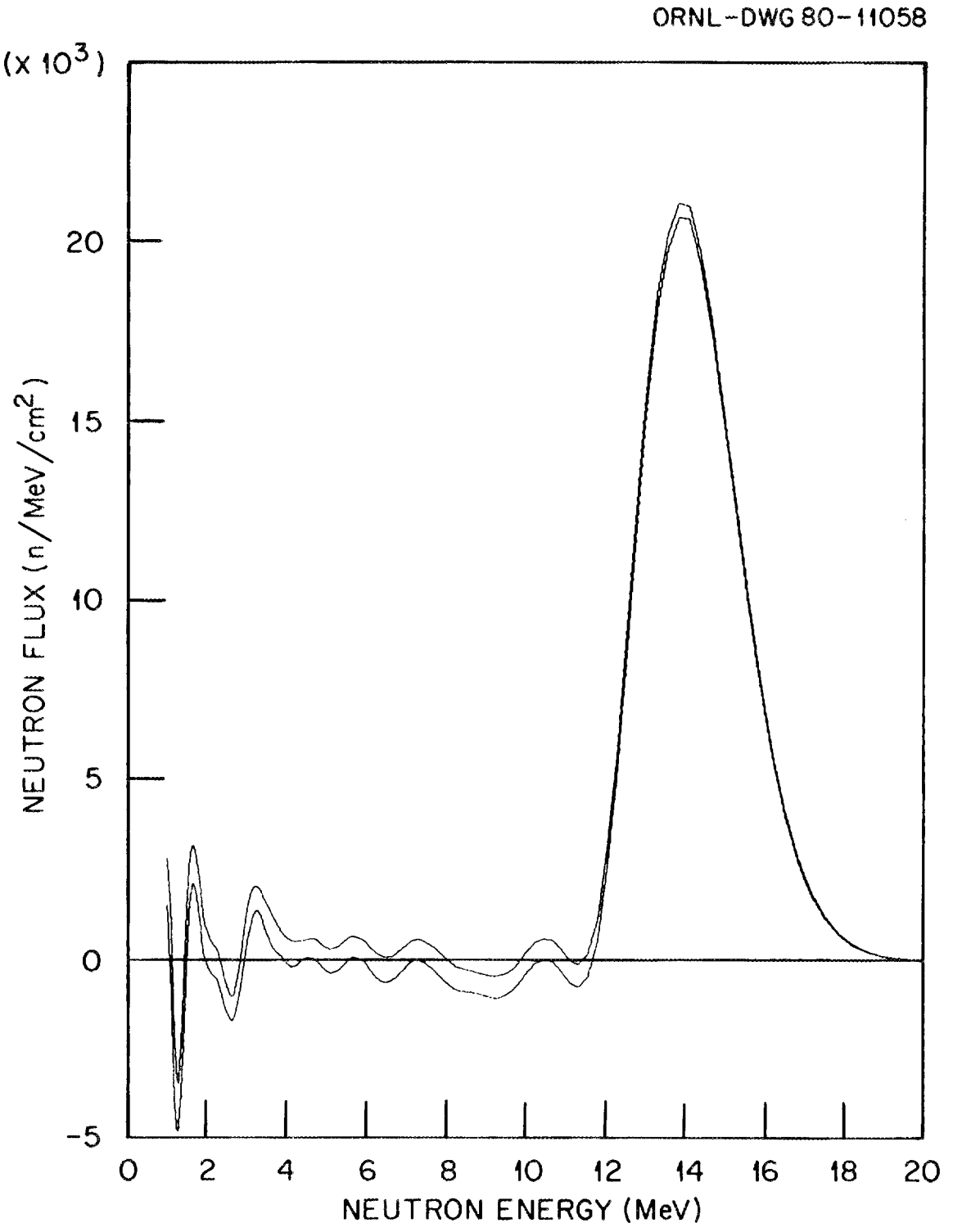

Fig. 6 Unfolded spectrum for the $T(d,n)^4He$ neutrons incident on the NE-213 detector during the initial target calibrations with the low-mass associated particle detector.

uncertainties of 5% on the neutron detector efficiency and 3% on the alpha-particle calibration factor. The latter uncertainty was due mainly to the molecular fractions of the incident deuteron beam.

Since the beam components could not be measured at the time, the alpha solid angle transformation factor was calculated using a FORTRAN computer program, TDNA.FOR,* for beam conditions ($D_1^+:D_2^+:D_3^+$) of 100%:0%:0% and 30%:60%:10%. The difference was less than 2%, and a value midway between these two conditions was assumed.

The same low-mass target holder was then installed in the target position in the background shield described above. The NE-213 detector was again placed at 0° to the beam and the calibration was repeated to look for effects that might be introduced by this configuration. Since no detrimental effects were observed, the production target holder (Fig. 4) was then installed. The same alpha-particle detector package (including the aluminized mylar absorber foil) was relocated to 90° relative to the accelerator beam and at a distance of 150 cm to protect the detector from neutron damage. The 1.3×10^{-5} steradian solid angle subtended by the detector at the target was defined by inserting a thin tantalum collimator immediately in front of the detector. Tantalum baffles were also placed at

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* A listing of TDNA.FOR is given in Appendix A and may be used, with some slight modifications, to calculate the neutron anisotropy. It was thus found that there are about 6% more neutrons at zero degrees to the z axis than would be estimated assuming isotropic neutron production.

appropriate positions in the stainless-steel tube between the target and the detector to prevent detecting particles scattered in that tube. The source strength determined by counting the alpha particles with this assembly was then compared with that determined by the NE-213 detector at 0° and found to agree within 1%. The solid-angle transformation factor at 90° is nearly equal to unity [19] (cm-to-lab ratio = 1.005), is essentially independent of deuteron energy, and therefore is independent of the relative molecular fractions in the deuteron beam.

Based on these calibrations, the data presented here have been normalized to unit neutron source strength as determined for each run by counting the alpha particles throughout the time period of the run.* All shielding measurements were made at a nominal accelerator voltage of 0.25 MeV. At this energy and based on the reaction kinematics and deuteron energies from 0.25 MeV to 0.05 MeV, the neutrons at the production site in the target ranged from 15.26 MeV to 14.55 MeV at 0°, from 14.15 MeV to 14.07 MeV at 90°, and from 13.12 MeV to 13.60 MeV at 180°. (These ranges are modified if deuteron scattering in the target is considered.) The source neutron spectrum in the facility must be estimated by integrals over the energy loss distribution similar to those for the solid angle transformation factor.

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* There was no obvious indication that the source was modified by, for example, D-D contamination during the work reported here.

V. DETECTOR CALIBRATION AND INSTRUMENTATION

The single detector used for both neutrons and gamma rays was an NE-213 organic liquid scintillator mounted on a photomultiplier tube as shown in Fig. 7. The detector axis was vertical for all observations in the experiments reported here. The primary process permitting neutron detection by NE-213 is proton recoil plus reaction with carbon at the higher energies, whereas gamma rays are detected by means of the electrons resulting from Compton scattering. This detector is inherently inferior to other state-of-the-art gamma-ray spectroscopy detectors because of its relatively low efficiency and poor resolution. However, neutron and gamma-ray interactions in NE-213 may be distinguished because the electron pulse has a faster rise time than do proton or alpha particle pulses. By the proper application of electronic analysis (pulse-shape discrimination or PSD) each event can be sorted according to the type of particle. Thus, it is possible to make relatively good gamma-ray spectral measurements in the presence of a high fast neutron field with NE-213.

The detector shown in Fig. 7 was fabricated in the Engineering Physics Division at ORNL and was calibrated using the pulsed neutron source at ORELA [8] as described in the following paragraphs which were abstracted from ref. 8.

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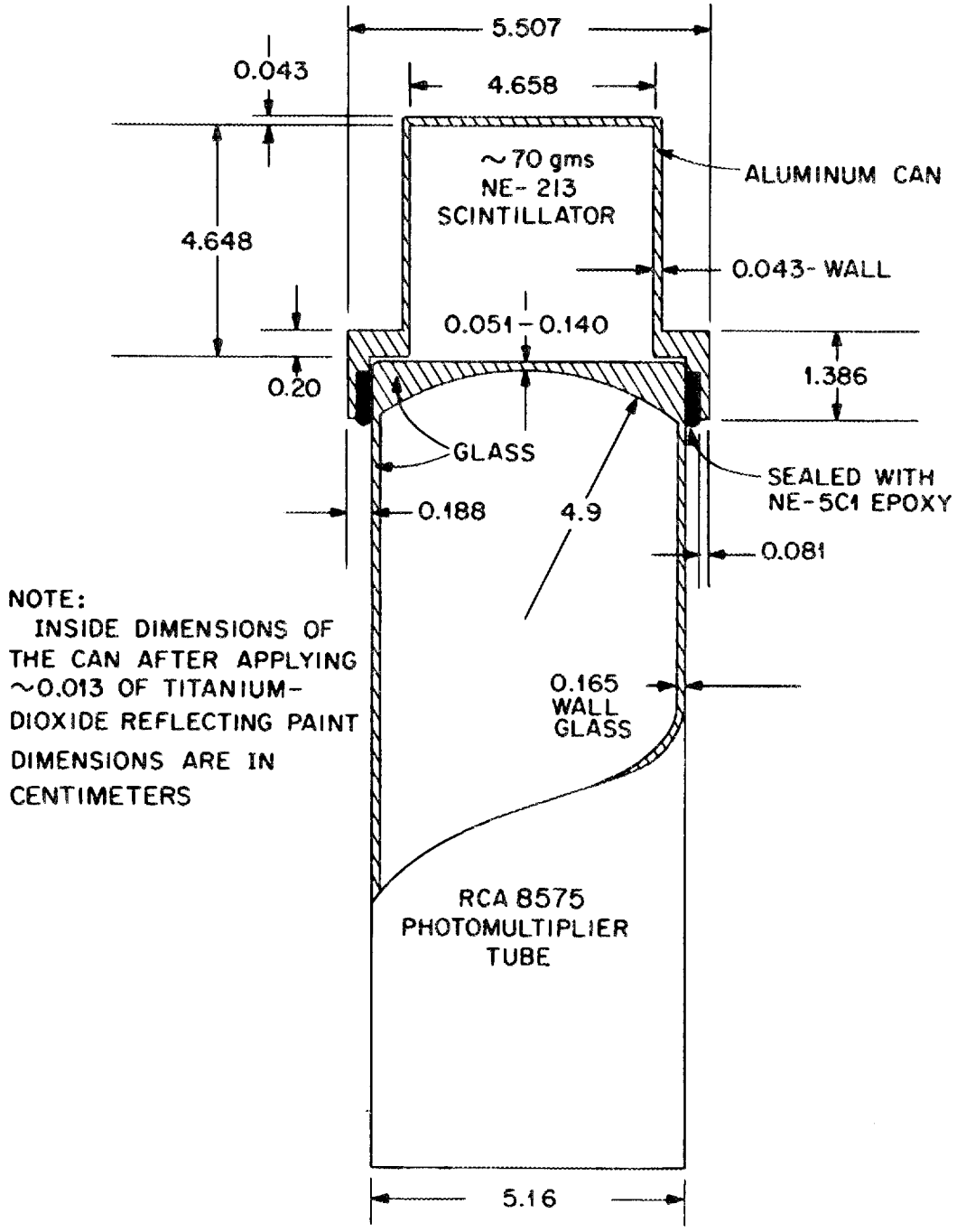

Fig. 7 The design of the NE-213 detector used with this work.

In these calibrations, the relative pulse-height distributions for neutrons were measured as a function of incident energy by placing the detector in the direct ORELA neutron beam and using time-of-flight and PSD electronics to record pulse-height spectra as a function of time of flight. This was done for two detector orientations: detector axis parallel to the incident beam and detector axis perpendicular to the beam. Pulse-height distributions were recorded for gamma-ray events also. These gamma-ray events were due to photons induced in the detector by neutrons. This information was necessary to correct all gamma-ray measurements made with this detector in neutron fields.

Comparison of the pulse-height distributions for the two detector orientations, normalized for the same incident neutron fluence, showed no differences in shape or magnitude greater than 5% over the incident neutron energy range from 1 to 20 MeV. Therefore, the average response of the detector, when expressed in terms of incident neutrons per unit cross sectional area, was taken to be independent of orientation with respect to incident flux.

The absolute neutron efficiencies used for these calibrations were based on absolute integral efficiencies given in ref. 7. These efficiencies are given in terms of counts/incident neutron on the scintillator as a function of pulse-height bias level for neutrons laterally incident on a 4.65-cm-diam and 4.60-cm-long detector. The integral efficiencies used for the present detector were obtained by

multiplying the values given in ref. 7 for the appropriate bias level by the lateral cross-sectional area (19.6 cm^2) of the scintillator in Fig. 7. The system of units for pulse height given in ref. 7 was adopted for these calibrations.* Since the observed maximum (50% intensity) pulse height vs E_n was consistant with the output data from ref. 7, the light-unit cutoffs for efficiency normalization could be used directly.

The relative pulse-height distributions obtained for neutrons laterally incident on the detector were then converted to absolute responses by normalizing the integral over the region of proton recoil plateau to the integral efficiencies obtained from ref. 7. The response functions for neutrons thus measured are shown in Fig. 8 with the higher energy response in the foreground. Using these same efficiencies, the total number of neutrons at each energy was determined and used to normalize the neutron-induced gamma-ray pulse-height distributions to absolute values in terms of unit incident neutron fluence.

The problem of obtaining a complete set of gamma-ray response functions was more difficult than for neutrons. Absolute differential response curves were measured using a series of calibrated radioactive sources and unnormalized

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* A "light unit" of pulse height is defined so that the "half-height" of the Compton recoil edge of the 1.274-MeV gamma ray from a ^{22}Na source occurs at 0.895 light units. This unit is somewhat a function of detector size and resolution.

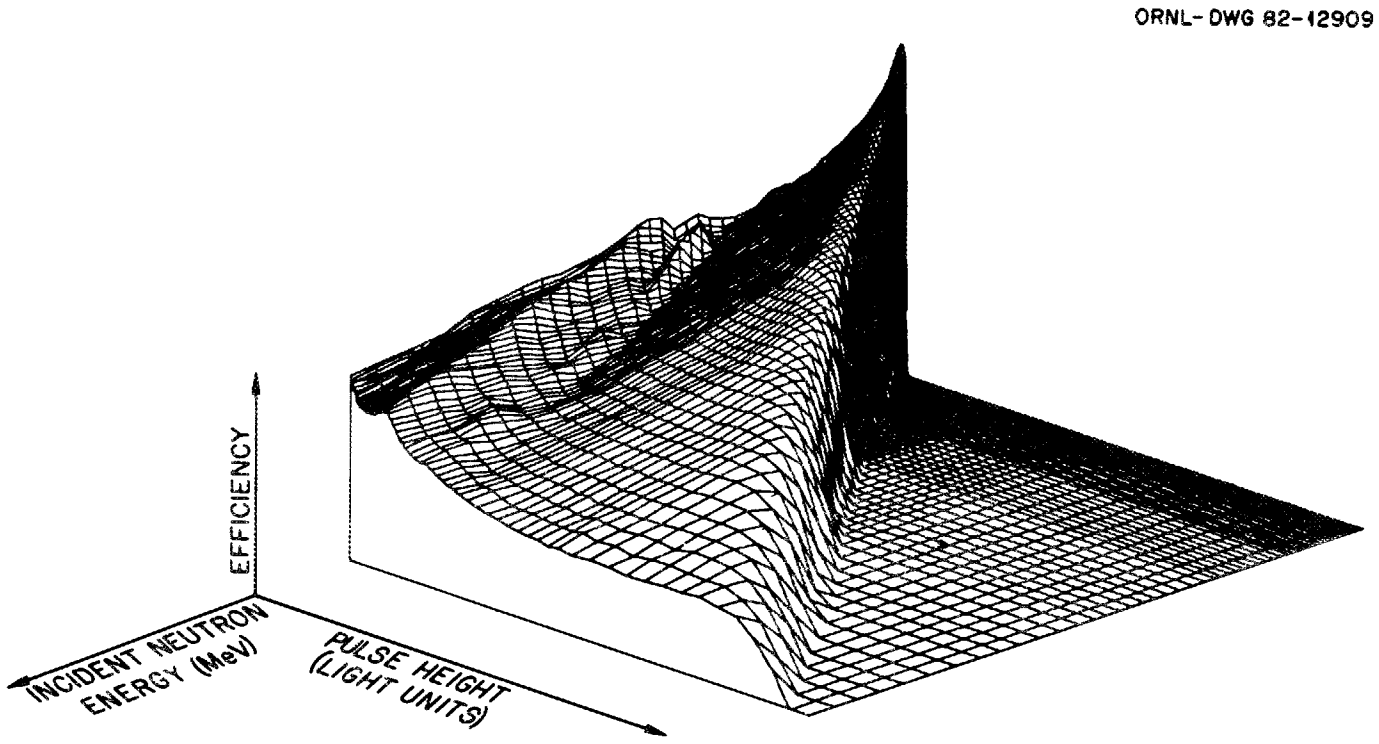

Fig. 8 The neutron response functions for the detector used with this work. The high-energy response is shown in the foreground. Incident energy covers the range 0.807 MeV $\leq E_n \leq$ 23.44 MeV and the pulse-height covers the range 0.108 lu $\leq$ PH $\leq$ 14.19 lu.

nuclear reaction sources covering the gamma-ray energy range from 0.662 MeV to 11.7 MeV. A discussion of each of these sources is given in ref. 8. The response functions at these discrete energy points were then used as a basis for interpolation to provide response data for intermediate energies.

As in the case of neutrons, the detector response defined in terms of unit incident fluence was found to be independent of detector orientation. Figure 9 shows the gamma-ray response functions as measured for this detector.*

Figure 10 shows a block diagram of the instrumentation. In addition to the primary NE-213 channel for recording the neutron and gamma-ray data, the system also included the necessary circuits to record the pulse-height spectrum (PHS) from the solid-state alpha detector, the charge collected from the ion beam incident on a collimator in the drift tube and on the target, and the integrated count rate for each detector including a small, uncalibrated NE-213 neutron detector used to monitor the target. A linear signal was taken from the eighth dynode of the RCA 8575 photomultiplier tube and, after amplification, was analyzed by an analog-to-digital converter (ADC) to produce the PHS. Neutron-gamma-ray separation (see Fig. 11) was accomplished by leading-edge-to-crossover timing; that is, the bipolar

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* Although no numerical values are presented here for the response functions, any interested reader may obtain this information from G. T. Chapman.

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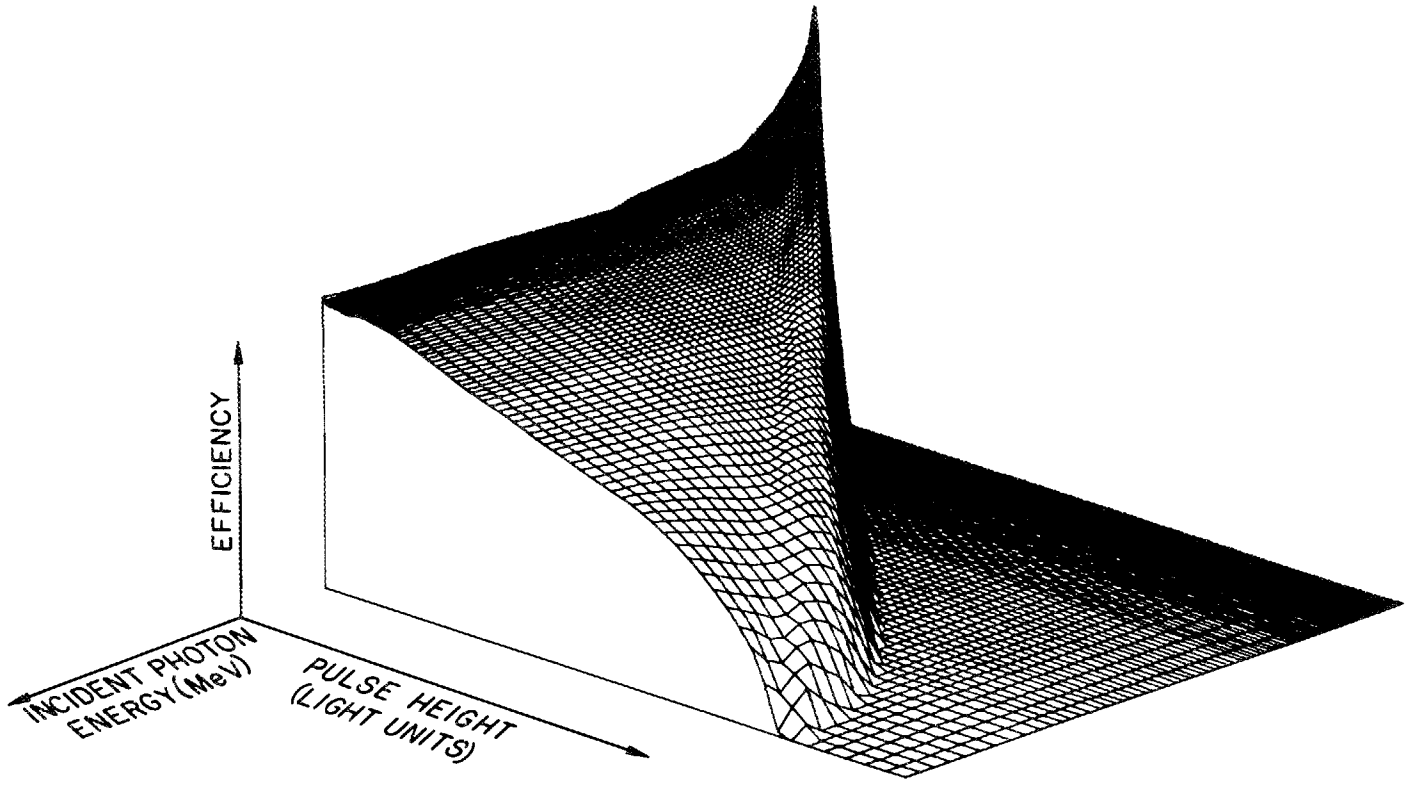

Fig. 9 The gamma-ray response functions for the detector used with this work. The high-energy response is shown in the foreground. Incident photon energy covers the range 0.72 MeV $\leq E_g \leq$ 13.9 MeV and the pulse-height covers the range 0.435 lu $\leq$ PH $\leq$ 11.92 lu.

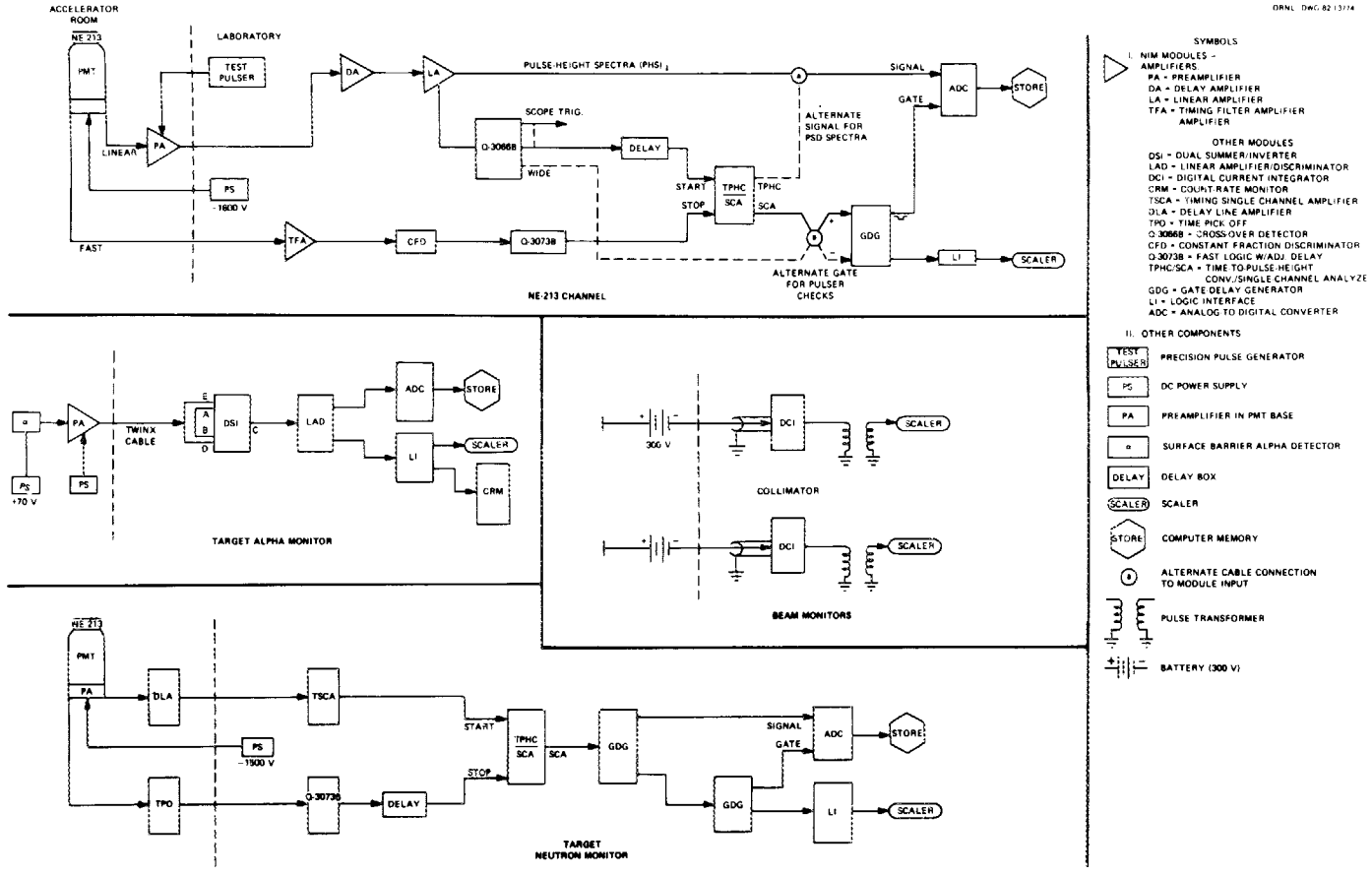

Fig. 10 Block diagram of the instrumentation used with this work.

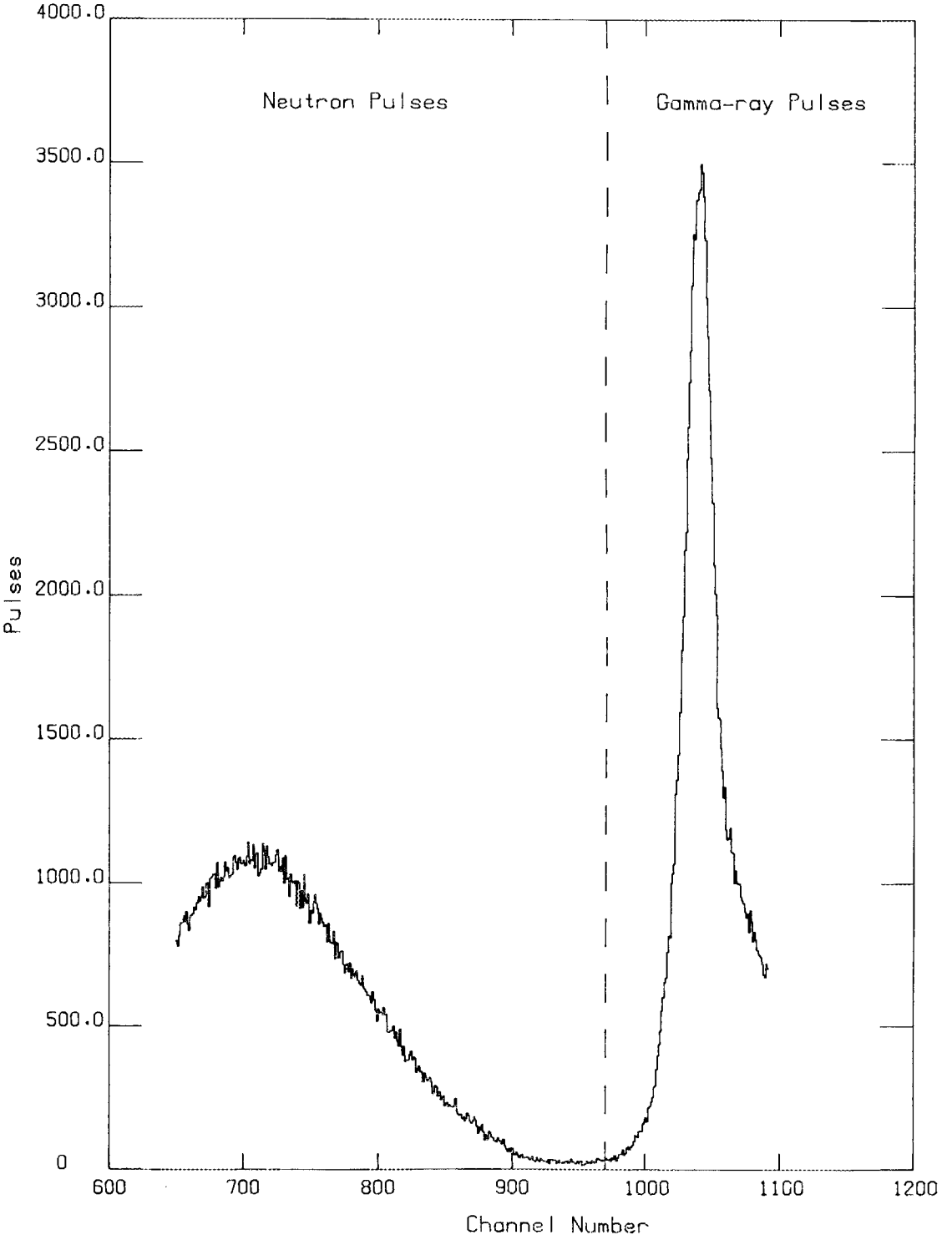

Fig. 11 The PSD spectrum measured with an AmBe neutron/gamma-ray source and used to determine the discrimination pulse-shape level shown by the vertical dashed line. The data covered the total range from channel 0 to channel 1700, although data at each end are not shown here.

linear signal was examined by a cross-over detector which produced a pulse at a different time for each event, depending on whether the rise-time of the pulse corresponded to a neutron or a gamma ray. The output of the cross-over detector was then used to start a time-to-pulse-height converter (TPHC). A fast signal taken from the anode of the photomultiplier tube, after amplification, produced a logic signal in a "constant fraction" discriminator. This pulse was delayed to produce an appropriate stop signal for the TPHC. A single-channel-analyser (SCA) circuit provided an output pulse from the TPHC/SCA module only if the pulse height fell in a selected window. This signal, which discriminates between the pulses produced by neutrons and gamma-ray interactions in the detector, was used to gate the ADC on and to permit analysis of the pulse. The output of the ADC then caused the appropriate memory location (channel) in a minicomputer to be incremented.

The system was checked for energy calibration before and after each data run by measuring the pulse-height distribution produced in the detector by Compton scattered photons from the 1.274-MeV gamma ray emitted by a ^{22}Na source. The photons always entered the detector through the side. Using the definition of the unit-of-light output given previously, a relation between pulse-height units (normally quoted as a number of analyzer channels) and the light output of the NE-213 is established. The use of a precision electronic pulser made it possible to determine the zero

intercept of the pulse-height vs channel relation. Thus knowing these two parameters, one can convert from pulse-height channel units to light units and subsequently to units of neutron energy (MeV). The instrument was set up for a gain of 140 pulse-height channels per 0.895 light units.

A Nuclear Data ND-812 computer/analyzer was used to store the data. This analyzer allowed recording only two pulse-height spectra at a time. The procedure followed with these conditions was to make a short run with the accelerator on to check the PSD distribution with the computer display and then make the data run storing the alpha-monitor spectrum and either the NE-213 neutron or gamma-ray spectrum. These data were then "dumped" to paper tape and read onto a PDP-10 disk for analysis. At this phase of the work only the neutron and gamma-ray data were permanently stored on the disk. The count rates required for monitoring the runs were recorded by scalers and hand-copied into the data book for later use.

VI. PRESENTATION OF THE DATA

Table 2 shows the location of the NE-213 detector relative to the target and the shield composition for each data run made during this work. The first column in the table shows an identification number unique for each data set. Of significance to the reader is the fact that the

Table 2

Detector location and composition for each run

Run	x	y	z	Configuration+
R133NS.184*	0.00	0.00	154.50	NO SHIELD
R136GS.205*	0.00	0.00	154.50	3SS
R135NS.198*	0.00	0.00	154.50	3SS
R138GS.216*	45.00	0.00	154.50	3SS
R137NS.211*	45.00	0.00	154.50	3SS
R139GS.218*	-45.00	0.00	154.50	3SS
R140NS.222*	-45.00	0.00	154.50	3SS
R141GS.230	-100.00	0.00	160.20	3SS
R141NS.229	-100.00	0.00	160.20	3SS
R142GS.239	100.00	0.00	159.20	3SS
R142NS.236	100.00	0.00	159.20	3SS
R143GS.248	0.00	45.00	154.50	3SS
R143NS.244	0.00	45.00	154.50	3SS
R144GS.253	0.00	86.50	154.50	3SS
R144NS.251	0.00	86.50	154.50	3SS
R145GS.259	0.00	0.00	229.50	3SS
R145NS.257	0.00	0.00	229.50	3SS
R146GS.261	-100.00	0.00	229.50	3SS
R146NS.263	-100.00	0.00	229.50	3SS
R147GS.270	100.00	0.00	229.50	3SS
R147NS.268	100.00	0.00	229.50	3SS
R148GS.010*	0.00	0.00	154.50	6SS
R148NS.008*	0.00	0.00	154.50	6SS
R149GS.018*	100.00	0.00	159.20	6SS
R149NS.016*	100.00	0.00	159.20	6SS
R150GS.028*	-100.00	0.00	160.20	6SS
R150NS.024*	-100.00	0.00	160.20	6SS
R151GS.044	0.00	0.00	229.50	6SS
R151NS.042	0.00	0.00	229.50	6SS
R152NS.051	100.00	0.00	229.00	6SS
R153GS.061	-100.00	0.00	229.50	6SS
R153NS.059	-100.00	0.00	229.50	6SS
R154NS.080	0.00	0.00	154.50	NO SHIELD
R156GS.105*	0.00	0.00	154.50	6SS
R156NS.100	0.00	0.00	154.50	6SS
R157NS.111	0.00	0.00	154.50	6SS
R158GS.132*	0.00	0.00	154.50	6SS1(SSBP)
R158NS.130*	0.00	0.00	154.50	6SS1(SSBP)
R159GS.147*	46.00	0.00	154.50	6SS1(SSBP)
R159NS.140*	46.00	0.00	154.50	6SS1(SSBP)
R160GS.149*	-46.50	0.00	154.50	6SS1(SSBP)
R160NS.152*	-46.50	0.00	154.50	6SS1(SSBP)

Table 2 (cont)

Run	x	y	z	Configuration+
R161GS.160	0.00	0.00	229.50	6SS1(SSBP)
R161NS.158	0.00	0.00	229.50	6SS1(SSBP)
R162GS.182*	0.00	0.00	154.50	6SS2(SSBP)
R162NS.175*	0.00	0.00	154.50	6SS2(SSBP)
R163GS.189*	-46.50	0.00	154.50	6SS2(SSBP)
R163NS.196*	-45.50	0.00	154.50	6SS2(SSBP)
R164GS.208	0.00	0.00	229.50	6SS2(SSBP)
R164NS.203	0.00	0.00	229.50	6SS2(SSBP)
R165GS.230*	0.00	0.00	154.50	6SS2(SSBP)1SS
R165NS.224*	0.00	0.00	154.50	6SS2(SSBP)1SS
R166GS.246*	-46.50	0.00	154.50	6SS2(SSBP)1SS
R166NS.238*	-46.50	0.00	154.50	6SS2(SSBP)1SS
R167GS.260	0.00	0.00	229.50	6SS2(SSBP)1SS
R167NS.257	0.00	0.00	229.50	6SS2(SSBP)1SS
R168GS.272*	0.00	0.00	154.50	6SS1(SSBP)1SS
R168NS.270*	0.00	0.00	154.50	6SS1(SSBP)1SS
R169GS.278*	-46.50	0.00	154.50	6SS1(SSBP)1SS
R169NS.280*	-46.50	0.00	154.50	6SS1(SSBP)1SS
R170GS.287	0.00	0.00	229.50	6SS1(SSBP)1SS
R170NS.289	0.00	0.00	229.50	6SS1(SSBP)1SS
C171GS.012	0.00	0.00	60.50	6SS1(SSBP)1SS
C171NS.016	0.00	0.00	60.50	6SS1(SSBP)1SS

\+ See Sect. VI for an explanation of the notation.
* Data that have been compared with calculations (See, for example, refs. 2 and 9).

two-letter group before the period in each identification number indicates whether the data pertains to gamma rays (GS) or neutrons (NS). Columns 2, 3, and 4 indicate the coordinates of the detector position, in centimeters, relative to the TiT target in accordance with the right-handed coordinate system described in Sect. II of this report. The last column shows the composition of each experimental shield. NO SHIELD, of course, indicates that no experimental shield was in place during the measurement. The two-letter groups SS and BP indicate one slab of stainless steel or borated polyethelene, respectively. An integer preceding such a group indicates the number of slabs of that type in place in that part of the shield. The symbol (SSBP) indicates a pair of stainless steel and borated-polyethelene slabs. Thus, 6SS2(SSBP)1SS indicates that the shield was composed of six stainless steel slabs followed by two pairs of stainless steel and borated polyethylene slabs, followed, in turn, by one stainless steel slab. The order from left to right indicates the composition in the direction of the positive z axis. This nomenclature appears on each of the tables and graphs showing the data.

Using the computer program FERD discussed in refs. 5, 6, and 7 and the instrument response functions discussed in Sect. V, the measured pulse-height spectra for both gamma rays and neutrons were "unfolded" to produce the energy spectra tabulated in Table 4 and shown in Fig. 16. The neutron response functions covered the energy range from 0.8

to 24 MeV and the the gamma-ray response functions ranged from 0.72 to 14 Mev. As shown in Table 3, the gamma-ray pulse-height data were binned into 87 light-unit bins and the neutron data were binned into 68 light unit bins to span those energy ranges. The bin widths were chosen to be small compared to the pulse-height resolution of the detector.

The binning was accomplished by first converting the pulse-height channel numbers to light units in accordance with the calibration procedures discussed Sect. V and then forming a cumulative sum over all channels in order to obtain an integral pulse-height distribution. A quadratic was then fitted[20] to the three nearest channels (in light units) whose range included each bin edge as given in Table 3. Using this quadratic as a basis for interpolation, the values of the cumulated summed count at the lower and upper edges of each bin were estimated, and the count in each bin was taken to be the difference between these values (Fig. 12).

Table 3

Binning table for data reduction
(All values are in light units)

Bin	Gamma Rays		Neutrons	
	Lower Edge	Upper Edge	Lower Edge	Upper Edge
1	0.420	0.450	0.100	0.115
2	0.450	0.480	0.115	0.130
3	0.480	0.510	0.130	0.145
4	0.510	0.540	0.145	0.160
5	0.540	0.570	0.160	0.175
6	0.570	0.600	0.175	0.190
7	0.600	0.630	0.190	0.220
8	0.630	0.660	0.220	0.250
9	0.660	0.690	0.250	0.280
10	0.690	0.720	0.280	0.310
11	0.720	0.760	0.310	0.340
12	0.760	0.800	0.340	0.370
13	0.800	0.840	0.370	0.400
14	0.840	0.880	0.400	0.430
15	0.880	0.920	0.430	0.480
16	0.920	0.960	0.480	0.530
17	0.960	1.00	0.530	0.580
18	1.00	1.04	0.580	0.630
19	1.04	1.08	0.630	0.680
20	1.08	1.12	0.680	0.730
21	1.12	1.18	0.730	0.780
22	1.18	1.24	0.780	0.830
23	1.24	1.30	0.830	0.880
24	1.30	1.36	0.880	0.930
25	1.36	1.42	0.930	1.02
26	1.42	1.48	1.02	1.11
27	1.48	1.54	1.11	1.20
28	1.54	1.60	1.20	1.29
29	1.60	1.66	1.29	1.38
30	1.66	1.72	1.38	1.47
31	1.72	1.80	1.47	1.56
32	1.80	1.88	1.56	1.65
33	1.88	1.96	1.65	1.74
34	1.96	2.04	1.74	1.83
35	2.04	2.12	1.83	2.00
36	2.12	2.20	2.00	2.17
37	2.20	2.28	2.17	2.34
38	2.28	2.36	2.34	2.51
39	2.36	2.44	2.51	2.68
40	2.44	2.52	2.68	2.85
41	2.52	2.62	2.85	3.02
42	2.62	2.72	3.02	3.19
43	2.72	2.82	3.19	3.36

Table 3 (cont)

Bin	Gamma Rays		Neutrons	
	Lower Edge	Upper Edge	Lower Edge	Upper Edge
44	2.82	2.92	3.36	3.53
45	2.92	3.02	3.53	3.84
46	3.02	3.12	3.84	4.15
47	3.12	3.22	4.15	4.46
48	3.22	3.32	4.46	4.77
49	3.32	3.42	4.77	5.08
50	3.42	3.52	5.08	5.39
51	3.52	3.67	5.39	5.70
52	3.67	3.82	5.70	6.01
53	3.82	3.97	6.01	6.32
54	3.97	4.12	6.32	6.63
55	4.12	4.27	6.63	7.19
56	4.27	4.42	7.19	7.75
57	4.42	4.57	7.75	8.31
58	4.57	4.72	8.31	8.87
59	4.72	4.87	8.87	9.43
60	4.87	5.02	9.43	9.99
61	5.02	5.22	9.99	10.55
62	5.22	5.42	10.55	11.11
63	5.42	5.62	11.11	11.67
64	5.62	5.82	11.67	12.23
65	5.82	6.02	12.23	12.79
66	6.02	6.22	12.79	13.35
67	6.22	6.42	13.35	13.91
68	6.42	6.62	13.91	14.47
69	6.62	6.82		
70	6.82	7.02		
71	7.02	7.27		
72	7.27	7.52		
73	7.52	7.77		
74	7.77	8.02		
75	8.02	8.27		
76	8.27	8.52		
77	8.52	8.77		
78	8.77	9.02		
79	9.02	9.27		
80	9.27	9.52		
81	9.52	9.82		
82	9.82	10.12		
83	10.12	10.52		
84	10.52	10.92		
85	10.92	11.32		
86	11.32	11.72		
87	11.72	12.12		

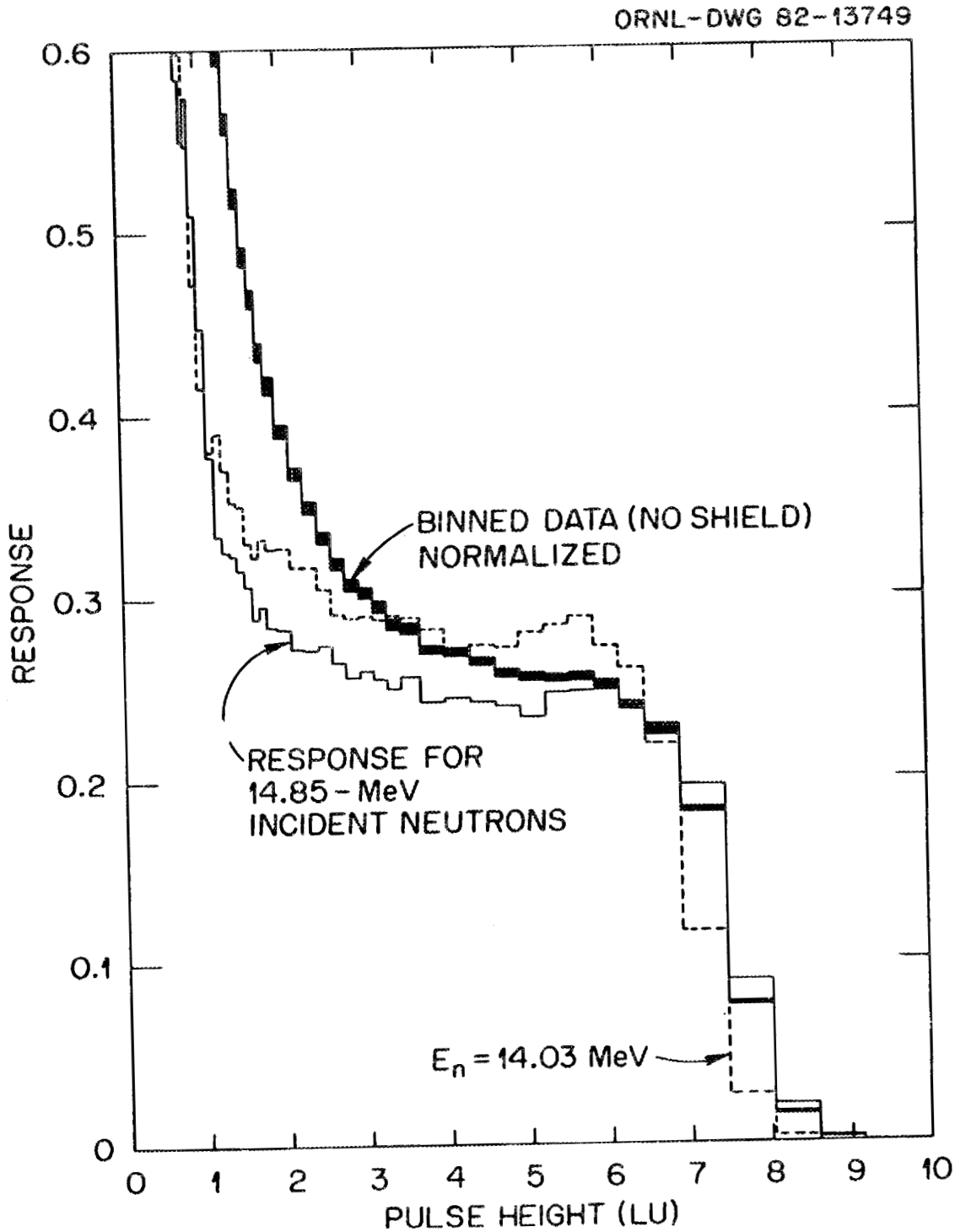

Fig. 12 Comparison of the binned experimental data with the measured neutron response. The experimental data for run R135NS.198 were arbitrarily normalized in amplitude to the measured response for an incident neutron energy of 14.85 MeV and compared with the adjacent response functions for 14.03 MeV.

The energy spectra produced by unfolding the pulse height spectra retain the effect of the inherent experimentally determined pulse-height resolution of the detector. For neutrons, the intrinsic resolution of the energy spectrum varied according to the relation

$$R = \sqrt{300 + 800/E_n},$$

and for gamma rays,

$$R = \sqrt{170 + 288/E_g}$$

where R is the relative fwhm in percent and E_n and E_g are, respectively, the neutron and gamma-ray energies in MeV.

As previously mentioned, the number of source neutrons produced in the target was determined by counting the number of alpha particles emitted into a known solid angle during the run (Sect. IV). A cursory monitoring of the target condition as it aged was made by recording the PHS from a small solid-state alpha detector located at 1.5 m from the target. Figure 13(a) shows the PHS for a "new" target. Figure 13(b) shows the PHS for the same target during the last run for which it was used. Small differences are apparent. The scaler readings for a run varied from about 5 x 10^5 to 4 x 10^7 depending on the thickness of the shield and the location of the detector. The number of source neutrons for the run was then determined by multiplying the number of alpha particles recorded by 9.83 x 10^5, a constant obtained from the target calibration discussed in Sect. IV.

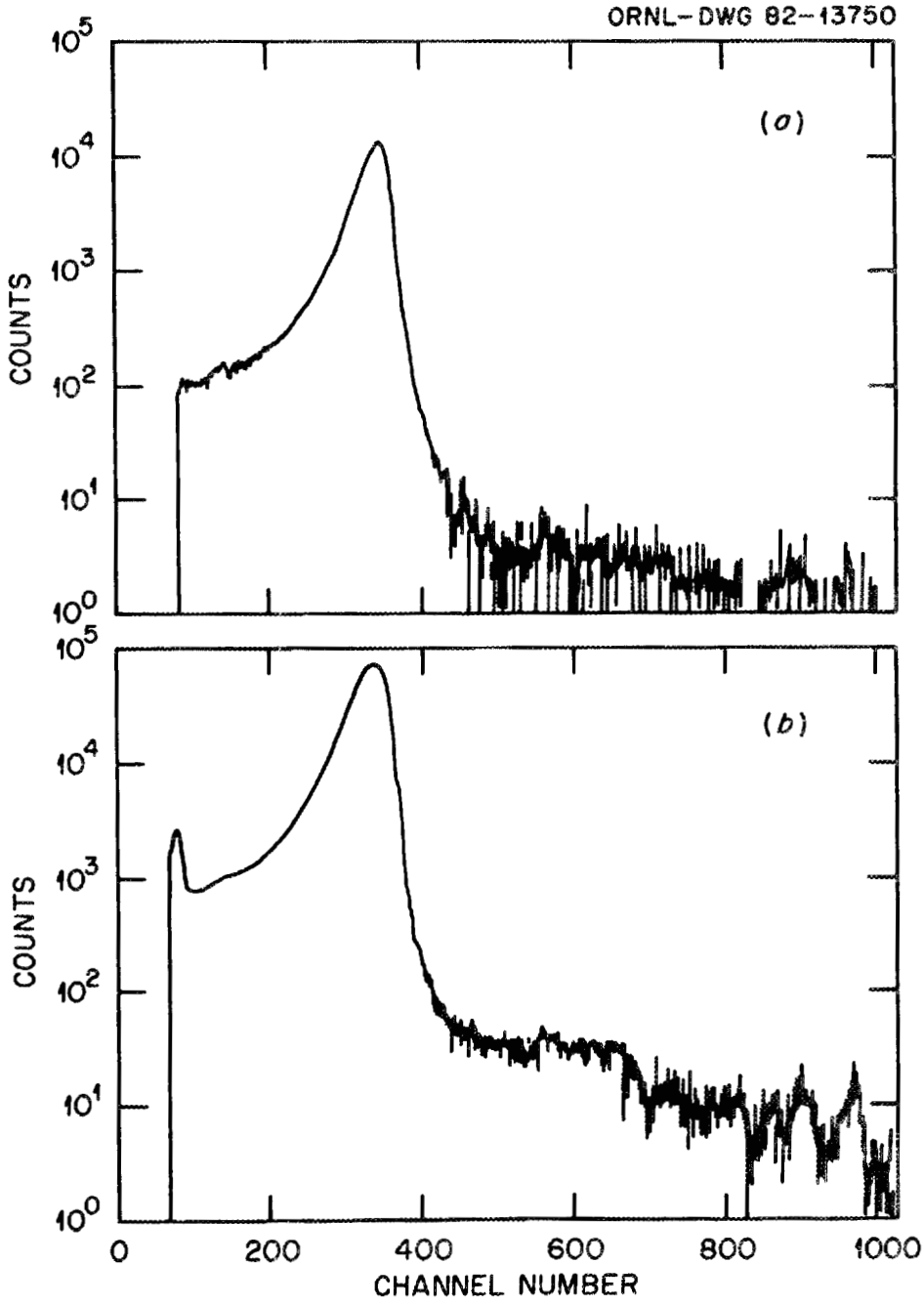

Fig. 13 The pulse-height distribution measured for the alpha particles emitted by a "new" (a) and "used" (b) target.

The output of the program FERD gives the energy spectra of neutrons or gamma rays in terms of detected particle fluence per source neutron. The uncertainty in the reduced data is exhibited as a "confidence interval" with a width of two standard deviations. This is illustrated in Fig. 16 by two smooth curves drawn through the calculated values for window functions centered at selected discrete energy points.* The numerical results for the upper and lower values of the confidence interval are given for each energy point in Table 4. The confidence interval includes effects of statistical uncertainties in the observed pulse-height spectra and difficulties in matching the window functions with bin response functions in the unfolding process, but not the uncertainties in the response functions.

VII. THE SYSTEMATIC UNCERTAINTIES ASSOCIATED WITH THE DATA

The systematic uncertainties associated with the measurements may be classified into two catagories: (1) geometric uncertainties related to the accuracy of locating the detector relative to the target and the accuracy of determining the thicknesses of the slabs used in the test shields, and (2) instrumentation uncertainties as determined

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* The window functions are normal density functions of unit area with widths given by the formula on page 36. The ordinate plotted correspond to upper and lower limits of a 68% confidence interval for the integral of the fluence incident on the detector weighted by the corresponding window function.

by the accuracy of the measured detector efficiency (see Sect. V), the uncertainties associated with determining the neutron source strength (see Sect. IV), and the uncertainties on the measured gain parameters. The uncertainties associated with the geometry and determination of the gain parameters are discussed in the following paragraphs:

(1) Geometric uncertainties: The detector was mounted on a stand so that the center of the NE-213 cup was at the centerline of the accelerator drift tube. Each measurement required moving the stand and detector to a different location. Check measurements were frequently made using a surveyor's transit. The results indicated that the detector could be located within a radial distance of 0.5 cm. Taking into account the position dependence of the flux, this corresponds to less than 1% for the data reported. The slab thicknesses were normally measured by sampling the thickness at many locations around the edges of each slab. A specially designed device was constructed using a micrometer which allowed measuring in a region near the center of the slab. One stainless steel and one polyethelene slab were measured near the center with this device, and the results were compared to measurements made around the edge of the slab. The averages of the measurements at the two regions agreed within 1% for each type slab,

indicating that the edge measurements are representative of the thicknesses of the slab. The average thicknesses for the slabs are thus assumed to be 5.20 ± 0.07 cm for stainless steel and 5.06 ± 0.05 cm for the polyethylene.

(2) Gain-parameter uncertainties: The gain calibration parameters were determined using the 1.276-MeV gamma ray from ^{22}Na (see, for example, ref. 7), and the zero intercept was determined using a precision electronic pulser. Checks before and after each run indicate reproducibility to a standard deviation of 1.1 channels out of 140 channels. The reproducibility of the strong 14-MeV peak in the data and measurements made on the unfolded gamma-ray spectra of the 4.43-MeV gamma ray from a polonium-beryllium (PoBe) source indicate that the energy is determined to within 2%. Other gamma-ray sources (^{24}Na, ^{137}Cs, etc.) were frequently used as a check on the energy calibration to confirm this accuracy.

Combining these uncertainties to evaluate the overall effects on the fluence is not straight foward. For instance, since only one slab of each material was measured accurately near the center, and since these measurements only confirmed the measurements made at the edges of that slab, it is probably reasonable to assume that the thickness uncertainty is random rather than systematic.

By combining this uncertainty with the estimated uncertainty on the density of each material, the effects on the fluence may be approximated by noting the attenuation produced by the addition of each slab as the shield configuration changed. With this approach, it was found that each stainless-steel slab produced an attenuation of about 2.8 and the combined effect of the total borated-polyethylene slabs (two slabs) was about a factor of three. Consequently, the contribution of each component of the total uncertainties for a maximum-thickness shield (nine stainless-steel slabs, two borated-polyethylene slabs) is summerized as follows:

1. NE-213 efficiency	5%
2. Alpha calibration	3%
3. Neutron detector position	1%
4. Nine stainless-steel slabs	3%
5. Two borated-polyethylene slabs	1%

VIII. CONCLUSIONS

The data are believed to be, in most cases, self-consistent (see Figs. 14 and 15) and adequate for accomplishing the purpose of the work. There are some apparent inconsistancies which have not been resolved yet:

(1) The results for run R148NS.008 (6SS; x=y=0.0 cm, z=154.5

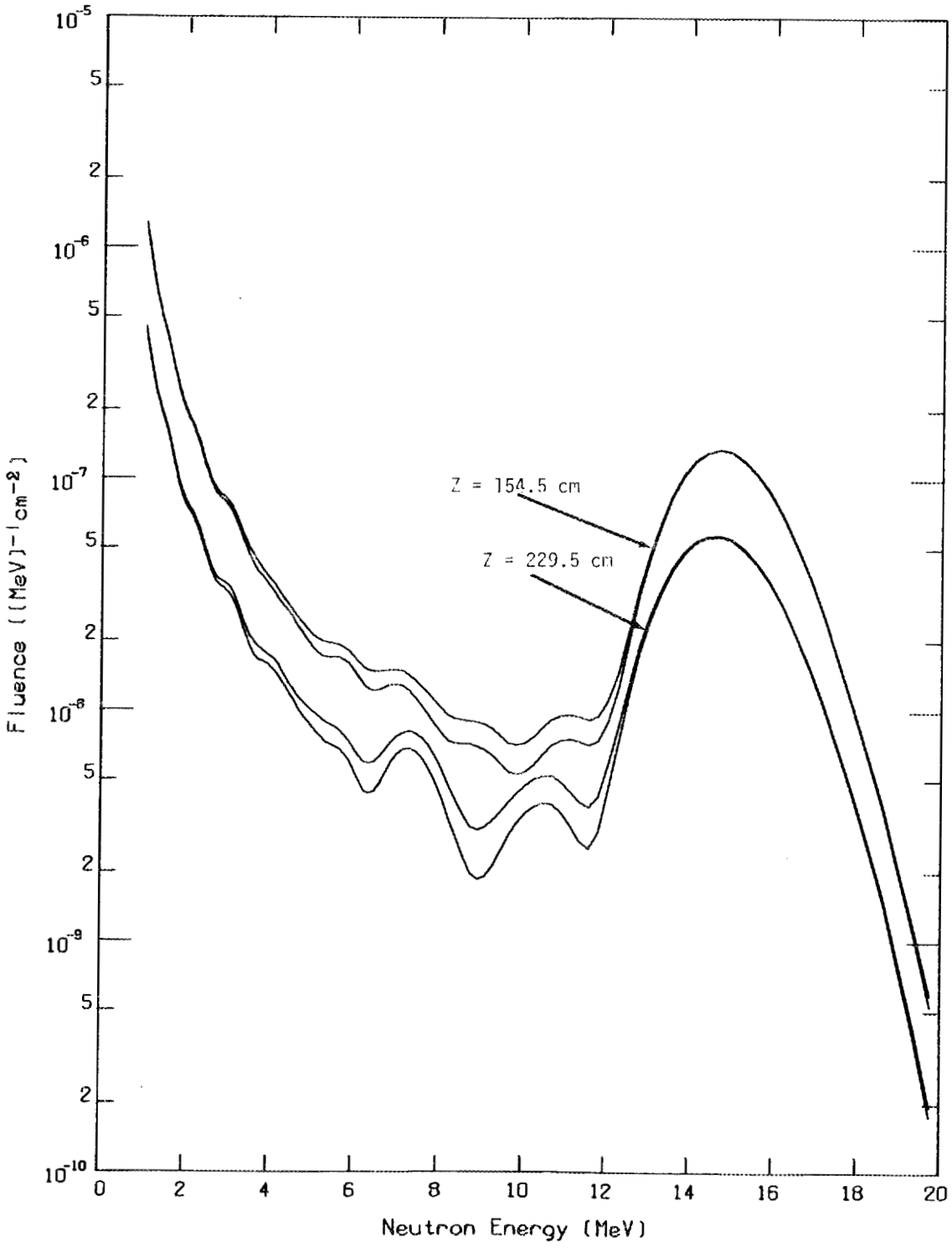

Fig. 14 The unfolded neutron-energy spectra measured for three stainless-steel slabs at two detector locations on the positive z axis.

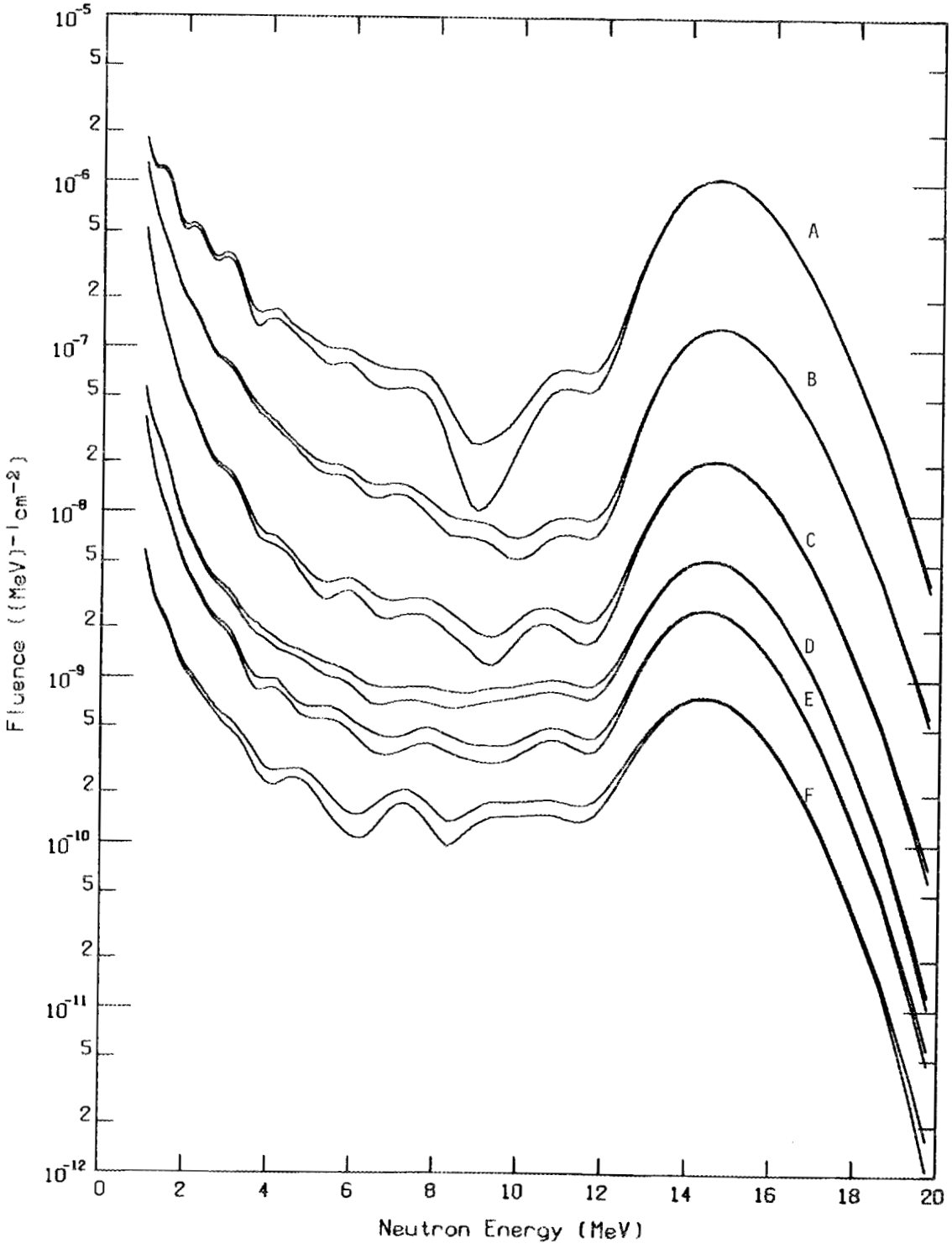

Fig. 15 The unfolded neutron-energy spectra measured for various shield compositions with the detector located at 154.5 cm from the target on the positive z axis. Data are shown for (A) NO SHIELD, (B) 3SS, (C) 6SS, (D) 6SS1(SSBB), (E) 6SS1(SSBP)1SS, and (F) 6SS2(SSBP)1SS.

cm) gave an overestimate of the fluence when compared with calculations.(2,9) A review of the run failed to resolve this observation, so the run was repeated twice (runs R156NS.100 and R157NS.111). The repeated runs were consistent with each other and with the calculations, indicating that run R148NS.008 was in error and that the data for that run is not reliable.

(2) Run C171NS.016 and C171GS.012 (6SS1(SSBP)1SS; x=y=0.0 cm, z=60.5 cm) were not consistent with the other data for this configuration. The reason for this error has not been resolved, and the data for these runs are not considered reliable.

(3) It is not expected that the details of the gamma-ray spectra would be indicated with any precision with this detector. The magnitude and general shape of the gamma-ray fluence do, however, agree with calculations, and this fulfills the most important experimental objectives. The "structure" in the gamma-ray data is not confirmed by the calculations* and seem to vary between runs with similar shield composition. This may be an artifact of the unfolding process, although there are reasons to expect "structure" as indicated by the measurements.

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* The energy bin widths used in the calculations given in refs. 2 and 9 were wide and probably could not be expected to reproduce the gamma-ray structure known to result from neutron interactions in the components of the shield materials.

The facility and experimental techniques described here are adequate for producing data with a sufficient degree of precision to support the calculational methods and cross-section data sets used in the design of complex shields. Improvements have been made in the facility, techniques, and instrumentation for continuing this work as required.

IX. ACKNOWLEDGEMENTS

The authors wish to acknowledge the help derived from many formal and informal conversations conducted with R. W. Peelle, R. G. Alsmiller, Jr., R. T. Santoro and other members of the Engineering Physics Division staff at ORNL.

Table 4

Tabulation of the unfolded energy spectra

The tabulations on the following pages show the numerical values of the final unfolded data for both gamma rays and neutrons. The energy is given in MeV, and the upper and lower values of the confidence interval (see Sect. VI) are given in neutrons or gamma rays per cm^2 per MeV and per source neutron. The negative values occurring at the higher energies result from supplying bins to the unfolding program which contain no counts. The program "expects" data for the total light-unit range and returns data for this range. These negative data points, therefore, are not significant and are included here only to show the complete calculated data set. The data are listed in the order shown in Table 2.

Run R133NS.184

x = 0.0 y = 0.0 z = 154.5
Configuration: NO SHIELD
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	2.25E-06	2.31E-06	5.94	7.85E-08	9.54E-08
1.01	1.78E-06	1.83E-06	6.25	6.51E-08	8.49E-08
1.11	1.39E-06	1.45E-06	6.55	5.73E-08	7.82E-08
1.21	1.20E-06	1.26E-06	6.83	5.61E-08	7.47E-08
1.31	1.18E-06	1.22E-06	7.23	5.79E-08	7.41E-08
1.41	1.17E-06	1.22E-06	7.73	5.10E-08	6.95E-08
1.51	1.10E-06	1.15E-06	8.25	2.46E-08	4.28E-08
1.61	9.49E-07	9.92E-07	8.77	1.13E-08	2.66E-08
1.71	7.60E-07	7.92E-07	9.24	1.20E-08	2.85E-08
1.81	5.96E-07	6.37E-07	9.72	1.92E-08	3.44E-08
1.94	5.12E-07	5.52E-07	10.23	3.60E-08	5.20E-08
2.11	5.35E-07	5.63E-07	10.75	5.50E-08	7.22E-08
2.31	4.91E-07	5.23E-07	11.26	5.76E-08	7.50E-08
2.50	3.82E-07	4.06E-07	11.76	5.62E-08	7.33E-08
2.69	3.30E-07	3.51E-07	12.40	1.29E-07	1.46E-07
2.90	3.50E-07	3.74E-07	13.20	4.70E-07	4.85E-07
3.10	3.25E-07	3.55E-07	14.03	9.44E-07	9.57E-07
3.30	2.42E-07	2.65E-07	14.86	1.06E-06	1.07E-06
3.51	1.61E-07	1.87E-07	15.62	7.94E-07	8.03E-07
3.71	1.34E-07	1.63E-07	16.45	4.12E-07	4.18E-07
3.90	1.46E-07	1.67E-07	17.44	1.39E-07	1.41E-07
4.15	1.48E-07	1.71E-07	18.51	3.20E-08	3.31E-08
4.46	1.28E-07	1.41E-07	19.58	5.28E-09	5.70E-09
4.75	1.09E-07	1.25E-07	20.53	-5.67E-10	-2.41E-10
5.06	9.15E-08	1.11E-07	21.43	-2.27E-09	-2.00E-09
5.36	7.82E-08	9.97E-08	22.40	-2.78E-09	-2.49E-09
5.64	8.07E-08	9.88E-08	23.43	-2.46E-09	-2.17E-09

Run R136GS.205

x = 0.0 y = 0.0 z = 154.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	3.88E-07	6.58E-07	3.93	4.87E-08	5.70E-08
0.76	6.14E-07	7.25E-07	4.06	3.69E-08	4.60E-08
0.80	7.28E-07	7.62E-07	4.19	2.83E-08	3.81E-08
0.84	7.28E-07	7.42E-07	4.31	2.69E-08	3.82E-08
0.88	6.56E-07	6.67E-07	4.44	3.48E-08	4.76E-08
0.92	5.58E-07	5.69E-07	4.57	4.84E-08	6.25E-08
0.96	4.64E-07	4.75E-07	4.70	5.98E-08	7.41E-08
1.00	3.94E-07	4.05E-07	4.83	5.90E-08	7.44E-08
1.04	3.56E-07	3.67E-07	4.99	4.10E-08	5.91E-08
1.08	3.46E-07	3.56E-07	5.15	1.08E-08	3.05E-08
1.13	3.50E-07	3.60E-07	5.32	-7.53E-09	1.28E-08
1.17	3.59E-07	3.70E-07	5.50	3.45E-10	2.25E-08
1.22	3.64E-07	3.76E-07	5.67	3.22E-08	5.55E-08
1.28	3.65E-07	3.77E-07	5.83	6.56E-08	8.77E-08
1.33	3.59E-07	3.69E-07	6.00	7.87E-08	9.93E-08
1.38	3.40E-07	3.49E-07	6.18	6.66E-08	8.69E-08
1.42	3.08E-07	3.18E-07	6.35	4.07E-08	6.01E-08
1.47	2.73E-07	2.82E-07	6.51	2.02E-08	3.75E-08
1.53	2.42E-07	2.50E-07	6.70	1.51E-08	3.00E-08
1.58	2.18E-07	2.26E-07	6.90	2.88E-08	4.19E-08
1.64	1.97E-07	2.06E-07	7.10	4.84E-08	6.10E-08
1.72	1.85E-07	1.93E-07	7.30	6.08E-08	7.25E-08
1.80	1.83E-07	1.91E-07	7.50	6.06E-08	7.11E-08
1.88	1.84E-07	1.93E-07	7.70	5.03E-08	6.00E-08
1.96	1.85E-07	1.93E-07	7.90	3.64E-08	4.52E-08
2.04	1.88E-07	1.95E-07	8.10	2.51E-08	3.27E-08
2.12	1.90E-07	1.97E-07	8.30	1.82E-08	2.50E-08
2.20	1.85E-07	1.93E-07	8.50	1.56E-08	2.17E-08
2.28	1.71E-07	1.78E-07	8.73	1.49E-08	2.01E-08
2.36	1.49E-07	1.56E-07	8.98	1.34E-08	1.79E-08
2.45	1.22E-07	1.29E-07	9.23	1.01E-08	1.37E-08
2.55	1.01E-07	1.07E-07	9.48	5.78E-09	8.83E-09
2.65	8.97E-08	9.63E-08	9.73	2.05E-09	4.63E-09
2.75	8.48E-08	9.14E-08	9.98	-4.38E-10	1.85E-09
2.85	7.96E-08	8.61E-08	10.30	-1.75E-09	3.25E-10
2.95	7.25E-08	7.88E-08	10.70	-1.76E-09	2.37E-10
3.05	6.63E-08	7.28E-08	11.10	-1.29E-09	4.83E-10
3.15	6.33E-08	7.01E-08	11.50	-8.71E-10	5.38E-10
3.25	6.33E-08	7.03E-08	11.90	-4.79E-10	5.85E-10
3.35	6.46E-08	7.16E-08	12.30	-1.32E-10	7.38E-10
3.45	6.60E-08	7.30E-08	12.70	1.64E-10	1.01E-09
3.55	6.63E-08	7.37E-08	13.10	3.55E-10	1.17E-09
3.66	6.45E-08	7.23E-08	13.50	3.64E-10	1.14E-09
3.79	5.88E-08	6.67E-08	13.90	2.90E-10	9.55E-10

Run R135NS.198

x = 0.0 y = 0.0 z = 154.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.67E-06	1.68E-06	5.94	1.58E-08	1.79E-08
1.01	1.28E-06	1.29E-06	6.25	1.30E-08	1.55E-08
1.11	9.55E-07	9.64E-07	6.55	1.22E-08	1.47E-08
1.21	7.40E-07	7.49E-07	6.83	1.29E-08	1.51E-08
1.31	6.00E-07	6.06E-07	7.23	1.27E-08	1.48E-08
1.41	4.99E-07	5.06E-07	7.73	1.00E-08	1.23E-08
1.51	4.25E-07	4.33E-07	8.25	7.45E-09	9.68E-09
1.61	3.59E-07	3.65E-07	8.77	7.20E-09	9.07E-09
1.71	3.01E-07	3.06E-07	9.24	6.61E-09	8.63E-09
1.81	2.52E-07	2.58E-07	9.72	5.36E-09	7.19E-09
1.94	2.07E-07	2.13E-07	10.23	5.72E-09	7.63E-09
2.11	1.76E-07	1.80E-07	10.75	7.30E-09	9.36E-09
2.31	1.43E-07	1.48E-07	11.26	7.52E-09	9.60E-09
2.50	1.10E-07	1.13E-07	11.76	7.30E-09	9.34E-09
2.69	8.91E-08	9.20E-08	12.40	1.54E-08	1.74E-08
2.90	8.09E-08	8.41E-08	13.20	5.67E-08	5.86E-08
3.10	7.19E-08	7.60E-08	14.03	1.17E-07	1.19E-07
3.30	5.97E-08	6.27E-08	14.86	1.34E-07	1.35E-07
3.51	4.77E-08	5.13E-08	15.62	1.02E-07	1.03E-07
3.71	4.04E-08	4.43E-08	16.45	5.42E-08	5.49E-08
3.90	3.68E-08	3.95E-08	17.44	1.88E-08	1.91E-08
4.15	3.17E-08	3.48E-08	18.51	4.48E-09	4.62E-09
4.46	2.68E-08	2.86E-08	19.58	7.94E-10	8.53E-10
4.75	2.22E-08	2.44E-08	20.53	-2.07E-11	2.62E-11
5.06	1.86E-08	2.11E-08	21.43	-2.69E-10	-2.28E-10
5.36	1.69E-08	1.97E-08	22.40	-3.64E-10	-3.24E-10
5.64	1.70E-08	1.93E-08	23.43	-3.47E-10	-3.12E-10

Run R138GS.216

x = 45.0 y = 0.0 z = 154.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	2.68E-07	4.99E-07	3.93	3.66E-08	4.41E-08
0.76	4.88E-07	5.83E-07	4.06	3.36E-08	4.17E-08
0.80	5.98E-07	6.27E-07	4.19	3.39E-08	4.28E-08
0.84	5.98E-07	6.10E-07	4.31	3.29E-08	4.32E-08
0.88	5.33E-07	5.44E-07	4.44	3.10E-08	4.27E-08
0.92	4.52E-07	4.63E-07	4.57	3.11E-08	4.37E-08
0.96	3.82E-07	3.92E-07	4.70	3.48E-08	4.76E-08
1.00	3.31E-07	3.41E-07	4.83	3.76E-08	5.15E-08
1.04	3.01E-07	3.10E-07	4.99	3.49E-08	5.10E-08
1.08	2.91E-07	3.00E-07	5.15	2.32E-08	4.08E-08
1.13	2.95E-07	3.04E-07	5.32	1.18E-08	2.99E-08
1.17	3.04E-07	3.14E-07	5.50	1.08E-08	3.05E-08
1.22	3.12E-07	3.23E-07	5.67	2.47E-08	4.54E-08
1.28	3.13E-07	3.24E-07	5.83	4.37E-08	6.33E-08
1.33	3.00E-07	3.09E-07	6.00	5.44E-08	7.28E-08
1.38	2.75E-07	2.84E-07	6.18	5.11E-08	6.90E-08
1.42	2.49E-07	2.57E-07	6.35	3.83E-08	5.54E-08
1.47	2.24E-07	2.33E-07	6.51	2.74E-08	4.25E-08
1.53	2.01E-07	2.09E-07	6.70	2.50E-08	3.78E-08
1.58	1.81E-07	1.89E-07	6.90	3.25E-08	4.40E-08
1.64	1.68E-07	1.75E-07	7.10	4.28E-08	5.36E-08
1.72	1.67E-07	1.74E-07	7.30	4.79E-08	5.80E-08
1.80	1.66E-07	1.74E-07	7.50	4.61E-08	5.52E-08
1.88	1.63E-07	1.71E-07	7.70	3.87E-08	4.69E-08
1.96	1.62E-07	1.70E-07	7.90	2.95E-08	3.69E-08
2.04	1.65E-07	1.72E-07	8.10	2.13E-08	2.78E-08
2.12	1.68E-07	1.75E-07	8.30	1.55E-08	2.11E-08
2.20	1.64E-07	1.71E-07	8.50	1.23E-08	1.71E-08
2.28	1.47E-07	1.54E-07	8.73	1.03E-08	1.45E-08
2.36	1.23E-07	1.30E-07	8.98	8.52E-09	1.21E-08
2.45	1.01E-07	1.07E-07	9.23	6.14E-09	9.01E-09
2.55	8.83E-08	9.42E-08	9.48	3.38E-09	5.80E-09
2.65	8.21E-08	8.81E-08	9.73	1.16E-09	3.23E-09
2.75	7.53E-08	8.14E-08	9.98	-2.23E-10	1.52E-09
2.85	6.76E-08	7.36E-08	10.30	-9.22E-10	6.65E-10
2.95	6.08E-08	6.67E-08	10.70	-8.37E-10	4.65E-10
3.05	5.64E-08	6.23E-08	11.10	-5.50E-10	5.37E-10
3.15	5.48E-08	6.10E-08	11.50	-2.64E-10	6.08E-10
3.25	5.62E-08	6.25E-08	11.90	-4.60E-11	7.26E-10
3.35	5.90E-08	6.54E-08	12.30	9.56E-11	8.02E-10
3.45	6.11E-08	6.75E-08	12.70	1.54E-10	7.91E-10
3.55	6.03E-08	6.71E-08	13.10	1.12E-10	6.88E-10
3.66	5.48E-08	6.19E-08	13.50	3.02E-11	5.55E-10
3.79	4.48E-08	5.20E-08	13.90	-1.50E-11	4.28E-10

Run R137NS.211

x = 45.0 y = 0.0 z = 154.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.42E-06	1.43E-06	5.94	1.20E-08	1.37E-08
1.01	1.10E-06	1.11E-06	6.25	1.10E-08	1.30E-08
1.11	8.28E-07	8.35E-07	6.55	1.07E-08	1.28E-08
1.21	6.29E-07	6.36E-07	6.83	1.06E-08	1.24E-08
1.31	4.98E-07	5.03E-07	7.23	9.97E-09	1.16E-08
1.41	4.10E-07	4.15E-07	7.73	8.07E-09	9.98E-09
1.51	3.51E-07	3.57E-07	8.25	5.42E-09	7.22E-09
1.61	3.00E-07	3.05E-07	8.77	4.39E-09	5.91E-09
1.71	2.51E-07	2.55E-07	9.24	4.21E-09	5.83E-09
1.81	2.08E-07	2.13E-07	9.72	4.94E-09	6.45E-09
1.94	1.69E-07	1.74E-07	10.23	7.27E-09	8.87E-09
2.11	1.44E-07	1.47E-07	10.75	8.56E-09	1.03E-08
2.31	1.20E-07	1.23E-07	11.26	6.60E-09	8.33E-09
2.50	9.17E-08	9.45E-08	11.76	6.12E-09	7.80E-09
2.69	7.33E-08	7.57E-08	12.40	1.88E-08	2.04E-08
2.90	6.75E-08	7.02E-08	13.20	5.64E-08	5.78E-08
3.10	6.00E-08	6.34E-08	14.03	9.29E-08	9.39E-08
3.30	4.87E-08	5.11E-08	14.86	9.62E-08	9.71E-08
3.51	3.78E-08	4.07E-08	15.62	7.18E-08	7.25E-08
3.71	3.19E-08	3.51E-08	16.45	3.84E-08	3.89E-08
3.90	3.01E-08	3.23E-08	17.44	1.33E-08	1.35E-08
4.15	2.70E-08	2.95E-08	18.51	2.99E-09	3.09E-09
4.46	2.24E-08	2.39E-08	19.58	4.12E-10	4.44E-10
4.75	1.89E-08	2.07E-08	20.53	-8.87E-11	-7.55E-11
5.06	1.65E-08	1.85E-08	21.43	-2.05E-10	-1.97E-10
5.36	1.42E-08	1.64E-08	22.40	-2.25E-10	-2.16E-10
5.64	1.29E-08	1.48E-08	23.43	-1.88E-10	-1.80E-10

Run R139GS.218

x = -45.0 y = 0.0 z = 154.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	2.92E-07	5.44E-07	3.93	4.17E-08	5.17E-08
0.76	5.03E-07	6.07E-07	4.06	3.86E-08	4.93E-08
0.80	6.09E-07	6.42E-07	4.19	3.33E-08	4.51E-08
0.84	6.13E-07	6.29E-07	4.31	2.73E-08	4.06E-08
0.88	5.49E-07	5.63E-07	4.44	2.50E-08	4.03E-08
0.92	4.60E-07	4.74E-07	4.57	2.81E-08	4.50E-08
0.96	3.81E-07	3.94E-07	4.70	3.45E-08	5.12E-08
1.00	3.27E-07	3.40E-07	4.83	3.84E-08	5.65E-08
1.04	2.98E-07	3.11E-07	4.99	3.68E-08	5.79E-08
1.08	2.90E-07	3.03E-07	5.15	2.59E-08	4.89E-08
1.13	2.97E-07	3.09E-07	5.32	1.32E-08	3.69E-08
1.17	3.08E-07	3.20E-07	5.50	1.01E-08	3.58E-08
1.22	3.09E-07	3.23E-07	5.67	2.31E-08	4.99E-08
1.28	3.02E-07	3.16E-07	5.83	4.22E-08	6.78E-08
1.33	2.92E-07	3.04E-07	6.00	5.31E-08	7.71E-08
1.38	2.78E-07	2.89E-07	6.18	5.06E-08	7.39E-08
1.42	2.55E-07	2.67E-07	6.35	3.91E-08	6.12E-08
1.47	2.28E-07	2.39E-07	6.51	2.88E-08	4.83E-08
1.53	2.03E-07	2.14E-07	6.70	2.35E-08	4.04E-08
1.58	1.85E-07	1.95E-07	6.90	2.70E-08	4.19E-08
1.64	1.71E-07	1.81E-07	7.10	3.53E-08	4.93E-08
1.72	1.61E-07	1.70E-07	7.30	4.31E-08	5.61E-08
1.80	1.59E-07	1.69E-07	7.50	4.51E-08	5.70E-08
1.88	1.64E-07	1.74E-07	7.70	3.92E-08	4.99E-08
1.96	1.68E-07	1.78E-07	7.90	2.91E-08	3.88E-08
2.04	1.72E-07	1.82E-07	8.10	1.96E-08	2.79E-08
2.12	1.75E-07	1.84E-07	8.30	1.33E-08	2.06E-08
2.20	1.68E-07	1.77E-07	8.50	1.05E-08	1.69E-08
2.28	1.49E-07	1.57E-07	8.73	9.53E-09	1.51E-08
2.36	1.25E-07	1.33E-07	8.98	8.53E-09	1.32E-08
2.45	1.03E-07	1.11E-07	9.23	6.53E-09	1.04E-08
2.55	8.78E-08	9.57E-08	9.48	3.91E-09	7.10E-09
2.65	7.78E-08	8.56E-08	9.73	1.60E-09	4.36E-09
2.75	7.26E-08	8.06E-08	9.98	4.94E-11	2.49E-09
2.85	6.93E-08	7.71E-08	10.30	-8.26E-10	1.39E-09
2.95	6.45E-08	7.22E-08	10.70	-8.87E-10	9.57E-10
3.05	5.97E-08	6.75E-08	11.10	-5.58E-10	8.79E-10
3.15	5.74E-08	6.55E-08	11.50	-2.88E-10	8.02E-10
3.25	5.69E-08	6.52E-08	11.90	-1.63E-10	7.11E-10
3.35	5.60E-08	6.45E-08	12.30	-1.32E-10	7.13E-10
3.45	5.47E-08	6.32E-08	12.70	-9.41E-11	7.03E-10
3.55	5.26E-08	6.14E-08	13.10	-7.77E-11	6.46E-10
3.66	4.89E-08	5.81E-08	13.50	-8.45E-11	5.63E-10
3.79	4.46E-08	5.40E-08	13.90	-7.43E-11	4.64E-10

Run R140NS.222

x = -45.0 y = 0.0 z = 154.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval	Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval
0.91	1.25E-06	1.26E-06	5.94	1.21E-08	1.39E-08
1.01	9.64E-07	9.70E-07	6.25	1.16E-08	1.37E-08
1.11	7.23E-07	7.30E-07	6.55	1.10E-08	1.32E-08
1.21	5.59E-07	5.66E-07	6.83	1.04E-08	1.24E-08
1.31	4.49E-07	4.55E-07	7.23	8.97E-09	1.07E-08
1.41	3.72E-07	3.78E-07	7.73	7.40E-09	9.36E-09
1.51	3.18E-07	3.24E-07	8.25	5.72E-09	7.64E-09
1.61	2.71E-07	2.76E-07	8.77	4.58E-09	6.16E-09
1.71	2.29E-07	2.33E-07	9.24	4.02E-09	5.71E-09
1.81	1.92E-07	1.97E-07	9.72	4.18E-09	5.73E-09
1.94	1.58E-07	1.63E-07	10.23	4.94E-09	6.57E-09
2.11	1.33E-07	1.37E-07	10.75	6.01E-09	7.74E-09
2.31	1.08E-07	1.12E-07	11.26	6.48E-09	8.21E-09
2.50	8.42E-08	8.71E-08	11.76	7.28E-09	8.95E-09
2.69	6.90E-08	7.15E-08	12.40	1.65E-08	1.82E-08
2.90	6.24E-08	6.51E-08	13.20	5.02E-08	5.16E-08
3.10	5.48E-08	5.83E-08	14.03	8.76E-08	8.87E-08
3.30	4.49E-08	4.75E-08	14.86	9.11E-08	9.22E-08
3.51	3.54E-08	3.83E-08	15.62	6.68E-08	6.76E-08
3.71	3.01E-08	3.34E-08	16.45	3.49E-08	3.54E-08
3.90	2.83E-08	3.06E-08	17.44	1.19E-08	1.22E-08
4.15	2.51E-08	2.78E-08	18.51	2.69E-09	2.78E-09
4.46	2.10E-08	2.25E-08	19.58	3.53E-10	3.80E-10
4.75	1.70E-08	1.88E-08	20.53	-1.21E-10	-1.05E-10
5.06	1.37E-08	1.57E-08	21.43	-2.21E-10	-2.10E-10
5.36	1.14E-08	1.36E-08	22.40	-2.18E-10	-2.08E-10
5.64	1.14E-08	1.34E-08	23.43	-1.69E-10	-1.58E-10

Run R141GS.230

x =-100.0 y = 0.0 z = 160.2
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.22E-07	2.58E-07	3.93	3.01E-08	3.64E-08
0.76	2.33E-07	2.89E-07	4.06	2.89E-08	3.59E-08
0.80	2.89E-07	3.08E-07	4.19	2.70E-08	3.44E-08
0.84	2.90E-07	2.99E-07	4.31	2.44E-08	3.28E-08
0.88	2.57E-07	2.65E-07	4.44	2.06E-08	3.04E-08
0.92	2.14E-07	2.23E-07	4.57	1.58E-08	2.64E-08
0.96	1.79E-07	1.87E-07	4.70	1.11E-08	2.18E-08
1.00	1.55E-07	1.63E-07	4.83	7.61E-09	1.92E-08
1.04	1.42E-07	1.49E-07	4.99	7.92E-09	2.12E-08
1.08	1.35E-07	1.43E-07	5.15	1.22E-08	2.68E-08
1.13	1.35E-07	1.43E-07	5.32	1.67E-08	3.14E-08
1.17	1.41E-07	1.48E-07	5.50	1.63E-08	3.25E-08
1.22	1.46E-07	1.54E-07	5.67	1.38E-08	3.04E-08
1.28	1.44E-07	1.53E-07	5.83	1.30E-08	2.93E-08
1.33	1.37E-07	1.45E-07	6.00	1.72E-08	3.23E-08
1.38	1.30E-07	1.37E-07	6.18	2.38E-08	3.84E-08
1.42	1.24E-07	1.31E-07	6.35	2.76E-08	4.12E-08
1.47	1.18E-07	1.25E-07	6.51	2.60E-08	3.84E-08
1.53	1.11E-07	1.17E-07	6.70	2.12E-08	3.14E-08
1.58	1.02E-07	1.09E-07	6.90	1.65E-08	2.58E-08
1.64	9.49E-08	1.01E-07	7.10	1.67E-08	2.56E-08
1.72	9.26E-08	9.89E-08	7.30	2.00E-08	2.81E-08
1.80	9.63E-08	1.03E-07	7.50	2.30E-08	3.05E-08
1.88	1.03E-07	1.09E-07	7.70	2.31E-08	2.97E-08
1.96	1.05E-07	1.12E-07	7.90	2.03E-08	2.59E-08
2.04	1.05E-07	1.11E-07	8.10	1.57E-08	2.07E-08
2.12	1.07E-07	1.13E-07	8.30	1.14E-08	1.57E-08
2.20	1.10E-07	1.16E-07	8.50	8.14E-09	1.18E-08
2.28	1.05E-07	1.10E-07	8.73	5.85E-09	8.80E-09
2.36	8.84E-08	9.40E-08	8.98	3.94E-09	6.52E-09
2.45	6.55E-08	7.08E-08	9.23	2.38E-09	4.53E-09
2.55	4.90E-08	5.40E-08	9.48	9.86E-10	2.78E-09
2.65	4.30E-08	4.80E-08	9.73	-9.52E-11	1.49E-09
2.75	3.97E-08	4.47E-08	9.98	-7.35E-10	7.13E-10
2.85	3.63E-08	4.13E-08	10.30	-9.75E-10	1.74E-10
2.95	3.51E-08	4.00E-08	10.70	-7.22E-10	1.12E-10
3.05	3.57E-08	4.07E-08	11.10	-3.64E-10	2.50E-10
3.15	3.48E-08	4.00E-08	11.50	-8.48E-11	4.08E-10
3.25	3.12E-08	3.65E-08	11.90	7.96E-11	5.46E-10
3.35	2.67E-08	3.21E-08	12.30	1.54E-10	5.97E-10
3.45	2.41E-08	2.95E-08	12.70	1.60E-10	5.62E-10
3.55	2.40E-08	2.96E-08	13.10	1.08E-10	4.69E-10
3.66	2.60E-08	3.19E-08	13.50	4.97E-11	3.63E-10
3.79	2.90E-08	3.50E-08	13.90	1.49E-11	2.77E-10

Run R141NS.229

x =-100.0 y = 0.0 z = 160.2
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	4.83E-07	4.88E-07	5.94	6.38E-09	7.21E-09
1.01	3.82E-07	3.85E-07	6.25	5.58E-09	6.52E-09
1.11	2.95E-07	2.99E-07	6.55	5.04E-09	6.05E-09
1.21	2.36E-07	2.39E-07	6.83	4.82E-09	5.68E-09
1.31	1.96E-07	1.99E-07	7.23	4.30E-09	5.06E-09
1.41	1.66E-07	1.69E-07	7.73	3.84E-09	4.71E-09
1.51	1.43E-07	1.46E-07	8.25	3.14E-09	3.98E-09
1.61	1.22E-07	1.24E-07	8.77	2.56E-09	3.26E-09
1.71	1.03E-07	1.05E-07	9.24	2.22E-09	2.96E-09
1.81	8.78E-08	9.04E-08	9.72	1.99E-09	2.65E-09
1.94	7.44E-08	7.69E-08	10.23	2.38E-09	3.06E-09
2.11	6.45E-08	6.62E-08	10.75	3.26E-09	4.00E-09
2.31	5.38E-08	5.57E-08	11.26	3.47E-09	4.23E-09
2.50	4.28E-08	4.43E-08	11.76	3.12E-09	3.85E-09
2.69	3.54E-08	3.66E-08	12.40	4.74E-09	5.49E-09
2.90	3.11E-08	3.25E-08	13.20	1.40E-08	1.47E-08
3.10	2.69E-08	2.86E-08	14.03	2.61E-08	2.66E-08
3.30	2.19E-08	2.32E-08	14.86	2.84E-08	2.89E-08
3.51	1.70E-08	1.85E-08	15.62	2.12E-08	2.16E-08
3.71	1.42E-08	1.58E-08	16.45	1.12E-08	1.14E-08
3.90	1.34E-08	1.45E-08	17.44	3.78E-09	3.89E-09
4.15	1.24E-08	1.36E-08	18.51	8.55E-10	8.97E-10
4.46	1.07E-08	1.14E-08	19.58	1.29E-10	1.46E-10
4.75	8.42E-09	9.27E-09	20.53	-2.71E-11	-1.52E-11
5.06	6.91E-09	7.85E-09	21.43	-6.91E-11	-5.96E-11
5.36	6.47E-09	7.54E-09	22.40	-7.39E-11	-6.67E-11
5.64	6.63E-09	7.56E-09	23.43	-5.86E-11	-5.26E-11

Run R142GS.239

x = 100.0 y = 0.0 z = 159.2
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	9.66E-08	2.09E-07	3.93	1.97E-08	2.42E-08
0.76	2.03E-07	2.49E-07	4.06	1.72E-08	2.21E-08
0.80	2.48E-07	2.62E-07	4.19	1.58E-08	2.12E-08
0.84	2.41E-07	2.48E-07	4.31	1.46E-08	2.07E-08
0.88	2.12E-07	2.18E-07	4.44	1.46E-08	2.16E-08
0.92	1.80E-07	1.86E-07	4.57	1.71E-08	2.48E-08
0.96	1.54E-07	1.60E-07	4.70	2.13E-08	2.90E-08
1.00	1.38E-07	1.44E-07	4.83	2.35E-08	3.19E-08
1.04	1.32E-07	1.38E-07	4.99	2.14E-08	3.12E-08
1.08	1.34E-07	1.39E-07	5.15	1.37E-08	2.42E-08
1.13	1.39E-07	1.44E-07	5.32	5.75E-09	1.68E-08
1.17	1.41E-07	1.46E-07	5.50	3.57E-09	1.55E-08
1.22	1.38E-07	1.44E-07	5.67	1.01E-08	2.27E-08
1.28	1.33E-07	1.40E-07	5.83	2.12E-08	3.31E-08
1.33	1.30E-07	1.36E-07	6.00	2.96E-08	4.09E-08
1.38	1.26E-07	1.31E-07	6.18	3.09E-08	4.18E-08
1.42	1.17E-07	1.22E-07	6.35	2.55E-08	3.58E-08
1.47	1.07E-07	1.12E-07	6.51	1.86E-08	2.78E-08
1.53	9.64E-08	1.01E-07	6.70	1.43E-08	2.24E-08
1.58	8.90E-08	9.36E-08	6.90	1.52E-08	2.23E-08
1.64	8.56E-08	9.02E-08	7.10	1.96E-08	2.62E-08
1.72	8.89E-08	9.34E-08	7.30	2.35E-08	2.97E-08
1.80	9.43E-08	9.88E-08	7.50	2.43E-08	2.99E-08
1.88	9.74E-08	1.02E-07	7.70	2.16E-08	2.68E-08
1.96	9.89E-08	1.04E-07	7.90	1.68E-08	2.13E-08
2.04	1.02E-07	1.07E-07	8.10	1.16E-08	1.57E-08
2.12	1.06E-07	1.11E-07	8.30	7.31E-09	1.10E-08
2.20	1.05E-07	1.10E-07	8.50	4.62E-09	7.83E-09
2.28	9.62E-08	1.00E-07	8.73	3.20E-09	5.98E-09
2.36	8.07E-08	8.46E-08	8.98	2.64E-09	5.04E-09
2.45	6.22E-08	6.59E-08	9.23	2.27E-09	4.30E-09
2.55	4.74E-08	5.10E-08	9.48	1.67E-09	3.37E-09
2.65	4.04E-08	4.40E-08	9.73	8.93E-10	2.42E-09
2.75	3.80E-08	4.16E-08	9.98	9.26E-11	1.48E-09
2.85	3.64E-08	3.99E-08	10.30	-7.72E-10	4.98E-10
2.95	3.39E-08	3.73E-08	10.70	-1.35E-09	-1.49E-10
3.05	3.10E-08	3.45E-08	11.10	-1.38E-09	-2.32E-10
3.15	2.87E-08	3.23E-08	11.50	-1.01E-09	2.42E-13
3.25	2.77E-08	3.15E-08	11.90	-5.01E-10	3.45E-10
3.35	2.81E-08	3.19E-08	12.30	-5.89E-11	6.70E-10
3.45	2.92E-08	3.31E-08	12.70	2.70E-10	8.93E-10
3.55	2.99E-08	3.38E-08	13.10	4.36E-10	9.90E-10
3.66	2.83E-08	3.26E-08	13.50	4.10E-10	9.63E-10
3.79	2.40E-08	2.83E-08	13.90	3.16E-10	8.30E-10

Run R142NS.236

x = 100.0 y = 0.0 z = 159.2
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	3.30E-07	3.34E-07	5.94	4.76E-09	5.51E-09
1.01	2.66E-07	2.69E-07	6.25	3.93E-09	4.76E-09
1.11	2.09E-07	2.12E-07	6.55	3.58E-09	4.45E-09
1.21	1.71E-07	1.74E-07	6.83	3.70E-09	4.45E-09
1.31	1.46E-07	1.48E-07	7.23	3.75E-09	4.41E-09
1.41	1.26E-07	1.29E-07	7.73	3.52E-09	4.27E-09
1.51	1.10E-07	1.12E-07	8.25	2.98E-09	3.70E-09
1.61	9.29E-08	9.52E-08	8.77	2.46E-09	3.06E-09
1.71	7.88E-08	8.07E-08	9.24	2.05E-09	2.68E-09
1.81	6.82E-08	7.05E-08	9.72	1.82E-09	2.39E-09
1.94	6.01E-08	6.23E-08	10.23	1.92E-09	2.51E-09
2.11	5.35E-08	5.50E-08	10.75	2.18E-09	2.83E-09
2.31	4.45E-08	4.62E-08	11.26	2.35E-09	3.00E-09
2.50	3.56E-08	3.69E-08	11.76	2.77E-09	3.40E-09
2.69	2.86E-08	2.97E-08	12.40	4.68E-09	5.31E-09
2.90	2.37E-08	2.49E-08	13.20	1.06E-08	1.12E-08
3.10	1.98E-08	2.13E-08	14.03	1.81E-08	1.85E-08
3.30	1.66E-08	1.77E-08	14.86	1.90E-08	1.94E-08
3.51	1.38E-08	1.51E-08	15.62	1.38E-08	1.42E-08
3.71	1.20E-08	1.33E-08	16.45	7.04E-09	7.24E-09
3.90	1.10E-08	1.20E-08	17.44	2.32E-09	2.42E-09
4.15	9.69E-09	1.07E-08	18.51	5.25E-10	5.61E-10
4.46	8.59E-09	9.24E-09	19.58	7.88E-11	9.43E-11
4.75	7.69E-09	8.44E-09	20.53	-1.81E-11	-8.02E-12
5.06	6.56E-09	7.39E-09	21.43	-4.37E-11	-3.59E-11
5.36	5.52E-09	6.45E-09	22.40	-4.74E-11	-4.09E-11
5.64	5.22E-09	6.03E-09	23.43	-3.94E-11	-3.29E-11

Run R143GS.248

x = 0.0 y = 45.0 z = 154.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval	Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval
0.72	3.75E-07	6.17E-07	3.93	3.90E-08	4.62E-08
0.76	5.31E-07	6.30E-07	4.06	3.21E-08	3.98E-08
0.80	5.98E-07	6.28E-07	4.19	3.08E-08	3.91E-08
0.84	5.77E-07	5.89E-07	4.31	3.51E-08	4.47E-08
0.88	5.04E-07	5.14E-07	4.44	4.04E-08	5.17E-08
0.92	4.25E-07	4.35E-07	4.57	4.28E-08	5.48E-08
0.96	3.61E-07	3.71E-07	4.70	4.24E-08	5.44E-08
1.00	3.18E-07	3.27E-07	4.83	3.93E-08	5.25E-08
1.04	2.91E-07	3.00E-07	4.99	3.33E-08	4.88E-08
1.08	2.81E-07	2.89E-07	5.15	2.29E-08	3.97E-08
1.13	2.83E-07	2.92E-07	5.32	1.25E-08	2.96E-08
1.17	2.92E-07	3.01E-07	5.50	9.27E-09	2.82E-08
1.22	2.97E-07	3.07E-07	5.67	2.03E-08	4.04E-08
1.28	2.93E-07	3.03E-07	5.83	3.92E-08	5.79E-08
1.33	2.83E-07	2.91E-07	6.00	5.35E-08	7.12E-08
1.38	2.68E-07	2.76E-07	6.18	5.47E-08	7.21E-08
1.42	2.50E-07	2.58E-07	6.35	4.44E-08	6.09E-08
1.47	2.29E-07	2.37E-07	6.51	3.21E-08	4.66E-08
1.53	2.06E-07	2.14E-07	6.70	2.44E-08	3.70E-08
1.58	1.87E-07	1.94E-07	6.90	2.80E-08	3.92E-08
1.64	1.69E-07	1.77E-07	7.10	3.88E-08	4.93E-08
1.72	1.59E-07	1.66E-07	7.30	4.86E-08	5.85E-08
1.80	1.60E-07	1.68E-07	7.50	5.09E-08	6.00E-08
1.88	1.69E-07	1.76E-07	7.70	4.48E-08	5.28E-08
1.96	1.69E-07	1.77E-07	7.90	3.38E-08	4.11E-08
2.04	1.68E-07	1.75E-07	8.10	2.31E-08	2.96E-08
2.12	1.74E-07	1.81E-07	8.30	1.59E-08	2.17E-08
2.20	1.78E-07	1.84E-07	8.50	1.27E-08	1.76E-08
2.28	1.64E-07	1.70E-07	8.73	1.15E-08	1.58E-08
2.36	1.35E-07	1.41E-07	8.98	1.06E-08	1.43E-08
2.45	1.07E-07	1.13E-07	9.23	8.72E-09	1.18E-08
2.55	8.88E-08	9.44E-08	9.48	6.26E-09	8.73E-09
2.65	7.79E-08	8.36E-08	9.73	3.83E-09	5.96E-09
2.75	7.10E-08	7.67E-08	9.98	1.95E-09	3.80E-09
2.85	6.87E-08	7.43E-08	10.30	4.34E-10	1.91E-09
2.95	6.68E-08	7.23E-08	10.70	-3.81E-10	8.81E-10
3.05	6.26E-08	6.82E-08	11.10	-4.58E-10	5.50E-10
3.15	5.83E-08	6.42E-08	11.50	-2.84E-10	4.90E-10
3.25	5.66E-08	6.26E-08	11.90	-1.31E-10	4.85E-10
3.35	5.66E-08	6.26E-08	12.30	-5.25E-11	5.57E-10
3.45	5.64E-08	6.25E-08	12.70	-4.71E-13	5.50E-10
3.55	5.52E-08	6.15E-08	13.10	1.11E-11	4.83E-10
3.66	5.23E-08	5.90E-08	13.50	-1.23E-11	4.28E-10
3.79	4.69E-08	5.37E-08	13.90	-2.57E-11	3.54E-10

Run R143NS.244

x = 0.0 y = 45.0 z = 154.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.07E-06	1.08E-06	5.94	1.27E-08	1.45E-08
1.01	8.51E-07	8.57E-07	6.25	1.27E-08	1.47E-08
1.11	6.53E-07	6.60E-07	6.55	1.23E-08	1.45E-08
1.21	5.22E-07	5.29E-07	6.83	1.16E-08	1.34E-08
1.31	4.43E-07	4.49E-07	7.23	9.91E-09	1.16E-08
1.41	3.86E-07	3.92E-07	7.73	7.77E-09	9.72E-09
1.51	3.36E-07	3.42E-07	8.25	6.61E-09	8.43E-09
1.61	2.83E-07	2.88E-07	8.77	7.48E-09	9.03E-09
1.71	2.34E-07	2.38E-07	9.24	6.96E-09	8.63E-09
1.81	1.92E-07	1.97E-07	9.72	5.43E-09	6.96E-09
1.94	1.57E-07	1.62E-07	10.23	5.38E-09	6.96E-09
2.11	1.36E-07	1.40E-07	10.75	6.38E-09	8.11E-09
2.31	1.17E-07	1.21E-07	11.26	6.19E-09	7.96E-09
2.50	8.73E-08	9.01E-08	11.76	5.66E-09	7.33E-09
2.69	6.57E-08	6.82E-08	12.40	1.11E-08	1.28E-08
2.90	6.29E-08	6.56E-08	13.20	3.87E-08	4.01E-08
3.10	6.26E-08	6.60E-08	14.03	8.24E-08	8.35E-08
3.30	5.35E-08	5.60E-08	14.86	1.05E-07	1.06E-07
3.51	3.92E-08	4.22E-08	15.62	9.13E-08	9.22E-08
3.71	2.98E-08	3.31E-08	16.45	5.64E-08	5.70E-08
3.90	2.75E-08	2.98E-08	17.44	2.27E-08	2.31E-08
4.15	2.64E-08	2.90E-08	18.51	6.07E-09	6.22E-09
4.46	2.36E-08	2.52E-08	19.58	1.16E-09	1.22E-09
4.75	1.98E-08	2.16E-08	20.53	9.30E-11	1.14E-10
5.06	1.70E-08	1.90E-08	21.43	-1.77E-10	-1.65E-10
5.36	1.45E-08	1.67E-08	22.40	-2.48E-10	-2.37E-10
5.64	1.30E-08	1.50E-08	23.43	-2.25E-10	-2.14E-10

Run R144GS.253

x = 0.0 y = 86.5 z = 154.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.30E-07	3.02E-07	3.93	3.37E-08	4.11E-08
0.76	2.98E-07	3.70E-07	4.06	2.78E-08	3.59E-08
0.80	3.78E-07	4.01E-07	4.19	2.47E-08	3.33E-08
0.84	3.79E-07	3.91E-07	4.31	2.43E-08	3.40E-08
0.88	3.41E-07	3.51E-07	4.44	2.46E-08	3.60E-08
0.92	2.92E-07	3.01E-07	4.57	2.45E-08	3.67E-08
0.96	2.47E-07	2.57E-07	4.70	2.37E-08	3.59E-08
1.00	2.16E-07	2.25E-07	4.83	2.14E-08	3.47E-08
1.04	1.98E-07	2.07E-07	4.99	1.82E-08	3.38E-08
1.08	1.90E-07	1.99E-07	5.15	1.41E-08	3.10E-08
1.13	1.91E-07	2.00E-07	5.32	1.09E-08	2.81E-08
1.17	1.98E-07	2.07E-07	5.50	9.86E-09	2.88E-08
1.22	1.98E-07	2.08E-07	5.67	1.59E-08	3.56E-08
1.28	1.92E-07	2.02E-07	5.83	2.62E-08	4.56E-08
1.33	1.84E-07	1.93E-07	6.00	3.50E-08	5.25E-08
1.38	1.78E-07	1.86E-07	6.18	3.67E-08	5.39E-08
1.42	1.69E-07	1.77E-07	6.35	3.18E-08	4.78E-08
1.47	1.56E-07	1.64E-07	6.51	2.59E-08	4.02E-08
1.53	1.41E-07	1.49E-07	6.70	2.27E-08	3.47E-08
1.58	1.29E-07	1.36E-07	6.90	2.43E-08	3.52E-08
1.64	1.21E-07	1.29E-07	7.10	2.86E-08	3.90E-08
1.72	1.22E-07	1.29E-07	7.30	3.18E-08	4.12E-08
1.80	1.23E-07	1.31E-07	7.50	3.20E-08	4.07E-08
1.88	1.26E-07	1.33E-07	7.70	2.88E-08	3.63E-08
1.96	1.29E-07	1.36E-07	7.90	2.36E-08	3.05E-08
2.04	1.32E-07	1.39E-07	8.10	1.84E-08	2.43E-08
2.12	1.35E-07	1.42E-07	8.30	1.38E-08	1.89E-08
2.20	1.35E-07	1.42E-07	8.50	1.06E-08	1.49E-08
2.28	1.26E-07	1.32E-07	8.73	8.04E-09	1.16E-08
2.36	1.06E-07	1.13E-07	8.98	6.16E-09	9.17E-09
2.45	8.06E-08	8.67E-08	9.23	4.62E-09	7.03E-09
2.55	6.13E-08	6.71E-08	9.48	3.08E-09	5.12E-09
2.65	5.50E-08	6.09E-08	9.73	1.65E-09	3.41E-09
2.75	5.40E-08	6.00E-08	9.98	4.79E-10	2.03E-09
2.85	5.21E-08	5.79E-08	10.30	-3.54E-10	8.01E-10
2.95	4.87E-08	5.45E-08	10.70	-6.01E-10	2.51E-10
3.05	4.63E-08	5.21E-08	11.10	-4.14E-10	2.15E-10
3.15	4.56E-08	5.16E-08	11.50	-1.61E-10	3.40E-10
3.25	4.44E-08	5.06E-08	11.90	6.49E-12	4.74E-10
3.35	4.12E-08	4.75E-08	12.30	7.77E-11	5.21E-10
3.45	3.77E-08	4.40E-08	12.70	7.59E-11	4.77E-10
3.55	3.66E-08	4.31E-08	13.10	1.55E-11	3.75E-10
3.66	3.79E-08	4.47E-08	13.50	-4.14E-11	2.71E-10
3.79	3.80E-08	4.50E-08	13.90	-6.22E-11	1.98E-10

Run R144NS.251

x = 0.0 y = 86.5 z = 154.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	6.34E-07	6.41E-07	5.94	7.63E-09	8.95E-09
1.01	5.06E-07	5.11E-07	6.25	6.50E-09	8.01E-09
1.11	3.96E-07	4.02E-07	6.55	6.31E-09	7.89E-09
1.21	3.21E-07	3.26E-07	6.83	6.54E-09	7.94E-09
1.31	2.68E-07	2.72E-07	7.23	6.45E-09	7.71E-09
1.41	2.28E-07	2.32E-07	7.73	5.73E-09	7.16E-09
1.51	1.97E-07	2.02E-07	8.25	4.37E-09	5.77E-09
1.61	1.68E-07	1.72E-07	8.77	3.50E-09	4.66E-09
1.71	1.41E-07	1.44E-07	9.24	3.03E-09	4.28E-09
1.81	1.18E-07	1.22E-07	9.72	2.78E-09	3.91E-09
1.94	9.84E-08	1.02E-07	10.23	3.22E-09	4.38E-09
2.11	8.64E-08	8.90E-08	10.75	4.17E-09	5.44E-09
2.31	7.16E-08	7.45E-08	11.26	4.35E-09	5.66E-09
2.50	5.54E-08	5.75E-08	11.76	4.05E-09	5.29E-09
2.69	4.56E-08	4.75E-08	12.40	7.25E-09	8.55E-09
2.90	4.20E-08	4.41E-08	13.20	2.47E-08	2.58E-08
3.10	3.72E-08	3.98E-08	14.03	4.96E-08	5.05E-08
3.30	3.01E-08	3.20E-08	14.86	5.68E-08	5.77E-08
3.51	2.27E-08	2.50E-08	15.62	4.40E-08	4.46E-08
3.71	1.83E-08	2.08E-08	16.45	2.39E-08	2.43E-08
3.90	1.72E-08	1.89E-08	17.44	8.39E-09	8.61E-09
4.15	1.59E-08	1.78E-08	18.51	1.97E-09	2.05E-09
4.46	1.44E-08	1.55E-08	19.58	3.19E-10	3.45E-10
4.75	1.28E-08	1.42E-08	20.53	-2.64E-11	-9.43E-12
5.06	1.13E-08	1.28E-08	21.43	-1.18E-10	-1.05E-10
5.36	9.67E-09	1.14E-08	22.40	-1.44E-10	-1.30E-10
5.64	8.71E-09	1.02E-08	23.43	-1.27E-10	-1.14E-10

Run R145GS.259

x = 0.0 y = 0.0 z = 229.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.72E-07	3.24E-07	3.93	2.39E-08	2.96E-08
0.76	2.79E-07	3.42E-07	4.06	2.25E-08	2.87E-08
0.80	3.27E-07	3.45E-07	4.19	2.04E-08	2.72E-08
0.84	3.16E-07	3.25E-07	4.31	1.78E-08	2.56E-08
0.88	2.75E-07	2.83E-07	4.44	1.64E-08	2.53E-08
0.92	2.33E-07	2.41E-07	4.57	1.80E-08	2.76E-08
0.96	2.01E-07	2.08E-07	4.70	2.19E-08	3.16E-08
1.00	1.77E-07	1.84E-07	4.83	2.42E-08	3.47E-08
1.04	1.61E-07	1.68E-07	4.99	2.17E-08	3.40E-08
1.08	1.56E-07	1.63E-07	5.15	1.27E-08	2.59E-08
1.13	1.59E-07	1.66E-07	5.32	4.44E-09	1.82E-08
1.17	1.63E-07	1.70E-07	5.50	4.23E-09	1.91E-08
1.22	1.64E-07	1.72E-07	5.67	1.37E-08	2.93E-08
1.28	1.62E-07	1.69E-07	5.83	2.52E-08	4.05E-08
1.33	1.56E-07	1.63E-07	6.00	3.10E-08	4.49E-08
1.38	1.47E-07	1.53E-07	6.18	2.86E-08	4.23E-08
1.42	1.33E-07	1.40E-07	6.35	2.17E-08	3.43E-08
1.47	1.20E-07	1.27E-07	6.51	1.62E-08	2.79E-08
1.53	1.09E-07	1.15E-07	6.70	1.58E-08	2.55E-08
1.58	1.02E-07	1.08E-07	6.90	2.02E-08	2.89E-08
1.64	9.98E-08	1.06E-07	7.10	2.64E-08	3.46E-08
1.72	1.00E-07	1.06E-07	7.30	2.98E-08	3.73E-08
1.80	9.85E-08	1.04E-07	7.50	2.84E-08	3.53E-08
1.88	9.83E-08	1.04E-07	7.70	2.32E-08	2.93E-08
1.96	1.02E-07	1.08E-07	7.90	1.73E-08	2.28E-08
2.04	1.06E-07	1.11E-07	8.10	1.32E-08	1.79E-08
2.12	1.06E-07	1.12E-07	8.30	1.09E-08	1.49E-08
2.20	1.01E-07	1.06E-07	8.50	9.41E-09	1.29E-08
2.28	9.02E-08	9.52E-08	8.73	7.77E-09	1.08E-08
2.36	7.66E-08	8.16E-08	8.98	5.43E-09	7.94E-09
2.45	6.32E-08	6.80E-08	9.23	3.07E-09	5.06E-09
2.55	5.35E-08	5.80E-08	9.48	1.13E-09	2.80E-09
2.65	4.83E-08	5.29E-08	9.73	-8.30E-11	1.34E-09
2.75	4.49E-08	4.95E-08	9.98	-7.70E-10	5.52E-10
2.85	4.05E-08	4.50E-08	10.30	-9.49E-10	1.94E-10
2.95	3.56E-08	4.00E-08	10.70	-7.66E-10	9.11E-11
3.05	3.28E-08	3.73E-08	11.10	-4.51E-10	1.90E-10
3.15	3.30E-08	3.76E-08	11.50	-1.62E-10	2.91E-10
3.25	3.41E-08	3.89E-08	11.90	4.36E-11	4.18E-10
3.35	3.33E-08	3.82E-08	12.30	1.80E-10	5.66E-10
3.45	3.07E-08	3.56E-08	12.70	2.70E-10	6.47E-10
3.55	2.78E-08	3.29E-08	13.10	2.82E-10	6.25E-10
3.66	2.57E-08	3.10E-08	13.50	2.34E-10	5.23E-10
3.79	2.48E-08	3.02E-08	13.90	1.63E-10	3.92E-10

Run R145NS.257

x = 0.0 y = 0.0 z = 229.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.64E-07	5.71E-07	5.94	5.93E-09	7.25E-09
1.01	4.49E-07	4.54E-07	6.25	4.52E-09	6.01E-09
1.11	3.47E-07	3.52E-07	6.55	4.56E-09	6.12E-09
1.21	2.75E-07	2.80E-07	6.83	5.71E-09	7.09E-09
1.31	2.28E-07	2.32E-07	7.23	6.93E-09	8.17E-09
1.41	1.95E-07	1.99E-07	7.73	5.97E-09	7.40E-09
1.51	1.70E-07	1.74E-07	8.25	3.43E-09	4.82E-09
1.61	1.45E-07	1.48E-07	8.77	1.95E-09	3.11E-09
1.71	1.20E-07	1.23E-07	9.24	2.05E-09	3.28E-09
1.81	9.93E-08	1.03E-07	9.72	2.97E-09	4.10E-09
1.94	8.17E-08	8.53E-08	10.23	3.82E-09	5.02E-09
2.11	7.16E-08	7.40E-08	10.75	3.89E-09	5.20E-09
2.31	6.00E-08	6.27E-08	11.26	2.89E-09	4.20E-09
2.50	4.61E-08	4.82E-08	11.76	2.79E-09	4.05E-09
2.69	3.68E-08	3.86E-08	12.40	9.21E-09	1.05E-08
2.90	3.39E-08	3.58E-08	13.20	3.01E-08	3.11E-08
3.10	3.06E-08	3.30E-08	14.03	5.25E-08	5.33E-08
3.30	2.50E-08	2.67E-08	14.86	5.56E-08	5.63E-08
3.51	1.94E-08	2.15E-08	15.62	4.15E-08	4.21E-08
3.71	1.67E-08	1.91E-08	16.45	2.21E-08	2.25E-08
3.90	1.62E-08	1.78E-08	17.44	7.70E-09	7.91E-09
4.15	1.47E-08	1.65E-08	18.51	1.79E-09	1.87E-09
4.46	1.20E-08	1.31E-08	19.58	2.75E-10	3.01E-10
4.75	9.82E-09	1.11E-08	20.53	-3.76E-11	-2.52E-11
5.06	8.41E-09	9.87E-09	21.43	-1.20E-10	-1.11E-10
5.36	7.31E-09	8.95E-09	22.40	-1.40E-10	-1.32E-10
5.64	6.92E-09	8.36E-09	23.43	-1.22E-10	-1.14E-10

Run R146GS.261

x =-100.0 y = 0.0 z = 229.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	5.88E-08	1.65E-07	3.93	1.91E-08	2.44E-08
0.76	1.58E-07	2.02E-07	4.06	1.96E-08	2.54E-08
0.80	2.07E-07	2.22E-07	4.19	1.76E-08	2.39E-08
0.84	2.12E-07	2.20E-07	4.31	1.29E-08	2.01E-08
0.88	1.94E-07	2.01E-07	4.44	7.86E-09	1.60E-08
0.92	1.66E-07	1.73E-07	4.57	5.88E-09	1.47E-08
0.96	1.40E-07	1.46E-07	4.70	9.04E-09	1.80E-08
1.00	1.19E-07	1.26E-07	4.83	1.54E-08	2.51E-08
1.04	1.07E-07	1.13E-07	4.99	2.19E-08	3.29E-08
1.08	1.02E-07	1.08E-07	5.15	2.07E-08	3.29E-08
1.13	1.01E-07	1.07E-07	5.32	1.10E-08	2.36E-08
1.17	1.04E-07	1.10E-07	5.50	-5.42E-10	1.33E-08
1.22	1.07E-07	1.14E-07	5.67	-3.82E-09	1.01E-08
1.28	1.07E-07	1.14E-07	5.83	3.65E-09	1.76E-08
1.33	1.04E-07	1.11E-07	6.00	1.70E-08	2.98E-08
1.38	1.00E-07	1.06E-07	6.18	2.79E-08	4.00E-08
1.42	9.55E-08	1.02E-07	6.35	3.00E-08	4.15E-08
1.47	8.95E-08	9.54E-08	6.51	2.50E-08	3.53E-08
1.53	8.28E-08	8.84E-08	6.70	1.57E-08	2.49E-08
1.58	7.69E-08	8.24E-08	6.90	9.06E-09	1.69E-08
1.64	7.18E-08	7.72E-08	7.10	9.66E-09	1.72E-08
1.72	6.88E-08	7.41E-08	7.30	1.52E-08	2.21E-08
1.80	7.19E-08	7.71E-08	7.50	2.07E-08	2.68E-08
1.88	7.95E-08	8.47E-08	7.70	2.13E-08	2.69E-08
1.96	8.33E-08	8.87E-08	7.90	1.77E-08	2.25E-08
2.04	8.26E-08	8.77E-08	8.10	1.23E-08	1.65E-08
2.12	8.24E-08	8.74E-08	8.30	7.65E-09	1.11E-08
2.20	8.16E-08	8.65E-08	8.50	5.01E-09	8.06E-09
2.28	7.48E-08	7.96E-08	8.73	3.97E-09	6.56E-09
2.36	6.35E-08	6.82E-08	8.98	3.65E-09	5.73E-09
2.45	5.28E-08	5.73E-08	9.23	2.81E-09	4.63E-09
2.55	4.55E-08	4.98E-08	9.48	1.58E-09	3.11E-09
2.65	3.80E-08	4.23E-08	9.73	3.24E-10	1.65E-09
2.75	2.98E-08	3.40E-08	9.98	-6.10E-10	4.89E-10
2.85	2.50E-08	2.91E-08	10.30	-1.10E-09	-1.50E-10
2.95	2.45E-08	2.86E-08	10.70	-9.52E-10	-3.00E-10
3.05	2.55E-08	2.97E-08	11.10	-5.52E-10	-1.22E-10
3.15	2.52E-08	2.96E-08	11.50	-1.95E-10	1.13E-10
3.25	2.44E-08	2.89E-08	11.90	3.05E-11	3.16E-10
3.35	2.45E-08	2.90E-08	12.30	1.50E-10	4.43E-10
3.45	2.50E-08	2.96E-08	12.70	1.95E-10	4.84E-10
3.55	2.39E-08	2.87E-08	13.10	1.86E-10	4.46E-10
3.66	2.08E-08	2.57E-08	13.50	1.52E-10	3.63E-10
3.79	1.85E-08	2.36E-08	13.90	1.06E-10	2.66E-10

Run R146NS.263

x =-100.0 y = 0.0 z = 229.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	3.87E-07	3.93E-07	5.94	5.18E-09	6.24E-09
1.01	3.05E-07	3.09E-07	6.25	3.91E-09	5.10E-09
1.11	2.32E-07	2.37E-07	6.55	3.12E-09	4.41E-09
1.21	1.85E-07	1.89E-07	6.83	3.09E-09	4.19E-09
1.31	1.55E-07	1.58E-07	7.23	3.33E-09	4.31E-09
1.41	1.33E-07	1.37E-07	7.73	3.17E-09	4.29E-09
1.51	1.16E-07	1.19E-07	8.25	2.05E-09	3.15E-09
1.61	9.69E-08	9.99E-08	8.77	1.54E-09	2.47E-09
1.71	7.93E-08	8.17E-08	9.24	1.25E-09	2.26E-09
1.81	6.51E-08	6.80E-08	9.72	9.53E-10	1.86E-09
1.94	5.43E-08	5.72E-08	10.23	1.35E-09	2.28E-09
2.11	4.82E-08	5.02E-08	10.75	2.37E-09	3.40E-09
2.31	4.03E-08	4.25E-08	11.26	2.88E-09	3.94E-09
2.50	3.13E-08	3.30E-08	11.76	2.94E-09	3.93E-09
2.69	2.55E-08	2.70E-08	12.40	4.86E-09	5.89E-09
2.90	2.35E-08	2.51E-08	13.20	1.50E-08	1.59E-08
3.10	2.11E-08	2.31E-08	14.03	3.02E-08	3.09E-08
3.30	1.71E-08	1.86E-08	14.86	3.53E-08	3.59E-08
3.51	1.31E-08	1.48E-08	15.62	2.78E-08	2.83E-08
3.71	1.12E-08	1.31E-08	16.45	1.53E-08	1.56E-08
3.90	1.08E-08	1.22E-08	17.44	5.39E-09	5.57E-09
4.15	9.80E-09	1.12E-08	18.51	1.27E-09	1.34E-09
4.46	7.80E-09	8.69E-09	19.58	2.14E-10	2.41E-10
4.75	5.72E-09	6.77E-09	20.53	-9.21E-12	6.00E-12
5.06	5.06E-09	6.22E-09	21.43	-7.06E-11	-5.94E-11
5.36	5.46E-09	6.80E-09	22.40	-8.92E-11	-7.78E-11
5.64	5.80E-09	6.96E-09	23.43	-7.93E-11	-6.89E-11

Run R147GS.270

x = 100.0 y = 0.0 z = 229.5
Configuration: 3SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.32E-07	2.36E-07	3.93	1.83E-08	2.33E-08
0.76	1.87E-07	2.30E-07	4.06	1.50E-08	2.05E-08
0.80	2.12E-07	2.27E-07	4.19	1.29E-08	1.88E-08
0.84	2.09E-07	2.16E-07	4.31	1.33E-08	1.99E-08
0.88	1.87E-07	1.93E-07	4.44	1.62E-08	2.37E-08
0.92	1.60E-07	1.67E-07	4.57	1.94E-08	2.77E-08
0.96	1.37E-07	1.44E-07	4.70	2.07E-08	2.91E-08
1.00	1.20E-07	1.26E-07	4.83	1.77E-08	2.65E-08
1.04	1.10E-07	1.16E-07	4.99	9.43E-09	1.97E-08
1.08	1.07E-07	1.13E-07	5.15	3.69E-10	1.18E-08
1.13	1.07E-07	1.13E-07	5.32	-6.57E-10	1.12E-08
1.17	1.07E-07	1.13E-07	5.50	6.99E-09	1.94E-08
1.22	1.04E-07	1.11E-07	5.67	1.87E-08	3.15E-08
1.28	1.02E-07	1.09E-07	5.83	2.61E-08	3.88E-08
1.33	1.01E-07	1.07E-07	6.00	2.55E-08	3.74E-08
1.38	9.80E-08	1.04E-07	6.18	1.93E-08	3.05E-08
1.42	9.19E-08	9.77E-08	6.35	1.25E-08	2.31E-08
1.47	8.50E-08	9.06E-08	6.51	9.66E-09	1.92E-08
1.53	7.89E-08	8.42E-08	6.70	1.08E-08	1.90E-08
1.58	7.42E-08	7.94E-08	6.90	1.47E-08	2.19E-08
1.64	7.18E-08	7.70E-08	7.10	1.82E-08	2.50E-08
1.72	7.53E-08	8.04E-08	7.30	2.01E-08	2.60E-08
1.80	7.92E-08	8.43E-08	7.50	1.91E-08	2.47E-08
1.88	7.97E-08	8.47E-08	7.70	1.62E-08	2.11E-08
1.96	8.03E-08	8.56E-08	7.90	1.23E-08	1.67E-08
2.04	8.27E-08	8.76E-08	8.10	8.79E-09	1.23E-08
2.12	8.39E-08	8.87E-08	8.30	6.10E-09	9.21E-09
2.20	8.24E-08	8.71E-08	8.50	4.47E-09	7.19E-09
2.28	7.58E-08	8.03E-08	8.73	3.47E-09	5.79E-09
2.36	6.29E-08	6.73E-08	8.98	2.72E-09	4.55E-09
2.45	4.63E-08	5.05E-08	9.23	1.71E-09	3.32E-09
2.55	3.56E-08	3.96E-08	9.48	6.91E-10	2.08E-09
2.65	3.45E-08	3.85E-08	9.73	-9.23E-11	9.30E-10
2.75	3.50E-08	3.91E-08	9.98	-5.44E-10	3.75E-10
2.85	3.23E-08	3.63E-08	10.30	-6.36E-10	7.11E-11
2.95	2.76E-08	3.16E-08	10.70	-4.25E-10	7.39E-11
3.05	2.37E-08	2.77E-08	11.10	-1.67E-10	1.91E-10
3.15	2.21E-08	2.63E-08	11.50	4.36E-12	2.93E-10
3.25	2.26E-08	2.68E-08	11.90	8.87E-11	3.52E-10
3.35	2.34E-08	2.77E-08	12.30	1.18E-10	3.74E-10
3.45	2.35E-08	2.79E-08	12.70	1.21E-10	3.64E-10
3.55	2.29E-08	2.74E-08	13.10	1.06E-10	3.25E-10
3.66	2.20E-08	2.67E-08	13.50	8.60E-11	2.67E-10
3.79	2.08E-08	2.55E-08	13.90	6.38E-11	2.03E-10

Run R147NS.268

x = 100.0 y = 0.0 z = 229.5
Configuration: 3SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.59E-07	5.66E-07	5.94	4.52E-09	5.58E-09
1.01	4.13E-07	4.17E-07	6.25	3.93E-09	5.13E-09
1.11	2.95E-07	3.00E-07	6.55	3.75E-09	5.04E-09
1.21	2.21E-07	2.26E-07	6.83	3.91E-09	5.01E-09
1.31	1.78E-07	1.81E-07	7.23	3.74E-09	4.73E-09
1.41	1.50E-07	1.53E-07	7.73	2.57E-09	3.68E-09
1.51	1.27E-07	1.31E-07	8.25	9.24E-10	2.05E-09
1.61	1.07E-07	1.10E-07	8.77	1.45E-09	2.40E-09
1.71	8.81E-08	9.05E-08	9.24	2.51E-09	3.52E-09
1.81	7.25E-08	7.53E-08	9.72	2.48E-09	3.40E-09
1.94	5.90E-08	6.19E-08	10.23	2.05E-09	3.01E-09
2.11	5.13E-08	5.34E-08	10.75	2.09E-09	3.14E-09
2.31	4.32E-08	4.54E-08	11.26	1.98E-09	3.05E-09
2.50	3.36E-08	3.53E-08	11.76	2.12E-09	3.15E-09
2.69	2.71E-08	2.86E-08	12.40	5.88E-09	6.92E-09
2.90	2.42E-08	2.59E-08	13.20	1.92E-08	2.00E-08
3.10	2.06E-08	2.26E-08	14.03	3.36E-08	3.43E-08
3.30	1.59E-08	1.73E-08	14.86	3.46E-08	3.52E-08
3.51	1.20E-08	1.38E-08	15.62	2.49E-08	2.53E-08
3.71	1.06E-08	1.25E-08	16.45	1.26E-08	1.29E-08
3.90	1.06E-08	1.20E-08	17.44	4.11E-09	4.25E-09
4.15	9.93E-09	1.14E-08	18.51	8.95E-10	9.46E-10
4.46	8.10E-09	9.03E-09	19.58	1.19E-10	1.38E-10
4.75	6.71E-09	7.76E-09	20.53	-3.94E-11	-2.82E-11
5.06	5.91E-09	7.11E-09	21.43	-8.19E-11	-7.35E-11
5.36	5.15E-09	6.45E-09	22.40	-9.20E-11	-8.38E-11
5.64	4.88E-09	6.01E-09	23.43	-7.89E-11	-7.13E-11

Run R148GS.010

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.04E-07	1.95E-07	3.93	1.87E-08	2.26E-08
0.76	1.56E-07	1.94E-07	4.06	1.77E-08	2.20E-08
0.80	1.79E-07	1.90E-07	4.19	1.42E-08	1.89E-08
0.84	1.75E-07	1.81E-07	4.31	9.89E-09	1.52E-08
0.88	1.56E-07	1.61E-07	4.44	7.77E-09	1.39E-08
0.92	1.33E-07	1.38E-07	4.57	9.28E-09	1.60E-08
0.96	1.13E-07	1.17E-07	4.70	1.30E-08	1.97E-08
1.00	9.66E-08	1.01E-07	4.83	1.50E-08	2.23E-08
1.04	8.65E-08	9.08E-08	4.99	1.34E-08	2.21E-08
1.08	8.24E-08	8.68E-08	5.15	8.01E-09	1.75E-08
1.13	8.18E-08	8.61E-08	5.32	3.74E-09	1.34E-08
1.17	8.19E-08	8.62E-08	5.50	4.18E-09	1.47E-08
1.22	8.08E-08	8.55E-08	5.67	1.08E-08	2.19E-08
1.28	7.85E-08	8.34E-08	5.83	1.91E-08	2.98E-08
1.33	7.67E-08	8.09E-08	6.00	2.37E-08	3.35E-08
1.38	7.53E-08	7.93E-08	6.18	2.26E-08	3.23E-08
1.42	7.32E-08	7.74E-08	6.35	1.76E-08	2.67E-08
1.47	7.03E-08	7.44E-08	6.51	1.31E-08	2.12E-08
1.53	6.73E-08	7.11E-08	6.70	1.21E-08	1.89E-08
1.58	6.48E-08	6.86E-08	6.90	1.57E-08	2.18E-08
1.64	6.23E-08	6.60E-08	7.10	2.12E-08	2.71E-08
1.72	6.01E-08	6.38E-08	7.30	2.47E-08	3.00E-08
1.80	6.24E-08	6.61E-08	7.50	2.45E-08	2.94E-08
1.88	6.75E-08	7.13E-08	7.70	2.11E-08	2.56E-08
1.96	6.97E-08	7.35E-08	7.90	1.63E-08	2.02E-08
2.04	7.04E-08	7.40E-08	8.10	1.18E-08	1.52E-08
2.12	7.33E-08	7.69E-08	8.30	8.50E-09	1.13E-08
2.20	7.55E-08	7.90E-08	8.50	6.55E-09	9.03E-09
2.28	7.09E-08	7.42E-08	8.73	5.38E-09	7.51E-09
2.36	5.97E-08	6.30E-08	8.98	4.46E-09	6.25E-09
2.45	4.60E-08	4.92E-08	9.23	3.46E-09	4.85E-09
2.55	3.51E-08	3.81E-08	9.48	2.29E-09	3.45E-09
2.65	2.84E-08	3.14E-08	9.73	1.30E-09	2.32E-09
2.75	2.56E-08	2.86E-08	9.98	6.04E-10	1.44E-09
2.85	2.51E-08	2.81E-08	10.30	1.45E-10	8.53E-10
2.95	2.40E-08	2.70E-08	10.70	-3.06E-11	5.04E-10
3.05	2.15E-08	2.45E-08	11.10	-3.65E-11	2.67E-10
3.15	1.93E-08	2.24E-08	11.50	-3.97E-11	1.72E-10
3.25	1.90E-08	2.22E-08	11.90	-6.53E-11	1.12E-10
3.35	1.96E-08	2.29E-08	12.30	-9.60E-11	8.98E-11
3.45	1.99E-08	2.32E-08	12.70	-1.06E-10	8.08E-11
3.55	1.92E-08	2.27E-08	13.10	-9.88E-11	7.20E-11
3.66	1.81E-08	2.18E-08	13.50	-7.98E-11	6.22E-11
3.79	1.81E-08	2.18E-08	13.90	-5.80E-11	5.24E-11

Run R148NS.008

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	7.03E-07	7.08E-07	5.94	3.38E-09	4.02E-09
1.01	5.18E-07	5.21E-07	6.25	2.88E-09	3.59E-09
1.11	3.64E-07	3.67E-07	6.55	2.37E-09	3.14E-09
1.21	2.61E-07	2.64E-07	6.83	2.28E-09	2.96E-09
1.31	1.95E-07	1.97E-07	7.23	2.45E-09	3.04E-09
1.41	1.51E-07	1.53E-07	7.73	2.39E-09	3.07E-09
1.51	1.22E-07	1.25E-07	8.25	1.90E-09	2.56E-09
1.61	9.93E-08	1.01E-07	8.77	1.49E-09	2.04E-09
1.71	8.05E-08	8.20E-08	9.24	1.19E-09	1.78E-09
1.81	6.53E-08	6.71E-08	9.72	1.48E-09	2.01E-09
1.94	5.20E-08	5.38E-08	10.23	2.06E-09	2.60E-09
2.11	4.18E-08	4.30E-08	10.75	2.11E-09	2.70E-09
2.31	3.16E-08	3.30E-08	11.26	1.72E-09	2.34E-09
2.50	2.40E-08	2.50E-08	11.76	1.68E-09	2.26E-09
2.69	1.97E-08	2.06E-08	12.40	3.41E-09	4.02E-09
2.90	1.78E-08	1.87E-08	13.20	1.03E-08	1.08E-08
3.10	1.56E-08	1.69E-08	14.03	1.90E-08	1.94E-08
3.30	1.27E-08	1.36E-08	14.86	2.05E-08	2.08E-08
3.51	9.41E-09	1.05E-08	15.62	1.50E-08	1.53E-08
3.71	7.25E-09	8.39E-09	16.45	7.72E-09	7.90E-09
3.90	6.65E-09	7.47E-09	17.44	2.57E-09	2.67E-09
4.15	6.30E-09	7.17E-09	18.51	5.89E-10	6.26E-10
4.46	5.47E-09	6.01E-09	19.58	9.35E-11	1.09E-10
4.75	4.29E-09	4.92E-09	20.53	-1.51E-11	-5.34E-12
5.06	3.39E-09	4.10E-09	21.43	-4.58E-11	-3.84E-11
5.36	2.97E-09	3.77E-09	22.40	-5.47E-11	-4.68E-11
5.64	3.26E-09	3.94E-09	23.43	-4.75E-11	-4.03E-11

Run R149GS.018

x = 100.0 y = 0.0 z = 159.2
Configuration: 6SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	4.17E-08	8.61E-08	3.93	8.53E-09	1.04E-08
0.76	6.64E-08	8.48E-08	4.06	8.41E-09	1.05E-08
0.80	7.61E-08	8.15E-08	4.19	8.84E-09	1.11E-08
0.84	7.42E-08	7.68E-08	4.31	9.26E-09	1.18E-08
0.88	6.64E-08	6.87E-08	4.44	9.37E-09	1.24E-08
0.92	5.74E-08	5.97E-08	4.57	9.30E-09	1.24E-08
0.96	5.01E-08	5.24E-08	4.70	8.78E-09	1.19E-08
1.00	4.53E-08	4.75E-08	4.83	7.69E-09	1.12E-08
1.04	4.29E-08	4.50E-08	4.99	5.99E-09	1.02E-08
1.08	4.19E-08	4.40E-08	5.15	4.12E-09	8.68E-09
1.13	4.12E-08	4.34E-08	5.32	3.37E-09	7.90E-09
1.17	4.02E-08	4.23E-08	5.50	4.42E-09	9.44E-09
1.22	3.85E-08	4.09E-08	5.67	7.78E-09	1.31E-08
1.28	3.67E-08	3.92E-08	5.83	1.14E-08	1.63E-08
1.33	3.54E-08	3.76E-08	6.00	1.31E-08	1.78E-08
1.38	3.46E-08	3.65E-08	6.18	1.26E-08	1.71E-08
1.42	3.35E-08	3.56E-08	6.35	1.07E-08	1.50E-08
1.47	3.23E-08	3.43E-08	6.51	9.29E-09	1.29E-08
1.53	3.15E-08	3.35E-08	6.70	8.40E-09	1.17E-08
1.58	3.20E-08	3.39E-08	6.90	8.69E-09	1.16E-08
1.64	3.37E-08	3.56E-08	7.10	9.98E-09	1.26E-08
1.72	3.61E-08	3.81E-08	7.30	1.17E-08	1.41E-08
1.80	3.95E-08	4.14E-08	7.50	1.26E-08	1.48E-08
1.88	4.41E-08	4.60E-08	7.70	1.17E-08	1.38E-08
1.96	4.80E-08	5.00E-08	7.90	9.45E-09	1.12E-08
2.04	5.07E-08	5.26E-08	8.10	6.59E-09	8.08E-09
2.12	5.26E-08	5.45E-08	8.30	4.17E-09	5.47E-09
2.20	5.26E-08	5.44E-08	8.50	2.68E-09	3.81E-09
2.28	4.82E-08	4.99E-08	8.73	1.93E-09	2.83E-09
2.36	3.99E-08	4.15E-08	8.98	1.58E-09	2.36E-09
2.45	2.96E-08	3.12E-08	9.23	1.27E-09	1.93E-09
2.55	2.14E-08	2.29E-08	9.48	8.99E-10	1.41E-09
2.65	1.77E-08	1.92E-08	9.73	4.91E-10	9.38E-10
2.75	1.64E-08	1.79E-08	9.98	1.65E-10	5.77E-10
2.85	1.52E-08	1.67E-08	10.30	-5.02E-11	2.58E-10
2.95	1.37E-08	1.52E-08	10.70	-8.73E-11	1.33E-10
3.05	1.25E-08	1.39E-08	11.10	-5.41E-11	9.73E-11
3.15	1.18E-08	1.33E-08	11.50	-2.98E-11	7.66E-11
3.25	1.15E-08	1.31E-08	11.90	-3.26E-11	7.61E-11
3.35	1.14E-08	1.30E-08	12.30	-4.06E-11	7.25E-11
3.45	1.13E-08	1.29E-08	12.70	-4.26E-11	5.66E-11
3.55	1.10E-08	1.27E-08	13.10	-4.07E-11	4.84E-11
3.66	1.03E-08	1.21E-08	13.50	-2.87E-11	3.62E-11
3.79	9.34E-09	1.12E-08	13.90	-2.36E-11	2.56E-11

Ru. R149NS.016

x = 100.0 y = 0.0 z = 159.2
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.66E-07	1.67E-07	5.94	7.07E-10	8.52E-10
1.01	1.17E-07	1.18E-07	6.25	5.59E-10	7.17E-10
1.11	8.05E-08	8.13E-08	6.55	4.83E-10	6.49E-10
1.21	5.70E-08	5.77E-08	6.83	4.99E-10	6.40E-10
1.31	4.20E-08	4.26E-08	7.23	5.00E-10	6.24E-10
1.41	3.23E-08	3.28E-08	7.73	4.40E-10	5.85E-10
1.51	2.61E-08	2.66E-08	8.25	3.81E-10	5.21E-10
1.61	2.13E-08	2.17E-08	8.77	3.16E-10	4.33E-10
1.71	1.73E-08	1.77E-08	9.24	3.34E-10	4.57E-10
1.81	1.42E-08	1.46E-08	9.72	3.97E-10	5.07E-10
1.94	1.14E-08	1.18E-08	10.23	3.79E-10	4.91E-10
2.11	9.23E-09	9.55E-09	10.75	3.65E-10	4.82E-10
2.31	7.29E-09	7.63E-09	11.26	4.38E-10	5.57E-10
2.50	5.82E-09	6.08E-09	11.76	5.28E-10	6.41E-10
2.69	4.69E-09	4.90E-09	12.40	6.62E-10	7.75E-10
2.90	3.84E-09	4.09E-09	13.20	1.22E-09	1.32E-09
3.10	3.22E-09	3.50E-09	14.03	2.08E-09	2.16E-09
3.30	2.67E-09	2.88E-09	14.86	2.24E-09	2.32E-09
3.51	2.14E-09	2.39E-09	15.62	1.65E-09	1.71E-09
3.71	1.79E-09	2.05E-09	16.45	8.47E-10	8.82E-10
3.90	1.59E-09	1.78E-09	17.44	2.79E-10	2.97E-10
4.15	1.36E-09	1.56E-09	18.51	6.31E-11	7.10E-11
4.46	1.29E-09	1.42E-09	19.58	1.08E-11	1.51E-11
4.75	1.16E-09	1.30E-09	20.53	-6.61E-13	2.84E-12
5.06	9.20E-10	1.08E-09	21.43	-4.16E-12	-1.43E-12
5.36	7.73E-10	9.47E-10	22.40	-5.71E-12	-3.04E-12
5.64	7.70E-10	9.23E-10	23.43	-5.51E-12	-2.90E-12

Run R150GS.028

x =-100.0 y = 0.0 z = 160.2
Configuration: 6SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	4.00E-08	8.62E-08	3.93	9.14E-09	1.10E-08
0.76	6.99E-08	8.90E-08	4.06	6.61E-09	8.63E-09
0.80	8.23E-08	8.78E-08	4.19	5.40E-09	7.59E-09
0.84	8.05E-08	8.31E-08	4.31	6.00E-09	8.47E-09
0.88	7.17E-08	7.40E-08	4.44	8.13E-09	1.10E-08
0.92	6.12E-08	6.36E-08	4.57	1.08E-08	1.39E-08
0.96	5.30E-08	5.52E-08	4.70	1.29E-08	1.60E-08
1.00	4.83E-08	5.05E-08	4.83	1.28E-08	1.62E-08
1.04	4.66E-08	4.88E-08	4.99	9.46E-09	1.34E-08
1.08	4.64E-08	4.85E-08	5.15	3.34E-09	7.65E-09
1.13	4.63E-08	4.85E-08	5.32	-5.01E-10	3.84E-09
1.17	4.59E-08	4.80E-08	5.50	8.97E-10	5.63E-09
1.22	4.49E-08	4.73E-08	5.67	6.98E-09	1.19E-08
1.28	4.38E-08	4.63E-08	5.83	1.33E-08	1.80E-08
1.33	4.22E-08	4.44E-08	6.00	1.60E-08	2.05E-08
1.38	3.98E-08	4.18E-08	6.18	1.48E-08	1.91E-08
1.42	3.74E-08	3.95E-08	6.35	1.15E-08	1.56E-08
1.47	3.62E-08	3.82E-08	6.51	9.07E-09	1.26E-08
1.53	3.60E-08	3.80E-08	6.70	8.07E-09	1.11E-08
1.58	3.60E-08	3.80E-08	6.90	9.11E-09	1.18E-08
1.64	3.56E-08	3.76E-08	7.10	1.11E-08	1.36E-08
1.72	3.64E-08	3.83E-08	7.30	1.28E-08	1.50E-08
1.80	4.08E-08	4.27E-08	7.50	1.28E-08	1.48E-08
1.88	4.63E-08	4.82E-08	7.70	1.08E-08	1.26E-08
1.96	4.97E-08	5.17E-08	7.90	7.80E-09	9.32E-09
2.04	5.18E-08	5.37E-08	8.10	4.99E-09	6.29E-09
2.12	5.31E-08	5.49E-08	8.30	3.15E-09	4.25E-09
2.20	5.20E-08	5.37E-08	8.50	2.29E-09	3.26E-09
2.28	4.67E-08	4.84E-08	8.73	2.01E-09	2.78E-09
2.36	3.83E-08	4.00E-08	8.98	1.79E-09	2.43E-09
2.45	2.87E-08	3.03E-08	9.23	1.36E-09	1.90E-09
2.55	2.08E-08	2.22E-08	9.48	8.18E-10	1.23E-09
2.65	1.67E-08	1.81E-08	9.73	3.03E-10	6.75E-10
2.75	1.55E-08	1.70E-08	9.98	-3.83E-11	2.88E-10
2.85	1.51E-08	1.66E-08	10.30	-2.18E-10	4.00E-11
2.95	1.43E-08	1.57E-08	10.70	-1.92E-10	-3.37E-11
3.05	1.33E-08	1.48E-08	11.10	-9.11E-11	2.00E-11
3.15	1.27E-08	1.42E-08	11.50	-1.81E-11	7.53E-11
3.25	1.22E-08	1.38E-08	11.90	6.85E-12	9.80E-11
3.35	1.19E-08	1.35E-08	12.30	3.89E-13	9.15E-11
3.45	1.20E-08	1.36E-08	12.70	-1.30E-11	7.08E-11
3.55	1.24E-08	1.41E-08	13.10	-2.15E-11	5.09E-11
3.66	1.27E-08	1.45E-08	13.50	-2.09E-11	3.77E-11
3.79	1.16E-08	1.34E-08	13.90	-1.48E-11	3.06E-11

Run R150NS.024

x =-100.0 y = 0.0 z = 160.2
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence (MeV-1cm-2) Confidence Interval		Energy (MeV)	Fluence (MeV-1cm-2) Confidence Interval	
0.91	1.61E-07	1.62E-07	5.94	8.61E-10	9.92E-10
1.01	1.18E-07	1.19E-07	6.25	6.11E-10	7.54E-10
1.11	8.35E-08	8.42E-08	6.55	4.98E-10	6.51E-10
1.21	6.06E-08	6.12E-08	6.83	5.40E-10	6.73E-10
1.31	4.54E-08	4.59E-08	7.23	6.25E-10	7.42E-10
1.41	3.52E-08	3.57E-08	7.73	5.83E-10	7.15E-10
1.51	2.87E-08	2.92E-08	8.25	4.27E-10	5.57E-10
1.61	2.36E-08	2.40E-08	8.77	3.47E-10	4.55E-10
1.71	1.94E-08	1.97E-08	9.24	3.74E-10	4.86E-10
1.81	1.59E-08	1.63E-08	9.72	4.10E-10	5.11E-10
1.94	1.27E-08	1.31E-08	10.23	4.06E-10	5.09E-10
2.11	1.03E-08	1.06E-08	10.75	4.13E-10	5.25E-10
2.31	8.32E-09	8.64E-09	11.26	4.29E-10	5.41E-10
2.50	6.46E-09	6.70E-09	11.76	4.45E-10	5.51E-10
2.69	5.13E-09	5.33E-09	12.40	6.22E-10	7.29E-10
2.90	4.32E-09	4.54E-09	13.20	1.37E-09	1.46E-09
3.10	3.63E-09	3.90E-09	14.03	2.30E-09	2.38E-09
3.30	2.97E-09	3.17E-09	14.86	2.47E-09	2.53E-09
3.51	2.35E-09	2.58E-09	15.62	1.87E-09	1.92E-09
3.71	1.95E-09	2.20E-09	16.45	1.02E-09	1.05E-09
3.90	1.77E-09	1.96E-09	17.44	3.64E-10	3.82E-10
4.15	1.51E-09	1.70E-09	18.51	8.72E-11	9.45E-11
4.46	1.23E-09	1.35E-09	19.58	1.41E-11	1.69E-11
4.75	1.10E-09	1.24E-09	20.53	-1.44E-12	1.23E-13
5.06	1.08E-09	1.23E-09	21.43	-5.47E-12	-4.33E-12
5.36	1.09E-09	1.25E-09	22.40	-6.58E-12	-5.45E-12
5.64	1.04E-09	1.19E-09	23.43	-5.76E-12	-4.72E-12

Run R151GS.044

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	5.98E-08	1.06E-07	3.93	1.02E-08	1.26E-08
0.76	8.18E-08	1.01E-07	4.06	8.64E-09	1.12E-08
0.80	9.15E-08	9.78E-08	4.19	7.01E-09	9.82E-09
0.84	8.91E-08	9.23E-08	4.31	6.07E-09	9.21E-09
0.88	7.90E-08	8.17E-08	4.44	5.94E-09	9.58E-09
0.92	6.75E-08	7.03E-08	4.57	6.87E-09	1.08E-08
0.96	5.81E-08	6.08E-08	4.70	8.71E-09	1.27E-08
1.00	5.08E-08	5.35E-08	4.83	1.03E-08	1.47E-08
1.04	4.64E-08	4.90E-08	4.99	1.03E-08	1.54E-08
1.08	4.52E-08	4.78E-08	5.15	7.28E-09	1.28E-08
1.13	4.56E-08	4.82E-08	5.32	2.80E-09	8.47E-09
1.17	4.52E-08	4.78E-08	5.50	6.04E-10	6.61E-09
1.22	4.38E-08	4.66E-08	5.67	3.31E-09	9.66E-09
1.28	4.30E-08	4.59E-08	5.83	9.18E-09	1.53E-08
1.33	4.28E-08	4.54E-08	6.00	1.39E-08	1.98E-08
1.38	4.19E-08	4.44E-08	6.18	1.47E-08	2.02E-08
1.42	4.00E-08	4.25E-08	6.35	1.18E-08	1.71E-08
1.47	3.76E-08	4.00E-08	6.51	8.48E-09	1.31E-08
1.53	3.50E-08	3.73E-08	6.70	7.12E-09	1.10E-08
1.58	3.29E-08	3.52E-08	6.90	9.00E-09	1.25E-08
1.64	3.24E-08	3.47E-08	7.10	1.24E-08	1.57E-08
1.72	3.51E-08	3.74E-08	7.30	1.45E-08	1.75E-08
1.80	3.85E-08	4.08E-08	7.50	1.41E-08	1.67E-08
1.88	3.96E-08	4.19E-08	7.70	1.15E-08	1.39E-08
1.96	3.94E-08	4.18E-08	7.90	8.34E-09	1.04E-08
2.04	4.21E-08	4.44E-08	8.10	5.81E-09	7.55E-09
2.12	4.71E-08	4.93E-08	8.30	4.24E-09	5.72E-09
2.20	4.84E-08	5.06E-08	8.50	3.50E-09	4.77E-09
2.28	4.30E-08	4.50E-08	8.73	3.05E-09	4.13E-09
2.36	3.39E-08	3.59E-08	8.98	2.42E-09	3.26E-09
2.45	2.53E-08	2.72E-08	9.23	1.64E-09	2.32E-09
2.55	1.96E-08	2.14E-08	9.48	8.62E-10	1.44E-09
2.65	1.67E-08	1.86E-08	9.73	2.93E-10	8.10E-10
2.75	1.55E-08	1.74E-08	9.98	-1.95E-11	4.24E-10
2.85	1.48E-08	1.67E-08	10.30	-1.88E-10	1.82E-10
2.95	1.36E-08	1.54E-08	10.70	-1.81E-10	1.08E-10
3.05	1.19E-08	1.38E-08	11.10	-1.16E-10	1.14E-10
3.15	1.10E-08	1.29E-08	11.50	-6.38E-11	1.19E-10
3.25	1.13E-08	1.33E-08	11.90	-4.09E-11	1.31E-10
3.35	1.19E-08	1.39E-08	12.30	-3.63E-11	1.34E-10
3.45	1.19E-08	1.39E-08	12.70	-3.22E-11	1.24E-10
3.55	1.13E-08	1.34E-08	13.10	-3.16E-11	1.06E-10
3.66	1.08E-08	1.30E-08	13.50	-1.59E-11	9.02E-11
3.79	1.08E-08	1.31E-08	13.90	-9.67E-12	7.30E-11

Run R151NS.042

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	2.05E-07	2.07E-07	5.94	1.05E-09	1.28E-09
1.01	1.51E-07	1.52E-07	6.25	9.31E-10	1.19E-09
1.11	1.08E-07	1.09E-07	6.55	7.51E-10	1.03E-09
1.21	7.89E-08	7.99E-08	6.83	6.65E-10	9.06E-10
1.31	5.93E-08	6.01E-08	7.23	6.91E-10	9.06E-10
1.41	4.58E-08	4.66E-08	7.73	6.71E-10	9.20E-10
1.51	3.69E-08	3.78E-08	8.25	5.10E-10	7.57E-10
1.61	2.99E-08	3.07E-08	8.77	4.80E-10	6.81E-10
1.71	2.45E-08	2.50E-08	9.24	5.11E-10	7.30E-10
1.81	2.01E-08	2.07E-08	9.72	6.48E-10	8.44E-10
1.94	1.62E-08	1.68E-08	10.23	7.18E-10	9.21E-10
2.11	1.29E-08	1.34E-08	10.75	5.95E-10	8.09E-10
2.31	9.63E-09	1.01E-08	11.26	4.43E-10	6.63E-10
2.50	7.14E-09	7.51E-09	11.76	5.10E-10	7.20E-10
2.69	5.91E-09	6.23E-09	12.40	1.29E-09	1.50E-09
2.90	5.35E-09	5.72E-09	13.20	3.66E-09	3.84E-09
3.10	4.58E-09	5.01E-09	14.03	6.23E-09	6.37E-09
3.30	3.68E-09	4.01E-09	14.86	6.38E-09	6.51E-09
3.51	2.84E-09	3.22E-09	15.62	4.55E-09	4.65E-09
3.71	2.33E-09	2.74E-09	16.45	2.29E-09	2.35E-09
3.90	2.18E-09	2.47E-09	17.44	7.53E-10	7.84E-10
4.15	1.98E-09	2.30E-09	18.51	1.69E-10	1.80E-10
4.46	1.74E-09	1.94E-09	19.58	2.48E-11	2.85E-11
4.75	1.38E-09	1.61E-09	20.53	-6.56E-12	-3.70E-12
5.06	1.07E-09	1.33E-09	21.43	-1.54E-11	-1.30E-11
5.36	9.52E-10	1.24E-09	22.40	-1.77E-11	-1.53E-11
5.64	1.02E-09	1.27E-09	23.43	-1.54E-11	-1.29E-11

Run R152NS.051

x = 100.0 y = 0.0 z = 229.0
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.25E-07	1.26E-07	5.94	4.77E-10	6.42E-10
1.01	9.15E-08	9.23E-08	6.25	3.73E-10	5.57E-10
1.11	6.37E-08	6.46E-08	6.55	3.30E-10	5.22E-10
1.21	4.55E-08	4.63E-08	6.83	3.72E-10	5.36E-10
1.31	3.43E-08	3.49E-08	7.23	4.31E-10	5.79E-10
1.41	2.70E-08	2.76E-08	7.73	3.91E-10	5.58E-10
1.51	2.21E-08	2.27E-08	8.25	2.93E-10	4.61E-10
1.61	1.81E-08	1.86E-08	8.77	3.16E-10	4.60E-10
1.71	1.46E-08	1.50E-08	9.24	3.29E-10	4.82E-10
1.81	1.17E-08	1.21E-08	9.72	2.78E-10	4.14E-10
1.94	9.07E-09	9.51E-09	10.23	2.63E-10	4.02E-10
2.11	7.50E-09	7.83E-09	10.75	3.33E-10	4.81E-10
2.31	6.15E-09	6.49E-09	11.26	3.70E-10	5.20E-10
2.50	4.62E-09	4.89E-09	11.76	4.06E-10	5.51E-10
2.69	3.59E-09	3.82E-09	12.40	7.28E-10	8.71E-10
2.90	3.14E-09	3.40E-09	13.20	1.81E-09	1.94E-09
3.10	2.57E-09	2.88E-09	14.03	2.98E-09	3.08E-09
3.30	2.00E-09	2.23E-09	14.86	2.99E-09	3.08E-09
3.51	1.58E-09	1.85E-09	15.62	2.10E-09	2.17E-09
3.71	1.38E-09	1.67E-09	16.45	1.03E-09	1.08E-09
3.90	1.31E-09	1.53E-09	17.44	3.31E-10	3.52E-10
4.15	1.15E-09	1.36E-09	18.51	7.35E-11	8.23E-11
4.46	1.03E-09	1.17E-09	19.58	1.10E-11	1.53E-11
4.75	9.64E-10	1.12E-09	20.53	-3.51E-12	2.07E-13
5.06	8.10E-10	9.91E-10	21.43	-7.62E-12	-4.68E-12
5.36	6.37E-10	8.27E-10	22.40	-9.15E-12	-6.07E-12
5.64	5.55E-10	7.22E-10	23.43	-8.17E-12	-4.98E-12

Run R153GS.061

x =-100.0 y = 0.0 z = 229.5
Configuration: 6SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	4.50E-08	8.71E-08	3.93	8.20E-09	9.81E-09
0.76	6.78E-08	8.51E-08	4.06	7.31E-09	9.05E-09
0.80	7.59E-08	8.09E-08	4.19	7.40E-09	9.25E-09
0.84	7.31E-08	7.54E-08	4.31	7.88E-09	1.00E-08
0.88	6.58E-08	6.78E-08	4.44	8.58E-09	1.11E-08
0.92	5.77E-08	5.98E-08	4.57	9.52E-09	1.23E-08
0.96	5.05E-08	5.24E-08	4.70	1.01E-08	1.29E-08
1.00	4.50E-08	4.69E-08	4.83	9.35E-09	1.22E-08
1.04	4.21E-08	4.40E-08	4.99	6.60E-09	1.01E-08
1.08	4.14E-08	4.33E-08	5.15	3.22E-09	7.07E-09
1.13	4.17E-08	4.36E-08	5.32	2.28E-09	6.00E-09
1.17	4.17E-08	4.36E-08	5.50	4.51E-09	8.66E-09
1.22	4.07E-08	4.28E-08	5.67	8.89E-09	1.33E-08
1.28	3.93E-08	4.15E-08	5.83	1.28E-08	1.70E-08
1.33	3.83E-08	4.02E-08	6.00	1.43E-08	1.80E-08
1.38	3.72E-08	3.89E-08	6.18	1.31E-08	1.68E-08
1.42	3.58E-08	3.76E-08	6.35	1.02E-08	1.39E-08
1.47	3.47E-08	3.64E-08	6.51	7.71E-09	1.08E-08
1.53	3.39E-08	3.56E-08	6.70	6.70E-09	9.35E-09
1.58	3.37E-08	3.54E-08	6.90	7.97E-09	1.03E-08
1.64	3.38E-08	3.55E-08	7.10	1.06E-08	1.28E-08
1.72	3.46E-08	3.63E-08	7.30	1.28E-08	1.48E-08
1.80	3.75E-08	3.92E-08	7.50	1.31E-08	1.49E-08
1.88	4.21E-08	4.38E-08	7.70	1.14E-08	1.30E-08
1.96	4.56E-08	4.73E-08	7.90	8.47E-09	9.82E-09
2.04	4.76E-08	4.93E-08	8.10	5.65E-09	6.83E-09
2.12	4.94E-08	5.10E-08	8.30	3.66E-09	4.69E-09
2.20	4.96E-08	5.11E-08	8.50	2.62E-09	3.51E-09
2.28	4.57E-08	4.71E-08	8.73	2.16E-09	2.85E-09
2.36	3.76E-08	3.90E-08	8.98	1.73E-09	2.34E-09
2.45	2.76E-08	2.90E-08	9.23	1.23E-09	1.76E-09
2.55	2.03E-08	2.16E-08	9.48	7.09E-10	1.08E-09
2.65	1.73E-08	1.86E-08	9.73	2.94E-10	6.25E-10
2.75	1.59E-08	1.72E-08	9.98	3.15E-11	3.30E-10
2.85	1.45E-08	1.58E-08	10.30	-8.75E-11	1.41E-10
2.95	1.32E-08	1.45E-08	10.70	-8.00E-11	7.83E-11
3.05	1.24E-08	1.37E-08	11.10	-2.98E-11	7.85E-11
3.15	1.18E-08	1.32E-08	11.50	-2.89E-12	8.34E-11
3.25	1.14E-08	1.27E-08	11.90	-3.96E-12	7.66E-11
3.35	1.14E-08	1.28E-08	12.30	-1.74E-11	6.36E-11
3.45	1.19E-08	1.32E-08	12.70	-2.83E-11	5.11E-11
3.55	1.22E-08	1.37E-08	13.10	-3.04E-11	3.98E-11
3.66	1.17E-08	1.33E-08	13.50	-2.42E-11	3.14E-11
3.79	1.00E-08	1.16E-08	13.90	-1.58E-11	2.52E-11

Run R153NS.059

x =-100.0 y = 0.0 z = 229.5
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.30E-07	1.31E-07	5.94	4.78E-10	6.06E-10
1.01	9.43E-08	9.50E-08	6.25	3.91E-10	5.35E-10
1.11	6.65E-08	6.71E-08	6.55	4.00E-10	5.54E-10
1.21	4.84E-08	4.89E-08	6.83	4.91E-10	6.22E-10
1.31	3.64E-08	3.69E-08	7.23	5.82E-10	6.98E-10
1.41	2.82E-08	2.87E-08	7.73	5.18E-10	6.50E-10
1.51	2.28E-08	2.33E-08	8.25	3.59E-10	4.89E-10
1.61	1.85E-08	1.89E-08	8.77	2.94E-10	4.03E-10
1.71	1.50E-08	1.53E-08	9.24	2.72E-10	3.87E-10
1.81	1.22E-08	1.25E-08	9.72	2.98E-10	4.01E-10
1.94	9.67E-09	1.00E-08	10.23	3.66E-10	4.73E-10
2.11	7.84E-09	8.10E-09	10.75	4.12E-10	5.25E-10
2.31	6.11E-09	6.38E-09	11.26	4.17E-10	5.31E-10
2.50	4.67E-09	4.88E-09	11.76	4.51E-10	5.60E-10
2.69	3.74E-09	3.92E-09	12.40	7.04E-10	8.13E-10
2.90	3.18E-09	3.38E-09	13.20	1.67E-09	1.77E-09
3.10	2.64E-09	2.88E-09	14.03	2.94E-09	3.01E-09
3.30	2.11E-09	2.29E-09	14.86	3.10E-09	3.18E-09
3.51	1.66E-09	1.87E-09	15.62	2.24E-09	2.30E-09
3.71	1.42E-09	1.66E-09	16.45	1.13E-09	1.17E-09
3.90	1.35E-09	1.52E-09	17.44	3.73E-10	3.90E-10
4.15	1.21E-09	1.38E-09	18.51	8.50E-11	9.19E-11
4.46	1.04E-09	1.15E-09	19.58	1.33E-11	1.61E-11
4.75	9.23E-10	1.05E-09	20.53	-3.05E-12	-6.31E-13
5.06	7.95E-10	9.39E-10	21.43	-7.69E-12	-5.68E-12
5.36	6.53E-10	8.06E-10	22.40	-8.99E-12	-6.98E-12
5.64	5.69E-10	7.01E-10	23.43	-7.90E-12	-5.82E-12

Run R154NS.080

x = 0.0 y = 0.0 z = 154.5
Configuration: NO SHIELD
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	-3.44E-06	-3.40E-06	5.94	9.05E-08	1.07E-07
1.01	1.02E-06	1.07E-06	6.25	8.25E-08	1.01E-07
1.11	2.23E-06	2.29E-06	6.55	7.38E-08	9.41E-08
1.21	2.16E-06	2.21E-06	6.83	6.99E-08	8.81E-08
1.31	1.86E-06	1.91E-06	7.23	6.74E-08	8.44E-08
1.41	1.60E-06	1.65E-06	7.73	5.52E-08	7.49E-08
1.51	1.42E-06	1.47E-06	8.25	3.86E-08	5.65E-08
1.61	1.23E-06	1.27E-06	8.77	3.57E-08	5.17E-08
1.71	1.01E-06	1.04E-06	9.24	3.66E-08	5.39E-08
1.81	8.09E-07	8.48E-07	9.72	3.20E-08	4.79E-08
1.94	6.78E-07	7.14E-07	10.23	2.12E-08	3.78E-08
2.11	6.82E-07	7.11E-07	10.75	3.02E-08	4.85E-08
2.31	6.45E-07	6.75E-07	11.26	5.54E-08	7.37E-08
2.50	4.79E-07	5.03E-07	11.76	6.79E-08	8.59E-08
2.69	3.72E-07	3.93E-07	12.40	1.11E-07	1.30E-07
2.90	3.95E-07	4.22E-07	13.20	4.21E-07	4.38E-07
3.10	4.11E-07	4.41E-07	14.03	9.64E-07	9.78E-07
3.30	3.32E-07	3.52E-07	14.86	1.19E-06	1.20E-06
3.51	2.20E-07	2.48E-07	15.62	9.57E-07	9.67E-07
3.71	1.73E-07	2.04E-07	16.45	5.34E-07	5.40E-07
3.90	1.79E-07	2.01E-07	17.44	1.92E-07	1.95E-07
4.15	1.79E-07	2.02E-07	18.51	4.62E-08	4.76E-08
4.46	1.51E-07	1.66E-07	19.58	8.14E-09	8.73E-09
4.75	1.20E-07	1.37E-07	20.53	-6.95E-11	3.94E-10
5.06	1.06E-07	1.27E-07	21.43	-2.34E-09	-1.95E-09
5.36	9.95E-08	1.22E-07	22.40	-3.05E-09	-2.64E-09
5.64	9.51E-08	1.14E-07	23.43	-2.77E-09	-2.34E-09

Run R156GS.105

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.09E-06	1.94E-06	3.93	1.71E-07	2.03E-07
0.76	1.71E-06	2.06E-06	4.06	1.58E-07	1.95E-07
0.80	1.98E-06	2.09E-06	4.19	1.55E-07	1.93E-07
0.84	1.94E-06	1.98E-06	4.31	1.58E-07	2.02E-07
0.88	1.71E-06	1.75E-06	4.44	1.65E-07	2.17E-07
0.92	1.45E-06	1.49E-06	4.57	1.76E-07	2.33E-07
0.96	1.24E-06	1.28E-06	4.70	1.90E-07	2.47E-07
1.00	1.10E-06	1.13E-06	4.83	1.88E-07	2.50E-07
1.04	1.01E-06	1.05E-06	4.99	1.52E-07	2.25E-07
1.08	9.76E-07	1.01E-06	5.15	8.46E-08	1.63E-07
1.13	9.69E-07	1.01E-06	5.32	4.39E-08	1.25E-07
1.17	9.69E-07	1.01E-06	5.50	7.11E-08	1.61E-07
1.22	9.44E-07	9.85E-07	5.67	1.61E-07	2.55E-07
1.28	9.01E-07	9.43E-07	5.83	2.49E-07	3.38E-07
1.33	8.66E-07	9.03E-07	6.00	2.80E-07	3.64E-07
1.38	8.45E-07	8.78E-07	6.18	2.47E-07	3.29E-07
1.42	8.24E-07	8.59E-07	6.35	1.87E-07	2.64E-07
1.47	7.96E-07	8.29E-07	6.51	1.50E-07	2.19E-07
1.53	7.60E-07	7.92E-07	6.70	1.53E-07	2.12E-07
1.58	7.24E-07	7.56E-07	6.90	1.94E-07	2.46E-07
1.64	6.92E-07	7.23E-07	7.10	2.38E-07	2.89E-07
1.72	6.91E-07	7.22E-07	7.30	2.64E-07	3.10E-07
1.80	7.28E-07	7.59E-07	7.50	2.62E-07	3.03E-07
1.88	7.75E-07	8.07E-07	7.70	2.33E-07	2.71E-07
1.96	8.10E-07	8.43E-07	7.90	1.88E-07	2.22E-07
2.04	8.42E-07	8.73E-07	8.10	1.40E-07	1.71E-07
2.12	8.84E-07	9.14E-07	8.30	9.99E-08	1.26E-07
2.20	9.04E-07	9.33E-07	8.50	7.21E-08	9.52E-08
2.28	8.44E-07	8.73E-07	8.73	5.34E-08	7.33E-08
2.36	7.02E-07	7.30E-07	8.98	4.19E-08	5.87E-08
2.45	5.24E-07	5.50E-07	9.23	3.26E-08	4.60E-08
2.55	3.89E-07	4.13E-07	9.48	2.25E-08	3.43E-08
2.65	3.22E-07	3.47E-07	9.73	1.33E-08	2.37E-08
2.75	2.96E-07	3.21E-07	9.98	6.20E-09	1.48E-08
2.85	2.94E-07	3.19E-07	10.30	4.88E-10	8.00E-09
2.95	2.88E-07	3.12E-07	10.70	-2.73E-09	4.12E-09
3.05	2.61E-07	2.86E-07	11.10	-3.30E-09	2.90E-09
3.15	2.34E-07	2.60E-07	11.50	-2.74E-09	2.24E-09
3.25	2.30E-07	2.56E-07	11.90	-1.74E-09	1.69E-09
3.35	2.41E-07	2.68E-07	12.30	-6.22E-10	1.97E-09
3.45	2.47E-07	2.74E-07	12.70	-1.43E-11	2.41E-09
3.55	2.35E-07	2.64E-07	13.10	-1.91E-10	2.70E-09
3.66	2.10E-07	2.40E-07	13.50	-2.91E-10	2.53E-09
3.79	1.87E-07	2.17E-07	13.90	-3.79E-10	1.93E-09

Run R156NS.100

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.83E-07	5.85E-07	5.94	2.25E-09	2.60E-09
1.01	4.27E-07	4.28E-07	6.25	1.99E-09	2.39E-09
1.11	2.96E-07	2.97E-07	6.55	1.92E-09	2.34E-09
1.21	2.07E-07	2.09E-07	6.83	1.80E-09	2.17E-09
1.31	1.52E-07	1.53E-07	7.23	1.38E-09	1.71E-09
1.41	1.17E-07	1.18E-07	7.73	1.07E-09	1.45E-09
1.51	9.48E-08	9.61E-08	8.25	1.03E-09	1.41E-09
1.61	7.73E-08	7.84E-08	8.77	1.31E-09	1.62E-09
1.71	6.28E-08	6.37E-08	9.24	1.62E-09	1.95E-09
1.81	5.08E-08	5.18E-08	9.72	1.54E-09	1.84E-09
1.94	3.97E-08	4.08E-08	10.23	1.36E-09	1.67E-09
2.11	3.17E-08	3.24E-08	10.75	1.46E-09	1.80E-09
2.31	2.47E-08	2.55E-08	11.26	1.41E-09	1.76E-09
2.50	1.86E-08	1.92E-08	11.76	1.28E-09	1.60E-09
2.69	1.49E-08	1.54E-08	12.40	2.54E-09	2.88E-09
2.90	1.32E-08	1.38E-08	13.20	7.98E-09	8.26E-09
3.10	1.12E-08	1.19E-08	14.03	1.43E-08	1.45E-08
3.30	8.78E-09	9.28E-09	14.86	1.52E-08	1.54E-08
3.51	6.69E-09	7.29E-09	15.62	1.13E-08	1.14E-08
3.71	5.60E-09	6.27E-09	16.45	5.95E-09	6.05E-09
3.90	5.22E-09	5.69E-09	17.44	2.04E-09	2.09E-09
4.15	4.58E-09	5.09E-09	18.51	4.66E-10	4.87E-10
4.46	3.87E-09	4.18E-09	19.58	6.98E-11	7.73E-11
4.75	3.46E-09	3.82E-09	20.53	-1.24E-11	-8.45E-12
5.06	3.19E-09	3.59E-09	21.43	-3.40E-11	-3.11E-11
5.36	2.88E-09	3.33E-09	22.40	-3.92E-11	-3.65E-11
5.64	2.58E-09	2.98E-09	23.43	-3.39E-11	-3.13E-11

Run R157NS.111

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.71E-07	5.75E-07	5.94	2.12E-09	2.62E-09
1.01	4.19E-07	4.22E-07	6.25	2.34E-09	2.92E-09
1.11	2.93E-07	2.95E-07	6.55	2.49E-09	3.11E-09
1.21	2.08E-07	2.10E-07	6.83	2.41E-09	2.94E-09
1.31	1.53E-07	1.55E-07	7.23	1.86E-09	2.33E-09
1.41	1.18E-07	1.20E-07	7.73	1.09E-09	1.63E-09
1.51	9.55E-08	9.74E-08	8.25	7.71E-10	1.30E-09
1.61	7.82E-08	7.98E-08	8.77	1.22E-09	1.65E-09
1.71	6.41E-08	6.53E-08	9.24	1.33E-09	1.80E-09
1.81	5.22E-08	5.37E-08	9.72	1.12E-09	1.55E-09
1.94	4.10E-08	4.24E-08	10.23	1.21E-09	1.65E-09
2.11	3.24E-08	3.34E-08	10.75	1.52E-09	1.98E-09
2.31	2.49E-08	2.60E-08	11.26	1.49E-09	1.97E-09
2.50	1.88E-08	1.96E-08	11.76	1.41E-09	1.87E-09
2.69	1.50E-08	1.57E-08	12.40	2.57E-09	3.02E-09
2.90	1.32E-08	1.40E-08	13.20	7.70E-09	8.11E-09
3.10	1.14E-08	1.24E-08	14.03	1.44E-08	1.47E-08
3.30	9.15E-09	9.87E-09	14.86	1.57E-08	1.60E-08
3.51	6.90E-09	7.70E-09	15.62	1.17E-08	1.19E-08
3.71	5.61E-09	6.51E-09	16.45	6.08E-09	6.22E-09
3.90	5.23E-09	5.88E-09	17.44	2.06E-09	2.13E-09
4.15	4.79E-09	5.50E-09	18.51	4.75E-10	5.03E-10
4.46	4.07E-09	4.50E-09	19.58	7.58E-11	8.59E-11
4.75	3.19E-09	3.69E-09	20.53	-1.14E-11	-3.42E-12
5.06	2.61E-09	3.18E-09	21.43	-3.59E-11	-2.91E-11
5.36	2.18E-09	2.80E-09	22.40	-4.27E-11	-3.60E-11
5.64	2.03E-09	2.56E-09	23.43	-3.77E-11	-3.09E-11

Run R158GS.132

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	5.42E-08	1.13E-07	3.93	7.03E-09	1.03E-08
0.76	8.34E-08	1.08E-07	4.06	6.67E-09	1.03E-08
0.80	9.55E-08	1.04E-07	4.19	6.98E-09	1.09E-08
0.84	9.44E-08	9.96E-08	4.31	7.40E-09	1.19E-08
0.88	8.49E-08	8.96E-08	4.44	7.44E-09	1.26E-08
0.92	7.22E-08	7.69E-08	4.57	7.55E-09	1.32E-08
0.96	6.20E-08	6.65E-08	4.70	7.64E-09	1.34E-08
1.00	5.60E-08	6.04E-08	4.83	6.30E-09	1.26E-08
1.04	5.24E-08	5.68E-08	4.99	3.06E-09	1.02E-08
1.08	5.04E-08	5.48E-08	5.15	-2.37E-10	7.69E-09
1.13	4.94E-08	5.36E-08	5.32	1.47E-09	9.66E-09
1.17	4.78E-08	5.19E-08	5.50	7.62E-09	1.64E-08
1.22	4.40E-08	4.82E-08	5.67	1.42E-08	2.33E-08
1.28	4.05E-08	4.47E-08	5.83	1.58E-08	2.50E-08
1.33	3.98E-08	4.35E-08	6.00	1.17E-08	2.00E-08
1.38	3.98E-08	4.32E-08	6.18	5.16E-09	1.31E-08
1.42	3.82E-08	4.17E-08	6.35	1.19E-09	8.75E-09
1.47	3.63E-08	3.96E-08	6.51	2.99E-09	9.91E-09
1.53	3.55E-08	3.86E-08	6.70	9.60E-09	1.53E-08
1.58	3.61E-08	3.91E-08	6.90	1.61E-08	2.13E-08
1.64	3.68E-08	3.98E-08	7.10	1.83E-08	2.33E-08
1.72	3.46E-08	3.75E-08	7.30	1.67E-08	2.11E-08
1.80	3.16E-08	3.46E-08	7.50	1.37E-08	1.78E-08
1.88	3.16E-08	3.45E-08	7.70	1.13E-08	1.50E-08
1.96	3.38E-08	3.69E-08	7.90	1.01E-08	1.32E-08
2.04	3.83E-08	4.11E-08	8.10	9.13E-09	1.19E-08
2.12	4.36E-08	4.64E-08	8.30	8.05E-09	1.04E-08
2.20	4.53E-08	4.81E-08	8.50	6.61E-09	8.63E-09
2.28	4.08E-08	4.35E-08	8.73	4.84E-09	6.50E-09
2.36	3.32E-08	3.58E-08	8.98	3.04E-09	4.41E-09
2.45	2.55E-08	2.81E-08	9.23	1.63E-09	2.72E-09
2.55	1.92E-08	2.16E-08	9.48	7.00E-10	1.59E-09
2.65	1.52E-08	1.77E-08	9.73	1.87E-10	9.57E-10
2.75	1.41E-08	1.65E-08	9.98	-5.62E-11	6.52E-10
2.85	1.38E-08	1.62E-08	10.30	-9.29E-11	5.21E-10
2.95	1.28E-08	1.52E-08	10.70	-4.23E-11	4.78E-10
3.05	1.18E-08	1.42E-08	11.10	-3.80E-11	4.10E-10
3.15	1.18E-08	1.44E-08	11.50	-7.42E-11	3.06E-10
3.25	1.25E-08	1.51E-08	11.90	-1.18E-10	1.69E-10
3.35	1.23E-08	1.50E-08	12.30	-1.48E-10	1.20E-10
3.45	1.11E-08	1.38E-08	12.70	-1.41E-10	1.37E-10
3.55	9.47E-09	1.23E-08	13.10	-1.25E-10	1.30E-10
3.66	8.22E-09	1.12E-08	13.50	-1.02E-10	1.24E-10
3.79	7.60E-09	1.07E-08	13.90	-6.95E-11	1.04E-10

Run R158NS.130

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	7.54E-08	7.63E-08	5.94	9.07E-10	1.07E-09
1.01	5.58E-08	5.64E-08	6.25	7.63E-10	9.49E-10
1.11	4.13E-08	4.20E-08	6.55	6.85E-10	8.88E-10
1.21	3.37E-08	3.44E-08	6.83	7.05E-10	8.77E-10
1.31	2.92E-08	2.97E-08	7.23	7.39E-10	8.92E-10
1.41	2.49E-08	2.54E-08	7.73	7.17E-10	8.91E-10
1.51	2.07E-08	2.13E-08	8.25	6.61E-10	8.32E-10
1.61	1.68E-08	1.72E-08	8.77	6.82E-10	8.22E-10
1.71	1.35E-08	1.39E-08	9.24	7.25E-10	8.73E-10
1.81	1.09E-08	1.14E-08	9.72	7.59E-10	8.92E-10
1.94	8.68E-09	9.11E-09	10.23	8.01E-10	9.40E-10
2.11	6.99E-09	7.28E-09	10.75	8.39E-10	9.87E-10
2.31	5.49E-09	5.82E-09	11.26	7.87E-10	9.35E-10
2.50	4.42E-09	4.67E-09	11.76	7.63E-10	9.05E-10
2.69	3.80E-09	4.02E-09	12.40	1.25E-09	1.39E-09
2.90	3.39E-09	3.63E-09	13.20	3.04E-09	3.16E-09
3.10	2.91E-09	3.21E-09	14.03	4.99E-09	5.08E-09
3.30	2.45E-09	2.68E-09	14.86	5.04E-09	5.12E-09
3.51	2.05E-09	2.31E-09	15.62	3.57E-09	3.64E-09
3.71	1.82E-09	2.12E-09	16.45	1.79E-09	1.83E-09
3.90	1.72E-09	1.93E-09	17.44	5.82E-10	6.02E-10
4.15	1.51E-09	1.74E-09	18.51	1.27E-10	1.35E-10
4.46	1.40E-09	1.54E-09	19.58	1.71E-11	2.01E-11
4.75	1.30E-09	1.47E-09	20.53	-5.83E-12	-4.10E-12
5.06	1.15E-09	1.33E-09	21.43	-1.20E-11	-1.07E-11
5.36	1.03E-09	1.23E-09	22.40	-1.35E-11	-1.22E-11
5.64	9.90E-10	1.17E-09	23.43	-1.15E-11	-1.03E-11

Run R159GS.147

x = 46.0 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	3.56E-08	7.64E-08	3.93	7.33E-09	9.22E-09
0.76	6.13E-08	7.84E-08	4.06	5.37E-09	7.42E-09
0.80	6.95E-08	7.54E-08	4.19	3.48E-09	5.75E-09
0.84	6.55E-08	6.87E-08	4.31	2.53E-09	5.12E-09
0.88	5.84E-08	6.12E-08	4.44	3.04E-09	5.99E-09
0.92	5.18E-08	5.46E-08	4.57	5.23E-09	8.50E-09
0.96	4.62E-08	4.90E-08	4.70	8.44E-09	1.17E-08
1.00	4.12E-08	4.39E-08	4.83	1.03E-08	1.39E-08
1.04	3.75E-08	4.01E-08	4.99	8.48E-09	1.28E-08
1.08	3.60E-08	3.86E-08	5.15	2.57E-09	7.24E-09
1.13	3.62E-08	3.88E-08	5.32	-2.14E-09	2.61E-09
1.17	3.63E-08	3.88E-08	5.50	-1.13E-09	4.05E-09
1.22	3.52E-08	3.78E-08	5.67	5.74E-09	1.12E-08
1.28	3.39E-08	3.66E-08	5.83	1.32E-08	1.85E-08
1.33	3.34E-08	3.57E-08	6.00	1.60E-08	2.08E-08
1.38	3.26E-08	3.46E-08	6.18	1.29E-08	1.77E-08
1.42	3.09E-08	3.30E-08	6.35	7.49E-09	1.20E-08
1.47	2.90E-08	3.10E-08	6.51	3.98E-09	8.03E-09
1.53	2.77E-08	2.96E-08	6.70	4.48E-09	7.88E-09
1.58	2.75E-08	2.92E-08	6.90	8.45E-09	1.15E-08
1.64	2.80E-08	2.98E-08	7.10	1.27E-08	1.56E-08
1.72	2.78E-08	2.96E-08	7.30	1.48E-08	1.75E-08
1.80	2.65E-08	2.82E-08	7.50	1.44E-08	1.68E-08
1.88	2.57E-08	2.74E-08	7.70	1.23E-08	1.44E-08
1.96	2.69E-08	2.87E-08	7.90	9.48E-09	1.14E-08
2.04	3.09E-08	3.26E-08	8.10	6.98E-09	8.70E-09
2.12	3.60E-08	3.77E-08	8.30	5.16E-09	6.57E-09
2.20	3.84E-08	4.00E-08	8.50	4.10E-09	5.33E-09
2.28	3.56E-08	3.72E-08	8.73	3.45E-09	4.50E-09
2.36	2.89E-08	3.04E-08	8.98	2.93E-09	3.83E-09
2.45	2.13E-08	2.28E-08	9.23	2.34E-09	3.04E-09
2.55	1.66E-08	1.80E-08	9.48	1.54E-09	2.13E-09
2.65	1.44E-08	1.59E-08	9.73	8.15E-10	1.32E-09
2.75	1.24E-08	1.39E-08	9.98	2.78E-10	6.74E-10
2.85	1.04E-08	1.19E-08	10.30	-8.51E-11	2.67E-10
2.95	9.24E-09	1.06E-08	10.70	-1.56E-10	9.68E-11
3.05	8.98E-09	1.04E-08	11.10	-7.82E-11	6.92E-11
3.15	9.34E-09	1.08E-08	11.50	-1.08E-11	8.59E-11
3.25	9.98E-09	1.15E-08	11.90	1.02E-11	9.57E-11
3.35	1.03E-08	1.18E-08	12.30	-1.80E-12	9.48E-11
3.45	9.93E-09	1.15E-08	12.70	-1.94E-11	8.23E-11
3.55	9.18E-09	1.08E-08	13.10	-2.45E-11	6.62E-11
3.66	8.56E-09	1.03E-08	13.50	-1.87E-11	5.39E-11
3.79	8.28E-09	1.01E-08	13.90	-9.87E-12	4.39E-11

Run R159NS,140

x = 46.0 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.10E-08	5.17E-08	5.94	4.98E-10	6.33E-10
1.01	3.77E-08	3.82E-08	6.25	5.32E-10	6.86E-10
1.11	2.78E-08	2.84E-08	6.55	5.59E-10	7.25E-10
1.21	2.28E-08	2.33E-08	6.83	5.81E-10	7.23E-10
1.31	2.02E-08	2.06E-08	7.23	5.94E-10	7.19E-10
1.41	1.74E-08	1.78E-08	7.73	5.10E-10	6.51E-10
1.51	1.43E-08	1.48E-08	8.25	4.77E-10	6.18E-10
1.61	1.14E-08	1.17E-08	8.77	5.88E-10	7.04E-10
1.71	9.04E-09	9.33E-09	9.24	5.87E-10	7.08E-10
1.81	7.31E-09	7.67E-09	9.72	4.95E-10	6.04E-10
1.94	5.87E-09	6.22E-09	10.23	4.55E-10	5.67E-10
2.11	4.88E-09	5.12E-09	10.75	4.91E-10	6.11E-10
2.31	3.91E-09	4.18E-09	11.26	5.23E-10	6.45E-10
2.50	3.05E-09	3.25E-09	11.76	5.92E-10	7.09E-10
2.69	2.57E-09	2.75E-09	12.40	9.33E-10	1.05E-09
2.90	2.40E-09	2.60E-09	13.20	1.98E-09	2.08E-09
3.10	2.12E-09	2.37E-09	14.03	3.14E-09	3.22E-09
3.30	1.68E-09	1.86E-09	14.86	3.19E-09	3.25E-09
3.51	1.26E-09	1.48E-09	15.62	2.29E-09	2.35E-09
3.71	1.05E-09	1.29E-09	16.45	1.18E-09	1.21E-09
3.90	1.00E-09	1.18E-09	17.44	3.99E-10	4.16E-10
4.15	9.44E-10	1.13E-09	18.51	9.10E-11	9.78E-11
4.46	9.52E-10	1.07E-09	19.58	1.22E-11	1.49E-11
4.75	9.78E-10	1.11E-09	20.53	-4.19E-12	-2.55E-12
5.06	9.29E-10	1.08E-09	21.43	-8.17E-12	-6.92E-12
5.36	7.34E-10	8.99E-10	22.40	-8.92E-12	-7.65E-12
5.64	5.58E-10	7.03E-10	23.43	-7.53E-12	-6.34E-12

Run R160GS.149

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	3.20E-08	7.63E-08	3.93	7.18E-09	9.38E-09
0.76	5.97E-08	7.84E-08	4.06	5.83E-09	8.24E-09
0.80	7.19E-08	7.84E-08	4.19	4.77E-09	7.34E-09
0.84	7.16E-08	7.53E-08	4.31	4.74E-09	7.65E-09
0.88	6.52E-08	6.84E-08	4.44	5.70E-09	9.12E-09
0.92	5.68E-08	6.01E-08	4.57	7.19E-09	1.10E-08
0.96	4.95E-08	5.27E-08	4.70	8.43E-09	1.22E-08
1.00	4.38E-08	4.69E-08	4.83	8.33E-09	1.24E-08
1.04	3.95E-08	4.26E-08	4.99	6.20E-09	1.10E-08
1.08	3.68E-08	3.99E-08	5.15	3.15E-09	8.44E-09
1.13	3.56E-08	3.85E-08	5.32	2.18E-09	7.37E-09
1.17	3.53E-08	3.82E-08	5.50	3.80E-09	9.48E-09
1.22	3.49E-08	3.79E-08	5.67	7.02E-09	1.31E-08
1.28	3.47E-08	3.77E-08	5.83	9.71E-09	1.57E-08
1.33	3.52E-08	3.78E-08	6.00	1.08E-08	1.61E-08
1.38	3.48E-08	3.72E-08	6.18	9.65E-09	1.48E-08
1.42	3.27E-08	3.51E-08	6.35	7.33E-09	1.24E-08
1.47	3.04E-08	3.27E-08	6.51	6.17E-09	1.07E-08
1.53	2.95E-08	3.16E-08	6.70	6.63E-09	1.03E-08
1.58	2.98E-08	3.18E-08	6.90	9.00E-09	1.24E-08
1.64	3.02E-08	3.23E-08	7.10	1.21E-08	1.53E-08
1.72	2.93E-08	3.13E-08	7.30	1.45E-08	1.73E-08
1.80	2.81E-08	3.01E-08	7.50	1.46E-08	1.72E-08
1.88	2.83E-08	3.03E-08	7.70	1.27E-08	1.51E-08
1.96	3.02E-08	3.23E-08	7.90	9.85E-09	1.18E-08
2.04	3.32E-08	3.52E-08	8.10	7.17E-09	8.81E-09
2.12	3.58E-08	3.77E-08	8.30	5.31E-09	6.75E-09
2.20	3.65E-08	3.84E-08	8.50	4.31E-09	5.57E-09
2.28	3.38E-08	3.57E-08	8.73	3.87E-09	4.79E-09
2.36	2.79E-08	2.97E-08	8.98	3.20E-09	3.98E-09
2.45	2.08E-08	2.26E-08	9.23	2.33E-09	2.99E-09
2.55	1.62E-08	1.78E-08	9.48	1.40E-09	1.86E-09
2.65	1.44E-08	1.61E-08	9.73	6.34E-10	1.04E-09
2.75	1.33E-08	1.50E-08	9.98	1.32E-10	4.87E-10
2.85	1.22E-08	1.39E-08	10.30	-1.29E-10	1.24E-10
2.95	1.19E-08	1.35E-08	10.70	-1.57E-10	7.16E-12
3.05	1.17E-08	1.34E-08	11.10	-9.25E-11	1.99E-11
3.15	1.09E-08	1.27E-08	11.50	-4.21E-11	4.99E-11
3.25	9.66E-09	1.14E-08	11.90	-2.25E-11	6.39E-11
3.35	8.41E-09	1.02E-08	12.30	-2.40E-11	6.22E-11
3.45	7.74E-09	9.58E-09	12.70	-3.19E-11	5.23E-11
3.55	7.62E-09	9.55E-09	13.10	-3.47E-11	3.98E-11
3.66	7.82E-09	9.84E-09	13.50	-2.93E-11	3.00E-11
3.79	7.88E-09	9.93E-09	13.90	-2.04E-11	2.34E-11

Run R160NS.152

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.33E-08	5.44E-08	5.94	5.65E-10	7.61E-10
1.01	3.92E-08	4.00E-08	6.25	5.45E-10	7.68E-10
1.11	2.93E-08	3.01E-08	6.55	5.71E-10	8.04E-10
1.21	2.44E-08	2.51E-08	6.83	5.47E-10	7.49E-10
1.31	2.13E-08	2.18E-08	7.23	4.21E-10	6.02E-10
1.41	1.80E-08	1.86E-08	7.73	4.11E-10	6.18E-10
1.51	1.48E-08	1.55E-08	8.25	4.61E-10	6.64E-10
1.61	1.19E-08	1.25E-08	8.77	4.54E-10	6.25E-10
1.71	9.60E-09	1.00E-08	9.24	4.41E-10	6.20E-10
1.81	7.71E-09	8.19E-09	9.72	4.73E-10	6.34E-10
1.94	6.13E-09	6.61E-09	10.23	5.61E-10	7.32E-10
2.11	5.04E-09	5.39E-09	10.75	6.56E-10	8.28E-10
2.31	4.02E-09	4.40E-09	11.26	6.09E-10	7.82E-10
2.50	3.25E-09	3.55E-09	11.76	4.88E-10	6.60E-10
2.69	2.81E-09	3.07E-09	12.40	7.46E-10	9.09E-10
2.90	2.55E-09	2.84E-09	13.20	2.17E-09	2.31E-09
3.10	2.19E-09	2.54E-09	14.03	3.60E-09	3.71E-09
3.30	1.77E-09	2.02E-09	14.86	3.44E-09	3.54E-09
3.51	1.25E-09	1.56E-09	15.62	2.30E-09	2.38E-09
3.71	9.77E-10	1.32E-09	16.45	1.09E-09	1.13E-09
3.90	1.01E-09	1.26E-09	17.44	3.34E-10	3.56E-10
4.15	1.04E-09	1.30E-09	18.51	6.86E-11	7.68E-11
4.46	9.88E-10	1.16E-09	19.58	6.68E-12	1.06E-11
4.75	9.67E-10	1.16E-09	20.53	-6.30E-12	-3.24E-12
5.06	9.03E-10	1.12E-09	21.43	-9.84E-12	-7.38E-12
5.36	7.65E-10	9.95E-10	22.40	-1.08E-11	-8.22E-12
5.64	6.54E-10	8.63E-10	23.43	-9.37E-12	-6.45E-12

Run R161GS.160

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS1(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	2.00E-08	4.48E-08	3.93	4.41E-09	5.76E-09
0.76	3.37E-08	4.42E-08	4.06	4.08E-09	5.57E-09
0.80	3.86E-08	4.24E-08	4.19	3.49E-09	5.10E-09
0.84	3.74E-08	3.96E-08	4.31	3.14E-09	4.96E-09
0.88	3.32E-08	3.52E-08	4.44	3.31E-09	5.44E-09
0.92	2.78E-08	2.98E-08	4.57	3.89E-09	6.24E-09
0.96	2.34E-08	2.53E-08	4.70	4.29E-09	6.63E-09
1.00	2.10E-08	2.29E-08	4.83	3.61E-09	6.16E-09
1.04	2.05E-08	2.24E-08	4.99	1.86E-09	4.86E-09
1.08	2.08E-08	2.27E-08	5.15	2.96E-10	3.58E-09
1.13	2.10E-08	2.28E-08	5.32	4.54E-10	3.81E-09
1.17	2.06E-08	2.23E-08	5.50	1.94E-09	5.58E-09
1.22	1.96E-08	2.14E-08	5.67	3.88E-09	7.70E-09
1.28	1.85E-08	2.03E-08	5.83	5.15E-09	8.95E-09
1.33	1.76E-08	1.92E-08	6.00	5.37E-09	8.86E-09
1.38	1.71E-08	1.85E-08	6.18	4.46E-09	7.84E-09
1.42	1.66E-08	1.81E-08	6.35	3.08E-09	6.31E-09
1.47	1.59E-08	1.73E-08	6.51	2.31E-09	5.20E-09
1.53	1.51E-08	1.64E-08	6.70	2.75E-09	5.16E-09
1.58	1.43E-08	1.55E-08	6.90	4.48E-09	6.74E-09
1.64	1.41E-08	1.54E-08	7.10	6.73E-09	8.84E-09
1.72	1.54E-08	1.66E-08	7.30	8.08E-09	1.00E-08
1.80	1.61E-08	1.74E-08	7.50	7.89E-09	9.62E-09
1.88	1.57E-08	1.69E-08	7.70	6.51E-09	8.11E-09
1.96	1.58E-08	1.70E-08	7.90	4.74E-09	6.17E-09
2.04	1.75E-08	1.87E-08	8.10	3.35E-09	4.57E-09
2.12	1.96E-08	2.08E-08	8.30	2.46E-09	3.52E-09
2.20	2.03E-08	2.14E-08	8.50	2.05E-09	2.96E-09
2.28	1.87E-08	1.98E-08	8.73	1.84E-09	2.62E-09
2.36	1.54E-08	1.65E-08	8.98	1.55E-09	2.19E-09
2.45	1.08E-08	1.18E-08	9.23	1.11E-09	1.64E-09
2.55	7.26E-09	8.24E-09	9.48	6.10E-10	1.03E-09
2.65	6.59E-09	7.58E-09	9.73	1.95E-10	5.52E-10
2.75	7.18E-09	8.17E-09	9.98	-9.33E-11	2.36E-10
2.85	6.84E-09	7.84E-09	10.30	-2.45E-10	6.00E-11
2.95	5.58E-09	6.56E-09	10.70	-2.20E-10	5.44E-11
3.05	4.61E-09	5.62E-09	11.10	-1.36E-10	9.33E-11
3.15	4.55E-09	5.60E-09	11.50	-5.63E-11	1.15E-10
3.25	4.98E-09	6.06E-09	11.90	2.62E-12	1.02E-10
3.35	5.14E-09	6.26E-09	12.30	3.03E-11	1.13E-10
3.45	4.83E-09	5.96E-09	12.70	3.36E-11	1.25E-10
3.55	4.32E-09	5.48E-09	13.10	1.67E-11	1.29E-10
3.66	4.02E-09	5.25E-09	13.50	2.30E-11	1.08E-10
3.79	4.25E-09	5.50E-09	13.90	1.37E-11	8.09E-11

Run R161NS.158

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS1(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	2.86E-08	2.91E-08	5.94	2.81E-10	3.83E-10
1.01	2.11E-08	2.15E-08	6.25	2.37E-10	3.52E-10
1.11	1.56E-08	1.61E-08	6.55	2.46E-10	3.68E-10
1.21	1.27E-08	1.31E-08	6.83	2.81E-10	3.85E-10
1.31	1.09E-08	1.12E-08	7.23	2.90E-10	3.83E-10
1.41	9.29E-09	9.61E-09	7.73	2.74E-10	3.79E-10
1.51	7.76E-09	8.10E-09	8.25	2.17E-10	3.25E-10
1.61	6.23E-09	6.51E-09	8.77	2.00E-10	2.89E-10
1.71	4.94E-09	5.15E-09	9.24	2.49E-10	3.43E-10
1.81	3.97E-09	4.20E-09	9.72	2.88E-10	3.73E-10
1.94	3.21E-09	3.45E-09	10.23	2.66E-10	3.54E-10
2.11	2.72E-09	2.90E-09	10.75	2.44E-10	3.33E-10
2.31	2.25E-09	2.44E-09	11.26	2.69E-10	3.59E-10
2.50	1.77E-09	1.92E-09	11.76	3.34E-10	4.19E-10
2.69	1.41E-09	1.54E-09	12.40	5.02E-10	5.85E-10
2.90	1.26E-09	1.40E-09	13.20	1.11E-09	1.18E-09
3.10	1.07E-09	1.25E-09	14.03	1.96E-09	2.02E-09
3.30	8.74E-10	1.00E-09	14.86	2.12E-09	2.17E-09
3.51	7.19E-10	8.71E-10	15.62	1.56E-09	1.60E-09
3.71	6.65E-10	8.34E-10	16.45	8.02E-10	8.27E-10
3.90	6.49E-10	7.76E-10	17.44	2.66E-10	2.80E-10
4.15	5.63E-10	6.96E-10	18.51	5.82E-11	6.38E-11
4.46	4.74E-10	5.60E-10	19.58	7.32E-12	9.63E-12
4.75	4.28E-10	5.25E-10	20.53	-3.00E-12	-1.50E-12
5.06	4.06E-10	5.18E-10	21.43	-5.48E-12	-4.42E-12
5.36	3.60E-10	4.80E-10	22.40	-6.04E-12	-5.02E-12
5.64	3.26E-10	4.33E-10	23.43	-5.18E-12	-4.02E-12

Run R162GS.182

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.59E-08	3.53E-08	3.93	3.43E-09	4.25E-09
0.76	2.90E-08	3.65E-08	4.06	3.11E-09	4.02E-09
0.80	3.44E-08	3.68E-08	4.19	2.96E-09	3.93E-09
0.84	3.39E-08	3.51E-08	4.31	3.08E-09	4.17E-09
0.88	3.09E-08	3.19E-08	4.44	3.29E-09	4.60E-09
0.92	2.73E-08	2.84E-08	4.57	3.42E-09	4.85E-09
0.96	2.42E-08	2.53E-08	4.70	3.34E-09	4.76E-09
1.00	2.20E-08	2.30E-08	4.83	2.94E-09	4.49E-09
1.04	2.04E-08	2.14E-08	4.99	2.36E-09	4.19E-09
1.08	1.93E-08	2.03E-08	5.15	1.89E-09	3.88E-09
1.13	1.82E-08	1.91E-08	5.32	1.87E-09	3.90E-09
1.17	1.73E-08	1.83E-08	5.50	2.54E-09	4.73E-09
1.22	1.69E-08	1.80E-08	5.67	3.95E-09	6.33E-09
1.28	1.65E-08	1.76E-08	5.83	5.24E-09	7.47E-09
1.33	1.60E-08	1.69E-08	6.00	5.34E-09	7.40E-09
1.38	1.56E-08	1.65E-08	6.18	4.09E-09	6.12E-09
1.42	1.53E-08	1.61E-08	6.35	2.60E-09	4.55E-09
1.47	1.49E-08	1.57E-08	6.51	2.28E-09	3.98E-09
1.53	1.47E-08	1.54E-08	6.70	3.47E-09	4.92E-09
1.58	1.46E-08	1.53E-08	6.90	5.63E-09	6.95E-09
1.64	1.44E-08	1.52E-08	7.10	7.13E-09	8.36E-09
1.72	1.36E-08	1.43E-08	7.30	7.23E-09	8.35E-09
1.80	1.25E-08	1.32E-08	7.50	6.36E-09	7.35E-09
1.88	1.20E-08	1.27E-08	7.70	5.28E-09	6.20E-09
1.96	1.22E-08	1.30E-08	7.90	4.49E-09	5.29E-09
2.04	1.28E-08	1.35E-08	8.10	3.98E-09	4.67E-09
2.12	1.31E-08	1.37E-08	8.30	3.53E-09	4.12E-09
2.20	1.26E-08	1.33E-08	8.50	3.00E-09	3.50E-09
2.28	1.15E-08	1.22E-08	8.73	2.31E-09	2.73E-09
2.36	1.00E-08	1.07E-08	8.98	1.53E-09	1.85E-09
2.45	8.29E-09	8.91E-09	9.23	8.64E-10	1.13E-09
2.55	7.12E-09	7.71E-09	9.48	4.00E-10	6.19E-10
2.65	6.61E-09	7.22E-09	9.73	1.29E-10	3.17E-10
2.75	6.13E-09	6.75E-09	9.98	3.99E-12	1.63E-10
2.85	5.55E-09	6.16E-09	10.30	-4.43E-11	8.30E-11
2.95	5.05E-09	5.65E-09	10.70	-3.01E-11	6.47E-11
3.05	4.68E-09	5.29E-09	11.10	-6.22E-12	6.12E-11
3.15	4.42E-09	5.06E-09	11.50	2.73E-12	5.41E-11
3.25	4.34E-09	5.00E-09	11.90	-2.91E-12	4.83E-11
3.35	4.35E-09	5.03E-09	12.30	-9.39E-12	4.16E-11
3.45	4.30E-09	5.00E-09	12.70	-1.08E-11	3.55E-11
3.55	4.14E-09	4.86E-09	13.10	-1.05E-11	3.02E-11
3.66	3.92E-09	4.69E-09	13.50	-8.74E-12	2.52E-11
3.79	3.71E-09	4.49E-09	13.90	-6.13E-12	2.17E-11

Run R162NS.175

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	1.06E-08	1.09E-08	5.94	3.16E-10	4.02E-10
1.01	8.24E-09	8.49E-09	6.25	3.31E-10	4.28E-10
1.11	6.13E-09	6.44E-09	6.55	3.24E-10	4.27E-10
1.21	5.14E-09	5.43E-09	6.83	2.99E-10	3.87E-10
1.31	4.84E-09	5.05E-09	7.23	2.40E-10	3.18E-10
1.41	4.45E-09	4.70E-09	7.73	2.37E-10	3.27E-10
1.51	3.80E-09	4.07E-09	8.25	3.00E-10	3.89E-10
1.61	3.11E-09	3.31E-09	8.77	3.63E-10	4.35E-10
1.71	2.55E-09	2.70E-09	9.24	3.54E-10	4.28E-10
1.81	2.16E-09	2.34E-09	9.72	2.97E-10	3.64E-10
1.94	1.95E-09	2.13E-09	10.23	2.98E-10	3.69E-10
2.11	1.89E-09	2.02E-09	10.75	3.62E-10	4.32E-10
2.31	1.56E-09	1.70E-09	11.26	3.68E-10	4.39E-10
2.50	1.18E-09	1.30E-09	11.76	3.49E-10	4.18E-10
2.69	9.97E-10	1.10E-09	12.40	4.94E-10	5.59E-10
2.90	9.38E-10	1.06E-09	13.20	1.07E-09	1.13E-09
3.10	7.99E-10	9.45E-10	14.03	1.67E-09	1.72E-09
3.30	6.29E-10	7.33E-10	14.86	1.65E-09	1.69E-09
3.51	5.01E-10	6.29E-10	15.62	1.14E-09	1.17E-09
3.71	4.73E-10	6.16E-10	16.45	5.56E-10	5.75E-10
3.90	5.11E-10	6.17E-10	17.44	1.72E-10	1.81E-10
4.15	5.38E-10	6.50E-10	18.51	3.43E-11	3.75E-11
4.46	5.18E-10	5.90E-10	19.58	4.62E-12	5.77E-12
4.75	4.45E-10	5.27E-10	20.53	-4.70E-13	6.00E-13
5.06	3.89E-10	4.84E-10	21.43	-1.67E-12	-3.85E-13
5.36	3.28E-10	4.30E-10	22.40	-1.96E-12	-5.33E-13
5.64	3.04E-10	3.94E-10	23.43	-1.74E-12	-3.15E-13

Run R163GS.189

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.58E-08	3.07E-08	3.93	2.51E-09	3.33E-09
0.76	2.35E-08	2.97E-08	4.06	2.26E-09	3.15E-09
0.80	2.63E-08	2.84E-08	4.19	2.10E-09	3.08E-09
0.84	2.55E-08	2.66E-08	4.31	1.94E-09	3.05E-09
0.88	2.31E-08	2.41E-08	4.44	1.78E-09	3.10E-09
0.92	2.05E-08	2.15E-08	4.57	1.90E-09	3.35E-09
0.96	1.83E-08	1.92E-08	4.70	2.47E-09	3.90E-09
1.00	1.68E-08	1.78E-08	4.83	2.96E-09	4.54E-09
1.04	1.60E-08	1.69E-08	4.99	2.87E-09	4.72E-09
1.08	1.53E-08	1.63E-08	5.15	1.71E-09	3.74E-09
1.13	1.46E-08	1.56E-08	5.32	3.87E-10	2.45E-09
1.17	1.42E-08	1.51E-08	5.50	3.59E-11	2.31E-09
1.22	1.43E-08	1.52E-08	5.67	1.34E-09	3.76E-09
1.28	1.43E-08	1.53E-08	5.83	3.36E-09	5.65E-09
1.33	1.39E-08	1.48E-08	6.00	4.71E-09	6.82E-09
1.38	1.31E-08	1.39E-08	6.18	4.51E-09	6.63E-09
1.42	1.22E-08	1.30E-08	6.35	3.17E-09	5.18E-09
1.47	1.15E-08	1.23E-08	6.51	1.91E-09	3.69E-09
1.53	1.10E-08	1.18E-08	6.70	1.54E-09	3.07E-09
1.58	1.08E-08	1.15E-08	6.90	2.54E-09	3.94E-09
1.64	1.06E-08	1.13E-08	7.10	4.31E-09	5.61E-09
1.72	1.04E-08	1.11E-08	7.30	5.72E-09	6.94E-09
1.80	9.91E-09	1.06E-08	7.50	6.00E-09	7.11E-09
1.88	9.02E-09	9.70E-09	7.70	5.14E-09	6.17E-09
1.96	8.60E-09	9.31E-09	7.90	3.76E-09	4.66E-09
2.04	9.25E-09	9.93E-09	8.10	2.56E-09	3.36E-09
2.12	1.01E-08	1.08E-08	8.30	1.88E-09	2.58E-09
2.20	1.02E-08	1.09E-08	8.50	1.62E-09	2.24E-09
2.28	9.22E-09	9.86E-09	8.73	1.57E-09	2.07E-09
2.36	7.64E-09	8.27E-09	8.98	1.41E-09	1.84E-09
2.45	6.13E-09	6.75E-09	9.23	1.07E-09	1.43E-09
2.55	5.30E-09	5.88E-09	9.48	6.56E-10	9.38E-10
2.65	4.92E-09	5.52E-09	9.73	2.97E-10	5.36E-10
2.75	4.60E-09	5.21E-09	9.98	4.55E-11	2.60E-10
2.85	4.26E-09	4.87E-09	10.30	-1.01E-10	8.29E-11
2.95	3.97E-09	4.57E-09	10.70	-1.24E-10	3.61E-11
3.05	3.77E-09	4.37E-09	11.10	-8.18E-11	5.60E-11
3.15	3.65E-09	4.28E-09	11.50	-3.82E-11	8.60E-11
3.25	3.62E-09	4.27E-09	11.90	-1.42E-11	9.20E-11
3.35	3.58E-09	4.24E-09	12.30	-6.49E-12	8.82E-11
3.45	3.47E-09	4.15E-09	12.70	-6.44E-12	7.82E-11
3.55	3.29E-09	3.99E-09	13.10	-1.20E-11	6.52E-11
3.66	3.04E-09	3.79E-09	13.50	-1.69E-11	5.26E-11
3.79	2.79E-09	3.55E-09	13.90	-1.62E-11	4.31E-11

Run R163NS.196

x = -45.5 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	7.87E-09	8.13E-09	5.94	2.10E-10	2.73E-10
1.01	6.04E-09	6.23E-09	6.25	2.08E-10	2.79E-10
1.11	4.59E-09	4.83E-09	6.55	2.21E-10	2.96E-10
1.21	3.84E-09	4.05E-09	6.83	2.32E-10	2.96E-10
1.31	3.38E-09	3.55E-09	7.23	2.10E-10	2.66E-10
1.41	2.94E-09	3.12E-09	7.73	1.85E-10	2.49E-10
1.51	2.53E-09	2.72E-09	8.25	2.04E-10	2.68E-10
1.61	2.17E-09	2.33E-09	8.77	2.33E-10	2.86E-10
1.71	1.87E-09	1.99E-09	9.24	2.37E-10	2.92E-10
1.81	1.58E-09	1.73E-09	9.72	2.43E-10	2.92E-10
1.94	1.35E-09	1.48E-09	10.23	2.30E-10	2.80E-10
2.11	1.22E-09	1.32E-09	10.75	1.93E-10	2.45E-10
2.31	1.05E-09	1.16E-09	11.26	1.80E-10	2.32E-10
2.50	8.54E-10	9.41E-10	11.76	2.16E-10	2.66E-10
2.69	7.36E-10	8.13E-10	12.40	3.55E-10	4.04E-10
2.90	6.91E-10	7.82E-10	13.20	7.05E-10	7.48E-10
3.10	6.22E-10	7.32E-10	14.03	1.04E-09	1.07E-09
3.30	5.42E-10	6.22E-10	14.86	9.90E-10	1.02E-09
3.51	4.34E-10	5.32E-10	15.62	6.77E-10	7.00E-10
3.71	3.50E-10	4.59E-10	16.45	3.26E-10	3.40E-10
3.90	3.24E-10	4.04E-10	17.44	1.01E-10	1.08E-10
4.15	3.07E-10	3.88E-10	18.51	2.09E-11	2.38E-11
4.46	3.15E-10	3.68E-10	19.58	2.21E-12	3.65E-12
4.75	3.17E-10	3.77E-10	20.53	-1.69E-12	-6.86E-13
5.06	2.87E-10	3.57E-10	21.43	-2.76E-12	-1.99E-12
5.36	2.40E-10	3.18E-10	22.40	-3.05E-12	-2.25E-12
5.64	2.21E-10	2.89E-10	23.43	-2.62E-12	-1.84E-12

Run R164GS.208

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS2(SSBP)
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval	Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval
0.72	5.32E-09	1.48E-08	3.93	1.32E-09	1.89E-09
0.76	1.12E-08	1.53E-08	4.06	1.27E-09	1.90E-09
0.80	1.36E-08	1.51E-08	4.19	1.16E-09	1.85E-09
0.84	1.31E-08	1.40E-08	4.31	1.01E-09	1.77E-09
0.88	1.16E-08	1.25E-08	4.44	1.05E-09	1.92E-09
0.92	1.03E-08	1.12E-08	4.57	1.41E-09	2.37E-09
0.96	9.30E-09	1.02E-08	4.70	1.79E-09	2.77E-09
1.00	8.36E-09	9.22E-09	4.83	1.59E-09	2.68E-09
1.04	7.67E-09	8.52E-09	4.99	5.26E-10	1.74E-09
1.08	7.39E-09	8.27E-09	5.15	-8.92E-10	4.65E-10
1.13	7.27E-09	8.12E-09	5.32	-1.06E-09	3.52E-10
1.17	6.96E-09	7.79E-09	5.50	3.23E-10	1.80E-09
1.22	6.69E-09	7.53E-09	5.67	2.19E-09	3.74E-09
1.28	6.68E-09	7.51E-09	5.83	3.15E-09	4.74E-09
1.33	6.77E-09	7.51E-09	6.00	2.77E-09	4.22E-09
1.38	6.64E-09	7.30E-09	6.18	1.46E-09	2.80E-09
1.42	6.39E-09	7.05E-09	6.35	2.63E-10	1.58E-09
1.47	6.20E-09	6.82E-09	6.51	-9.94E-12	1.21E-09
1.53	6.04E-09	6.61E-09	6.70	6.94E-10	1.72E-09
1.58	5.83E-09	6.36E-09	6.90	1.89E-09	2.82E-09
1.64	5.57E-09	6.09E-09	7.10	2.73E-09	3.65E-09
1.72	5.29E-09	5.79E-09	7.30	2.89E-09	3.73E-09
1.80	4.95E-09	5.45E-09	7.50	2.52E-09	3.24E-09
1.88	4.89E-09	5.39E-09	7.70	1.97E-09	2.63E-09
1.96	5.26E-09	5.78E-09	7.90	1.51E-09	2.11E-09
2.04	5.65E-09	6.15E-09	8.10	1.28E-09	1.76E-09
2.12	5.68E-09	6.17E-09	8.30	1.12E-09	1.54E-09
2.20	5.38E-09	5.86E-09	8.50	9.90E-10	1.36E-09
2.28	4.79E-09	5.26E-09	8.73	8.33E-10	1.16E-09
2.36	3.97E-09	4.43E-09	8.98	6.19E-10	8.59E-10
2.45	3.16E-09	3.61E-09	9.23	3.98E-10	6.00E-10
2.55	2.84E-09	3.26E-09	9.48	2.11E-10	3.87E-10
2.65	2.75E-09	3.18E-09	9.73	6.87E-11	2.29E-10
2.75	2.43E-09	2.86E-09	9.98	-4.84E-12	1.24E-10
2.85	2.04E-09	2.47E-09	10.30	-5.58E-11	4.40E-11
2.95	1.96E-09	2.39E-09	10.70	-6.93E-11	4.89E-12
3.05	2.08E-09	2.51E-09	11.10	-5.86E-11	4.66E-12
3.15	2.05E-09	2.50E-09	11.50	-3.88E-11	1.34E-11
3.25	1.85E-09	2.31E-09	11.90	-1.86E-11	3.01E-11
3.35	1.67E-09	2.14E-09	12.30	-4.98E-12	4.14E-11
3.45	1.66E-09	2.13E-09	12.70	8.47E-13	4.29E-11
3.55	1.71E-09	2.21E-09	13.10	-4.45E-13	3.66E-11
3.66	1.67E-09	2.19E-09	13.50	-2.80E-12	2.80E-11
3.79	1.47E-09	2.00E-09	13.90	-3.43E-12	2.06E-11

Run R164NS.203

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS2(SSBP)
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	4.64E-09	4.78E-09	5.94	1.21E-10	1.57E-10
1.01	3.61E-09	3.72E-09	6.25	1.12E-10	1.52E-10
1.11	2.80E-09	2.93E-09	6.55	1.08E-10	1.49E-10
1.21	2.28E-09	2.40E-09	6.83	1.08E-10	1.43E-10
1.31	1.93E-09	2.02E-09	7.23	1.01E-10	1.33E-10
1.41	1.69E-09	1.79E-09	7.73	9.78E-11	1.33E-10
1.51	1.51E-09	1.61E-09	8.25	9.58E-11	1.31E-10
1.61	1.31E-09	1.39E-09	8.77	9.26E-11	1.22E-10
1.71	1.08E-09	1.15E-09	9.24	8.64E-11	1.18E-10
1.81	8.72E-10	9.52E-10	9.72	8.95E-11	1.18E-10
1.94	7.35E-10	8.10E-10	10.23	1.15E-10	1.43E-10
2.11	7.05E-10	7.62E-10	10.75	1.46E-10	1.75E-10
2.31	6.40E-10	7.02E-10	11.26	1.48E-10	1.79E-10
2.50	5.14E-10	5.63E-10	11.76	1.30E-10	1.59E-10
2.69	4.20E-10	4.63E-10	12.40	1.60E-10	1.90E-10
2.90	3.77E-10	4.27E-10	13.20	3.75E-10	4.01E-10
3.10	3.12E-10	3.72E-10	14.03	6.42E-10	6.61E-10
3.30	2.41E-10	2.84E-10	14.86	6.58E-10	6.77E-10
3.51	1.85E-10	2.37E-10	15.62	4.64E-10	4.78E-10
3.71	1.78E-10	2.36E-10	16.45	2.28E-10	2.36E-10
3.90	1.96E-10	2.38E-10	17.44	7.25E-11	7.67E-11
4.15	1.87E-10	2.31E-10	18.51	1.58E-11	1.78E-11
4.46	1.61E-10	1.90E-10	19.58	2.25E-12	3.18E-12
4.75	1.51E-10	1.84E-10	20.53	-9.69E-13	-3.99E-14
5.06	1.46E-10	1.84E-10	21.43	-1.86E-12	-1.07E-12
5.36	1.33E-10	1.74E-10	22.40	-2.20E-12	-1.35E-12
5.64	1.27E-10	1.62E-10	23.43	-1.88E-12	-9.80E-13

Run R165GS.230

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	5.63E-09	1.79E-08	3.93	1.58E-09	2.00E-09
0.76	1.15E-08	1.68E-08	4.06	1.26E-09	1.72E-09
0.80	1.44E-08	1.65E-08	4.19	9.42E-10	1.45E-09
0.84	1.48E-08	1.63E-08	4.31	7.47E-10	1.33E-09
0.88	1.39E-08	1.53E-08	4.44	7.23E-10	1.41E-09
0.92	1.26E-08	1.40E-08	4.57	9.40E-10	1.69E-09
0.96	1.14E-08	1.28E-08	4.70	1.38E-09	2.13E-09
1.00	1.04E-08	1.19E-08	4.83	1.82E-09	2.62E-09
1.04	9.98E-09	1.14E-08	4.99	1.94E-09	2.90E-09
1.08	1.02E-08	1.17E-08	5.15	1.22E-09	2.26E-09
1.13	1.13E-08	1.28E-08	5.32	4.11E-11	1.11E-09
1.17	1.25E-08	1.39E-08	5.50	-5.61E-10	6.05E-10
1.22	1.28E-08	1.42E-08	5.67	1.65E-10	1.41E-09
1.28	1.22E-08	1.35E-08	5.83	1.60E-09	2.78E-09
1.33	1.14E-08	1.25E-08	6.00	2.62E-09	3.70E-09
1.38	1.06E-08	1.15E-08	6.18	2.54E-09	3.63E-09
1.42	9.44E-09	1.03E-08	6.35	1.62E-09	2.66E-09
1.47	8.14E-09	8.82E-09	6.51	7.77E-10	1.69E-09
1.53	7.00E-09	7.57E-09	6.70	6.00E-10	1.38E-09
1.58	6.23E-09	6.70E-09	6.90	1.29E-09	2.00E-09
1.64	5.79E-09	6.21E-09	7.10	2.19E-09	2.88E-09
1.72	5.61E-09	6.00E-09	7.30	2.61E-09	3.24E-09
1.80	5.36E-09	5.73E-09	7.50	2.39E-09	2.97E-09
1.88	5.10E-09	5.47E-09	7.70	1.83E-09	2.36E-09
1.96	4.96E-09	5.35E-09	7.90	1.28E-09	1.75E-09
2.04	4.94E-09	5.30E-09	8.10	9.28E-10	1.35E-09
2.12	4.90E-09	5.26E-09	8.30	7.56E-10	1.12E-09
2.20	4.77E-09	5.12E-09	8.50	6.93E-10	1.00E-09
2.28	4.54E-09	4.88E-09	8.73	6.36E-10	9.02E-10
2.36	4.22E-09	4.56E-09	8.98	5.29E-10	7.60E-10
2.45	3.67E-09	4.00E-09	9.23	3.85E-10	5.67E-10
2.55	2.88E-09	3.20E-09	9.48	2.34E-10	3.87E-10
2.65	2.29E-09	2.61E-09	9.73	9.90E-11	2.39E-10
2.75	2.13E-09	2.45E-09	9.98	3.71E-12	1.33E-10
2.85	2.16E-09	2.48E-09	10.30	-5.28E-11	5.69E-11
2.95	2.07E-09	2.38E-09	10.70	-6.40E-11	2.09E-11
3.05	1.83E-09	2.15E-09	11.10	-4.30E-11	1.75E-11
3.15	1.66E-09	1.99E-09	11.50	-1.82E-11	2.52E-11
3.25	1.69E-09	2.04E-09	11.90	-4.88E-12	3.31E-11
3.35	1.87E-09	2.22E-09	12.30	-9.37E-13	3.94E-11
3.45	2.03E-09	2.39E-09	12.70	4.30E-13	3.94E-11
3.55	2.06E-09	2.42E-09	13.10	-4.20E-13	3.42E-11
3.66	1.96E-09	2.35E-09	13.50	-1.44E-12	2.76E-11
3.79	1.81E-09	2.21E-09	13.90	-1.61E-12	2.11E-11

Run R165NS.224

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)1SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	7.22E-09	7.40E-09	5.94	1.12E-10	1.51E-10
1.01	5.76E-09	5.89E-09	6.25	1.08E-10	1.51E-10
1.11	4.35E-09	4.51E-09	6.55	1.24E-10	1.71E-10
1.21	3.39E-09	3.53E-09	6.83	1.54E-10	1.93E-10
1.31	2.83E-09	2.93E-09	7.23	1.77E-10	2.12E-10
1.41	2.47E-09	2.59E-09	7.73	1.42E-10	1.82E-10
1.51	2.21E-09	2.33E-09	8.25	9.68E-11	1.37E-10
1.61	1.94E-09	2.04E-09	8.77	1.20E-10	1.53E-10
1.71	1.66E-09	1.74E-09	9.24	1.43E-10	1.77E-10
1.81	1.39E-09	1.49E-09	9.72	1.46E-10	1.77E-10
1.94	1.16E-09	1.26E-09	10.23	1.49E-10	1.81E-10
2.11	1.01E-09	1.08E-09	10.75	1.51E-10	1.84E-10
2.31	8.46E-10	9.27E-10	11.26	1.38E-10	1.72E-10
2.50	7.29E-10	7.92E-10	11.76	1.45E-10	1.78E-10
2.69	6.22E-10	6.77E-10	12.40	2.45E-10	2.77E-10
2.90	5.36E-10	5.99E-10	13.20	5.05E-10	5.31E-10
3.10	4.76E-10	5.48E-10	14.03	7.44E-10	7.65E-10
3.30	4.24E-10	4.76E-10	14.86	7.19E-10	7.38E-10
3.51	3.46E-10	4.10E-10	15.62	5.01E-10	5.15E-10
3.71	2.73E-10	3.40E-10	16.45	2.47E-10	2.56E-10
3.90	2.38E-10	2.87E-10	17.44	7.91E-11	8.34E-11
4.15	2.23E-10	2.76E-10	18.51	1.67E-11	1.84E-11
4.46	2.46E-10	2.80E-10	19.58	1.91E-12	2.72E-12
4.75	2.43E-10	2.81E-10	20.53	-1.05E-12	-5.27E-13
5.06	2.09E-10	2.52E-10	21.43	-1.80E-12	-1.41E-12
5.36	1.60E-10	2.09E-10	22.40	-2.00E-12	-1.60E-12
5.64	1.31E-10	1.74E-10	23.43	-1.71E-12	-1.34E-12

Run R166GS.246

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	5.00E-09	1.38E-08	3.93	1.12E-09	1.46E-09
0.76	9.21E-09	1.30E-08	4.06	1.09E-09	1.45E-09
0.80	1.07E-08	1.22E-08	4.19	1.17E-09	1.58E-09
0.84	1.07E-08	1.17E-08	4.31	1.32E-09	1.77E-09
0.88	1.01E-08	1.10E-08	4.44	1.38E-09	1.92E-09
0.92	9.08E-09	1.01E-08	4.57	1.30E-09	1.88E-09
0.96	7.75E-09	8.75E-09	4.70	1.07E-09	1.66E-09
1.00	6.41E-09	7.41E-09	4.83	7.50E-10	1.39E-09
1.04	5.48E-09	6.49E-09	4.99	4.33E-10	1.19E-09
1.08	5.20E-09	6.22E-09	5.15	2.98E-10	1.11E-09
1.13	5.36E-09	6.37E-09	5.32	5.05E-10	1.35E-09
1.17	5.56E-09	6.52E-09	5.50	9.62E-10	1.88E-09
1.22	5.74E-09	6.69E-09	5.67	1.49E-09	2.46E-09
1.28	6.09E-09	6.97E-09	5.83	1.70E-09	2.62E-09
1.33	6.58E-09	7.35E-09	6.00	1.51E-09	2.37E-09
1.38	6.88E-09	7.53E-09	6.18	1.07E-09	1.92E-09
1.42	6.79E-09	7.38E-09	6.35	6.90E-10	1.49E-09
1.47	6.39E-09	6.88E-09	6.51	6.79E-10	1.39E-09
1.53	5.86E-09	6.29E-09	6.70	1.04E-09	1.67E-09
1.58	5.36E-09	5.72E-09	6.90	1.59E-09	2.15E-09
1.64	4.89E-09	5.22E-09	7.10	1.93E-09	2.45E-09
1.72	4.57E-09	4.87E-09	7.30	1.90E-09	2.39E-09
1.80	4.37E-09	4.67E-09	7.50	1.58E-09	2.04E-09
1.88	4.22E-09	4.52E-09	7.70	1.20E-09	1.61E-09
1.96	4.16E-09	4.47E-09	7.90	9.26E-10	1.29E-09
2.04	4.30E-09	4.59E-09	8.10	7.85E-10	1.12E-09
2.12	4.53E-09	4.82E-09	8.30	7.33E-10	1.01E-09
2.20	4.56E-09	4.84E-09	8.50	6.61E-10	9.03E-10
2.28	4.15E-09	4.42E-09	8.73	5.33E-10	7.46E-10
2.36	3.43E-09	3.70E-09	8.98	3.54E-10	5.41E-10
2.45	2.72E-09	2.98E-09	9.23	1.96E-10	3.42E-10
2.55	2.34E-09	2.58E-09	9.48	8.82E-11	2.11E-10
2.65	2.15E-09	2.40E-09	9.73	2.82E-11	1.38E-10
2.75	1.92E-09	2.18E-09	9.98	-8.11E-13	1.01E-10
2.85	1.75E-09	2.00E-09	10.30	-1.33E-11	8.18E-11
2.95	1.75E-09	2.00E-09	10.70	-1.37E-11	7.48E-11
3.05	1.84E-09	2.10E-09	11.10	-1.39E-11	6.88E-11
3.15	1.86E-09	2.13E-09	11.50	-8.01E-12	4.55E-11
3.25	1.79E-09	2.07E-09	11.90	-5.95E-12	3.36E-11
3.35	1.69E-09	1.97E-09	12.30	-8.30E-12	2.39E-11
3.45	1.61E-09	1.89E-09	12.70	-1.50E-11	1.97E-11
3.55	1.52E-09	1.81E-09	13.10	-1.80E-11	2.05E-11
3.66	1.40E-09	1.71E-09	13.50	-1.48E-11	1.95E-11
3.79	1.25E-09	1.56E-09	13.90	-1.01E-11	1.68E-11

Run R166NS.238

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS2(SSBP)1SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	5.60E-09	5.73E-09	5.94	1.07E-10	1.34E-10
1.01	4.32E-09	4.41E-09	6.25	1.14E-10	1.43E-10
1.11	3.31E-09	3.42E-09	6.55	1.14E-10	1.46E-10
1.21	2.69E-09	2.78E-09	6.83	1.10E-10	1.37E-10
1.31	2.24E-09	2.32E-09	7.23	1.09E-10	1.33E-10
1.41	1.88E-09	1.96E-09	7.73	1.05E-10	1.33E-10
1.51	1.63E-09	1.72E-09	8.25	9.70E-11	1.24E-10
1.61	1.43E-09	1.50E-09	8.77	1.02E-10	1.24E-10
1.71	1.25E-09	1.31E-09	9.24	9.85E-11	1.22E-10
1.81	1.08E-09	1.15E-09	9.72	9.87E-11	1.19E-10
1.94	9.21E-10	9.89E-10	10.23	1.00E-10	1.22E-10
2.11	7.74E-10	8.25E-10	10.75	9.50E-11	1.17E-10
2.31	6.51E-10	7.08E-10	11.26	9.55E-11	1.18E-10
2.50	5.80E-10	6.24E-10	11.76	1.12E-10	1.33E-10
2.69	5.05E-10	5.44E-10	12.40	1.64E-10	1.85E-10
2.90	4.19E-10	4.62E-10	13.20	3.11E-10	3.28E-10
3.10	3.42E-10	3.93E-10	14.03	4.79E-10	4.94E-10
3.30	2.90E-10	3.27E-10	14.86	4.80E-10	4.93E-10
3.51	2.43E-10	2.88E-10	15.62	3.38E-10	3.48E-10
3.71	2.23E-10	2.69E-10	16.45	1.68E-10	1.74E-10
3.90	2.24E-10	2.58E-10	17.44	5.37E-11	5.67E-11
4.15	2.06E-10	2.43E-10	18.51	1.14E-11	1.27E-11
4.46	1.69E-10	1.92E-10	19.58	1.40E-12	2.07E-12
4.75	1.41E-10	1.67E-10	20.53	-6.60E-13	-6.49E-14
5.06	1.33E-10	1.62E-10	21.43	-1.29E-12	-6.55E-13
5.36	1.20E-10	1.52E-10	22.40	-1.48E-12	-7.70E-13
5.64	1.09E-10	1.37E-10	23.43	-1.31E-12	-5.99E-13

Run R167GS.260

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS2(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.93E-09	6.48E-09	3.93	8.13E-10	1.03E-09
0.76	4.76E-09	6.70E-09	4.06	6.40E-10	8.82E-10
0.80	6.02E-09	6.75E-09	4.19	4.53E-10	7.23E-10
0.84	6.02E-09	6.48E-09	4.31	3.89E-10	6.91E-10
0.88	5.53E-09	5.96E-09	4.44	5.08E-10	8.60E-10
0.92	4.96E-09	5.40E-09	4.57	7.65E-10	1.14E-09
0.96	4.45E-09	4.89E-09	4.70	1.01E-09	1.40E-09
1.00	4.07E-09	4.51E-09	4.83	1.05E-09	1.47E-09
1.04	3.85E-09	4.29E-09	4.99	7.44E-10	1.24E-09
1.08	3.76E-09	4.21E-09	5.15	1.71E-10	6.95E-10
1.13	3.76E-09	4.20E-09	5.32	-1.82E-10	3.65E-10
1.17	3.76E-09	4.19E-09	5.50	-1.66E-12	6.02E-10
1.22	3.70E-09	4.13E-09	5.67	6.39E-10	1.26E-09
1.28	3.52E-09	3.94E-09	5.83	1.24E-09	1.83E-09
1.33	3.33E-09	3.69E-09	6.00	1.38E-09	1.96E-09
1.38	3.14E-09	3.45E-09	6.18	1.05E-09	1.62E-09
1.42	3.00E-09	3.30E-09	6.35	5.51E-10	1.07E-09
1.47	2.98E-09	3.25E-09	6.51	2.42E-10	7.11E-10
1.53	3.02E-09	3.26E-09	6.70	3.51E-10	7.57E-10
1.58	3.00E-09	3.22E-09	6.90	7.85E-10	1.15E-09
1.64	2.89E-09	3.10E-09	7.10	1.20E-09	1.53E-09
1.72	2.79E-09	2.99E-09	7.30	1.33E-09	1.65E-09
1.80	2.78E-09	2.98E-09	7.50	1.18E-09	1.47E-09
1.88	2.77E-09	2.96E-09	7.70	9.02E-10	1.15E-09
1.96	2.80E-09	3.00E-09	7.90	6.14E-10	8.39E-10
2.04	2.94E-09	3.13E-09	8.10	4.04E-10	6.10E-10
2.12	2.97E-09	3.16E-09	8.30	3.08E-10	4.84E-10
2.20	2.75E-09	2.93E-09	8.50	2.77E-10	4.22E-10
2.28	2.36E-09	2.54E-09	8.73	2.58E-10	3.85E-10
2.36	1.98E-09	2.16E-09	8.98	2.13E-10	3.30E-10
2.45	1.63E-09	1.80E-09	9.23	1.48E-10	2.39E-10
2.55	1.35E-09	1.52E-09	9.48	7.20E-11	1.51E-10
2.65	1.25E-09	1.42E-09	9.73	1.23E-11	8.76E-11
2.75	1.27E-09	1.44E-09	9.98	-2.14E-11	5.04E-11
2.85	1.26E-09	1.43E-09	10.30	-3.15E-11	2.00E-11
2.95	1.17E-09	1.33E-09	10.70	-1.99E-11	1.50E-11
3.05	1.06E-09	1.22E-09	11.10	-3.29E-12	1.91E-11
3.15	1.01E-09	1.18E-09	11.50	5.75E-12	2.18E-11
3.25	9.95E-10	1.18E-09	11.90	4.72E-12	2.07E-11
3.35	9.52E-10	1.14E-09	12.30	-4.47E-13	1.68E-11
3.45	8.78E-10	1.06E-09	12.70	-4.48E-12	1.24E-11
3.55	8.21E-10	1.01E-09	13.10	-5.18E-12	9.39E-12
3.66	8.23E-10	1.02E-09	13.50	-3.53E-12	7.86E-12
3.79	8.61E-10	1.07E-09	13.90	-1.64E-12	6.88E-12

Run R167NS.257

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS2(SSBP)1SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	3.25E-09	3.35E-09	5.94	6.38E-11	8.47E-11
1.01	2.61E-09	2.68E-09	6.25	4.72E-11	7.03E-11
1.11	2.03E-09	2.11E-09	6.55	4.03E-11	6.45E-11
1.21	1.58E-09	1.66E-09	6.83	4.61E-11	6.68E-11
1.31	1.26E-09	1.32E-09	7.23	5.67E-11	7.54E-11
1.41	1.06E-09	1.12E-09	7.73	5.21E-11	7.32E-11
1.51	9.32E-10	9.98E-10	8.25	3.26E-11	5.41E-11
1.61	8.28E-10	8.83E-10	8.77	2.55E-11	4.36E-11
1.71	7.30E-10	7.73E-10	9.24	3.56E-11	5.49E-11
1.81	6.38E-10	6.89E-10	9.72	5.45E-11	7.16E-11
1.94	5.53E-10	6.03E-10	10.23	6.71E-11	8.48E-11
2.11	4.66E-10	5.02E-10	10.75	7.37E-11	9.21E-11
2.31	3.56E-10	3.95E-10	11.26	7.16E-11	9.03E-11
2.50	3.05E-10	3.35E-10	11.76	6.37E-11	8.14E-11
2.69	3.05E-10	3.32E-10	12.40	8.38E-11	1.01E-10
2.90	2.82E-10	3.13E-10	13.20	1.99E-10	2.13E-10
3.10	2.18E-10	2.54E-10	14.03	3.20E-10	3.32E-10
3.30	1.73E-10	2.01E-10	14.86	3.11E-10	3.22E-10
3.51	1.50E-10	1.83E-10	15.62	2.14E-10	2.22E-10
3.71	1.40E-10	1.74E-10	16.45	1.04E-10	1.09E-10
3.90	1.28E-10	1.54E-10	17.44	3.30E-11	3.53E-11
4.15	9.70E-11	1.24E-10	18.51	7.09E-12	8.02E-12
4.46	7.94E-11	9.74E-11	19.58	8.78E-13	1.24E-12
4.75	7.60E-11	9.62E-11	20.53	-4.76E-13	-1.91E-13
5.06	7.18E-11	9.53E-11	21.43	-8.51E-13	-6.13E-13
5.36	7.46E-11	9.93E-11	22.40	-9.60E-13	-7.11E-13
5.64	7.53E-11	9.74E-11	23.43	-8.25E-13	-5.78E-13

Run R168GS.272

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	2.75E-08	5.06E-08	3.93	4.44E-09	5.30E-09
0.76	4.18E-08	5.13E-08	4.06	3.73E-09	4.66E-09
0.80	4.72E-08	5.00E-08	4.19	3.34E-09	4.35E-09
0.84	4.56E-08	4.67E-08	4.31	3.56E-09	4.75E-09
0.88	4.06E-08	4.16E-08	4.44	4.35E-09	5.74E-09
0.92	3.53E-08	3.63E-08	4.57	5.41E-09	6.89E-09
0.96	3.11E-08	3.21E-08	4.70	6.23E-09	7.73E-09
1.00	2.85E-08	2.94E-08	4.83	5.97E-09	7.57E-09
1.04	2.71E-08	2.80E-08	4.99	3.97E-09	5.90E-09
1.08	2.63E-08	2.72E-08	5.15	1.04E-09	3.09E-09
1.13	2.59E-08	2.68E-08	5.32	-1.40E-11	2.13E-09
1.17	2.56E-08	2.65E-08	5.50	2.08E-09	4.40E-09
1.22	2.53E-08	2.62E-08	5.67	5.90E-09	8.40E-09
1.28	2.45E-08	2.55E-08	5.83	8.56E-09	1.09E-08
1.33	2.34E-08	2.43E-08	6.00	8.43E-09	1.06E-08
1.38	2.21E-08	2.29E-08	6.18	6.10E-09	8.25E-09
1.42	2.11E-08	2.19E-08	6.35	3.66E-09	5.66E-09
1.47	2.02E-08	2.10E-08	6.51	2.80E-09	4.61E-09
1.53	1.96E-08	2.03E-08	6.70	3.96E-09	5.48E-09
1.58	1.91E-08	1.99E-08	6.90	6.44E-09	7.79E-09
1.64	1.87E-08	1.95E-08	7.10	8.42E-09	9.68E-09
1.72	1.79E-08	1.87E-08	7.30	9.02E-09	1.02E-08
1.80	1.72E-08	1.79E-08	7.50	8.33E-09	9.40E-09
1.88	1.70E-08	1.78E-08	7.70	6.97E-09	7.93E-09
1.96	1.73E-08	1.81E-08	7.90	5.57E-09	6.42E-09
2.04	1.78E-08	1.86E-08	8.10	4.51E-09	5.27E-09
2.12	1.85E-08	1.92E-08	8.30	3.81E-09	4.46E-09
2.20	1.85E-08	1.93E-08	8.50	3.30E-09	3.86E-09
2.28	1.72E-08	1.79E-08	8.73	2.71E-09	3.17E-09
2.36	1.46E-08	1.53E-08	8.98	1.99E-09	2.38E-09
2.45	1.17E-08	1.24E-08	9.23	1.31E-09	1.62E-09
2.55	9.50E-09	1.01E-08	9.48	7.71E-10	1.02E-09
2.65	8.23E-09	8.87E-09	9.73	4.09E-10	6.15E-10
2.75	7.62E-09	8.27E-09	9.98	1.92E-10	3.60E-10
2.85	7.36E-09	8.01E-09	10.30	5.16E-11	1.99E-10
2.95	7.06E-09	7.69E-09	10.70	-7.49E-12	1.11E-10
3.05	6.66E-09	7.30E-09	11.10	-1.33E-11	6.76E-11
3.15	6.41E-09	7.09E-09	11.50	-1.23E-11	4.49E-11
3.25	6.43E-09	7.13E-09	11.90	-1.77E-11	2.94E-11
3.35	6.44E-09	7.15E-09	12.30	-2.52E-11	2.56E-11
3.45	6.18E-09	6.89E-09	12.70	-2.67E-11	2.32E-11
3.55	5.71E-09	6.46E-09	13.10	-2.42E-11	1.77E-11
3.66	5.27E-09	6.07E-09	13.50	-1.96E-11	1.67E-11
3.79	4.96E-09	5.77E-09	13.90	-1.39E-11	1.53E-11

Run R168NS.270

x = 0.0 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)1SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	4.89E-08	4.94E-08	5.94	4.77E-10	5.68E-10
1.01	3.67E-08	3.70E-08	6.25	3.98E-10	5.01E-10
1.11	2.64E-08	2.68E-08	6.55	3.50E-10	4.61E-10
1.21	1.95E-08	1.99E-08	6.83	3.42E-10	4.36E-10
1.31	1.52E-08	1.55E-08	7.23	3.70E-10	4.54E-10
1.41	1.24E-08	1.26E-08	7.73	4.08E-10	5.05E-10
1.51	1.05E-08	1.08E-08	8.25	3.59E-10	4.53E-10
1.61	8.89E-09	9.15E-09	8.77	3.22E-10	4.00E-10
1.71	7.48E-09	7.68E-09	9.24	3.07E-10	3.90E-10
1.81	6.19E-09	6.43E-09	9.72	3.19E-10	3.93E-10
1.94	4.93E-09	5.16E-09	10.23	3.78E-10	4.54E-10
2.11	4.00E-09	4.17E-09	10.75	4.29E-10	5.08E-10
2.31	3.25E-09	3.43E-09	11.26	3.89E-10	4.70E-10
2.50	2.62E-09	2.76E-09	11.76	3.55E-10	4.32E-10
2.69	2.23E-09	2.35E-09	12.40	6.30E-10	7.05E-10
2.90	2.00E-09	2.13E-09	13.20	1.59E-09	1.66E-09
3.10	1.69E-09	1.86E-09	14.03	2.51E-09	2.56E-09
3.30	1.34E-09	1.46E-09	14.86	2.43E-09	2.48E-09
3.51	9.98E-10	1.14E-09	15.62	1.68E-09	1.71E-09
3.71	8.38E-10	1.00E-09	16.45	8.22E-10	8.43E-10
3.90	8.60E-10	9.76E-10	17.44	2.63E-10	2.74E-10
4.15	8.61E-10	9.87E-10	18.51	5.73E-11	6.14E-11
4.46	7.35E-10	8.12E-10	19.58	7.73E-12	9.34E-12
4.75	6.01E-10	6.92E-10	20.53	-2.97E-12	-1.68E-12
5.06	5.62E-10	6.63E-10	21.43	-5.99E-12	-4.95E-12
5.36	5.60E-10	6.75E-10	22.40	-6.84E-12	-5.76E-12
5.64	5.43E-10	6.43E-10	23.43	-5.95E-12	-4.83E-12

Run R169GS.278

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.39E-08	3.10E-08	3.93	3.57E-09	4.31E-09
0.76	2.86E-08	3.56E-08	4.06	2.62E-09	3.42E-09
0.80	3.43E-08	3.65E-08	4.19	2.59E-09	3.45E-09
0.84	3.37E-08	3.46E-08	4.31	3.13E-09	4.14E-09
0.88	3.05E-08	3.14E-08	4.44	3.61E-09	4.83E-09
0.92	2.70E-08	2.78E-08	4.57	3.90E-09	5.20E-09
0.96	2.39E-08	2.47E-08	4.70	4.13E-09	5.40E-09
1.00	2.18E-08	2.26E-08	4.83	4.05E-09	5.42E-09
1.04	2.05E-08	2.13E-08	4.99	3.33E-09	5.00E-09
1.08	1.98E-08	2.06E-08	5.15	1.92E-09	3.71E-09
1.13	1.94E-08	2.01E-08	5.32	9.76E-10	2.81E-09
1.17	1.89E-08	1.97E-08	5.50	1.65E-09	3.65E-09
1.22	1.82E-08	1.91E-08	5.67	4.02E-09	6.18E-09
1.28	1.75E-08	1.84E-08	5.83	6.39E-09	8.39E-09
1.33	1.70E-08	1.77E-08	6.00	7.06E-09	8.89E-09
1.38	1.65E-08	1.72E-08	6.18	5.77E-09	7.62E-09
1.42	1.60E-08	1.68E-08	6.35	3.75E-09	5.52E-09
1.47	1.57E-08	1.64E-08	6.51	2.60E-09	4.12E-09
1.53	1.56E-08	1.62E-08	6.70	2.90E-09	4.18E-09
1.58	1.54E-08	1.60E-08	6.90	4.57E-09	5.75E-09
1.64	1.49E-08	1.55E-08	7.10	6.43E-09	7.51E-09
1.72	1.42E-08	1.49E-08	7.30	7.37E-09	8.35E-09
1.80	1.41E-08	1.48E-08	7.50	7.13E-09	8.04E-09
1.88	1.43E-08	1.50E-08	7.70	6.04E-09	6.87E-09
1.96	1.43E-08	1.50E-08	7.90	4.71E-09	5.43E-09
2.04	1.45E-08	1.52E-08	8.10	3.62E-09	4.24E-09
2.12	1.51E-08	1.57E-08	8.30	2.87E-09	3.42E-09
2.20	1.52E-08	1.58E-08	8.50	2.41E-09	2.87E-09
2.28	1.42E-08	1.48E-08	8.73	2.00E-09	2.38E-09
2.36	1.22E-08	1.28E-08	8.98	1.50E-09	1.82E-09
2.45	9.78E-09	1.03E-08	9.23	9.67E-10	1.23E-09
2.55	7.88E-09	8.41E-09	9.48	5.03E-10	7.09E-10
2.65	6.98E-09	7.53E-09	9.73	1.92E-10	3.70E-10
2.75	6.43E-09	6.98E-09	9.98	2.76E-11	1.85E-10
2.85	5.96E-09	6.51E-09	10.30	-3.74E-11	9.66E-11
2.95	5.69E-09	6.23E-09	10.70	-1.76E-11	8.52E-11
3.05	5.50E-09	6.05E-09	11.10	2.67E-12	8.17E-11
3.15	5.11E-09	5.69E-09	11.50	6.42E-12	5.15E-11
3.25	4.57E-09	5.17E-09	11.90	-4.55E-12	3.13E-11
3.35	4.21E-09	4.81E-09	12.30	-1.92E-11	3.24E-11
3.45	4.33E-09	4.94E-09	12.70	-2.59E-11	2.23E-11
3.55	4.81E-09	5.46E-09	13.10	-2.40E-11	1.22E-11
3.66	5.23E-09	5.92E-09	13.50	-1.66E-11	1.20E-11
3.79	4.80E-09	5.49E-09	13.90	-9.40E-12	1.16E-11

Run R169NS.280

x = -46.5 y = 0.0 z = 154.5
Configuration: 6SS1(SSBP)1SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	3.92E-08	3.96E-08	5.94	3.50E-10	4.10E-10
1.01	2.87E-08	2.90E-08	6.25	3.35E-10	4.03E-10
1.11	2.05E-08	2.08E-08	6.55	3.35E-10	4.09E-10
1.21	1.53E-08	1.55E-08	6.83	3.35E-10	3.97E-10
1.31	1.19E-08	1.21E-08	7.23	3.00E-10	3.56E-10
1.41	9.55E-09	9.74E-09	7.73	2.64E-10	3.27E-10
1.51	7.92E-09	8.13E-09	8.25	2.56E-10	3.18E-10
1.61	6.60E-09	6.77E-09	8.77	2.63E-10	3.15E-10
1.71	5.49E-09	5.62E-09	9.24	2.55E-10	3.09E-10
1.81	4.56E-09	4.72E-09	9.72	2.59E-10	3.07E-10
1.94	3.77E-09	3.93E-09	10.23	2.84E-10	3.33E-10
2.11	3.18E-09	3.29E-09	10.75	3.05E-10	3.56E-10
2.31	2.56E-09	2.69E-09	11.26	3.08E-10	3.60E-10
2.50	2.04E-09	2.13E-09	11.76	3.28E-10	3.77E-10
2.69	1.68E-09	1.76E-09	12.40	4.88E-10	5.36E-10
2.90	1.44E-09	1.54E-09	13.20	1.04E-09	1.08E-09
3.10	1.22E-09	1.33E-09	14.03	1.68E-09	1.71E-09
3.30	1.02E-09	1.10E-09	14.86	1.68E-09	1.71E-09
3.51	8.54E-10	9.54E-10	15.62	1.18E-09	1.20E-09
3.71	7.79E-10	8.89E-10	16.45	5.82E-10	5.95E-10
3.90	7.53E-10	8.30E-10	17.44	1.85E-10	1.92E-10
4.15	6.45E-10	7.31E-10	18.51	3.99E-11	4.25E-11
4.46	5.27E-10	5.79E-10	19.58	5.31E-12	6.33E-12
4.75	4.60E-10	5.21E-10	20.53	-2.09E-12	-1.27E-12
5.06	4.21E-10	4.88E-10	21.43	-4.19E-12	-3.50E-12
5.36	3.85E-10	4.62E-10	22.40	-4.76E-12	-4.04E-12
5.64	3.67E-10	4.34E-10	23.43	-4.10E-12	-3.39E-12

Run R170GS.287

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS1(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	8.23E-09	1.89E-08	3.93	1.71E-09	2.21E-09
0.76	1.48E-08	1.89E-08	4.06	1.41E-09	1.96E-09
0.80	1.75E-08	1.88E-08	4.19	1.39E-09	1.98E-09
0.84	1.75E-08	1.81E-08	4.31	1.54E-09	2.22E-09
0.88	1.64E-08	1.69E-08	4.44	1.76E-09	2.56E-09
0.92	1.48E-08	1.54E-08	4.57	2.13E-09	2.98E-09
0.96	1.32E-08	1.38E-08	4.70	2.57E-09	3.43E-09
1.00	1.19E-08	1.24E-08	4.83	2.66E-09	3.60E-09
1.04	1.11E-08	1.16E-08	4.99	1.97E-09	3.09E-09
1.08	1.08E-08	1.13E-08	5.15	4.66E-10	1.67E-09
1.13	1.09E-08	1.14E-08	5.32	-5.09E-10	7.07E-10
1.17	1.08E-08	1.14E-08	5.50	-3.94E-13	1.35E-09
1.22	1.03E-08	1.08E-08	5.67	1.84E-09	3.29E-09
1.28	9.45E-09	1.00E-08	5.83	3.69E-09	5.01E-09
1.33	9.00E-09	9.51E-09	6.00	4.27E-09	5.50E-09
1.38	8.88E-09	9.36E-09	6.18	3.41E-09	4.67E-09
1.42	8.71E-09	9.22E-09	6.35	1.95E-09	3.11E-09
1.47	8.50E-09	8.98E-09	6.51	1.01E-09	2.04E-09
1.53	8.35E-09	8.82E-09	6.70	1.13E-09	1.99E-09
1.58	8.28E-09	8.75E-09	6.90	2.20E-09	3.02E-09
1.64	8.08E-09	8.54E-09	7.10	3.42E-09	4.16E-09
1.72	7.72E-09	8.17E-09	7.30	4.02E-09	4.69E-09
1.80	7.64E-09	8.08E-09	7.50	3.85E-09	4.47E-09
1.88	7.62E-09	8.06E-09	7.70	3.14E-09	3.69E-09
1.96	7.60E-09	8.06E-09	7.90	2.28E-09	2.77E-09
2.04	8.06E-09	8.49E-09	8.10	1.60E-09	2.03E-09
2.12	8.80E-09	9.23E-09	8.30	1.23E-09	1.61E-09
2.20	8.98E-09	9.41E-09	8.50	1.13E-09	1.44E-09
2.28	8.10E-09	8.51E-09	8.73	1.07E-09	1.33E-09
2.36	6.49E-09	6.89E-09	8.98	9.11E-10	1.13E-09
2.45	4.85E-09	5.24E-09	9.23	6.45E-10	8.18E-10
2.55	3.99E-09	4.36E-09	9.48	3.68E-10	5.09E-10
2.65	3.77E-09	4.15E-09	9.73	1.63E-10	2.81E-10
2.75	3.52E-09	3.90E-09	9.98	3.94E-11	1.44E-10
2.85	3.11E-09	3.49E-09	10.30	-2.14E-11	6.52E-11
2.95	2.80E-09	3.17E-09	10.70	-2.39E-11	4.24E-11
3.05	2.73E-09	3.11E-09	11.10	-9.38E-12	4.08E-11
3.15	2.79E-09	3.19E-09	11.50	-3.19E-12	3.97E-11
3.25	2.82E-09	3.23E-09	11.90	-7.64E-12	3.26E-11
3.35	2.79E-09	3.20E-09	12.30	-1.46E-11	2.38E-11
3.45	2.73E-09	3.15E-09	12.70	-1.70E-11	1.76E-11
3.55	2.66E-09	3.09E-09	13.10	-1.67E-11	1.41E-11
3.66	2.48E-09	2.94E-09	13.50	-1.34E-11	1.28E-11
3.79	2.15E-09	2.61E-09	13.90	-8.85E-12	1.21E-11

Run R170NS.289

x = 0.0 y = 0.0 z = 229.5
Configuration: 6SS1(SSBP)1SS
Neutron Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval	Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence	Interval
0.91	1.83E-08	1.85E-08	5.94	1.49E-10	1.92E-10
1.01	1.36E-08	1.38E-08	6.25	1.70E-10	2.21E-10
1.11	9.75E-09	9.94E-09	6.55	1.81E-10	2.34E-10
1.21	7.20E-09	7.37E-09	6.83	1.81E-10	2.25E-10
1.31	5.58E-09	5.71E-09	7.23	1.49E-10	1.89E-10
1.41	4.49E-09	4.63E-09	7.73	9.79E-11	1.44E-10
1.51	3.77E-09	3.91E-09	8.25	7.10E-11	1.16E-10
1.61	3.15E-09	3.27E-09	8.77	9.47E-11	1.33E-10
1.71	2.59E-09	2.69E-09	9.24	1.30E-10	1.70E-10
1.81	2.14E-09	2.24E-09	9.72	1.49E-10	1.85E-10
1.94	1.81E-09	1.92E-09	10.23	1.54E-10	1.91E-10
2.11	1.58E-09	1.66E-09	10.75	1.44E-10	1.83E-10
2.31	1.24E-09	1.33E-09	11.26	1.16E-10	1.56E-10
2.50	9.23E-10	9.89E-10	11.76	1.16E-10	1.54E-10
2.69	7.56E-10	8.12E-10	12.40	2.40E-10	2.77E-10
2.90	6.86E-10	7.51E-10	13.20	5.88E-10	6.21E-10
3.10	5.88E-10	6.66E-10	14.03	9.40E-10	9.66E-10
3.30	4.82E-10	5.40E-10	14.86	9.57E-10	9.81E-10
3.51	3.86E-10	4.53E-10	15.62	6.91E-10	7.10E-10
3.71	3.34E-10	4.08E-10	16.45	3.53E-10	3.64E-10
3.90	3.14E-10	3.68E-10	17.44	1.16E-10	1.22E-10
4.15	2.75E-10	3.32E-10	18.51	2.58E-11	2.81E-11
4.46	2.55E-10	2.92E-10	19.58	3.77E-12	4.83E-12
4.75	2.28E-10	2.70E-10	20.53	-9.43E-13	-4.47E-14
5.06	1.93E-10	2.41E-10	21.43	-2.23E-12	-1.52E-12
5.36	1.54E-10	2.06E-10	22.40	-2.70E-12	-1.95E-12
5.64	1.37E-10	1.82E-10	23.43	-2.43E-12	-1.65E-12

Run C171GS.012

x = 0.0 y = 0.0 z = 60.5
Configuration: 6SS1(SSBP)1SS
Gamma-ray Data

Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.72	1.27E-07	2.23E-07	3.93	2.01E-08	2.33E-08
0.76	1.86E-07	2.25E-07	4.06	1.88E-08	2.22E-08
0.80	2.11E-07	2.22E-07	4.19	1.65E-08	2.02E-08
0.84	2.07E-07	2.12E-07	4.31	1.48E-08	1.91E-08
0.88	1.88E-07	1.91E-07	4.44	1.54E-08	2.06E-08
0.92	1.64E-07	1.68E-07	4.57	1.89E-08	2.42E-08
0.96	1.45E-07	1.48E-07	4.70	2.28E-08	2.83E-08
1.00	1.29E-07	1.32E-07	4.83	2.42E-08	3.00E-08
1.04	1.17E-07	1.20E-07	4.99	1.98E-08	2.69E-08
1.08	1.10E-07	1.14E-07	5.15	9.55E-09	1.72E-08
1.13	1.07E-07	1.11E-07	5.32	1.96E-09	9.77E-09
1.17	1.07E-07	1.10E-07	5.50	4.28E-09	1.29E-08
1.22	1.05E-07	1.09E-07	5.67	1.69E-08	2.63E-08
1.28	1.02E-07	1.06E-07	5.83	3.12E-08	3.99E-08
1.33	9.87E-08	1.02E-07	6.00	3.74E-08	4.53E-08
1.38	9.53E-08	9.83E-08	6.18	3.20E-08	4.01E-08
1.42	9.26E-08	9.58E-08	6.35	2.06E-08	2.82E-08
1.47	8.98E-08	9.29E-08	6.51	1.18E-08	1.85E-08
1.53	8.57E-08	8.87E-08	6.70	1.14E-08	1.70E-08
1.58	8.15E-08	8.44E-08	6.90	2.12E-08	2.63E-08
1.64	7.79E-08	8.07E-08	7.10	3.37E-08	3.84E-08
1.72	7.48E-08	7.75E-08	7.30	4.09E-08	4.52E-08
1.80	7.00E-08	7.27E-08	7.50	4.06E-08	4.46E-08
1.88	6.51E-08	6.78E-08	7.70	3.48E-08	3.84E-08
1.96	6.27E-08	6.55E-08	7.90	2.71E-08	3.03E-08
2.04	6.41E-08	6.69E-08	8.10	2.04E-08	2.32E-08
2.12	6.90E-08	7.18E-08	8.30	1.59E-08	1.83E-08
2.20	7.26E-08	7.53E-08	8.50	1.36E-08	1.57E-08
2.28	6.96E-08	7.22E-08	8.73	1.22E-08	1.40E-08
2.36	6.04E-08	6.29E-08	8.98	1.07E-08	1.21E-08
2.45	4.90E-08	5.14E-08	9.23	8.18E-09	9.35E-09
2.55	4.03E-08	4.26E-08	9.48	5.24E-09	6.19E-09
2.65	3.52E-08	3.76E-08	9.73	2.62E-09	3.36E-09
2.75	3.21E-08	3.45E-08	9.98	8.21E-10	1.44E-09
2.85	3.03E-08	3.27E-08	10.30	-2.63E-10	2.85E-10
2.95	2.96E-08	3.19E-08	10.70	-4.05E-10	6.88E-11
3.05	2.92E-08	3.16E-08	11.10	-1.46E-10	2.66E-10
3.15	2.84E-08	3.09E-08	11.50	3.44E-11	3.84E-10
3.25	2.71E-08	2.96E-08	11.90	5.87E-11	3.16E-10
3.35	2.56E-08	2.82E-08	12.30	4.53E-12	2.29E-10
3.45	2.43E-08	2.69E-08	12.70	-4.08E-11	1.58E-10
3.55	2.29E-08	2.56E-08	13.10	-5.91E-11	1.50E-10
3.66	2.14E-08	2.43E-08	13.50	-2.85E-11	1.39E-10
3.79	2.05E-08	2.35E-08	13.90	-1.80E-11	1.29E-10

Run C171NS.016

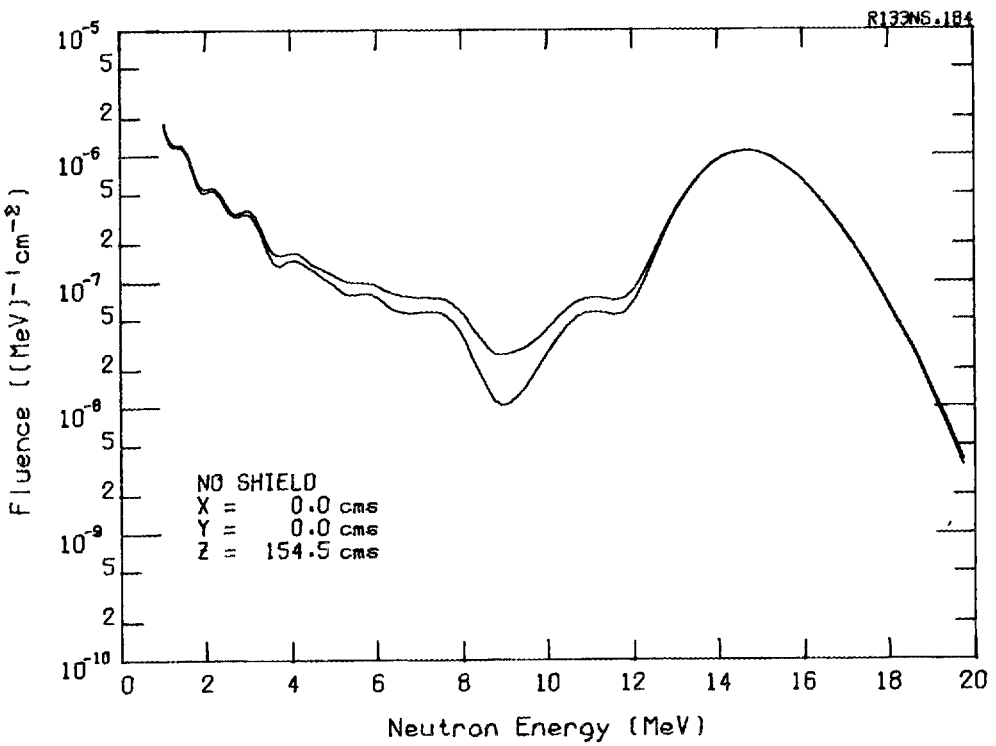
x = 0.0 y = 0.0 z = 60.5
Configuration: 6SS1(SSBP)1SS
Neutron Data

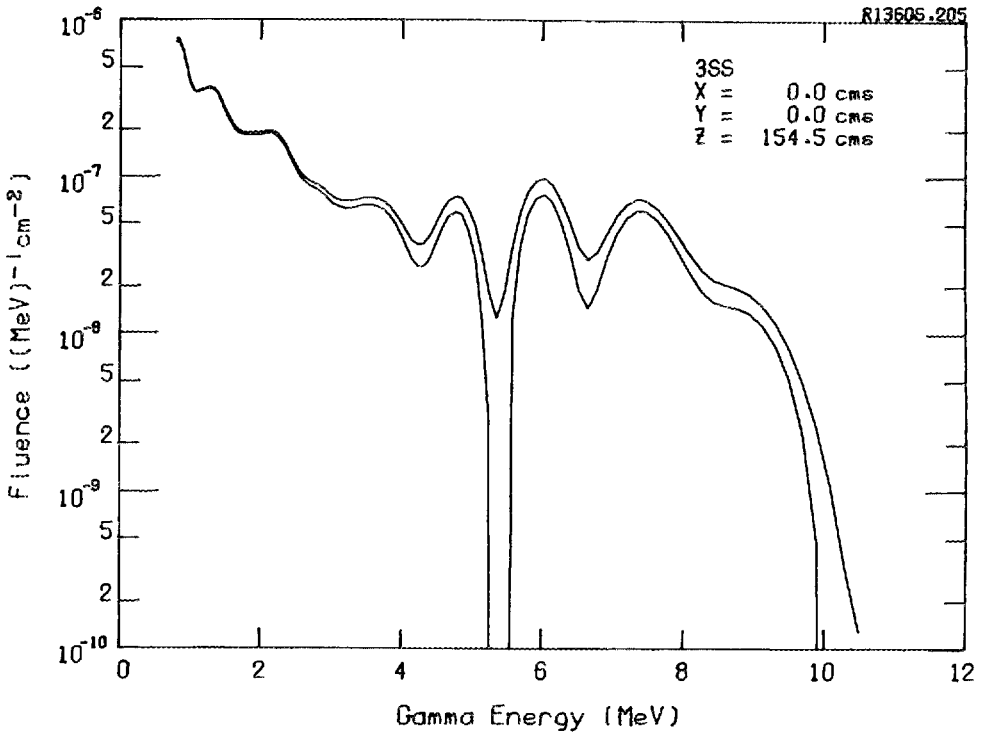
Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval		Energy (MeV)	Fluence ($MeV^{-1}cm^{-2}$) Confidence Interval	
0.91	2.41E-08	2.43E-08	5.94	2.46E-10	2.81E-10
1.01	1.82E-08	1.84E-08	6.25	2.01E-10	2.40E-10
1.11	1.33E-08	1.34E-08	6.55	1.91E-10	2.31E-10
1.21	1.00E-08	1.01E-08	6.83	2.06E-10	2.42E-10
1.31	7.79E-09	7.90E-09	7.23	2.36E-10	2.68E-10
1.41	6.26E-09	6.37E-09	7.73	2.27E-10	2.63E-10
1.51	5.28E-09	5.40E-09	8.25	1.75E-10	2.10E-10
1.61	4.51E-09	4.61E-09	8.77	1.61E-10	1.89E-10
1.71	3.84E-09	3.92E-09	9.24	1.64E-10	1.94E-10
1.81	3.25E-09	3.35E-09	9.72	1.73E-10	1.99E-10
1.94	2.67E-09	2.76E-09	10.23	1.82E-10	2.10E-10
2.11	2.17E-09	2.24E-09	10.75	1.83E-10	2.13E-10
2.31	1.75E-09	1.82E-09	11.26	1.77E-10	2.07E-10
2.50	1.43E-09	1.49E-09	11.76	1.86E-10	2.15E-10
2.69	1.21E-09	1.26E-09	12.40	2.72E-10	3.01E-10
2.90	1.05E-09	1.11E-09	13.20	5.74E-10	5.98E-10
3.10	9.10E-10	9.78E-10	14.03	9.30E-10	9.49E-10
3.30	7.75E-10	8.24E-10	14.86	9.61E-10	9.78E-10
3.51	6.36E-10	6.94E-10	15.62	7.04E-10	7.18E-10
3.71	5.36E-10	6.02E-10	16.45	3.68E-10	3.77E-10
3.90	4.96E-10	5.42E-10	17.44	1.27E-10	1.31E-10
4.15	4.51E-10	5.01E-10	18.51	2.93E-11	3.11E-11
4.46	3.94E-10	4.25E-10	19.58	4.31E-12	5.00E-12
4.75	3.36E-10	3.71E-10	20.53	-9.72E-13	-5.94E-13
5.06	3.15E-10	3.54E-10	21.43	-2.30E-12	-2.05E-12
5.36	3.13E-10	3.58E-10	22.40	-2.54E-12	-2.30E-12
5.64	2.93E-10	3.33E-10	23.43	-2.14E-12	-1.91E-12

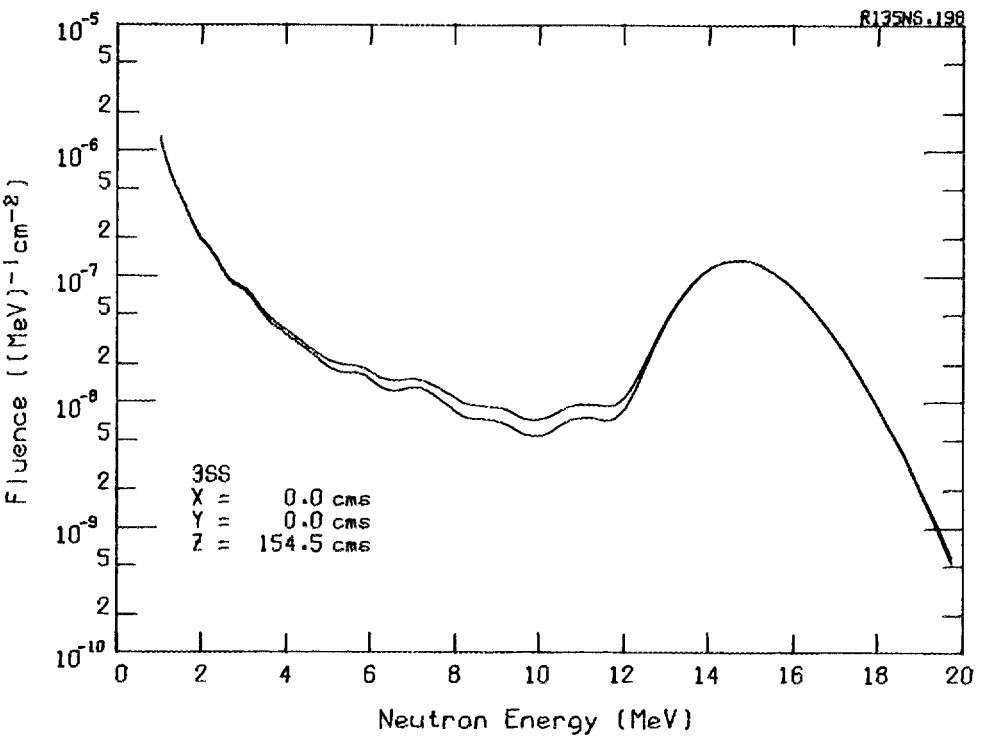
Fig. 16

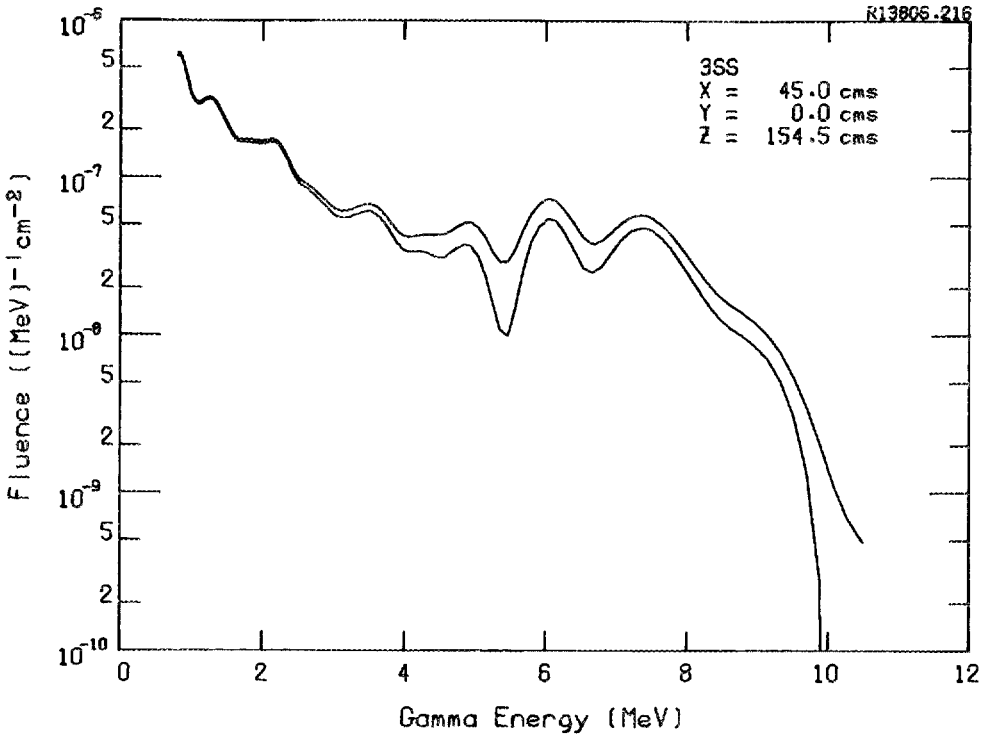
The unfolded energy spectra for each shield configuration

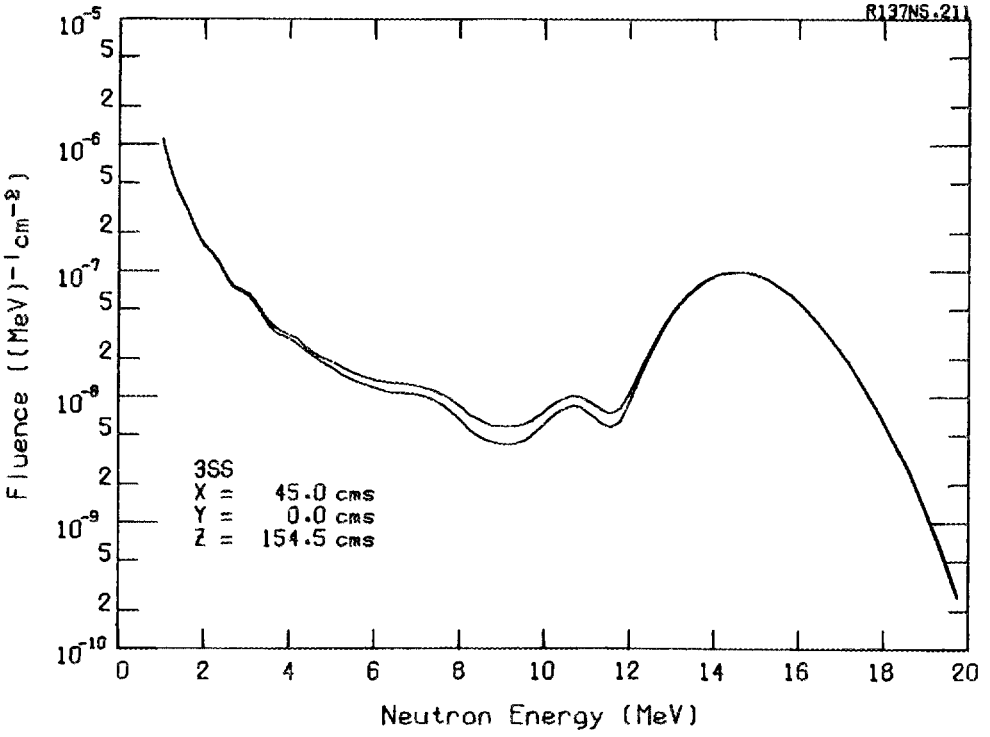
The following plots show the final unfolded energy spectrum for each shield configuration. The energy is given in MeV and the upper and lower values of the confidence interval (see Sect. VI) are given in neutrons or gamma rays per cm^2 per MeV and per source neutron. The plots are presented in the order shown in Table 2 where it will be noticed that gamma-ray data were not taken in some cases. The gamma-ray data, when taken, are shown in the top plot of each page and the neutron data in the lower plot.

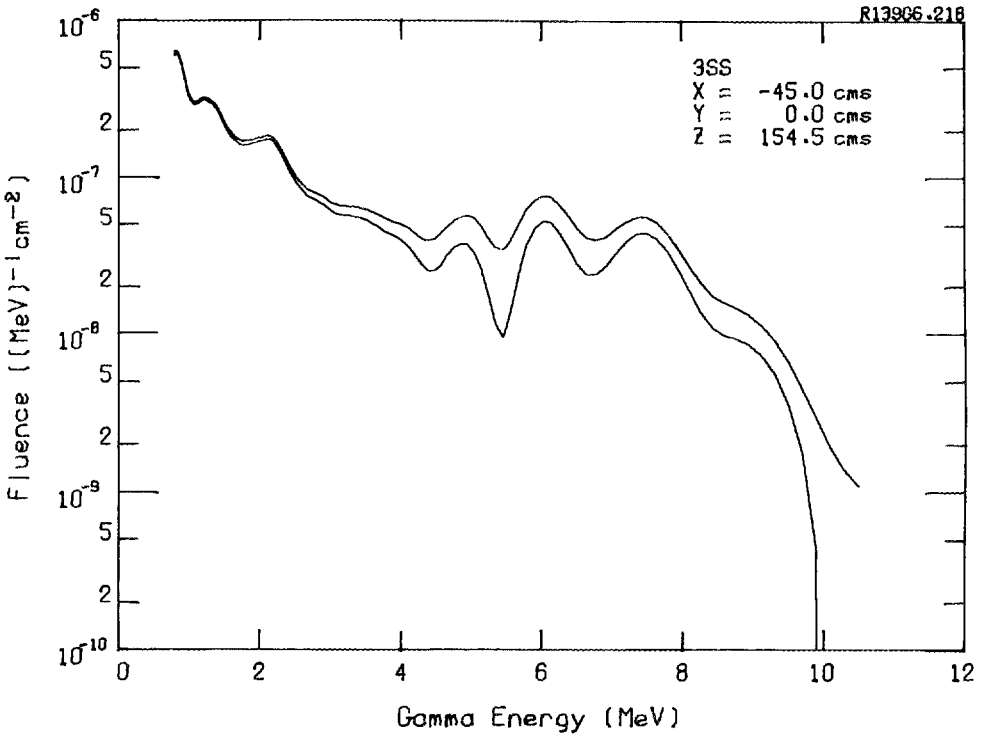

R133NS.184
NO SHIELD
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
0
2
4
6
8
10
12
14
16
18
20

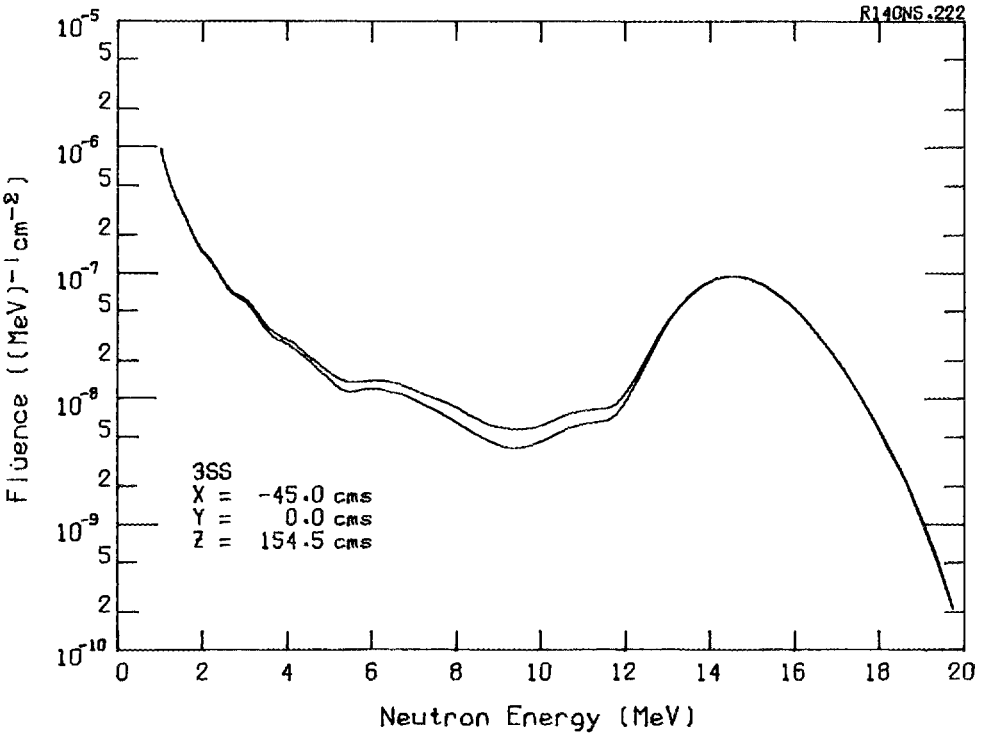

R1360S.205
3SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

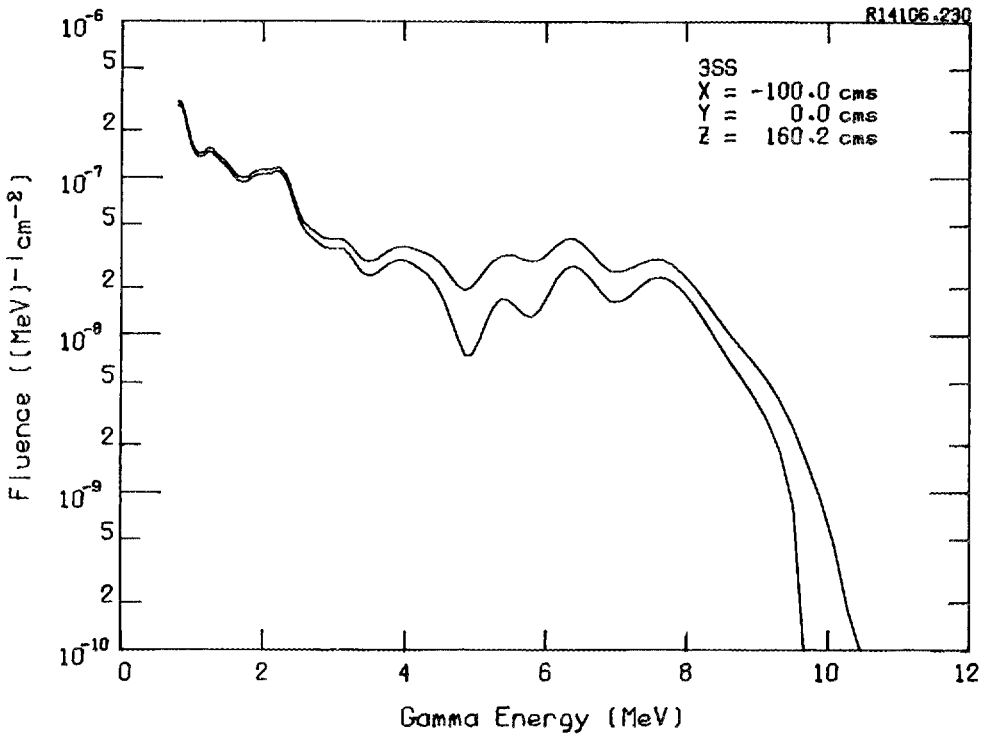

R135NS.198
3SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

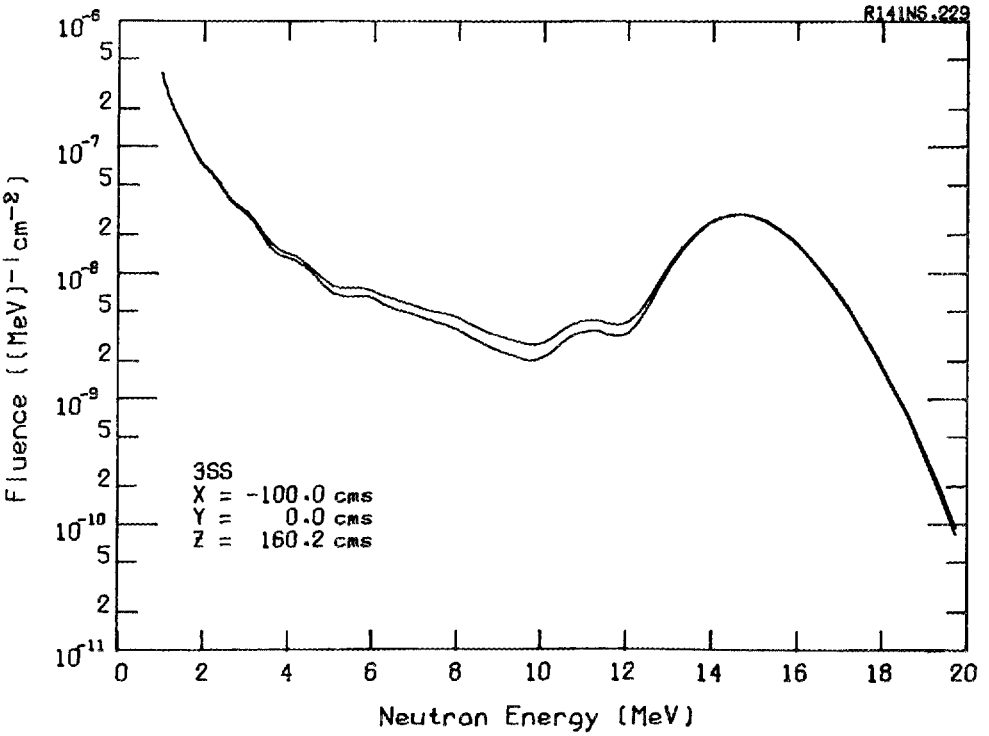

R13806.216
3SS
X = 45.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

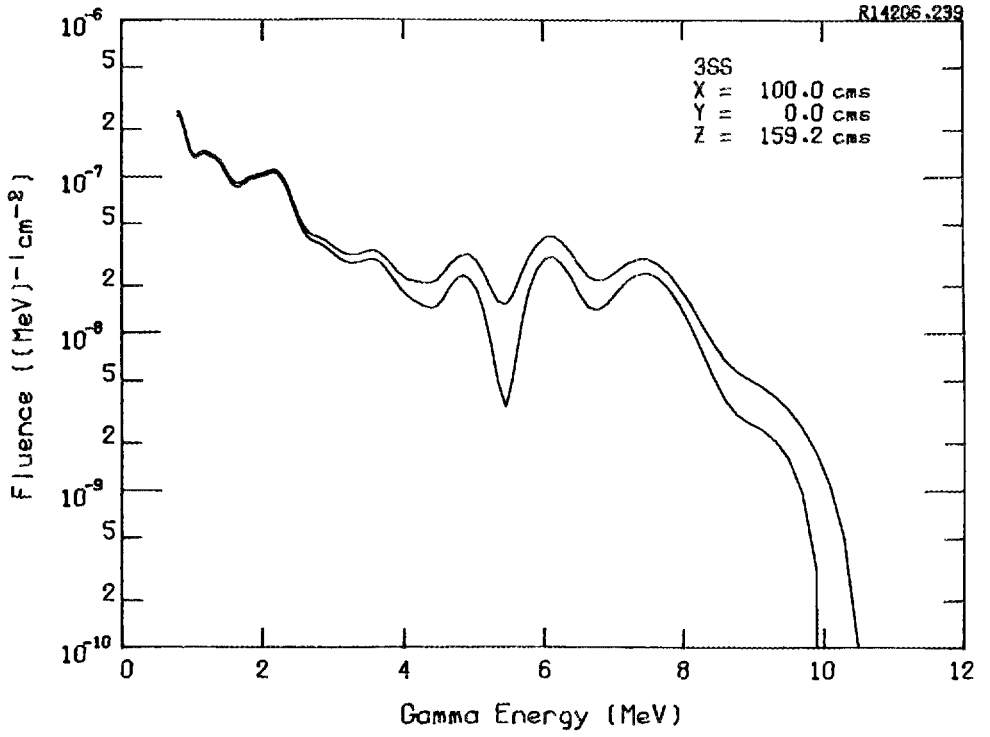

R137NS.211
3SS
X = 45.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

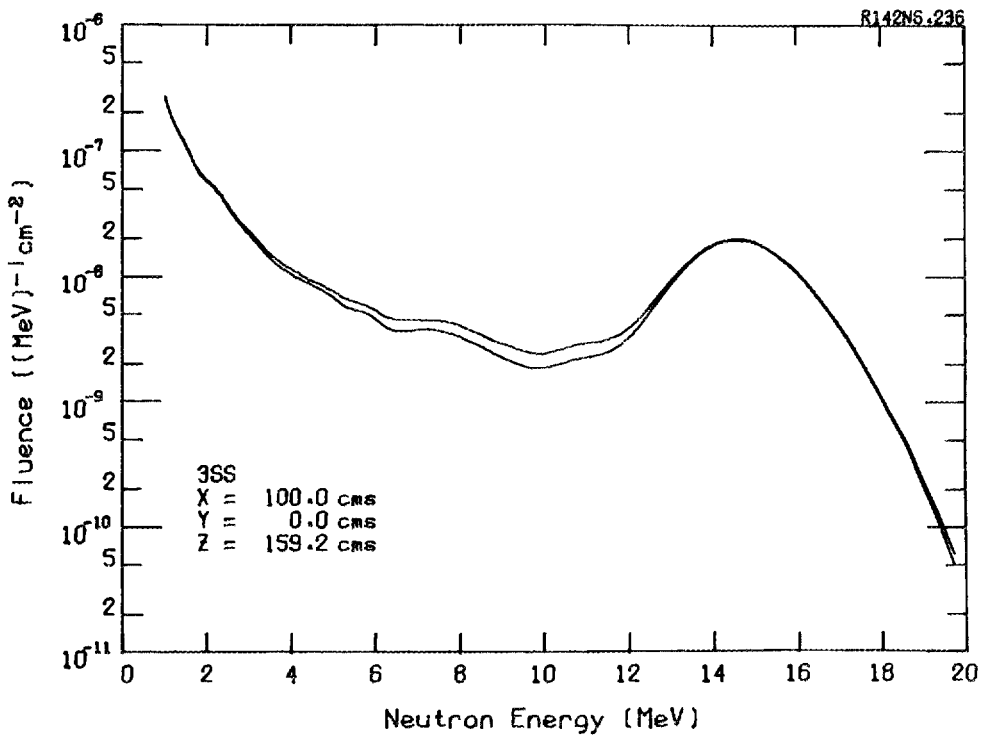

R13906.218
3SS
X = -45.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

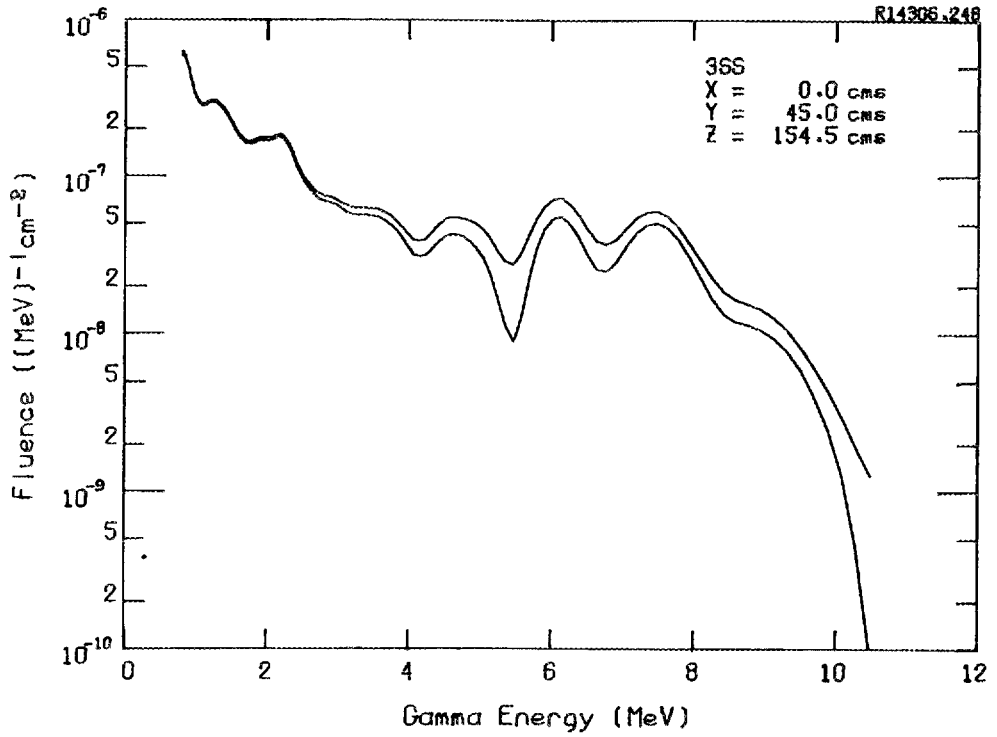

R140NS.222
3SS
X = -45.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

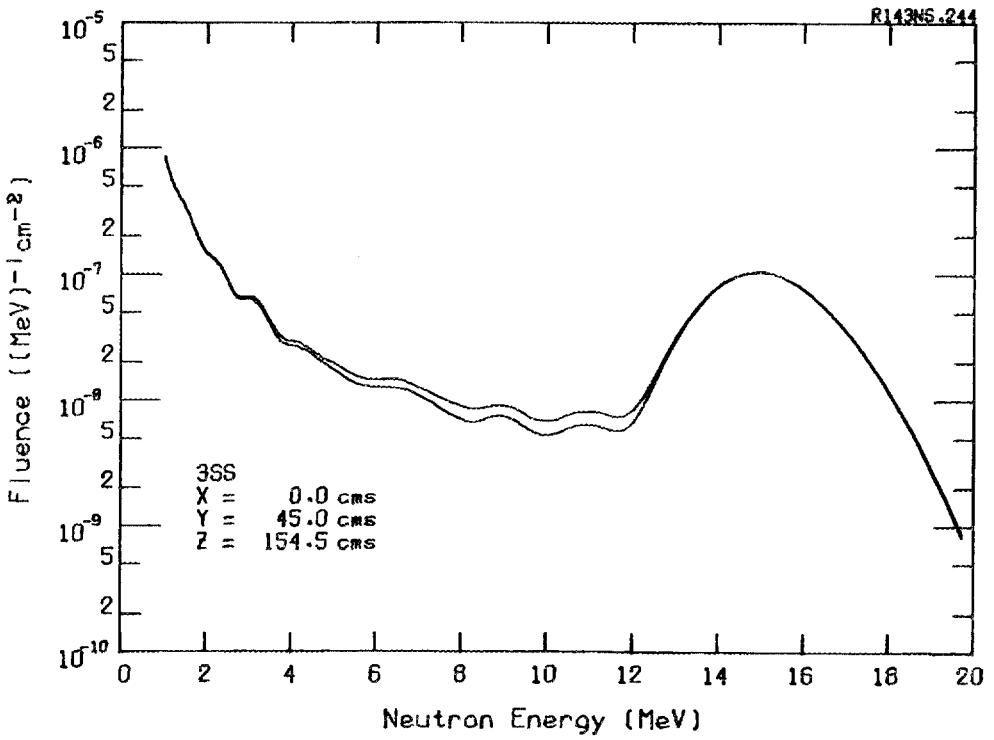

R141G6.230
3SS
X = -100.0 cms
Y = 0.0 cms
Z = 160.2 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

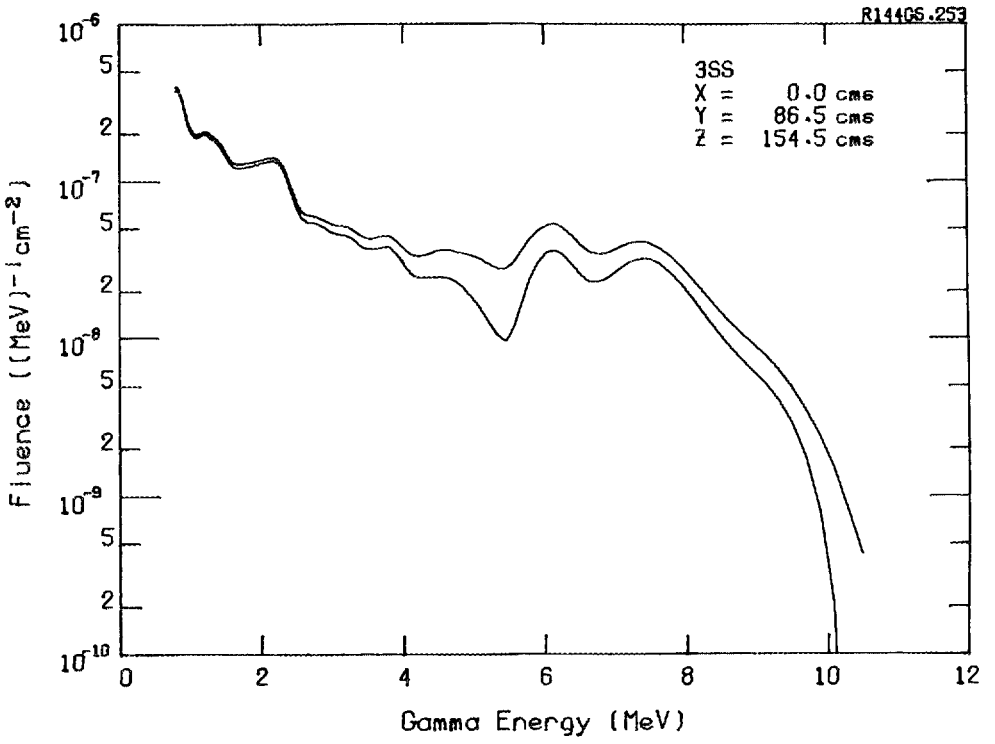

R141N5.229
3SS
X = -100.0 cms
Y = 0.0 cms
Z = 160.2 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

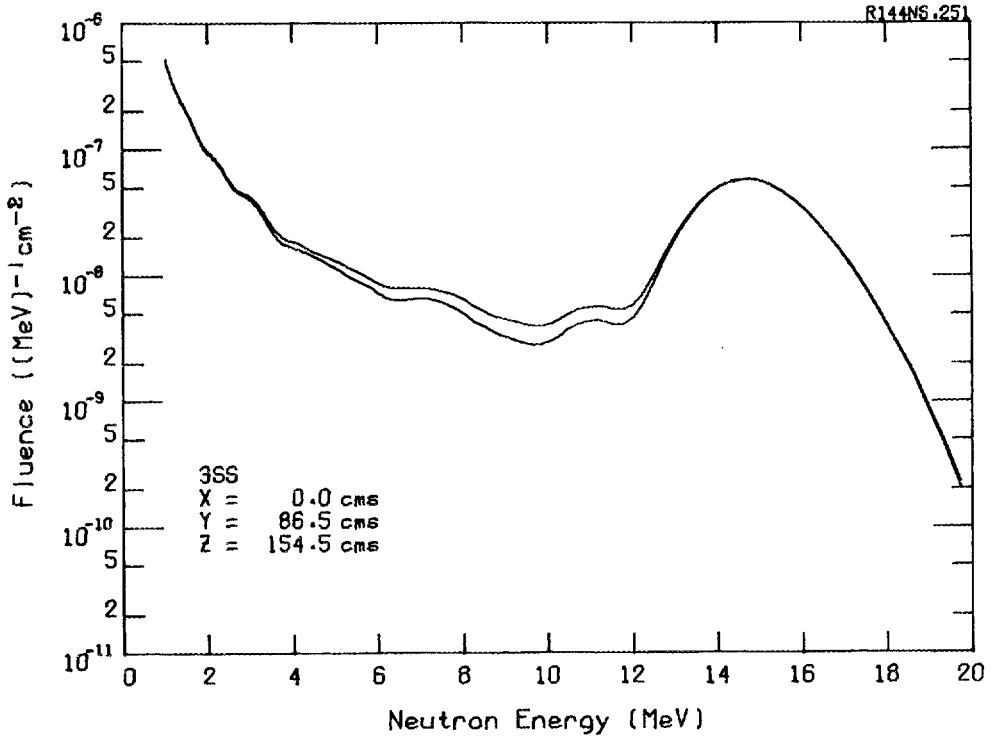

R14206.239
3SS
X = 100.0 cms
Y = 0.0 cms
Z = 159.2 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

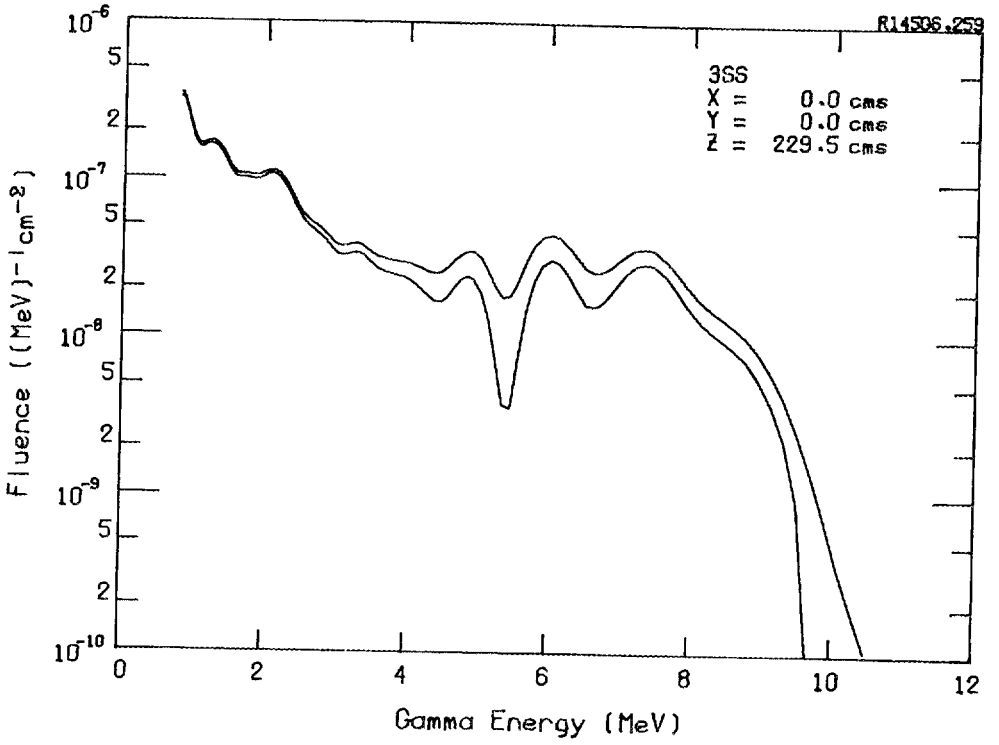

R142NS.236
3SS
X = 100.0 cms
Y = 0.0 cms
Z = 159.2 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

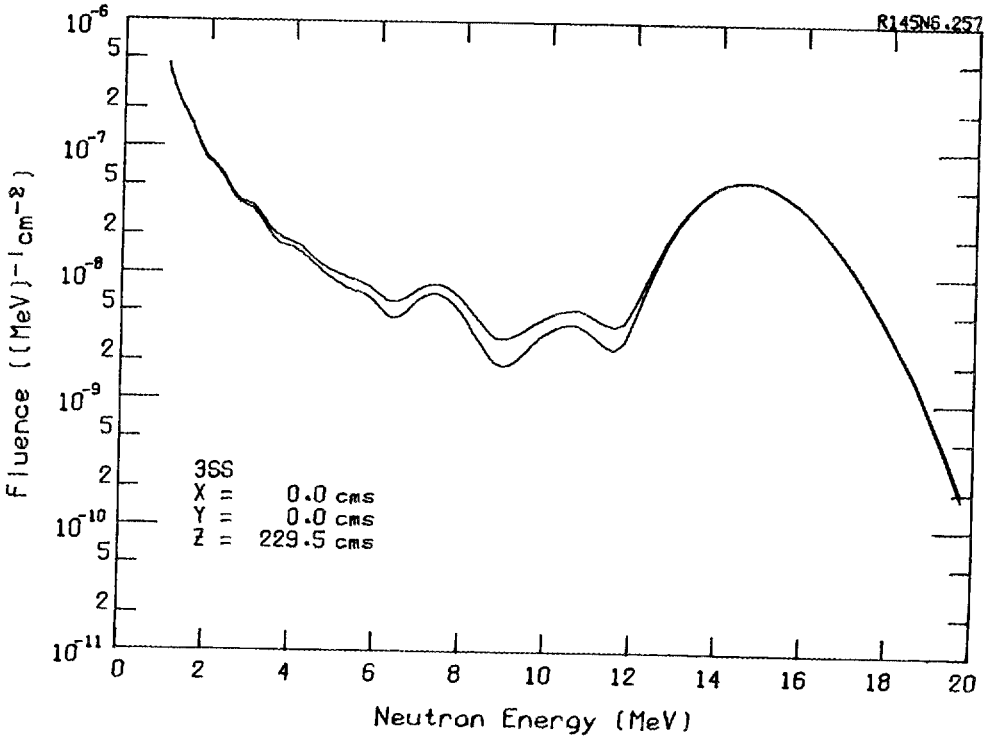

R14306.248
3SS
X = 0.0 cms
Y = 45.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

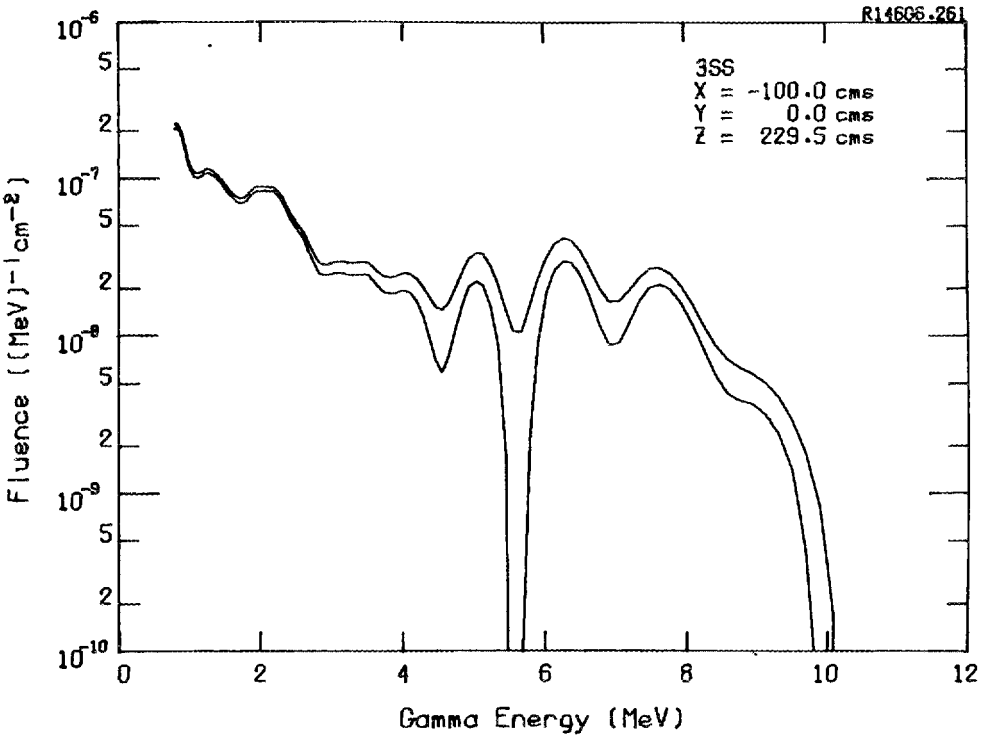

R143N5.244
3SS
X = 0.0 cms
Y = 45.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

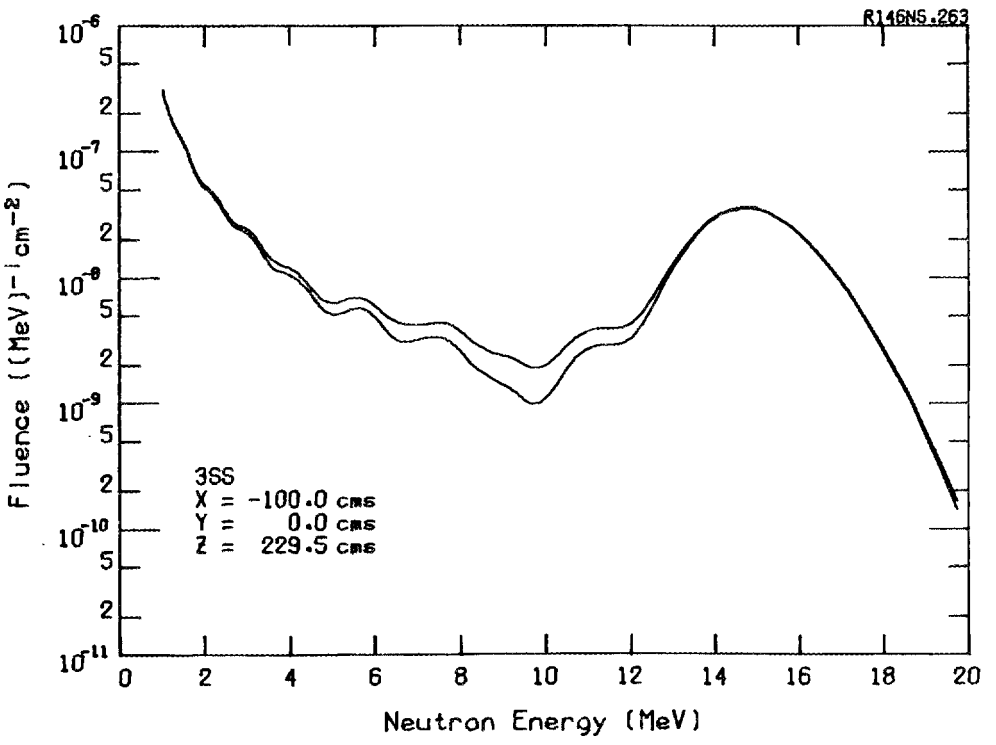

R144GS.253
3SS
X = 0.0 cms
Y = 86.5 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

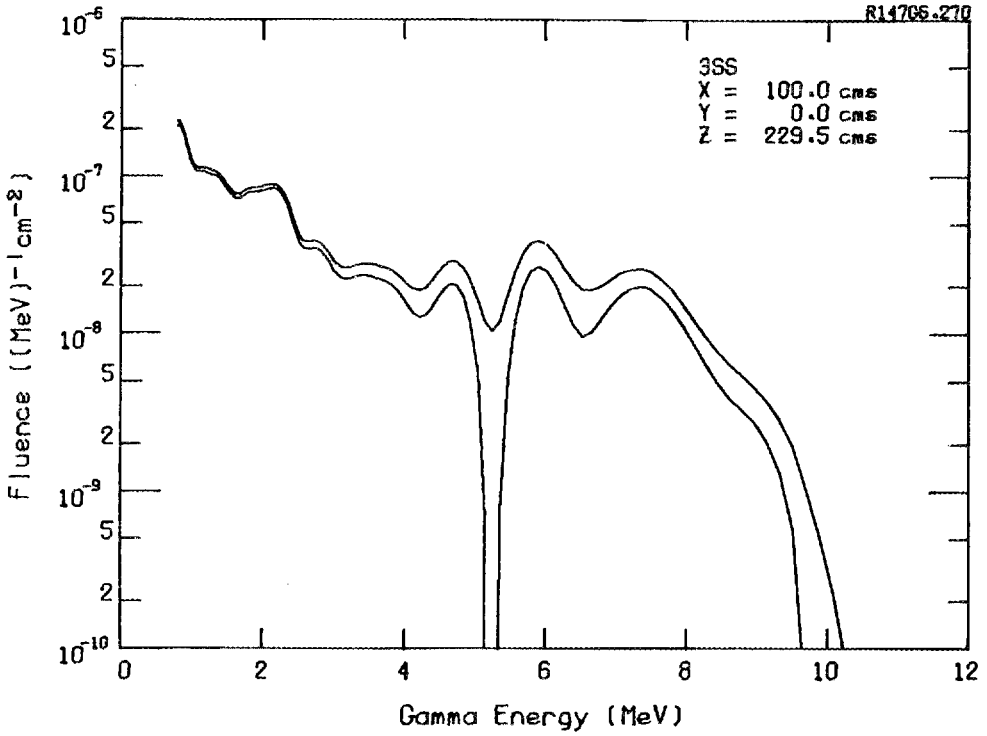

R144NS.251
3SS
X = 0.0 cms
Y = 86.5 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

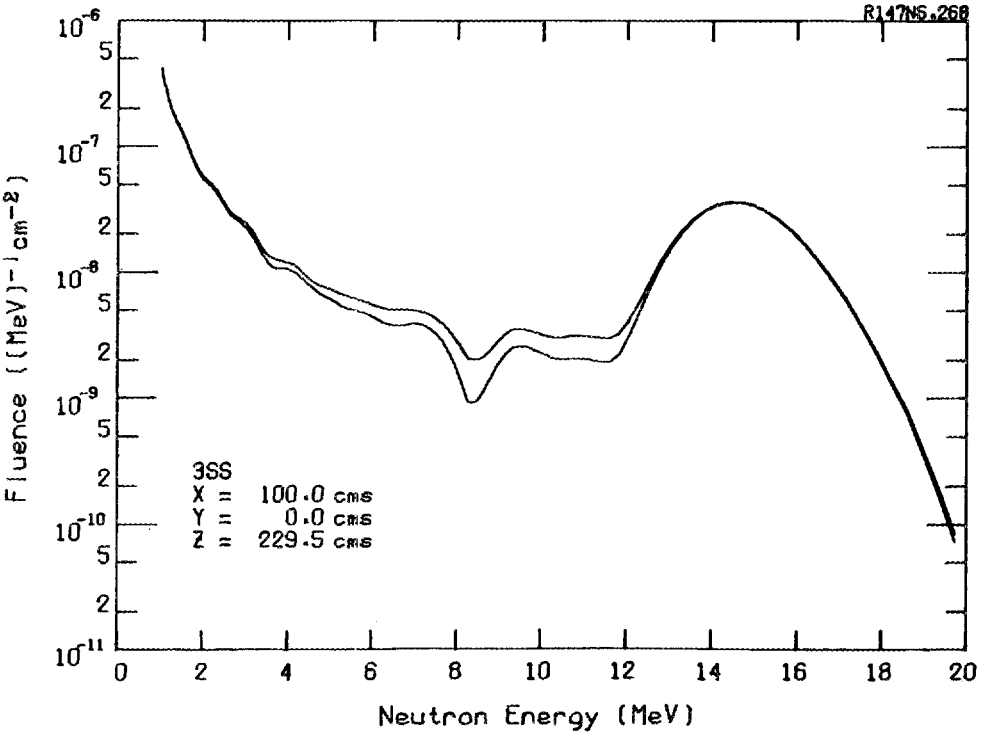

R145G6.259
3SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

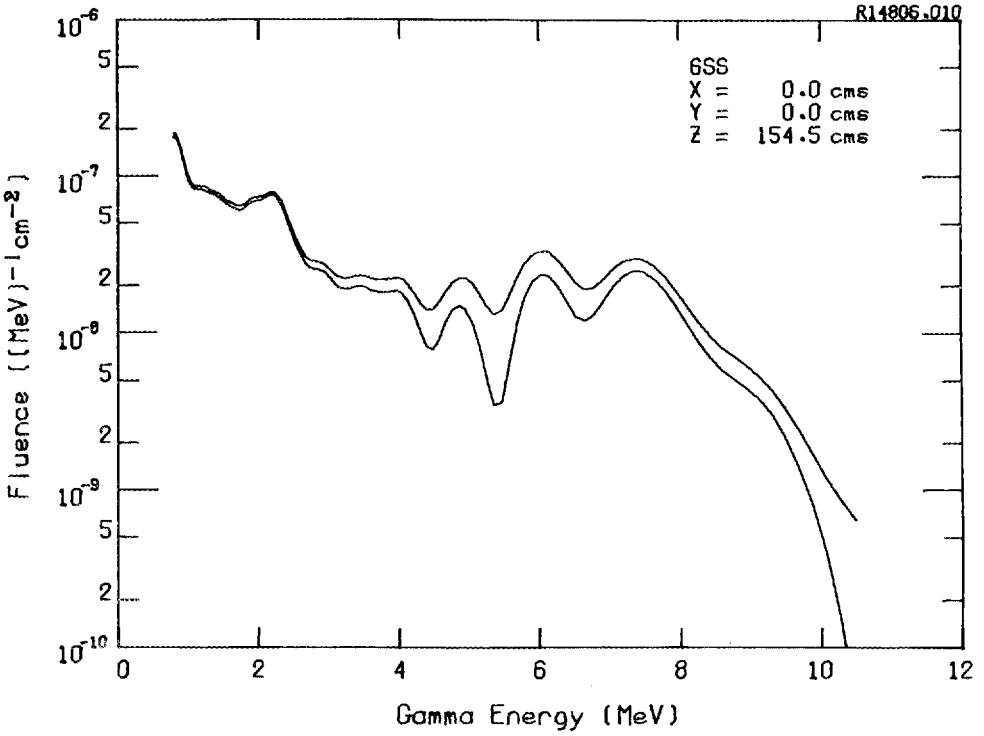

R145N6.257
3SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

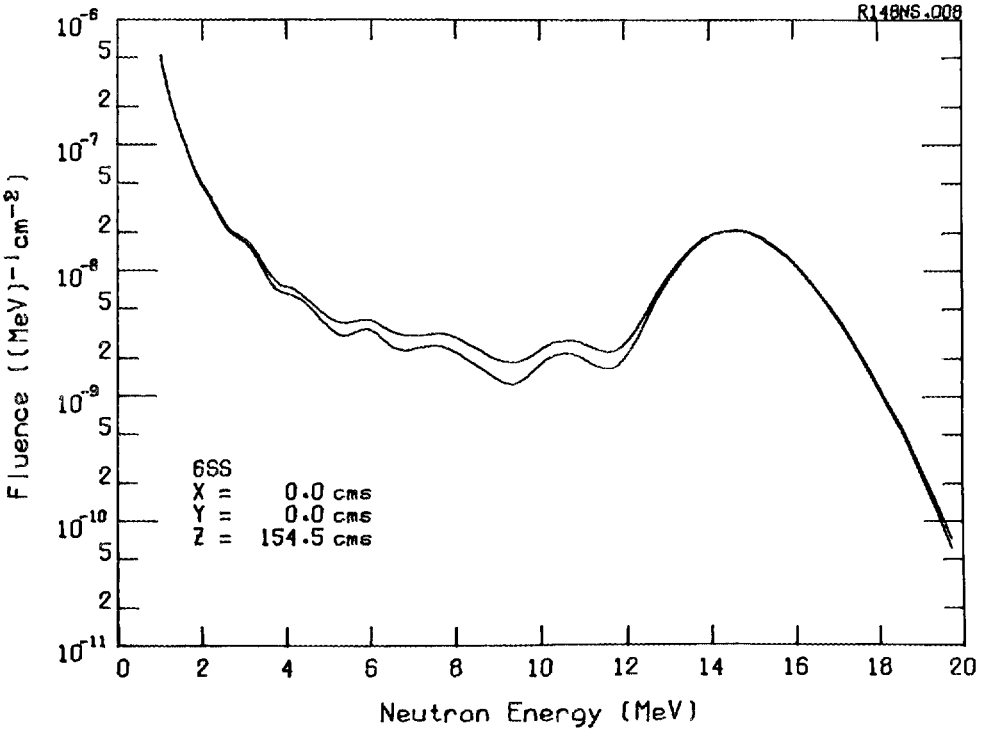

R146GS.261
3SS
X = -100.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

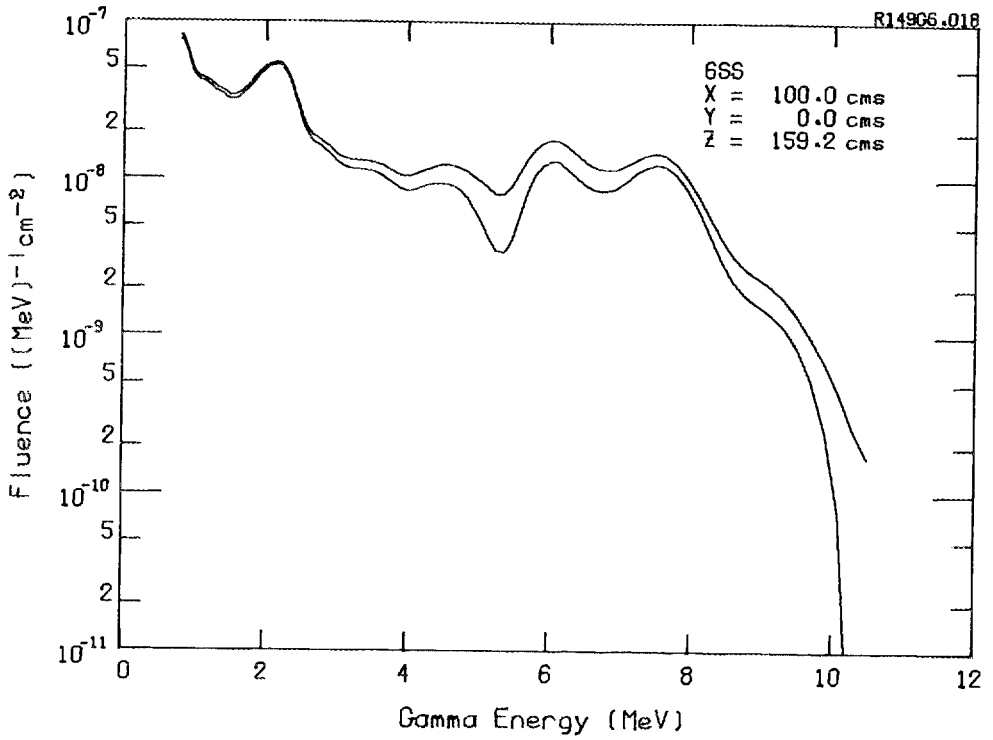

R146NS.263
3SS
X = -100.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

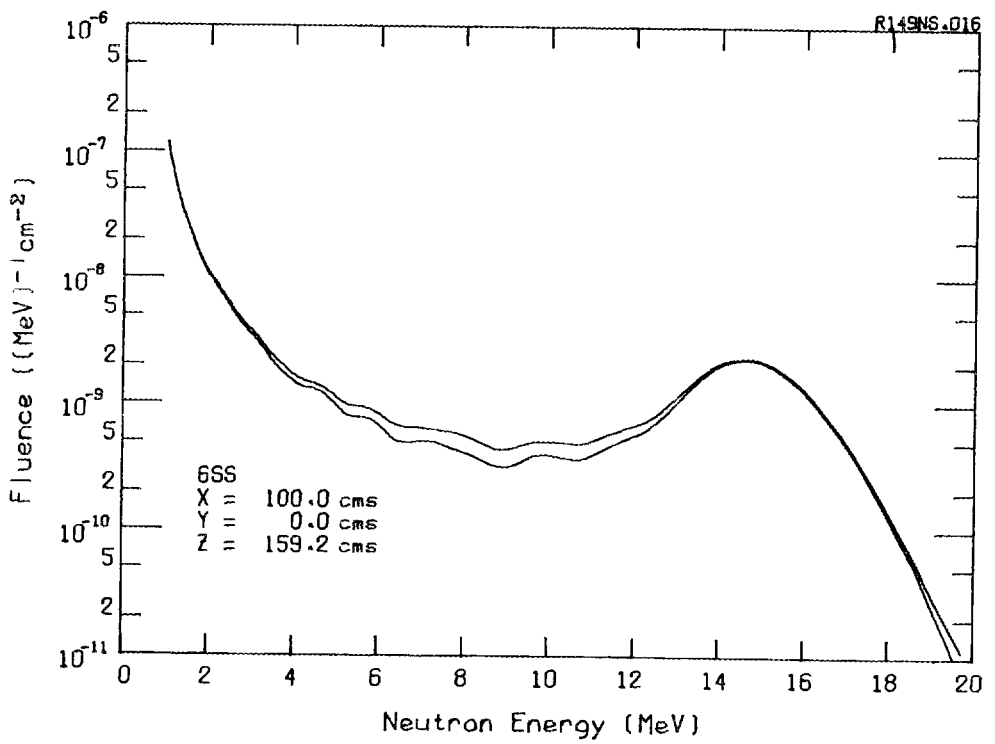

R147G6.270
3SS
X = 100.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

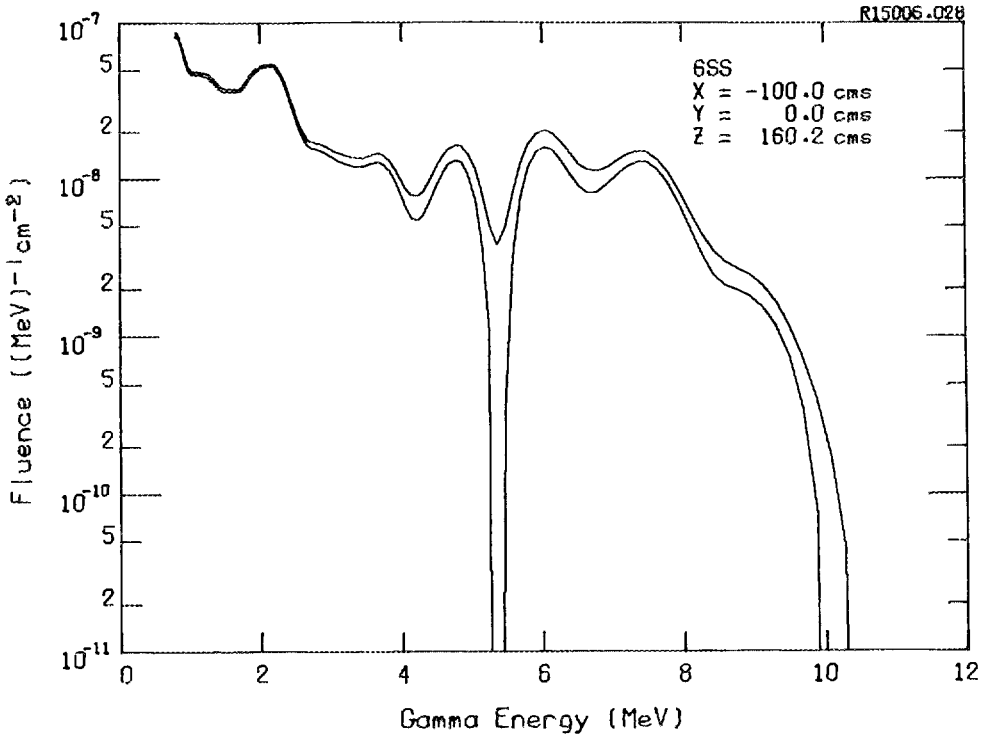

R147N5.268
3SS
X = 100.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

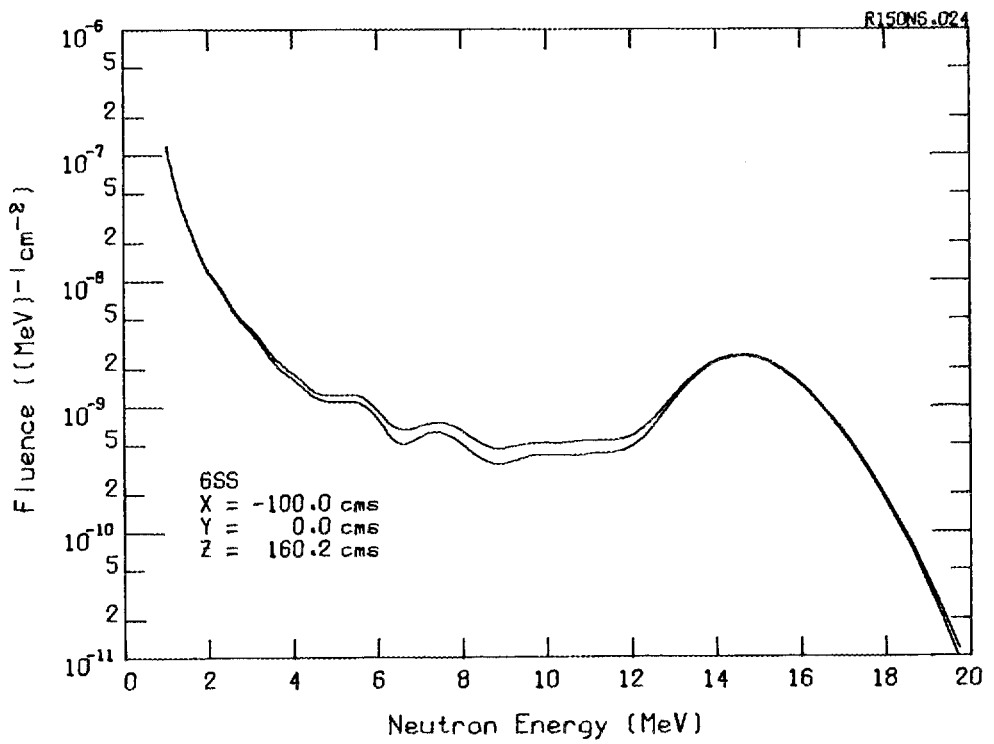

R14806.010
6SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

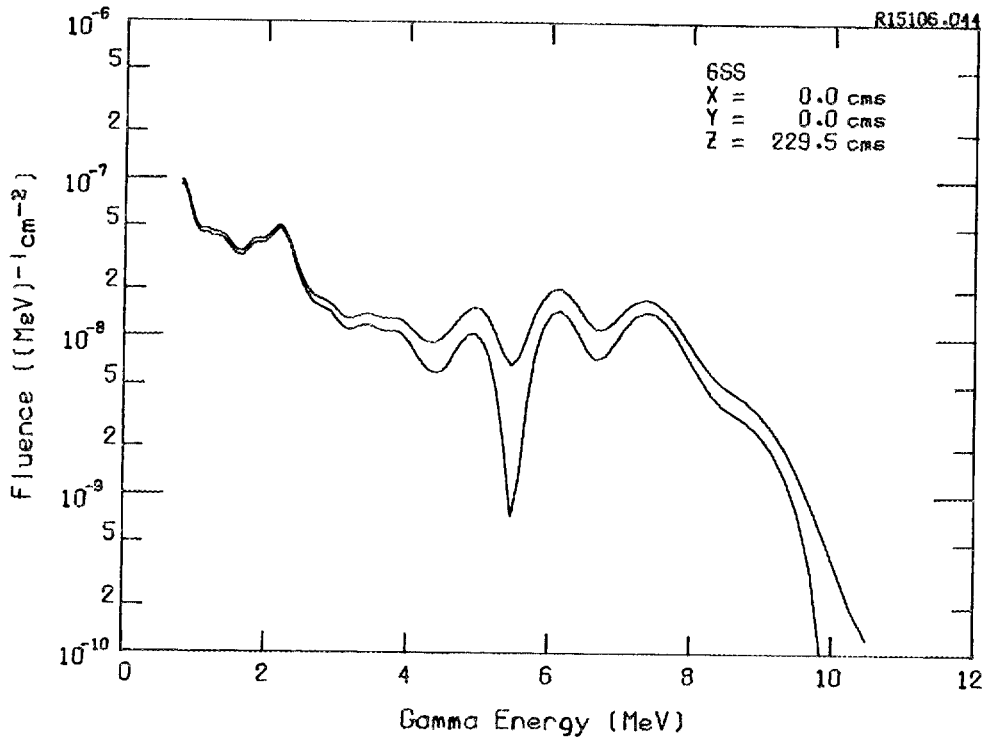

R14BNS.008
6SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

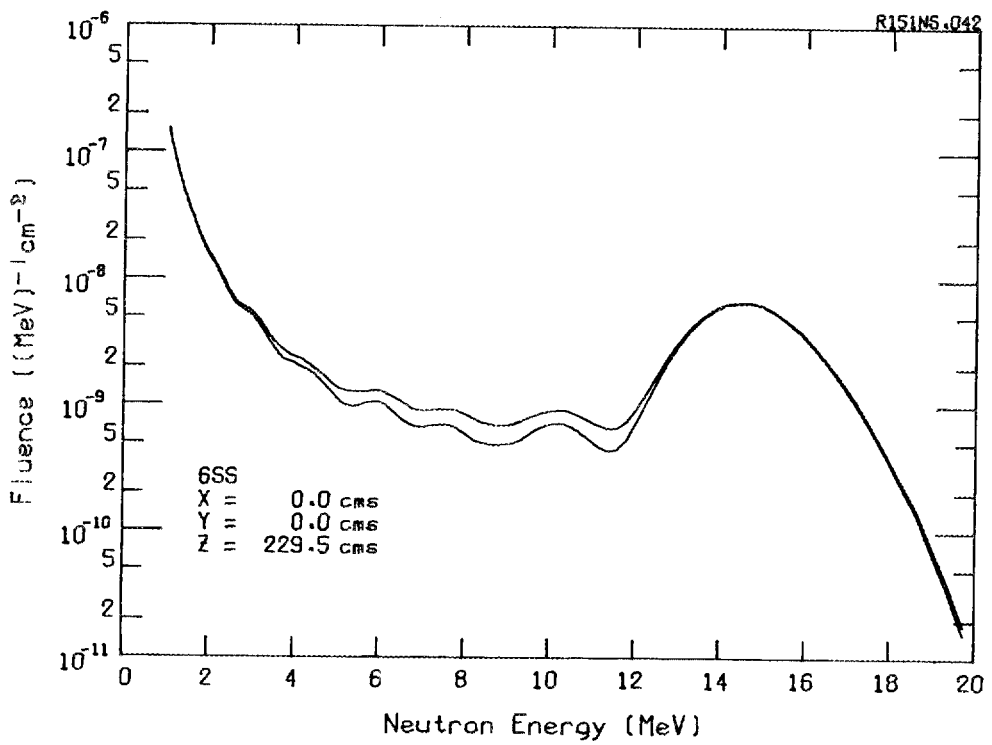

R149GS.018
6SS
X = 100.0 cms
Y = 0.0 cms
Z = 159.2 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

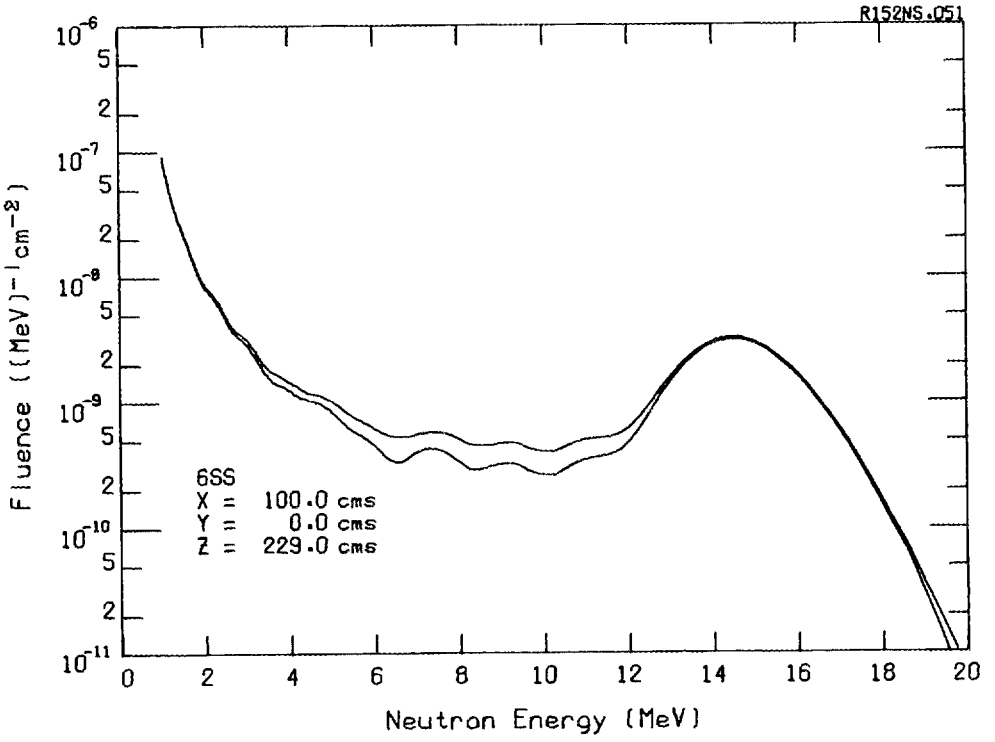

R149NS.016
6SS
X = 100.0 cms
Y = 0.0 cms
Z = 159.2 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

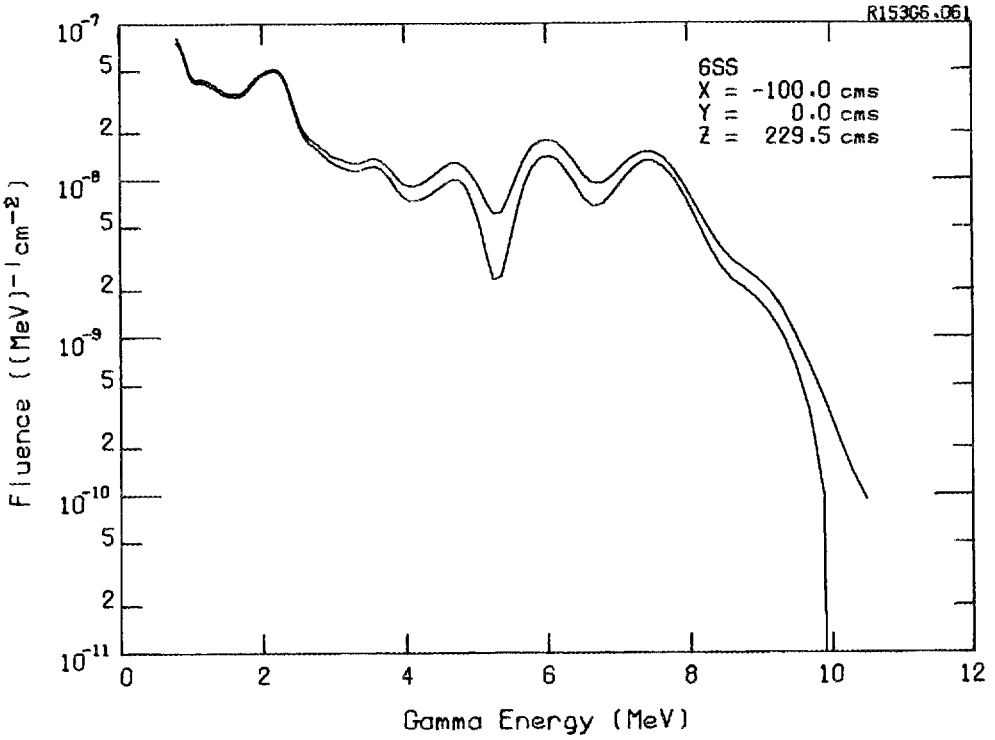

R150G6.028
6SS
X = -100.0 cms
Y = 0.0 cms
Z = 160.2 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)

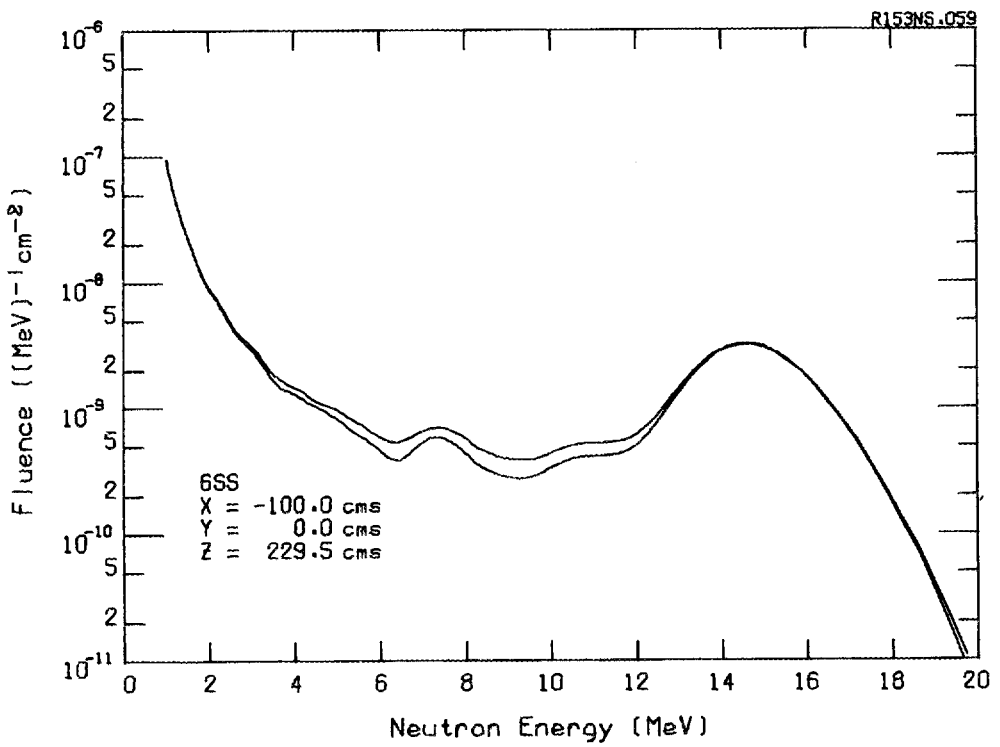

R150N6.024
6SS
X = -100.0 cms
Y = 0.0 cms
Z = 160.2 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)

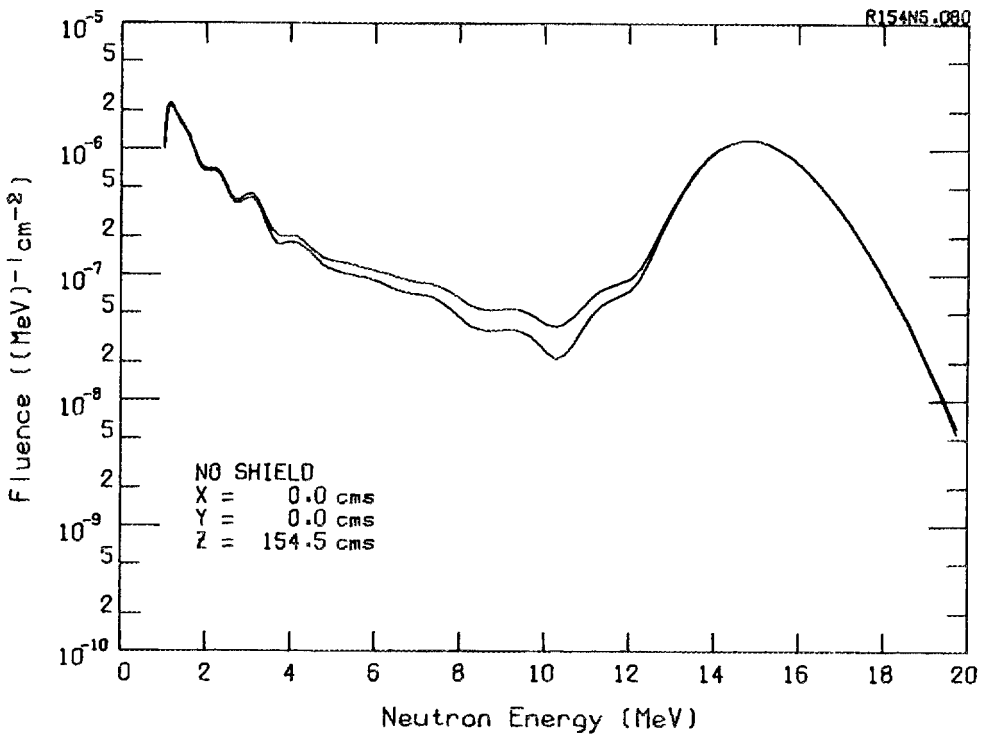

R15106.044
6SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

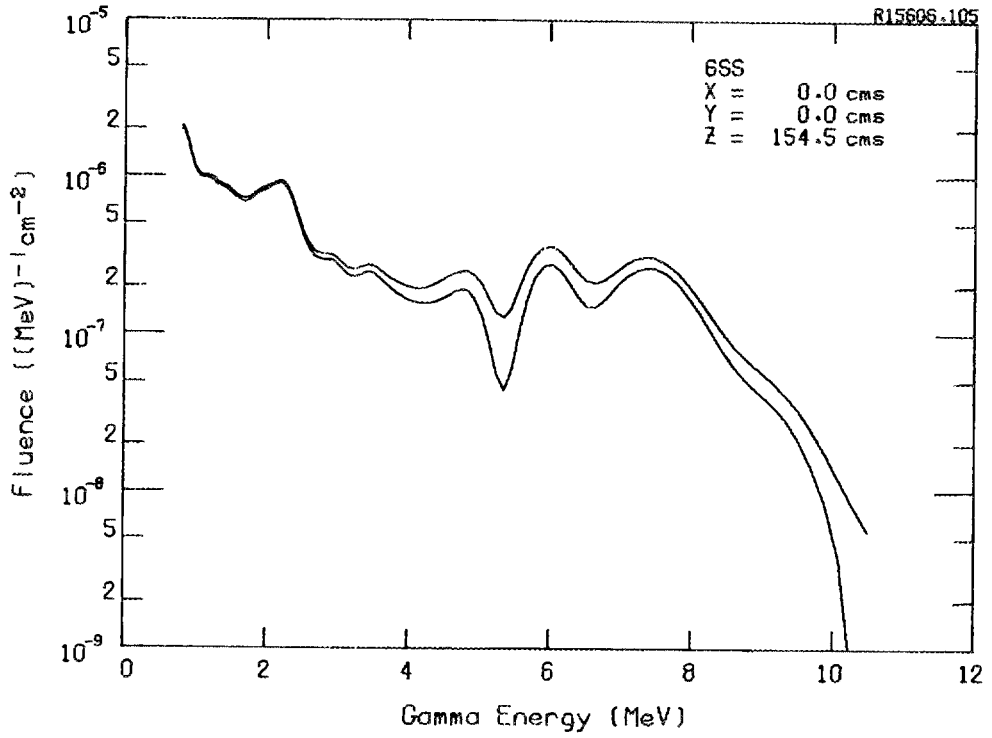

R151N5.042
6SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

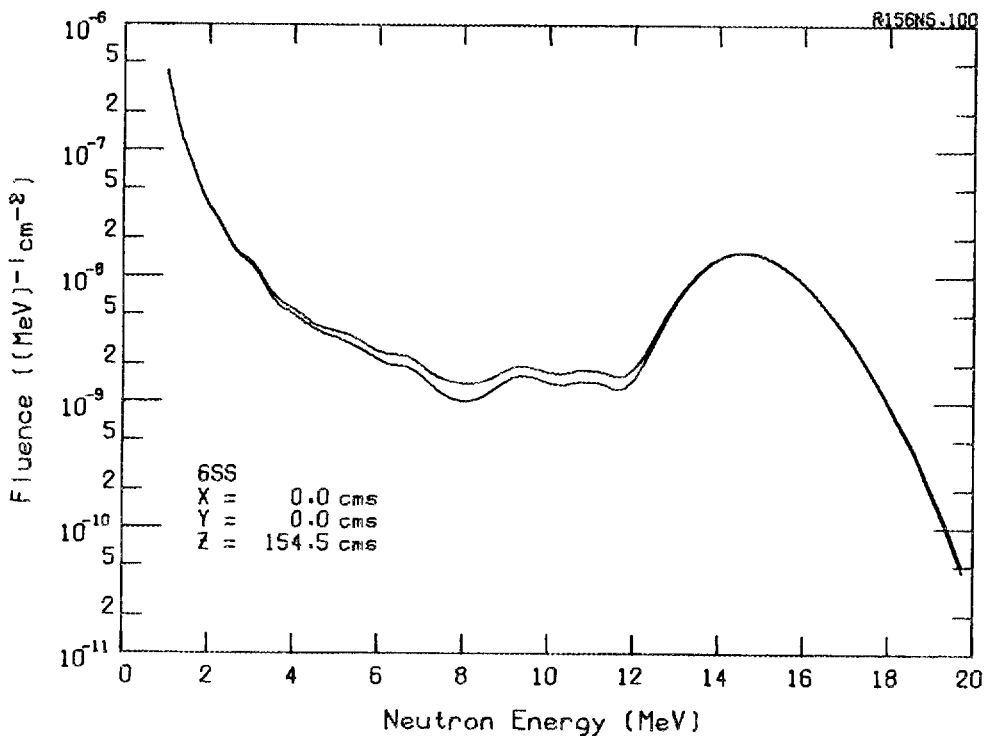

R152NS.051
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)
6SS
X = 100.0 cms
Y = 0.0 cms
Z = 229.0 cms

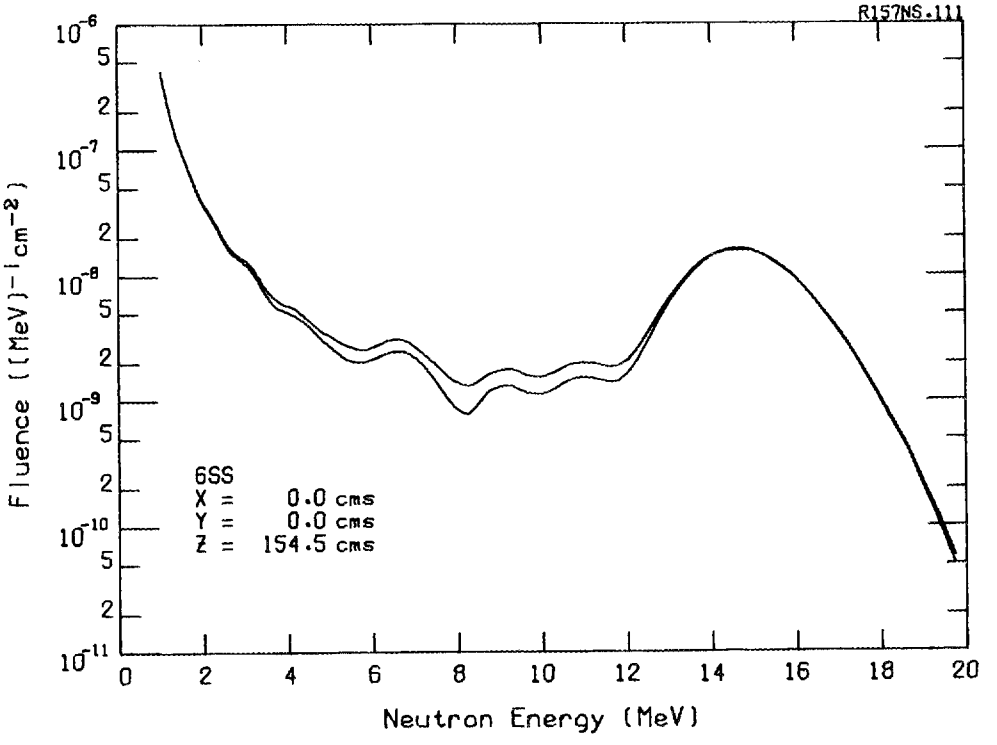

R153G6.061
6SS
X = -100.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

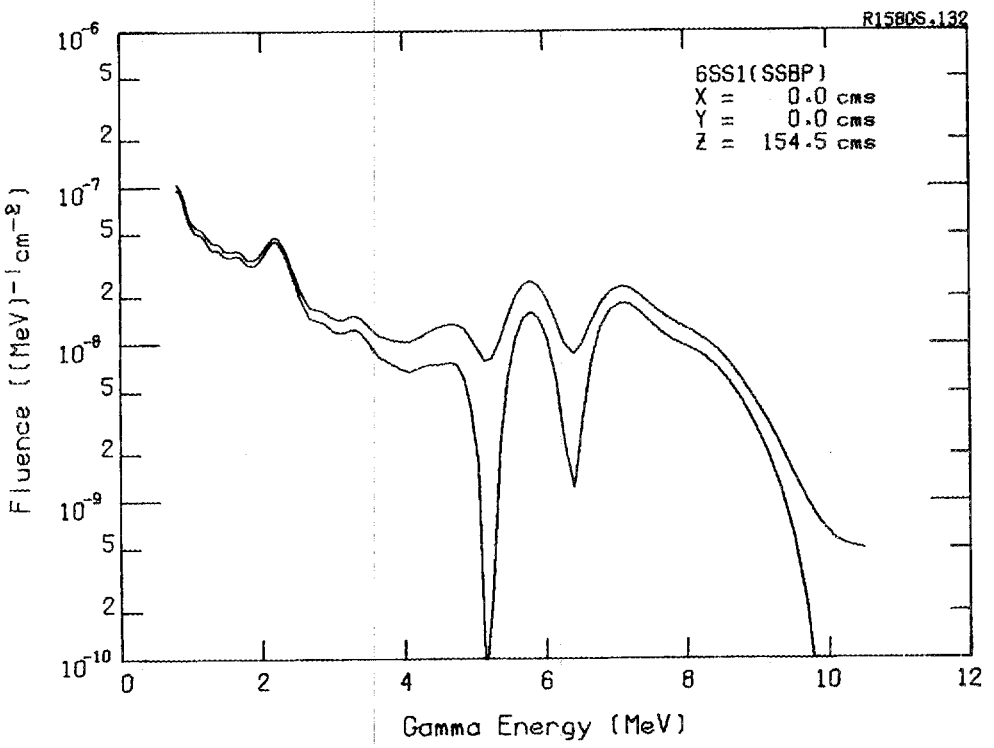

R153NS.059
6SS
X = -100.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

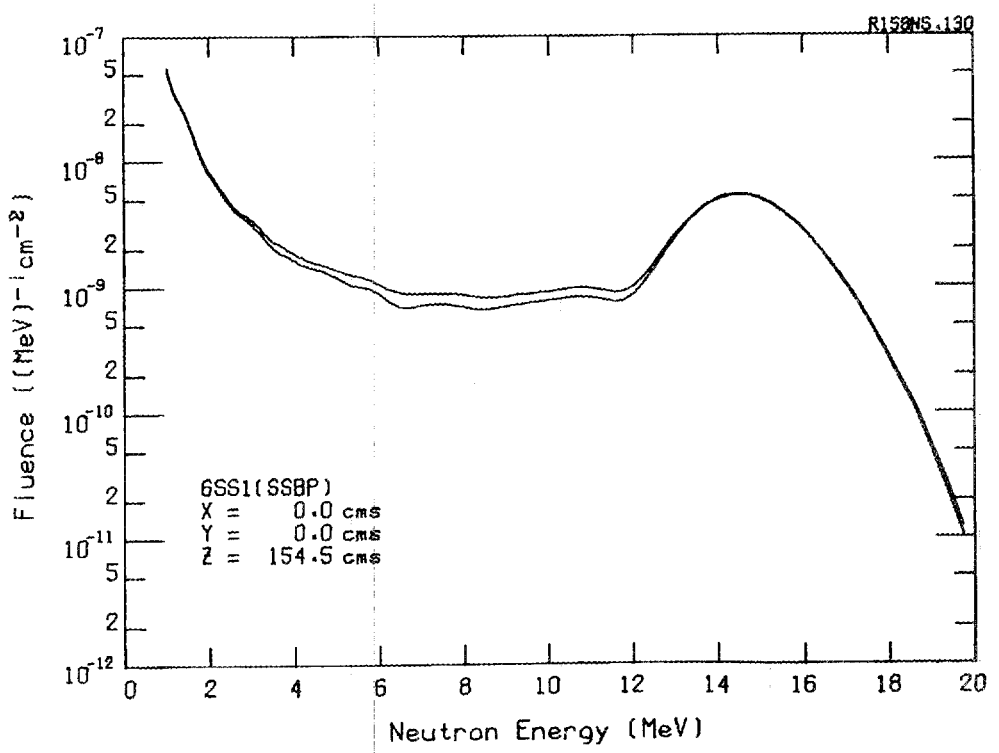

R154N5.080
NO SHIELD
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
0
2
4
6
8
10
12
14
16
18
20

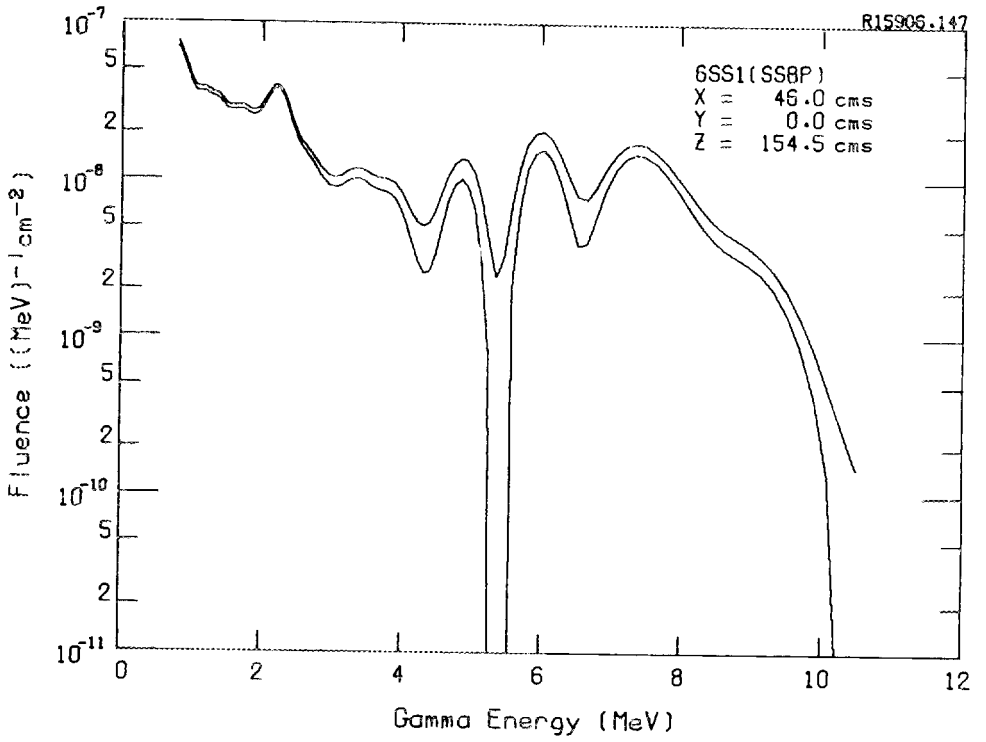

R156GS.105
6SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

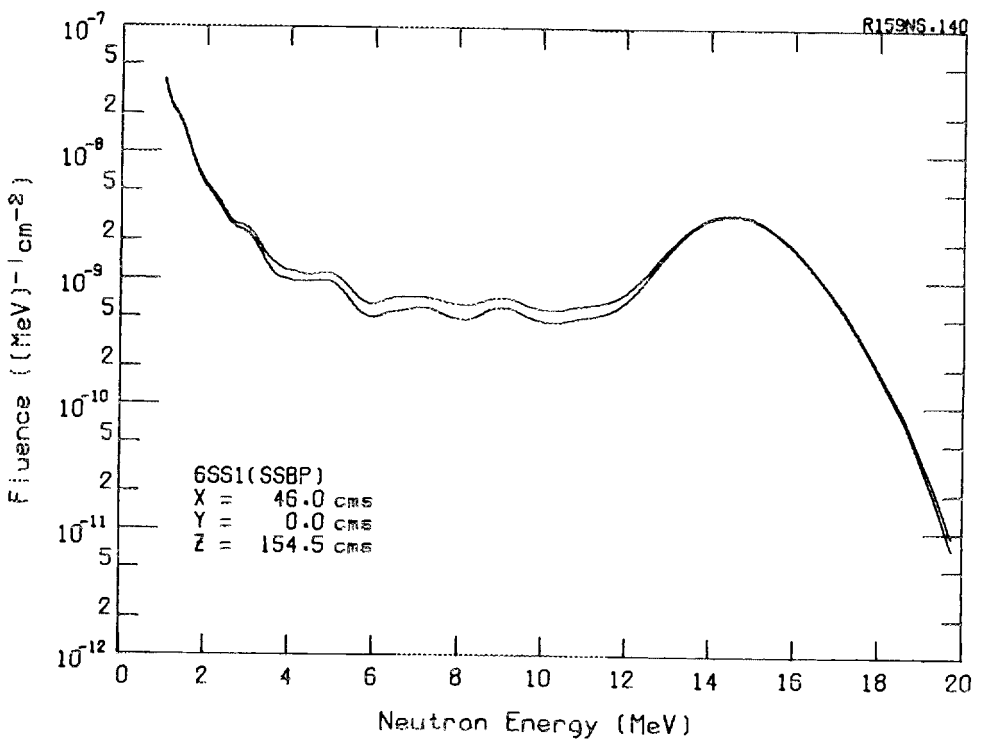

R156NS.100
6SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

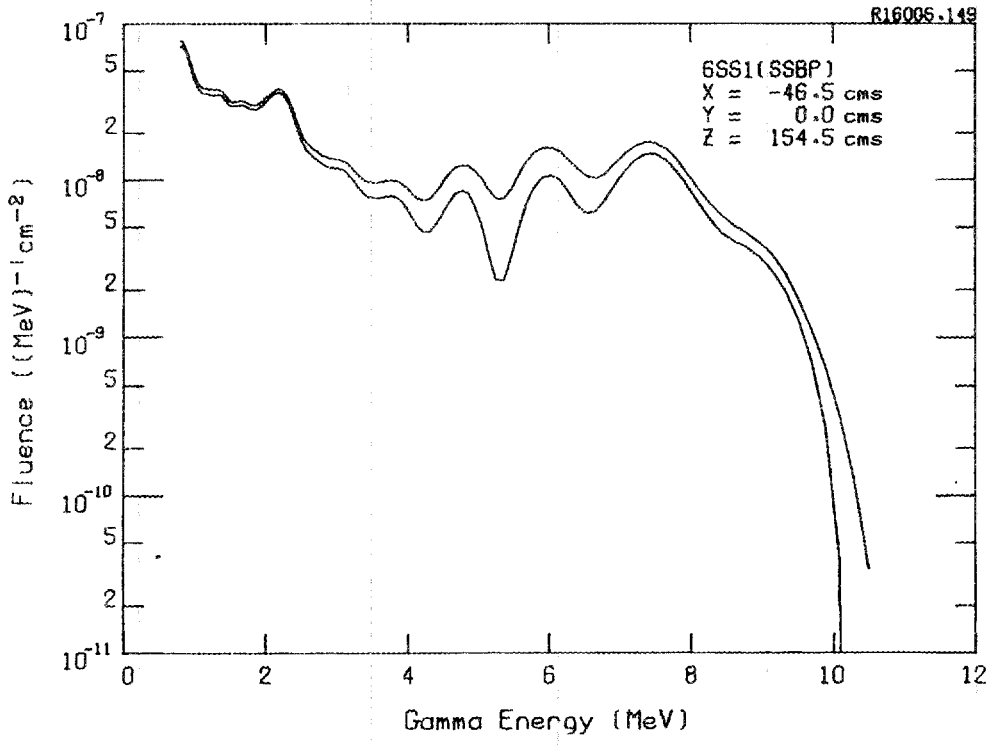

R157NS.111
Fluence ((MeV)$^{-1}$cm^{-2})
10^{-6}
5
2
10^{-7}
5
2
10^{-8}
5
2
10^{-9}
5
2
10^{-10}
5
2
10^{-11}
0
2
4
6
8
10
12
14
16
18
20
Neutron Energy (MeV)
GSS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms

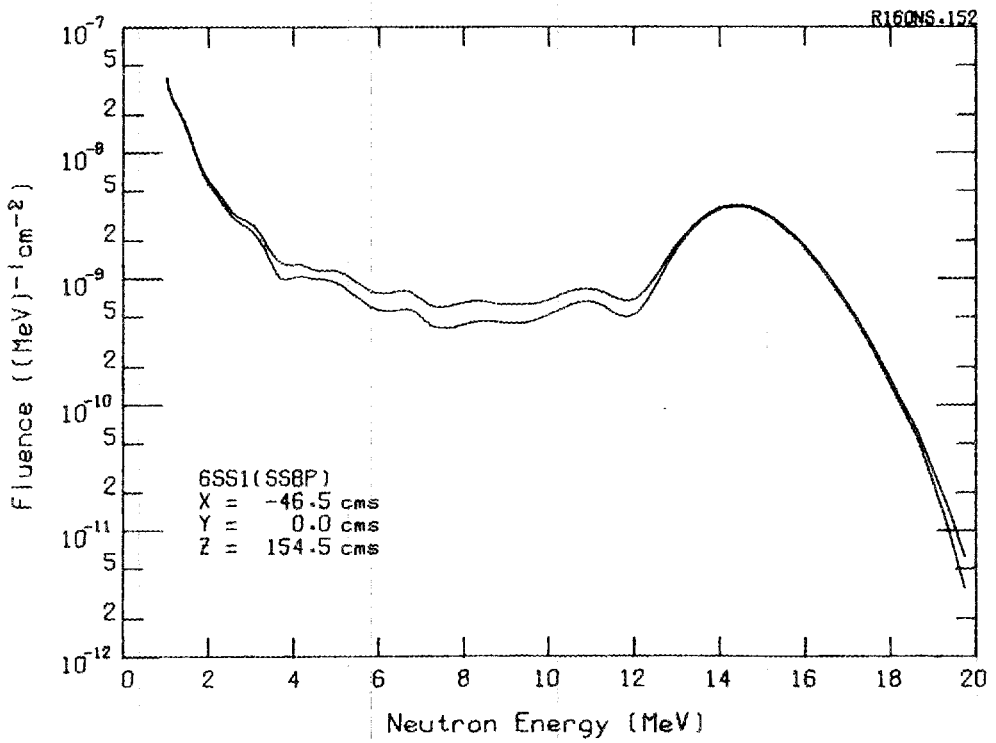

R158GS.132
6SS1(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

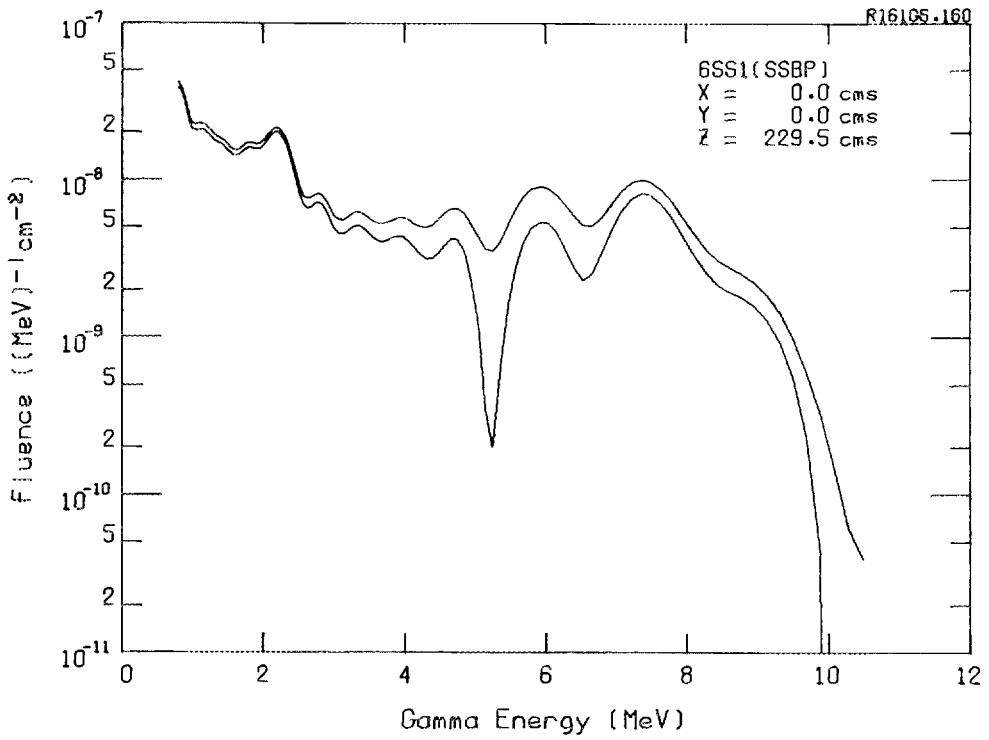

R158NS.130
6SS1(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

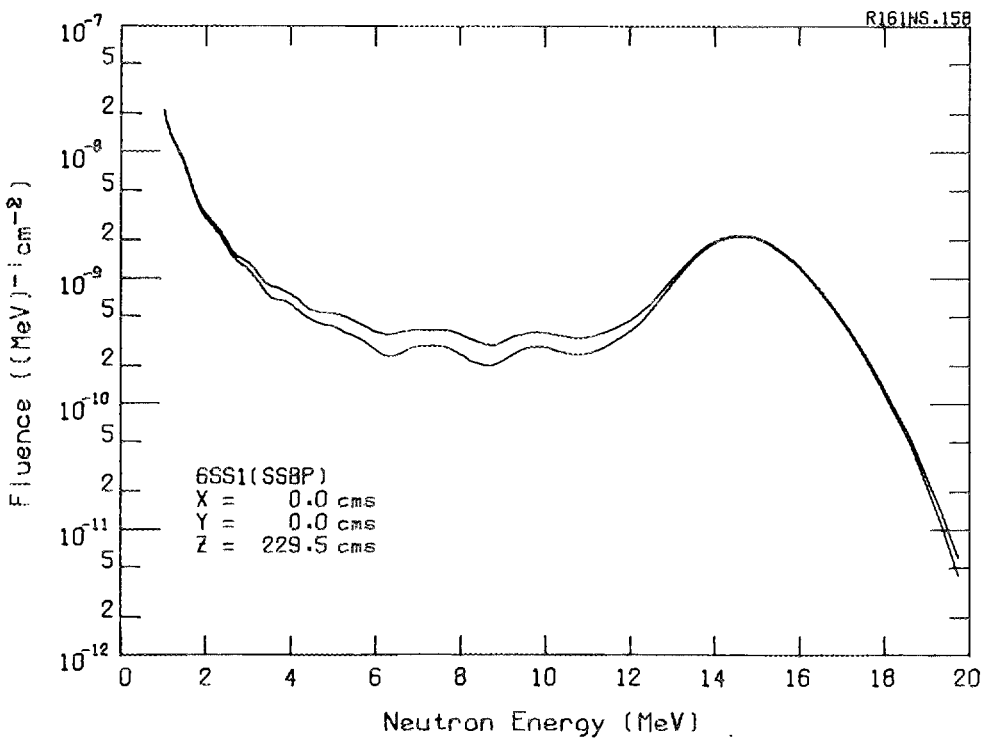

R159GS.147
6SS1(SSBP)
X = 46.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)

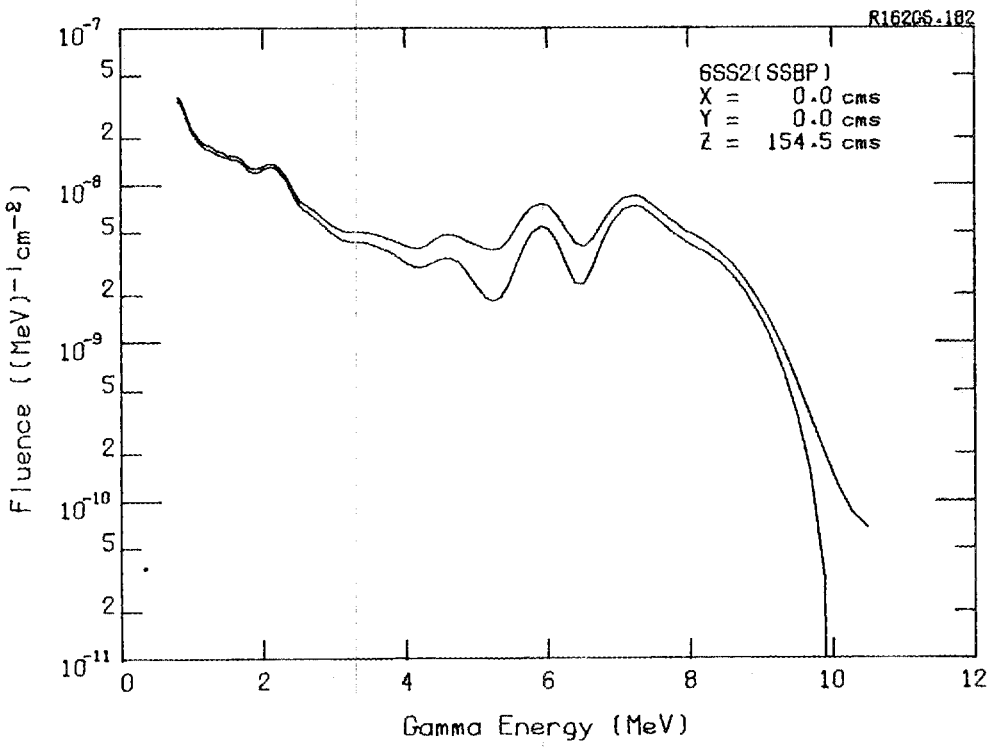

R159NS.140
6SS1(SSBP)
X = 46.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)

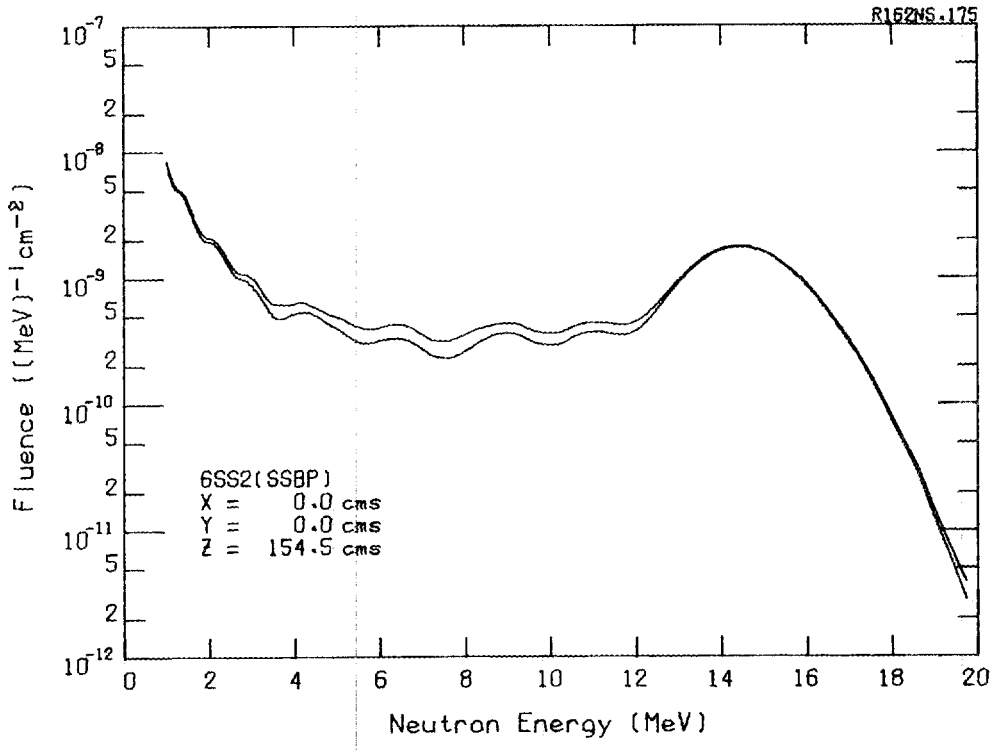

R16006.149
6SS1(SSBP)
X = -46.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

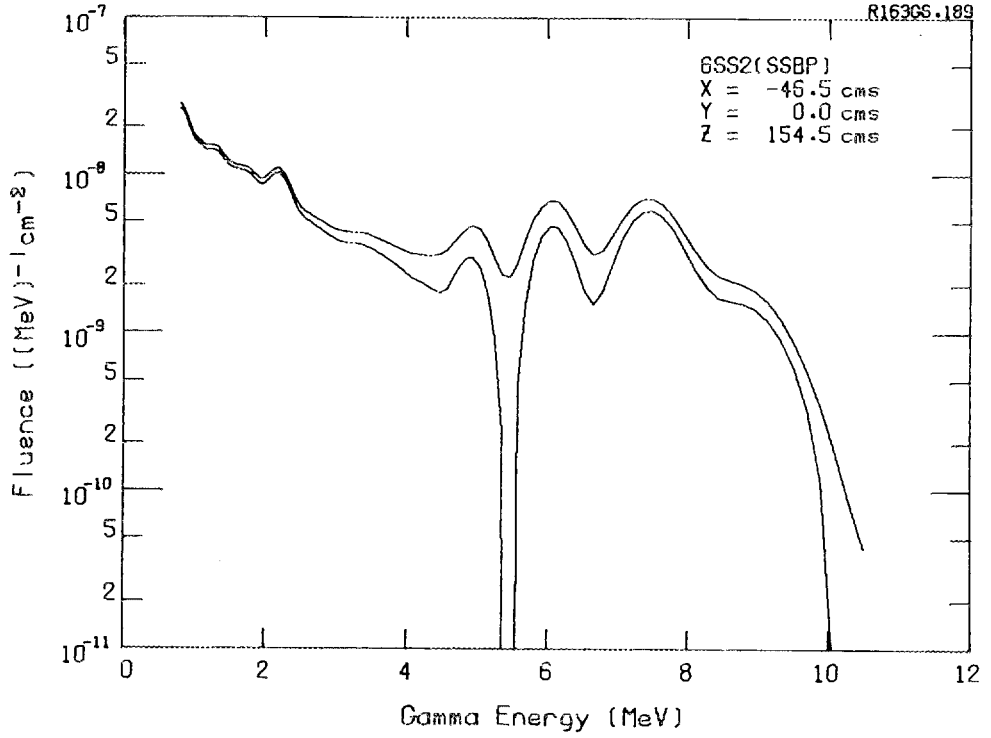

R16QNS.152
6SS1(SSBP)
X = -46.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

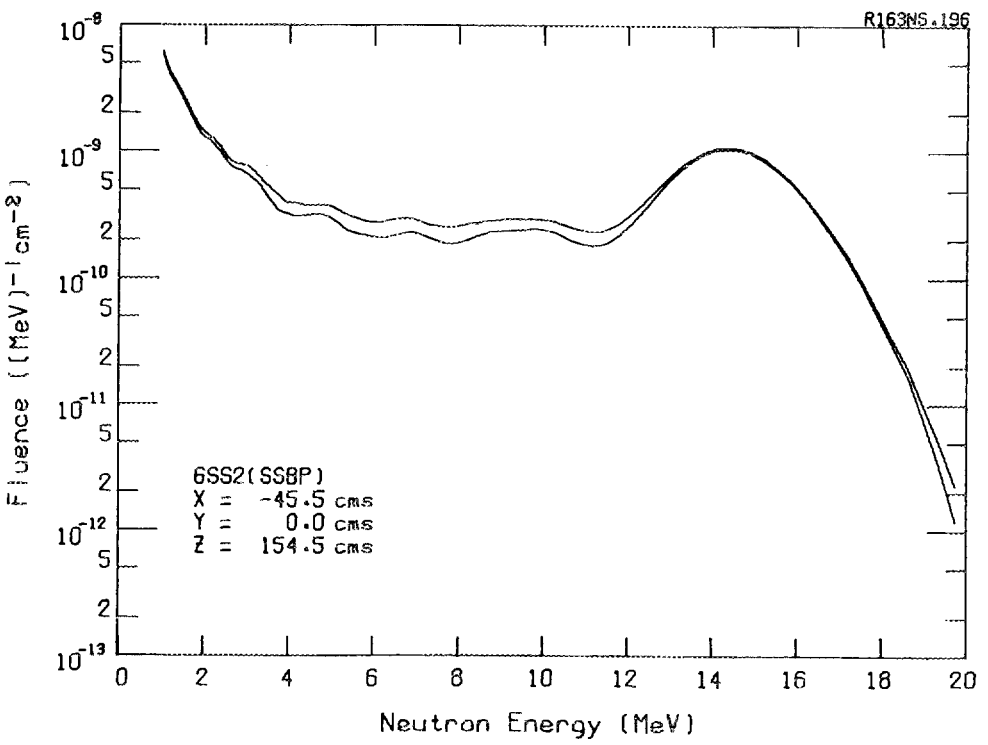

R16105.160
6SS1(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)

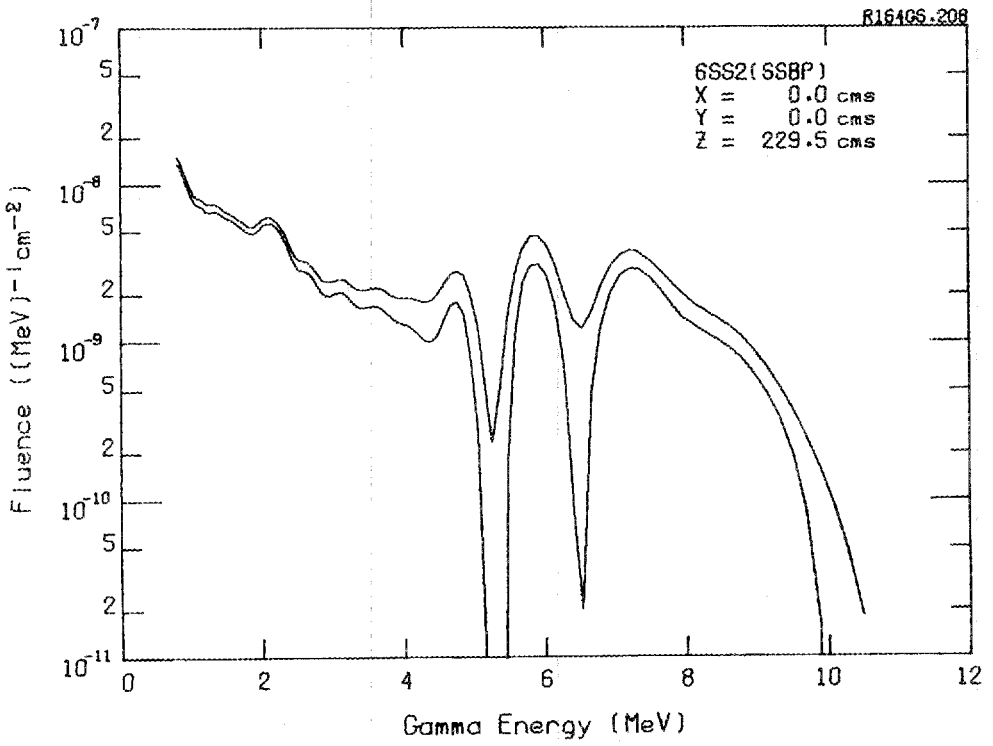

R16INS.158
6SS1(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)

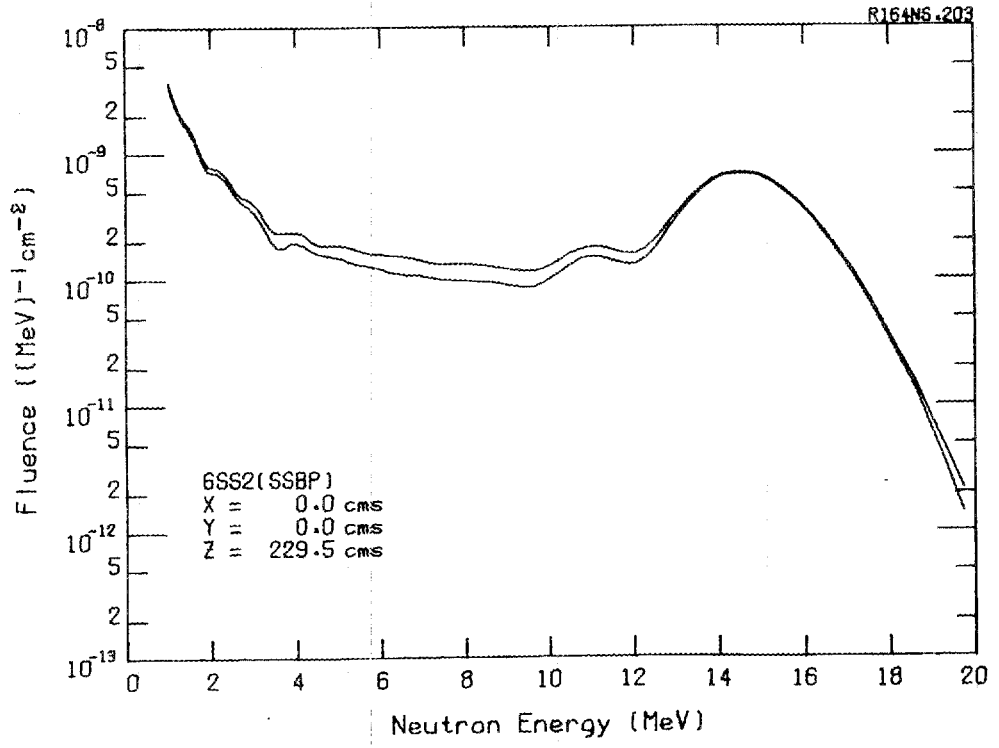

R162GS.182
6SS2(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)

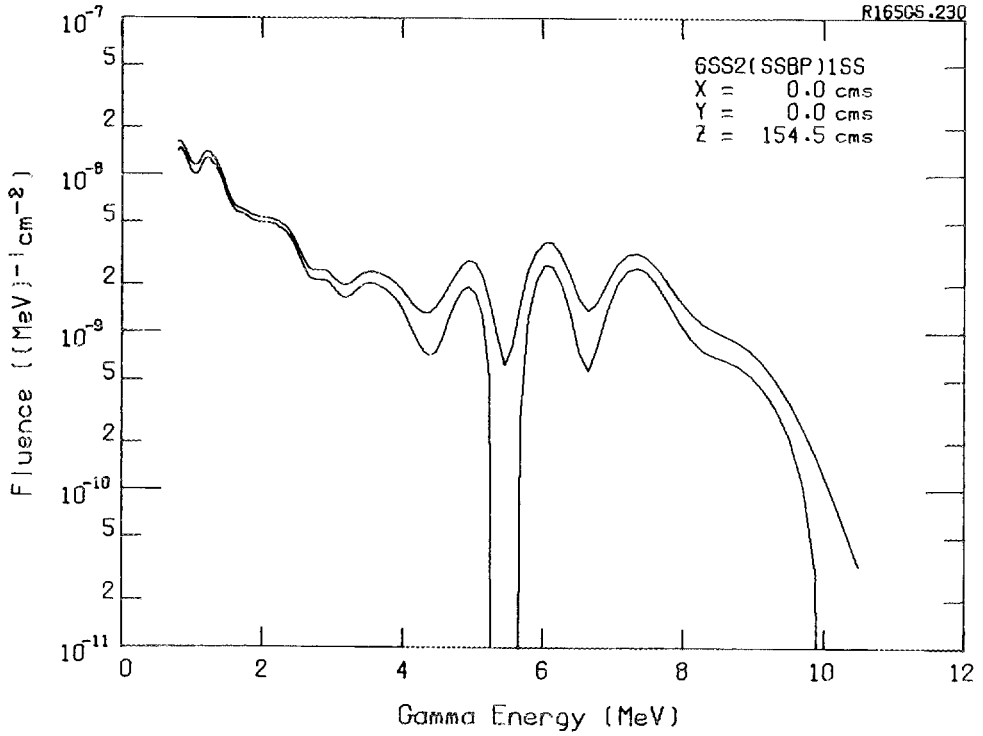

R162NS.175
6SS2(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)

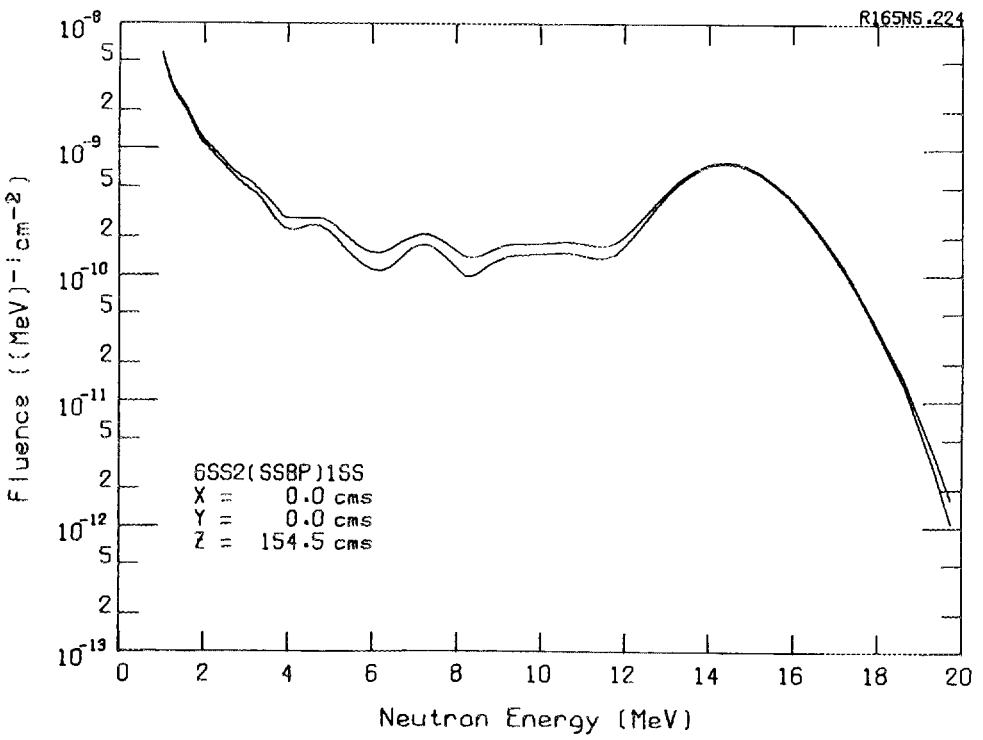

R163GS.189
6SS2(SSBP)
X = -45.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)

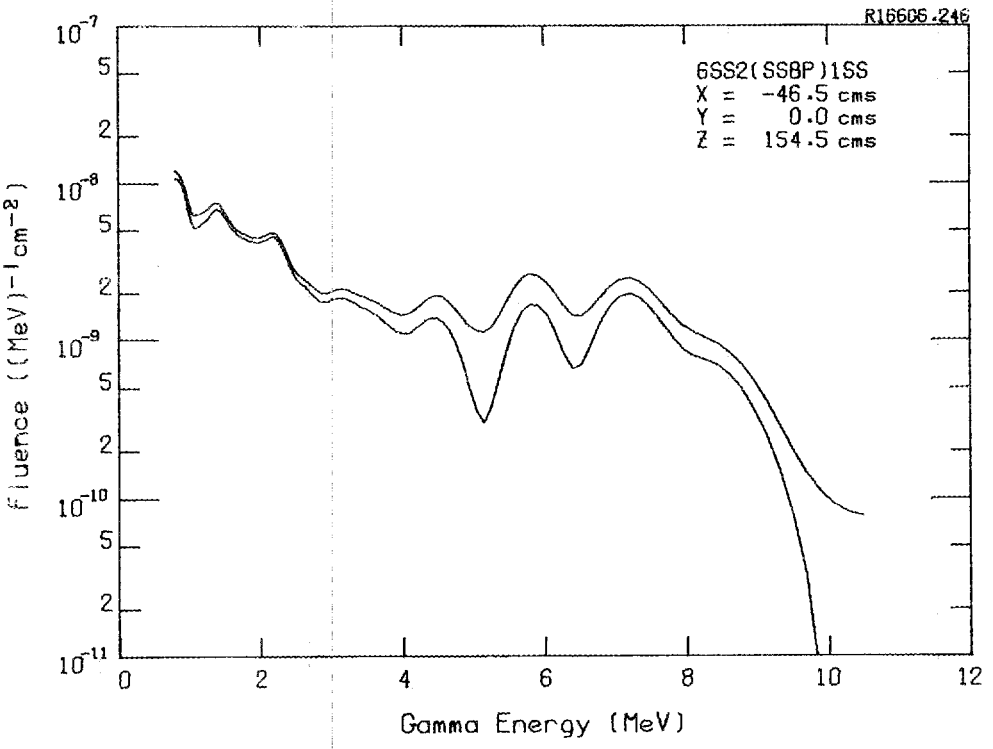

R163NS.196
6SS2(SSBP)
X = -45.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)

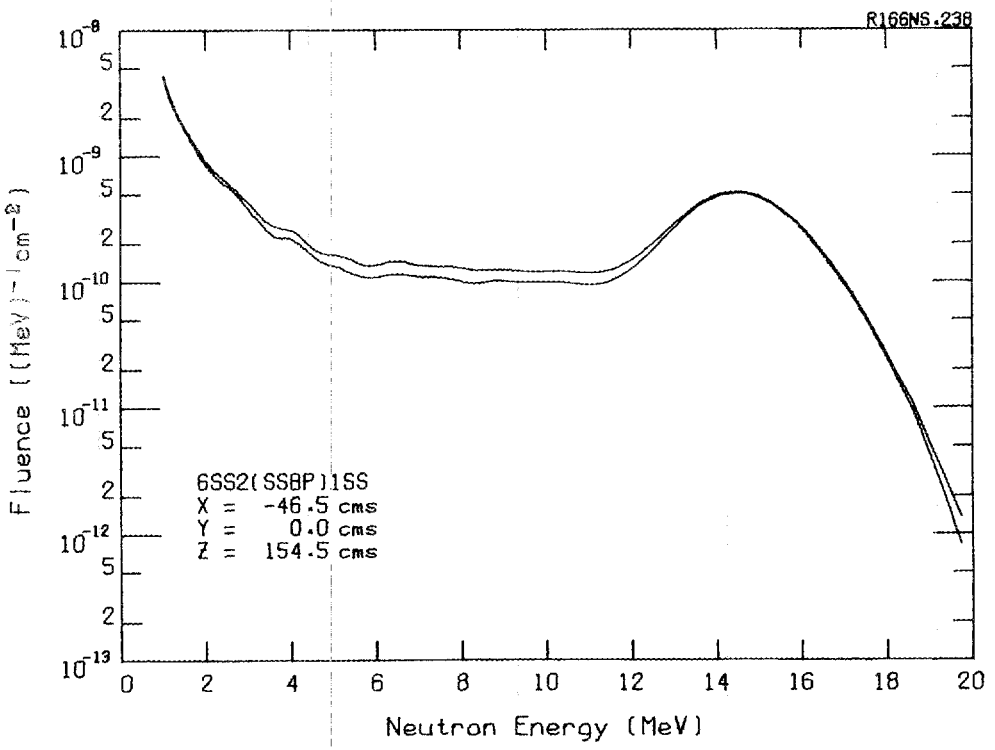

R164GS.208
6SS2(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

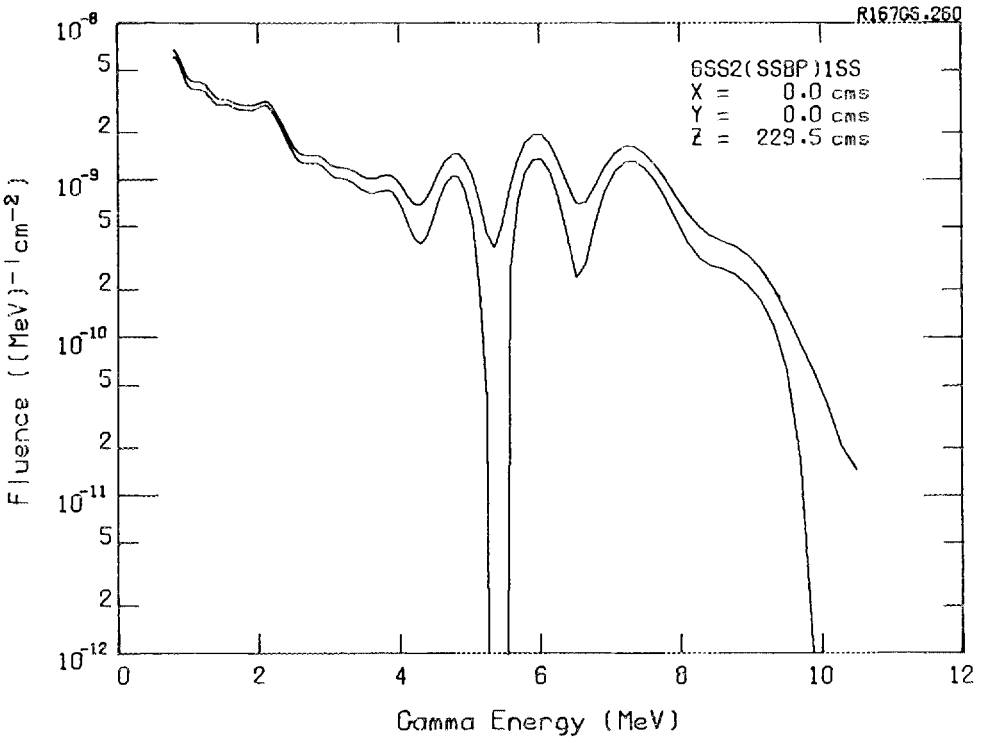

R164NS.203
6SS2(SSBP)
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

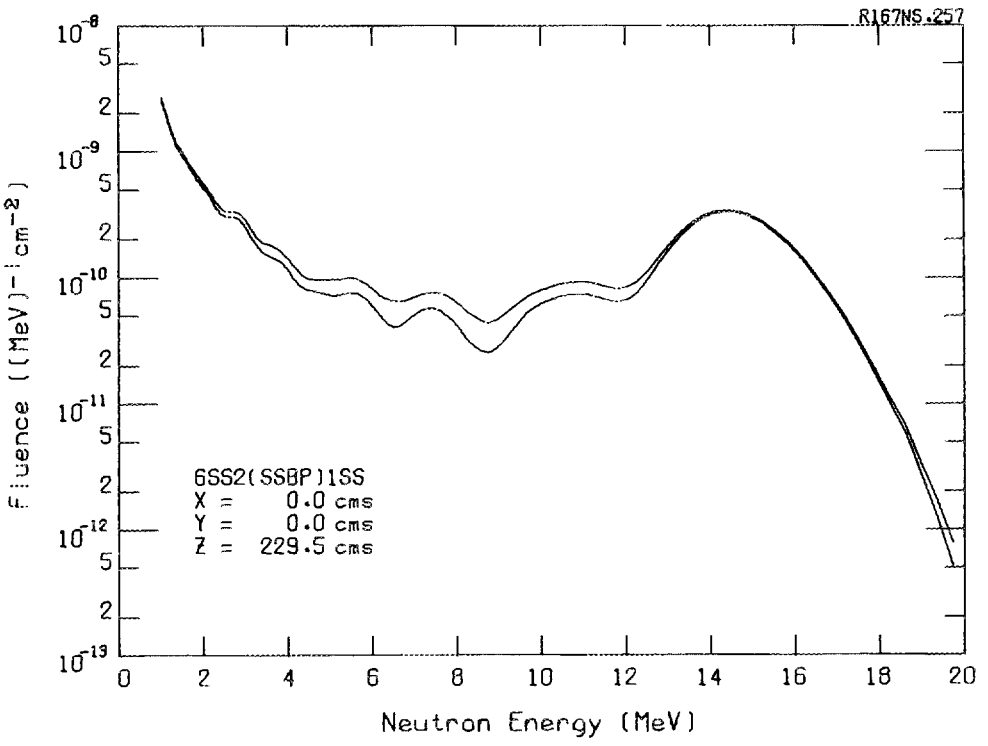

R165GS.230
6SS2(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

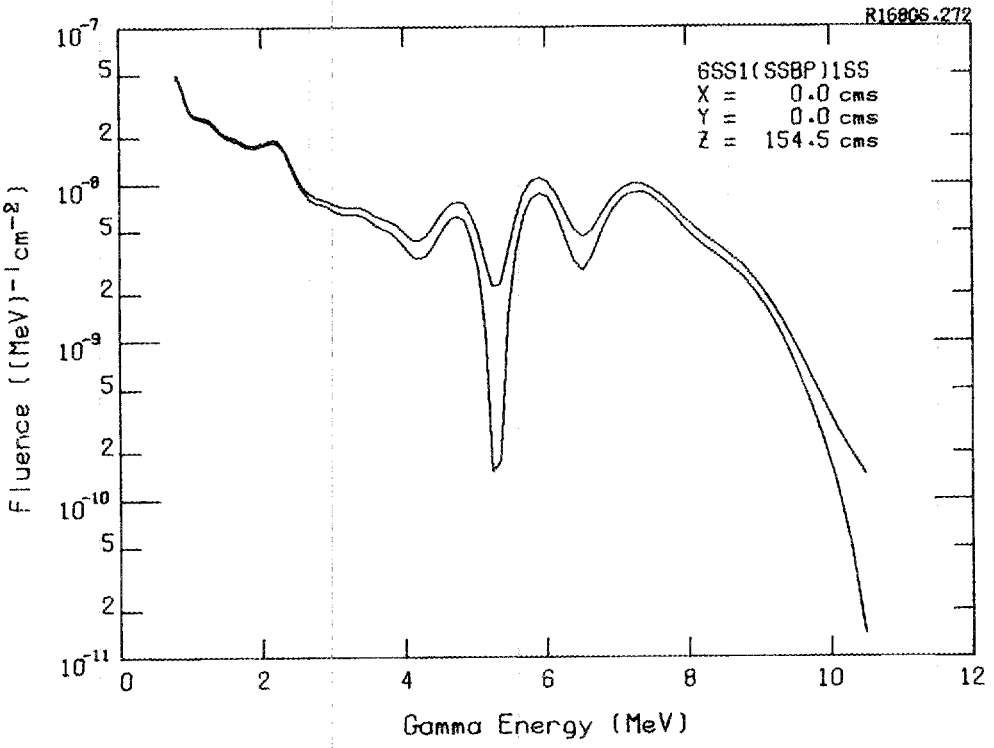

R165NS.224
6SS2(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

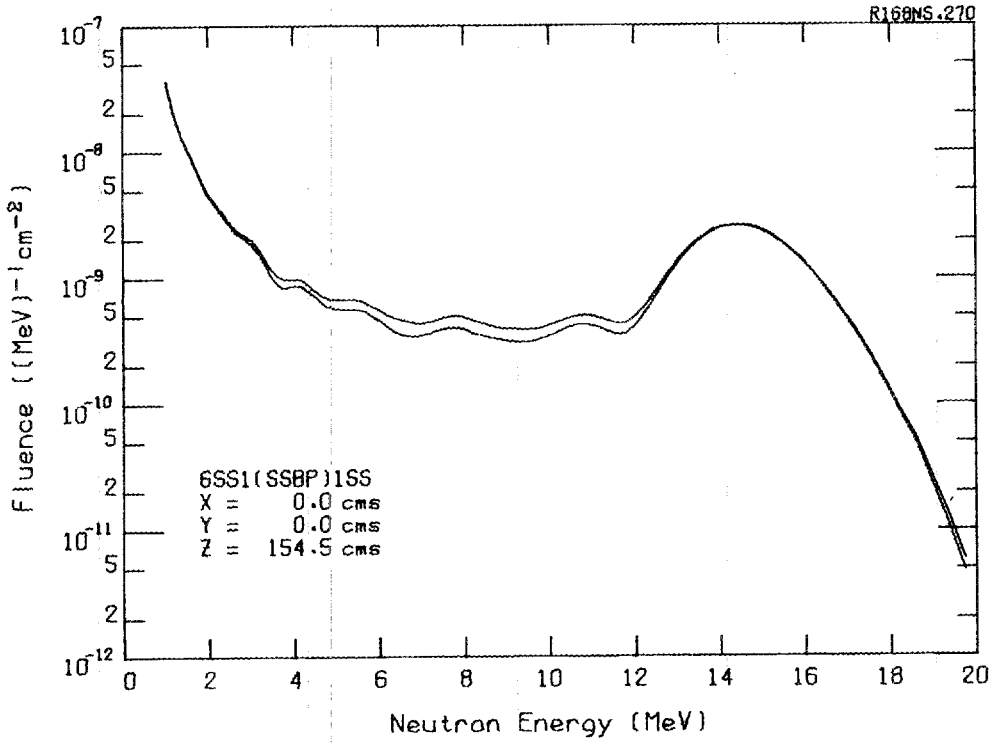

R16606.246
6SS2(SSBP)1SS
X = -46.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)

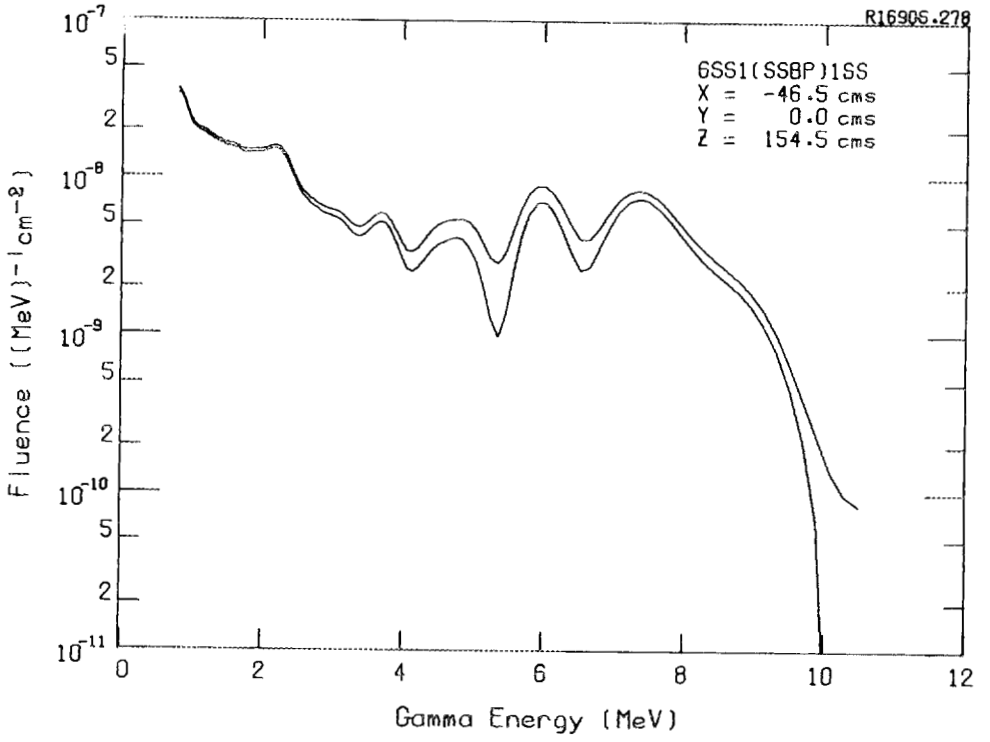

R166NS.238
6SS2(SSBP)1SS
X = -46.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)

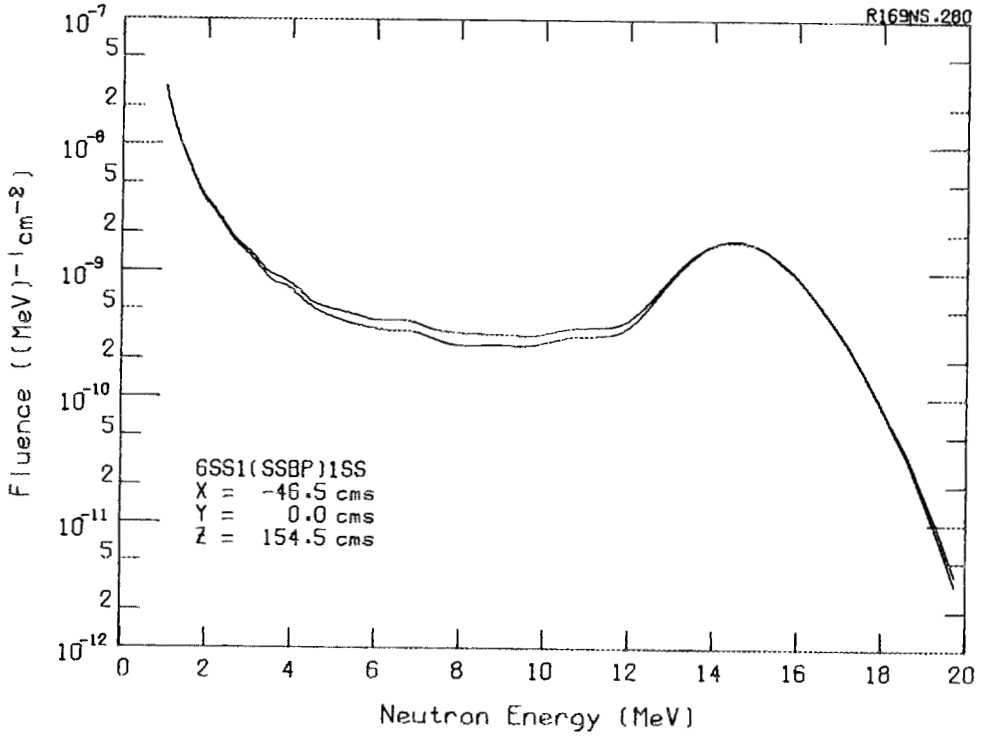

R167GS.260
6SS2(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

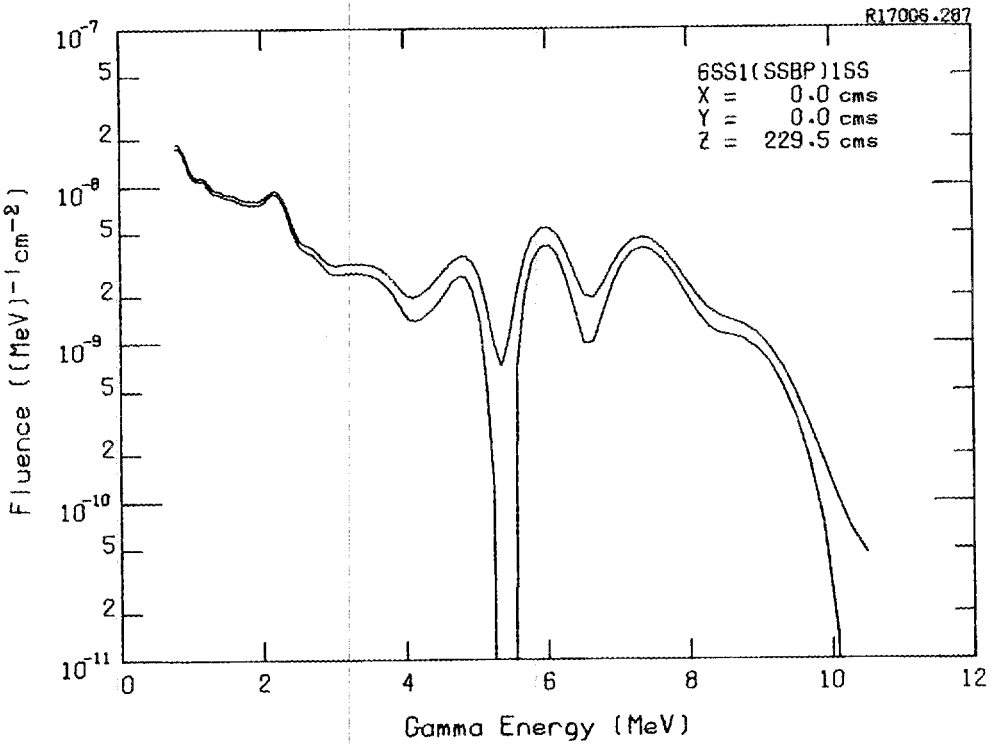

R167NS.257
6SS2(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

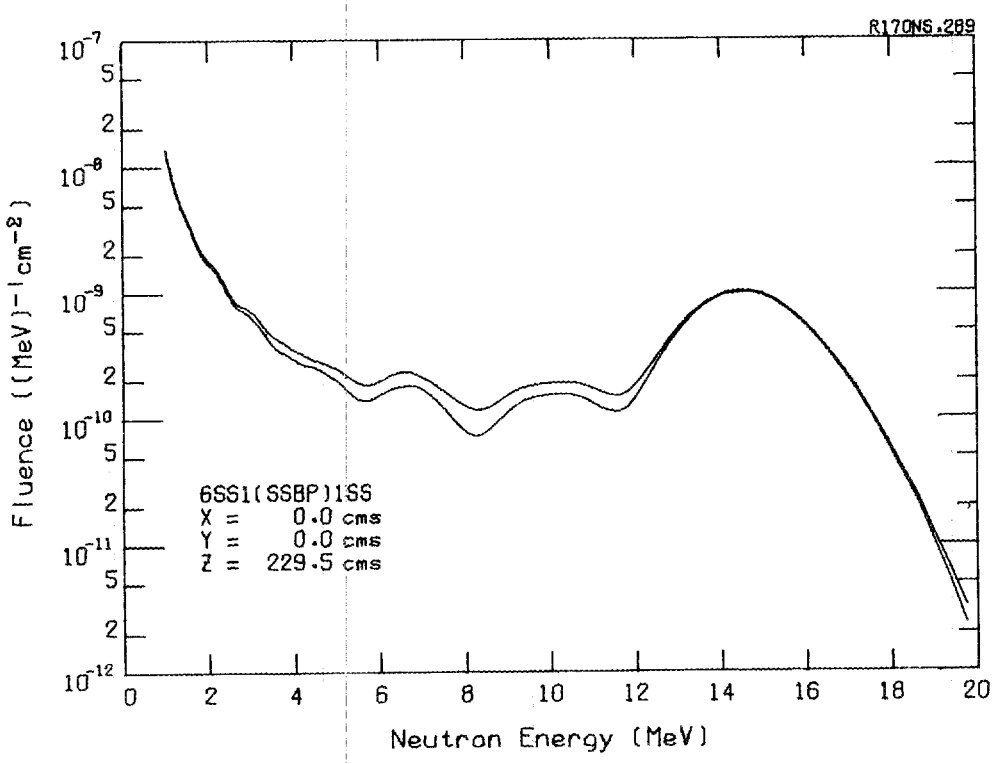

R168GS.272
6SS1(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)

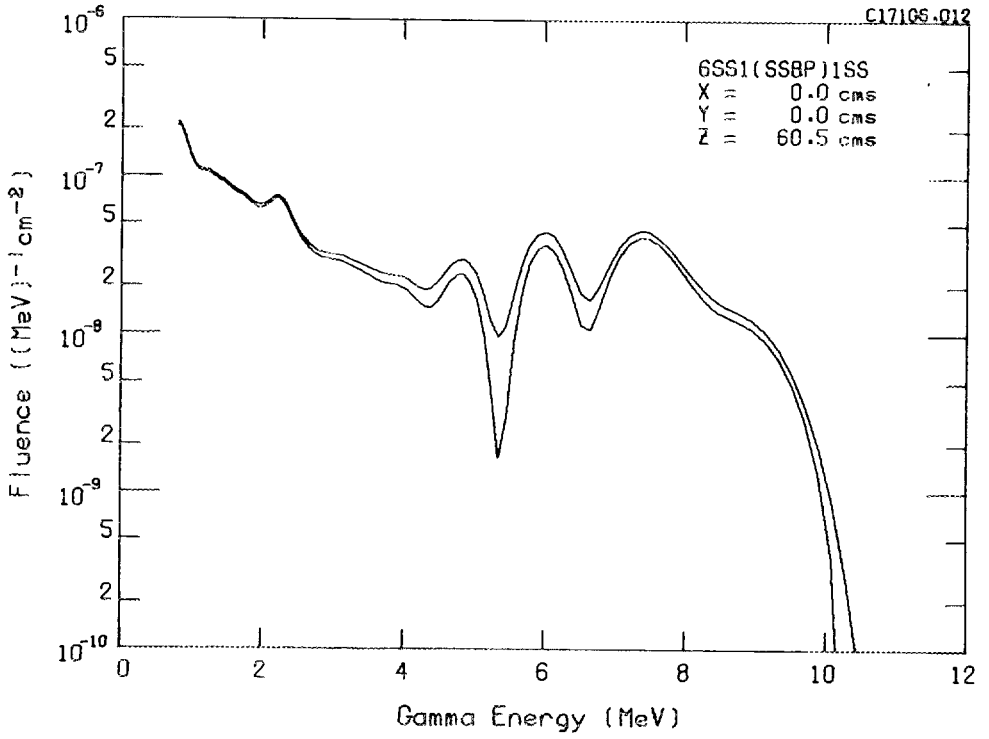

R168NS.270
6SS1(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

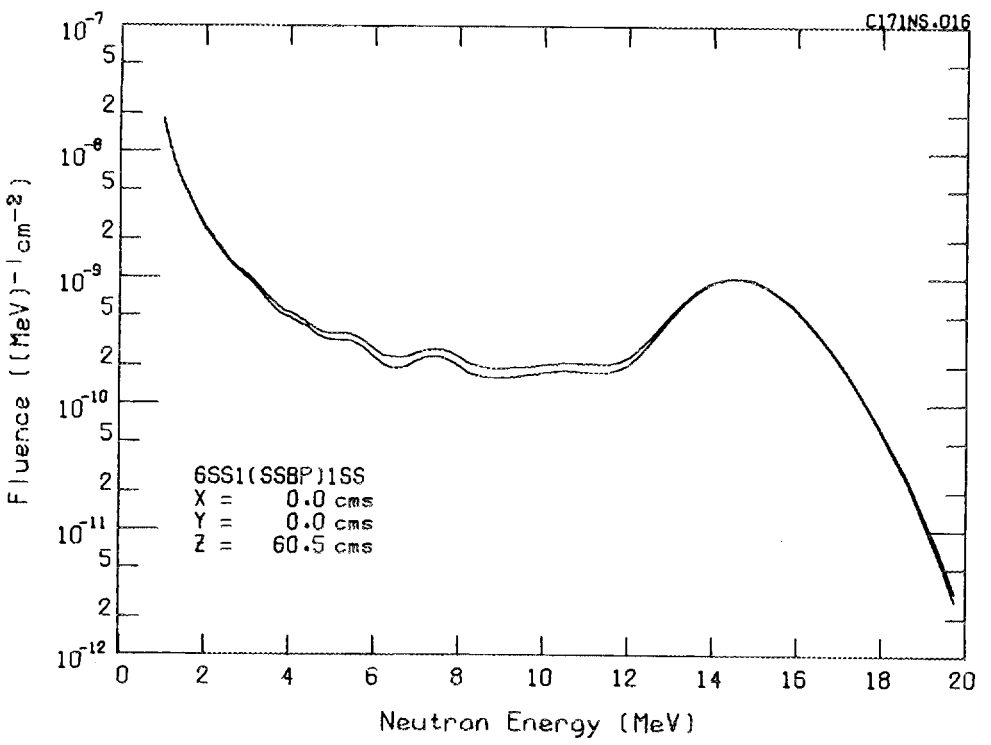

R16905.278
6SS1(SSBP)1SS
X = -46.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)


R169NS.280
6SS1(SSBP)1SS
X = -46.5 cms
Y = 0.0 cms
Z = 154.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)


R170G6.287
6SS1(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)-1cm-2)
Gamma Energy (MeV)


R170N6.289
6SS1(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 229.5 cms
Fluence ((MeV)-1cm-2)
Neutron Energy (MeV)


C171GS.012
6SS1(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 60.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Gamma Energy (MeV)


C171NS.016
6SS1(SSBP)1SS
X = 0.0 cms
Y = 0.0 cms
Z = 60.5 cms
Fluence ((MeV)$^{-1}$cm^{-2})
Neutron Energy (MeV)

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APPENDIX A

FORTRAN PROGRAM FOR CALCULATING $T(d,n)^4He$ KINEMATICS

A listing of the FORTRAN program TDNA.FOR is given on the following pages. This program, which takes into account the deuteron energy loss in the TiT target, was used to calculate the solid angle factors as discussed in Sect. IV of this report. In general, the program is self-explanatory and should present no difficulty in application. It should be noted that subroutines XINT and INTERP are required for integration and interpolation. Since these are utility subprograms, it is advisable for the user to supply his own. Locally, these subprograms made use of routines taken from ref. 21 which proved to be most reliable.

```
      PROGRAM TDNA
C
C     T(d,n)Alpha kinematics with dE/dx
C
C     ////////////////////////Definitions////////////////////////
C     /                                                          /
C     /       MD = Deuterium mass                                /
C     /       MT = Tritium mass                                  /
C     /       MN = Neutron mass                                  /
C     /       MA = Alpha particle mass                           /
C     /       ED = Deuteron energy in BLOCK DATA tables          /
C     /       SIG = Reaction cross section                       /
C     /       CDEDX = Energy loss in Titanium                    /
C     /       TDEDX = Energy loss in Tritium                     /
C     /       THL = Alpha detector angle in degrees              /
C     /       D = Alpha detector distance from target            /
C     /       AD = Diameter of detector aperture                 /
C     /       T = Target thickness                               /
C     /       XN = Tritium loading                               /
C     /       D1, D2, D3 = Molecular beam fractional components  /
C     /                                                          /
C     /       All units and definitions are consistant           /
C     /       those in T. R. Fewell (SC-RR-67-346).              /
C     /                                                          /
C     /       Subroutines XINT and INTERP are used to integrate  /
C     /       over energy and interpolate to expand the number of /
C     /       data points given in the BLOCK DATA.               /
C     /                                                          /
C     ////////////////////////////////////////////////////////////
C
      DIMENSION CDEDX(100),SIG(100),TDEDX(100),PL(100),PC(100),
     1                ED(100)
      DIMENSION S(100),R(100),DEDX(100),EMIN(3),DF(3)
      DOUBLE PRECISION XR
      REAL MD,MT,MN,MA
      COMMON /BLOK1/ NPTS,ED,SIG,CDEDX,TDEDX
      DATA MD/2.014102/
      DATA MT/3.016030/
      DATA MN/1.008665/
      DATA MA/4.002603/
      DATA Q/17.589/
   20 FORMAT (4F)
    1 TYPE 30
   30 FORMAT (1H///1H  'ANGLE,DISTANCE,APERTURE DIA. = '$)
      ACCEPT 20, THL, D, AD
      IF (THL.EQ.0.0 .AND. D.EQ.0.0 .AND. AD.EQ.0.0) STOP
      TH = THL*3.141593/180.0
      XK = 16.0*D**2/AD**2
      TYPE 40
   40 FORMAT (1H 'TI TARGET THICKNESS,TRITIUM LOADING = '$)
      ACCEPT 20, T, XN
      T = T*(48.0 + 3.0*XN)/48.0
      TYPE 50
   50 FORMAT (1H 'DEUTERON ENERGY = '$)
```

```
      ACCEPT 20, EB
      TYPE 60
   60 FORMAT (1H 'FRACTIONS OF D1,D2,D3 = '$)
      ACCEPT 20, DF(1),DF(2),DF(3)
      DO 100 I = 1, NPTS
      DEDX(I)=CDEDX(I)*48./(48.+3.*XN)+TDEDX(I)*3.*XN/(48.+3.*XN)
  100 S(I) = 1.0/DEDX(I)
      DO 200 I = 1, NPTS
      CALL XINT (ED,S,NPTS,2,0.0,ED(I),XR)
  200 R(I) = XR
      DO 300 I = 1, 3
      ER = EB/I
      CALL INTERP (ED,R,NPTS,3,ER,RMAX)
      DR = RMAX - T
      IF (DR.GT.0.0)   GO TO 350
      EMIN(I) = 0.0
      GO TO 300
  350 CALL INTERP (R,ED,NPTS,3,DR,EMIN(I))
  300 CONTINUE
      TYPE 70, (EMIN(I), I = 1,3)
   70 FORMAT (1H 'MINIMUM ENERGIES IN TARGET = '3F6.3)
      DO 500 I = 1, NPTS
      ET = ED(I) + Q
      AUX = (MD + MT)*(MN + MA)
      A = MD*MA*ED(I)/ET/AUX
      C = MT*MN/AUX*(1.0 + MD*Q/(MT*ET))
      EA = ET*A*(COS(TH) + SQRT(C/A - SIN(TH)**2))**2
      G = SQRT(A*C)*SQRT(C/A - SIN(TH)**2)/(EA/ET)
      PL(I) = SIG(I)/G/DEDX(I)
  500 PC(I) = SIG(I)/DEDX(I)
      SUMC = 0.0
      SUML = 0.0
      DO 1000 I = 1,3
      AUX = EB/I
      CALL XINT (ED,PL,NPTS,3,EMIN(I),AUX,XR)
      SUML = I*XR*DF(I) + SUML
      CALL XINT (ED,PC,NPTS,3,EMIN(I),AUX,XR)
      SUMC = I*XR*DF(I) + SUMC
 1000 CONTINUE
      RAT = SUMC/SUML
      TYPE 80, RAT
      XTOT = XK*RAT
      TYPE 90, XTOT
   80 FORMAT (1H 'AVERAGE SOLID ANGLE FACTOR = 'F8.5)
   90 FORMAT (1H 'NEUTRONS/ALPHA COUNT = '1PE12.5)
      GO TO 1
      END
```

```
      SUBROUTINE INTERP (X, Y, NPTS, NTERMS, XIN, YOUT)
      RETURN
      END

      SUBROUTINE XINT (E,F,NPTS,NTERMS,E1,E2,SUM)
      RETURN
      END

       BLOCK DATA
C
C      ////////////////////////////////////////////////////////////
C      /                                                          /
C      /       The values shown here are taken from Fewell,       /
C      /       TABLE B-1 with some points added.                  /
C      /                                                          /
C      ////////////////////////////////////////////////////////////
C
       COMMON /BLOK1/ NPTS,ED(100),SIG(100),CDEDX(100),TDEDX(100)
C
       DATA NPTS /28/
       DATA (ED(I),I=1,100) / 0.010,0.015,0.020,0.025,0.030,0.035,
       1       0.040,0.045,0.050,0.060,0.070,0.080,0.090,0.100,0.110,
       2       0.120,0.130,0.140,0.150,0.160,0.170,0.180,0.190,0.200,
       3       0.225,0.250,0.275,0.300,72*0.0 /
       DATA (SIG(I),I=1,100) /1.5E-4,1.2E-3,4.3E-3,0.012,
       1       0.022,0.036,0.057,0.081,0.110,0.173,0.243,0.310,0.360,
       2       0.395,0.400,0.395,0.375,0.350,0.320,0.290,0.265,0.250,
       3       0.230,0.210,0.168,0.139,0.119,0.102,72*0.0 /
       DATA (CDEDX(I),I=1,100) / 0.082,0.100,0.115,0.129,
       1       0.141,0.153,0.163,0.173,0.183,0.200,0.214,0.226,0.236,
       2       0.245,0.251,0.257,0.262,0.266,0.270,0.273,0.276,0.277,
       3       0.279,0.280,0.284,0.281,0.280,0.281,72*0.0 /
       DATA (TDEDX(I),I=1,100) / 0.640,0.720,0.784,0.838,
       1       0.894,0.936,0.980,1.016,1.044,1.114,1.172,1.216,1.250,
       2       1.270,1.284,1.284,1.278,1.268,1.256,1.240,1.224,1.204,
       3       1.186,1.166,1.110,1.048,0.994,0.943,72*0.0 /
C
       END
```

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