The $\text{Cu}(n,x\gamma)$ Reaction Cross Section for Incident Neutron Energies Between 0.2 and 20.0 MeV

G. T. Chapman

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Neutron Physics Division

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BETWEEN 0.2 AND 20.0 MeV

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FEBRUARY 1976

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ABSTRACT

Differential cross sections for the neutron-induced gamma-ray production from copper have been measured for incident neutron energies between 0.2 and 20.0 MeV. The Oak Ridge Linear Accelerator (ORELA) was used to provide the neutrons and a NaI spectrometer to detect the gamma rays at 125°. The data presented are the doubly differential cross section, $d^2\sigma/d\Omega dE$, for gamma-ray energies between 0.3 and 10.6 MeV for coarse intervals in incident neutron energy. The integrated yield of gamma rays of energies greater than 300 keV with higher resolution in the neutron energy is also presented. The experimental results are compared with previous measurements made at ORELA and with the Evaluated Neutron Data File (ENDF/B-IV, MAT 1295).

INTRODUCTION

Early in a continuing program¹⁻¹⁸ for determining numerical values of gamma-ray production cross sections for neutron-induced reactions, differential cross sections for gamma rays produced in copper⁴ were measured at ORELA. Recent new measurements have been completed for copper extending the gamma-ray and neutron energy ranges to lower values than the original data. These new results are presented in detail in this report in both graphical and tabular form. A comparison between the new and old data is presented as well as a comparison of the new data and the current evaluated neutron data file (ENDF/B-IV, MAT 1295).¹⁹

Two methods of data analysis were employed. The first gives the detailed gamma-ray spectra for a series of relatively coarse intervals in incident neutron energy while the second method uses integral quantities to illustrate the detailed behavior of the cross sections as a function of the incident neutron energy. The second approach is used to facilitate comparison of the experimental and evaluated data in the region of the threshold for the (n,2n) reaction.

EXPERIMENTAL PROCEDURE

Details of the experimental procedure are given elsewhere²⁰ and only a brief description will be given here. Neutrons were produced by photo-nuclear processes due to bremsstrahlung from the impact on a tantalum target of electrons from the Oak Ridge Electron Linear Accelerator (ORELA). The present experiment employed an electron beam energy of 135 MeV with a repetition rate of 800 pulses per second and a pulse width of 30 ns. The total electron beam power was 48 kW.

Neutrons produced at the linac target traversed a 47.35 m flight path and were incident on a thin slab of natural copper oriented 45° with respect to the incident beam. The slab was 30.8 cm wide by 30.7 cm high with a thickness of 0.0543 atoms/barn. Gamma rays originating in the sample were detected by a heavily shielded 12.5 cm by 12.5 cm NaI detector at 125° with respect to the incident neutron beam. For each event in the detector data were recorded in a two-parameter array containing gamma-ray pulse height as a function of time-of-flight for the incident neutron.

The neutron flux at the sample position was determined using calibrated thick organic scintillators. During the course of the gamma-ray measurements the flux was monitored using a small plastic scintillator in the edge of the neutron beam 30 m from the source.

DATA REDUCTION

Two methods of data reduction were employed. In the first, the pulse height spectra were integrated over intervals of neutron time-of-flight to form pulse height spectra for specific incident neutron energy ranges. These intervals ranged in width from 0.5 MeV at energies below 5 MeV to 3 MeV in the range 14 to 20 MeV. The spectra so formed were then unfolded using the code FERD and measured response function of the NaI detector. The results were the gamma-ray spectra defined by 146 points covering the gamma-ray energy range from 0.3 to 10.6 MeV. After correction for self-absorption and neutron self-shielding in the sample, these spectra were normalized to cross sections using the measured

neutron flux and sample thickness. A further correction was then applied to the unfolded data. The contribution to the observed cross section at $E_\gamma = 0.511$ MeV due to pair production in the sample was analytically removed. This was done by first calculating the pair production probability as a function of gamma-ray energy using a Monte Carlo technique. Implicit in the calculation are the assumptions of uniform gamma-ray production probability within the sample volume intercepted by the beam and the isotropy of emitted gamma rays. The total 0.511-MeV cross section within each neutron energy group was then calculated from the product of the observed gamma-ray cross section and the pair production probability. This cross section was then "smeared" with the detector resolution and subtracted from the original data. The magnitude of the correction ranged from on the order of 0.2 mb/sr for $E_n = 1.0$ -1.5 MeV to 6 mb/sr for $E_n = 17$ -20 MeV.

The data described above provide detailed information about the secondary gamma-ray spectra, but because the unfolding technique requires good statistical accuracy the data must be binned over large neutron energy intervals. Therefore a second type of data reduction, pulse height weighting,^{21,22} was also used. This technique provided only integral information about the secondary gamma spectra (e.g., total yield and average photon energy), but because the demands on statistical accuracy are less it allowed better resolution in the incident neutron energy. In this work the pulse height weighting analysis was applied to spectra formed by integration over time-of-flight intervals corresponding to $\Delta E_n = 0.1$ MeV at $E_n = 1$ MeV increasing to $\Delta E_n = 1.0$ MeV at $E_n = 20$ MeV.

PRESENTATION AND DISCUSSION OF DATA

A comparison of the gamma-ray spectra from Dickens et al.⁴ and the present results is shown in Figures 1 through 17. For clarity, the errors on the current data are not shown in these figures, but may be seen on later figures in this report. The integrated cross section and average gamma-ray energy for $E_\gamma \geq 0.75$ MeV as a function of incident neutron energy are shown in Figures 18 and 19.

Reference to Figures 1 to 17 indicates that the spectral shapes of the present results are in very good agreement with the earlier data of Dickens et al.⁴ However, Figure 18 shows a systematic discrepancy of about 15% in absolute normalization between the two measurements. Overall uncertainties of 10% are claimed for both the present results and the earlier work, but since many of the sources of this systematic uncertainty are common to both experiments overall agreement should be better than 10%. A recent remeasurement¹⁸ of gamma-ray production cross sections for iron has indicated some difficulty with the earlier measurements. Because of the refinement in techniques resulting from several years of experience in these measurements, the present results are believed to be more accurate than those made earlier. At any rate the difference is only slightly outside the estimated uncertainty and is not large enough to be of serious concern.

Figure 20 shows a three-dimensional representation of the new data giving cross section versus gamma-ray and neutron energy. A comparison of the current data with the latest evaluated neutron data file (ENDF/B-IV, MAT 1295) is shown in Figures 21 through 39. The ENDF file contains

data binned in 0.5-MeV intervals above $E_Y = 2$ MeV, and contains some discrete lines below that energy. For purposes of this comparison, the lines were "smeared" with the resolution function of the gamma-ray spectrometer used in this work and the values above 2 MeV were re-binned to give the appearance of the near continuum observed in the experimental data. In both cases, total cross section was conserved. Figures 40 and 41 show comparisons of the integrated cross sections and average gamma-ray energy for these two data sets as derived from the pulse-height weighting technique.

The evaluation¹⁹ is based in large part on the earlier measurements of Dickens et al.⁴ and thus systematic discrepancies appear between the evaluated data and the present results which mirror the discrepancies in the two measurements as discussed above.

The new data shown in the graphs are given in the tables contained in the last section of the report. The values shown in the graphs and presented in the tables do not include an uncertainty of 10% in overall normalization due mainly to the determination of the incident neutron flux.

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FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

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FIGURE 9

FIGURE 10

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FIGURE 34

FIGURE 35

FIGURE 36

FIGURE 37

FIGURE 38

FIGURE 39

FIGURE 40

FIGURE 41

TOTAL SECONDARY GAMMA RAY YIELD AND AVERAGE SECONDARY GAMMA RAY ENERGY FROM CU AS A FUNCTION OF THE INCIDENT NEUTRON ENERGY. THESE DATA RESULT FROM A PULSE HEIGHT WEIGHTING ANALYSIS FOR PULSE HEIGHTS GREATER THAN 0.300 MEV. UNCERTAINTIES ARE GIVEN IN PARENTHESES IN THE SAME UNITS AS THE DATA. THE UNCERTAINTIES IN TOTAL YIELD DO NOT INCLUDE A 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION. THE ANGLE IS 125 DEGREES.

INC. NT. ENERGY (MEV)	ENERGY SPREAD (MEV)	SECONDARY PHOTON YIELD (B/SR)	AVERAGE ENERGY (MEV)	INC. NT. ENERGY (MEV)	ENERGY SPREAD (MEV)	SECONDARY PHOTON YIELD (B/SR)	AVERAGE ENERGY (MEV)
0.150	0.101	0.138E-02 (0.154E-03)	0.243E 01 (0.317E 00)	5.263	0.509	0.383E 00 (0.270E-02)	0.138E 01 (0.124E-01)
0.251	0.100	0.501E-02 (0.287E-03)	0.252E 01 (0.164E 00)	5.744	0.452	0.406E 00 (0.297E-02)	0.143E 01 (0.134E-01)
0.350	0.099	0.399E-02 (0.158E-03)	0.247E 01 (0.115E 00)	6.225	0.510	0.418E 00 (0.311E-02)	0.148E 01 (0.141E-01)
0.450	0.101	0.376E-02 (0.134E-03)	0.238E 01 (0.102E 00)	6.725	0.491	0.437E 00 (0.340E-02)	0.153E 01 (0.151E-01)
0.550	0.099	0.377E-02 (0.107E-03)	0.249E 01 (0.842E-01)	7.246	0.550	0.460E 00 (0.364E-02)	0.159E 01 (0.159E-01)
0.648	0.097	0.430E-02 (0.102E-03)	0.219E 01 (0.637E-01)	7.775	0.509	0.464E 00 (0.390E-02)	0.165E 01 (0.175E-01)
0.751	0.109	0.909E-02 (0.111E-03)	0.134E 01 (0.225E-01)	8.253	0.446	0.486E 00 (0.429E-02)	0.168E 01 (0.189E-01)
0.850	0.088	0.141E-01 (0.146E-03)	0.108E 01 (0.156E-01)	8.750	0.548	0.509E 00 (0.450E-02)	0.172E 01 (0.193E-01)
0.945	0.103	0.156E-01 (0.152E-03)	0.105E 01 (0.138E-01)	9.256	0.464	0.489E 00 (0.473E-02)	0.176E 01 (0.216E-01)
1.124	0.254	0.374E-01 (0.210E-03)	0.926E 00 (0.660E-02)	9.738	0.501	0.508E 00 (0.517E-02)	0.179E 01 (0.228E-01)
1.379	0.256	0.579E-01 (0.293E-03)	0.913E 00 (0.576E-02)	10.260	0.542	0.510E 00 (0.559E-02)	0.183E 01 (0.251E-01)
1.634	0.253	0.833E-01 (0.416E-03)	0.948E 00 (0.589E-02)	10.781	0.500	0.497E 00 (0.579E-02)	0.182E 01 (0.269E-01)
1.881	0.241	0.111E 00 (0.564E-03)	0.976E 00 (0.623E-02)	11.253	0.445	0.502E 00 (0.649E-02)	0.182E 01 (0.299E-01)
2.132	0.262	0.132E 00 (0.695E-03)	0.100E 01 (0.661E-02)	11.761	0.571	0.485E 00 (0.668E-02)	0.184E 01 (0.314E-01)
2.383	0.241	0.162E 00 (0.861E-03)	0.101E 01 (0.686E-02)	12.249	0.405	0.448E 00 (0.733E-02)	0.177E 01 (0.366E-01)
2.623	0.238	0.179E 00 (0.101E-02)	0.104E 01 (0.745E-02)	12.719	0.535	0.436E 00 (0.751E-02)	0.172E 01 (0.369E-01)
2.879	0.274	0.204E 00 (0.124E-02)	0.107E 01 (0.813E-02)	13.272	0.571	0.419E 00 (0.752E-02)	0.165E 01 (0.373E-01)
3.133	0.234	0.232E 00 (0.147E-02)	0.110E 01 (0.891E-02)	13.799	0.484	0.404E 00 (0.886E-02)	0.159E 01 (0.438E-01)
3.381	0.262	0.252E 00 (0.164E-02)	0.113E 01 (0.935E-02)	14.297	0.511	0.398E 00 (0.934E-02)	0.153E 01 (0.455E-01)
3.625	0.226	0.273E 00 (0.195E-02)	0.116E 01 (0.106E-01)	14.753	0.402	0.378E 00 (0.103E-01)	0.149E 01 (0.516E-01)
3.863	0.249	0.297E 00 (0.206E-02)	0.118E 01 (0.106E-01)	15.457	1.006	0.380E 00 (0.843E-02)	0.139E 01 (0.393E-01)
4.125	0.275	0.319E 00 (0.223E-02)	0.123E 01 (0.109E-01)	16.516	1.112	0.361E 00 (0.885E-02)	0.131E 01 (0.403E-01)
4.392	0.259	0.332E 00 (0.251E-02)	0.126E 01 (0.121E-01)	17.505	0.867	0.372E 00 (0.106E-01)	0.127E 01 (0.470E-01)
4.638	0.234	0.350E 00 (0.270E-02)	0.129E 01 (0.127E-01)	18.505	1.132	0.401E 00 (0.115E-01)	0.134E 01 (0.472E-01)
4.882	0.253	0.362E 00 (0.277E-02)	0.132E 01 (0.130E-01)	19.585	1.028	0.443E 00 (0.128E-01)	0.137E 01 (0.505E-01)

TOTAL SECONDARY GAMMA RAY YIELD AND AVERAGE SECONDARY GAMMA RAY ENERGY FROM CU AS A FUNCTION OF THE INCIDENT NEUTRON ENERGY. THESE DATA RESULT FROM A PULSE HEIGHT WEIGHTING ANALYSIS FOR PULSE HEIGHTS GREATER THAN 0.750 MEV. UNCERTAINTIES ARE GIVEN IN PARENTHESES IN THE SAME UNITS AS THE DATA. THE UNCERTAINTIES IN TOTAL YIELD DO NOT INCLUDE A 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION. THE ANGLE IS 125 DEGREES.

INC. NT. ENERGY (MEV)	ENERGY SPREAD (MEV)	SECONDARY PHOTON YIELD (B/SR)	AVERAGE ENERGY (MEV)	INC. NT. ENERGY (MEV)	ENERGY SPREAD (MEV)	SECONDARY PHOTON YIELD (B/SR)	AVERAGE ENERGY (MEV)
0.150	0.051	0.865E-03 (0.932E-04)	0.359E 01(0.467E 00)	5.263	0.255	0.285E 00(0.211E-02)	0.168E 01(0.166E-01)
0.251	0.050	0.302E-02(0.172E-03)	0.388E 01(0.256E 00)	5.744	0.226	0.305E 00(0.229E-02)	0.175E 01(0.176E-01)
0.350	0.050	0.268E-02(0.947E-04)	0.345E 01(0.152E 00)	6.225	0.255	0.315E 00(0.247E-02)	0.181E 01(0.189E-01)
0.450	0.050	0.238E-02(0.843E-04)	0.348E 01(0.153E 00)	6.725	0.246	0.329E 00(0.270E-02)	0.188E 01(0.202E-01)
0.550	0.049	0.241E-02(0.664E-04)	0.364E 01(0.124E 00)	7.246	0.275	0.349E 00(0.296E-02)	0.195E 01(0.215E-01)
0.648	0.049	0.247E-02(0.593E-04)	0.345E 01(0.105E 00)	7.775	0.255	0.351E 00(0.306E-02)	0.202E 01(0.231E-01)
0.751	0.055	0.253E-02(0.507E-04)	0.327E 01(0.845E-01)	8.253	0.223	0.369E 00(0.349E-02)	0.206E 01(0.254E-01)
0.850	0.044	0.378E-02(0.683E-04)	0.239E 01(0.578E-01)	8.750	0.274	0.387E 00(0.361E-02)	0.212E 01(0.257E-01)
0.945	0.051	0.460E-02(0.682E-04)	0.211E 01(0.430E-01)	9.256	0.232	0.373E 00(0.377E-02)	0.217E 01(0.285E-01)
1.124	0.127	0.192E-01(0.111E-03)	0.125E 01(0.103E-01)	9.738	0.250	0.388E 00(0.400E-02)	0.220E 01(0.294E-01)
1.379	0.128	0.352E-01(0.174E-03)	0.114E 01(0.790E-02)	10.260	0.271	0.391E 00(0.435E-02)	0.224E 01(0.323E-01)
1.634	0.127	0.542E-01(0.269E-03)	0.117E 01(0.802E-02)	10.781	0.250	0.375E 00(0.465E-02)	0.226E 01(0.361E-01)
1.881	0.120	0.736E-01(0.389E-03)	0.121E 01(0.876E-02)	11.253	0.222	0.379E 00(0.498E-02)	0.227E 01(0.390E-01)
2.132	0.131	0.900E-01(0.493E-03)	0.123E 01(0.920E-02)	11.761	0.285	0.372E 00(0.506E-02)	0.226E 01(0.397E-01)
2.383	0.120	0.112E 00(0.642E-03)	0.124E 01(0.968E-02)	12.249	0.202	0.334E 00(0.555E-02)	0.221E 01(0.481E-01)
2.623	0.119	0.126E 00(0.764E-03)	0.126E 01(0.104E-01)	12.719	0.268	0.323E 00(0.532E-02)	0.216E 01(0.469E-01)
2.879	0.137	0.145E 00(0.932E-03)	0.130E 01(0.113E-01)	13.272	0.285	0.303E 00(0.544E-02)	0.211E 01(0.498E-01)
3.133	0.117	0.165E 00(0.113E-02)	0.134E 01(0.124E-01)	13.799	0.242	0.275E 00(0.624E-02)	0.212E 01(0.628E-01)
3.381	0.131	0.180E 00(0.127E-02)	0.138E 01(0.132E-01)	14.297	0.255	0.274E 00(0.663E-02)	0.202E 01(0.640E-01)
3.625	0.113	0.198E 00(0.150E-02)	0.141E 01(0.145E-01)	14.753	0.201	0.251E 00(0.675E-02)	0.201E 01(0.729E-01)
3.863	0.125	0.212E 00(0.163E-02)	0.145E 01(0.151E-01)	15.457	0.503	0.250E 00(0.582E-02)	0.187E 01(0.579E-01)
4.125	0.137	0.234E 00(0.177E-02)	0.150E 01(0.151E-01)	16.516	0.556	0.229E 00(0.564E-02)	0.180E 01(0.589E-01)
4.392	0.129	0.246E 00(0.192E-02)	0.153E 01(0.162E-01)	17.505	0.434	0.229E 00(0.708E-02)	0.178E 01(0.741E-01)
4.638	0.117	0.255E 00(0.208E-02)	0.159E 01(0.174E-01)	18.505	0.566	0.259E 00(0.712E-02)	0.183E 01(0.662E-01)
4.882	0.126	0.267E 00(0.216E-02)	0.162E 01(0.178E-01)	19.585	0.514	0.286E 00(0.913E-02)	0.187E 01(0.782E-01)

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALISATION.

INCIDENT NEUTRON ENERGY = 0.20 TO 0.60 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	8.784E-03	2.771E-03	2.810E 00	5.360E-04	2.405E-04
3.175E-01	6.036E-03	2.669E-03	2.870E 00	4.081E-04	2.478E-04
3.325E-01	4.129E-03	2.539E-03	2.930E 00	2.591E-04	2.439E-04
3.475E-01	3.905E-03	2.346E-03	2.990E 00	2.798E-04	2.449E-04
3.625E-01	4.298E-03	2.144E-03	3.050E 00	4.248E-04	2.358E-04
3.775E-01	4.039E-03	2.008E-03	3.110E 00	4.711E-04	2.340E-04
3.925E-01	3.062E-03	1.896E-03	3.180E 00	2.920E-04	2.361E-04
4.100E-01	2.104E-03	1.845E-03	3.260E 00	1.428E-04	2.346E-04
4.300E-01	1.831E-03	1.819E-03	3.340E 00	3.591E-04	2.221E-04
4.500E-01	2.651E-03	1.796E-03	3.420E 00	5.742E-04	2.153E-04
4.700E-01	4.204E-03	1.850E-03	3.500E 00	4.587E-04	2.174E-04
4.900E-01	4.723E-03	1.878E-03	3.580E 00	3.624E-04	2.217E-04
5.100E-01	3.586E-03	1.911E-03	3.660E 00	4.684E-04	2.130E-04
5.300E-01	2.493E-03	1.689E-03	3.740E 00	4.285E-04	2.058E-04
5.500E-01	2.302E-03	1.430E-03	3.820E 00	2.344E-04	2.139E-04
5.700E-01	2.387E-03	1.298E-03	3.900E 00	2.020E-04	2.129E-04
5.900E-01	2.547E-03	1.212E-03	3.980E 00	2.857E-04	2.062E-04
6.100E-01	2.542E-03	1.118E-03	4.060E 00	3.079E-04	2.086E-04
6.300E-01	2.164E-03	1.166E-03	4.140E 00	3.495E-04	2.057E-04
6.500E-01	1.660E-03	1.106E-03	4.220E 00	4.317E-04	2.030E-04
6.700E-01	1.328E-03	9.748E-04	4.300E 00	4.143E-04	2.121E-04
6.900E-01	9.515E-04	9.040E-04	4.380E 00	2.901E-04	2.032E-04
7.100E-01	5.209E-04	8.556E-04	4.460E 00	1.826E-04	2.011E-04
7.300E-01	2.904E-04	8.311E-04	4.540E 00	1.782E-04	1.943E-04
7.500E-01	3.253E-04	7.611E-04	4.630E 00	2.395E-04	1.914E-04
7.700E-01	3.838E-04	7.167E-04	4.730E 00	2.663E-04	2.071E-04
7.900E-01	3.562E-04	6.981E-04	4.830E 00	2.701E-04	2.000E-04
8.100E-01	3.288E-04	6.875E-04	4.930E 00	3.051E-04	1.979E-04
8.300E-01	3.613E-04	6.560E-04	5.030E 00	2.885E-04	1.959E-04
8.500E-01	4.479E-04	6.388E-04	5.130E 00	1.440E-04	1.919E-04
8.700E-01	5.954E-04	6.114E-04	5.230E 00	5.796E-05	2.005E-04
8.900E-01	7.972E-04	6.138E-04	5.330E 00	1.103E-04	2.040E-04
9.100E-01	1.034E-03	6.081E-04	5.430E 00	1.827E-04	1.975E-04
9.300E-01	1.204E-03	6.071E-04	5.530E 00	2.051E-04	1.984E-04
9.500E-01	1.215E-03	6.231E-04	5.630E 00	3.361E-04	1.864E-04
9.700E-01	1.210E-03	6.233E-04	5.730E 00	3.565E-04	1.791E-04
1.000E 00	1.099E-03	6.075E-04	5.830E 00	2.494E-04	1.825E-04
1.040E 00	1.030E-03	5.959E-04	5.930E 00	1.346E-04	1.721E-04
1.080E 00	1.109E-03	5.551E-04	6.030E 00	1.287E-04	1.637E-04
1.120E 00	1.170E-03	5.555E-04	6.130E 00	1.827E-04	1.577E-04
1.160E 00	1.013E-03	5.275E-04	6.230E 00	2.051E-04	1.488E-04
1.200E 00	7.742E-04	5.257E-04	6.330E 00	2.094E-04	1.430E-04
1.240E 00	6.704E-04	4.985E-04	6.440E 00	2.260E-04	1.304E-04
1.280E 00	7.568E-04	5.431E-04	6.560E 00	2.406E-04	1.158E-04
1.320E 00	7.293E-04	5.791E-04	6.680E 00	2.713E-04	1.095E-04
1.360E 00	4.787E-04	5.808E-04	6.800E 00	3.117E-04	9.673E-05
1.400E 00	3.758E-04	5.885E-04	6.920E 00	3.165E-04	8.627E-05
1.440E 00	5.956E-04	5.373E-04	7.040E 00	2.789E-04	7.229E-05
1.480E 00	7.753E-04	5.033E-04	7.160E 00	2.232E-04	6.033E-05
1.520E 00	7.449E-04	4.827E-04	7.280E 00	1.679E-04	5.384E-05
1.560E 00	6.299E-04	4.707E-04	7.400E 00	1.648E-04	5.140E-05
1.600E 00	5.583E-04	4.638E-04	7.520E 00	2.124E-04	4.725E-05
1.640E 00	5.229E-04	4.640E-04	7.640E 00	2.476E-04	4.260E-05
1.680E 00	5.608E-04	4.576E-04	7.760E 00	2.559E-04	3.811E-05
1.720E 00	5.043E-04	4.538E-04	7.880E 00	2.515E-04	3.383E-05
1.760E 00	5.178E-04	4.533E-04	8.000E 00	2.161E-04	2.923E-05
1.800E 00	4.613E-04	4.252E-04	8.120E 00	1.541E-04	2.289E-05
1.850E 00	5.043E-04	3.909E-04	8.310E 00	9.717E-05	1.930E-05
1.910E 00	5.236E-04	3.700E-04	8.450E 00	5.690E-05	1.533E-05
1.970E 00	3.079E-04	3.690E-04	8.590E 00	2.716E-05	1.064E-05
2.030E 00	3.293E-04	3.647E-04	8.730E 00	8.797E-06	8.775E-06
2.090E 00	5.033E-04	3.551E-04	8.870E 00	1.711E-06	6.745E-06
2.150E 00	6.062E-04	3.692E-04	9.010E 00	-2.330E-07	5.201E-06
2.210E 00	5.701E-04	3.695E-04	9.150E 00	-1.350E-07	5.232E-06
2.270E 00	5.095E-04	3.416E-04	9.300E 00	1.239E-06	4.085E-06
2.330E 00	4.871E-04	3.019E-04	9.460E 00	1.799E-06	3.868E-06
2.390E 00	3.938E-04	2.808E-04	9.620E 00	2.345E-06	3.530E-06
2.450E 00	3.347E-04	2.775E-04	9.780E 00	1.745E-06	3.547E-06
2.510E 00	3.654E-04	2.755E-04	9.940E 00	1.196E-06	3.246E-06
2.570E 00	4.320E-04	2.696E-04	1.010E 01	4.727E-07	2.718E-06
2.630E 00	5.045E-04	2.601E-04	1.026E 01	-1.687E-07	2.547E-06
2.690E 00	5.208E-04	2.537E-04	1.042E 01	-1.305E-06	3.083E-06
2.750E 00	5.316E-04	2.499E-04	1.058E 01	-1.248E-06	2.819E-06

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	4.666E-04	2.316E-04
4.000E-01 - 5.000E-01	3.837E-04	1.796E-04
5.000E-01 - 6.000E-01	4.136E-04	1.382E-04
6.000E-01 - 7.000E-01	1.720E-04	1.056E-04
7.000E-01 - 8.000E-01	3.789E-05	7.733E-05
8.000E-01 - 1.000E 00	1.668E-04	1.256E-04
1.000E 00 - 1.200E 00	2.111E-04	1.120E-04
1.200E 00 - 1.400E 00	1.284E-04	1.102E-04
1.400E 00 - 1.600E 00	1.298E-04	1.006E-04
1.600E 00 - 1.800E 00	1.079E-04	9.106E-05
1.800E 00 - 2.000E 00	9.118E-05	7.618E-05
2.000E 00 - 2.500E 00	2.317E-04	1.650E-04
2.500E 00 - 3.000E 00	2.172E-04	1.267E-04
3.000E 00 - 3.500E 00	1.906E-04	1.143E-04
3.500E 00 - 4.000E 00	1.703E-04	1.065E-04
4.000E 00 - 4.500E 00	1.641E-04	1.028E-04
4.500E 00 - 5.000E 00	1.282E-04	9.909E-05
5.000E 00 - 6.000E 00	2.075E-04	1.900E-04
6.000E 00 - 7.000E 00	2.002E-04	1.242E-04
7.000E 00 - 8.000E 00	2.245E-04	4.834E-05
8.000E 00 - 9.000E 00	6.936E-05	1.490E-05
9.000E 00 - 1.000E 01	1.254E-06	3.942E-06

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 0.60 TO 1.00 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (D/SE/MEV)	ERROR (D/SE/MEV)	PHOTON ENERGY (MEV)	I-SECTION (D/SE/MEV)	ERROR (D/SE/MEV)
3.025E-01	1.374E-02	1.961E-03	2.810E-00	2.902E-04	1.327E-04
3.175E-01	1.236E-02	1.803E-03	2.870E-00	2.712E-04	1.379E-04
3.325E-01	1.059E-02	1.845E-03	2.930E-00	2.982E-04	1.349E-04
3.475E-01	8.180E-03	1.835E-03	2.990E-00	3.654E-04	1.291E-04
3.625E-01	6.911E-03	1.750E-03	3.050E-00	4.385E-04	1.280E-04
3.775E-01	7.390E-03	1.670E-03	3.110E-00	4.739E-04	1.249E-04
3.925E-01	7.544E-03	1.754E-03	3.160E-00	4.459E-04	1.162E-04
4.075E-01	5.920E-03	1.735E-03	3.260E-00	3.789E-04	1.203E-04
4.200E-01	5.183E-03	1.868E-03	3.340E-00	3.590E-04	1.171E-04
4.500E-01	6.655E-03	1.787E-03	3.420E-00	3.375E-04	1.152E-04
4.700E-01	6.554E-03	1.720E-03	3.500E-00	2.954E-04	1.173E-04
4.900E-01	5.439E-03	1.636E-03	3.580E-00	3.585E-04	1.132E-04
5.100E-01	5.535E-03	1.548E-03	3.660E-00	4.040E-04	1.086E-04
5.300E-01	5.629E-03	1.248E-03	3.740E-00	3.216E-04	1.129E-04
5.500E-01	4.859E-03	9.251E-04	3.820E-00	2.724E-04	1.116E-04
5.700E-01	4.374E-03	8.647E-04	3.900E-00	3.308E-04	1.052E-04
5.900E-01	6.048E-03	8.894E-04	3.980E-00	3.376E-04	1.075E-04
6.100E-01	1.418E-02	9.530E-04	4.060E-00	2.278E-04	1.073E-04
6.300E-01	3.230E-02	1.096E-03	4.140E-00	1.859E-04	1.106E-04
6.500E-01	5.278E-02	9.618E-04	4.220E-00	1.979E-04	1.112E-04
6.700E-01	6.033E-02	9.202E-04	4.300E-00	1.395E-04	1.131E-04
6.900E-01	4.997E-02	7.830E-04	4.380E-00	1.451E-04	1.059E-04
7.100E-01	3.232E-02	6.602E-04	4.460E-00	2.583E-04	1.084E-04
7.300E-01	1.988E-02	5.952E-04	4.540E-00	2.862E-04	1.022E-04
7.500E-01	1.497E-02	5.061E-04	4.620E-00	2.306E-04	1.008E-04
7.700E-01	1.267E-02	4.512E-04	4.700E-00	2.541E-04	1.033E-04
7.900E-01	9.537E-03	4.005E-04	4.800E-00	2.390E-04	1.042E-04
8.100E-01	5.941E-03	3.744E-04	4.900E-00	1.943E-04	9.439E-05
8.300E-01	3.109E-03	3.501E-04	5.000E-00	2.235E-04	9.445E-05
8.500E-01	1.499E-03	3.002E-04	5.100E-00	1.945E-04	9.709E-05
8.700E-01	9.180E-04	3.267E-04	5.200E-00	1.574E-04	1.016E-04
8.900E-01	1.022E-03	3.255E-04	5.300E-00	1.862E-04	1.056E-04
9.100E-01	1.413E-03	3.294E-04	5.400E-00	1.869E-04	1.018E-04
9.300E-01	1.845E-03	3.319E-04	5.500E-00	1.267E-04	1.006E-04
9.500E-01	2.148E-03	3.563E-04	5.600E-00	1.294E-04	9.439E-05
9.700E-01	2.207E-03	3.422E-04	5.700E-00	1.627E-04	7.659E-05
1.000E-00	1.833E-03	3.322E-04	5.800E-00	1.944E-04	9.429E-05
1.040E-00	1.081E-03	3.020E-04	5.900E-00	1.794E-04	9.300E-05
1.080E-00	6.635E-04	2.845E-04	6.000E-00	2.141E-04	9.133E-05
1.120E-00	7.241E-04	2.847E-04	6.100E-00	2.559E-04	8.473E-05
1.160E-00	9.986E-04	2.784E-04	6.200E-00	2.341E-04	8.299E-05
1.200E-00	9.997E-04	2.567E-04	6.300E-00	1.763E-04	8.232E-05
1.240E-00	8.489E-04	2.604E-04	6.400E-00	1.477E-04	7.659E-05
1.280E-00	7.561E-04	2.237E-04	6.500E-00	1.524E-04	7.079E-05
1.320E-00	7.040E-04	2.824E-04	6.600E-00	1.601E-04	6.677E-05
1.360E-00	6.981E-04	2.799E-04	6.800E-00	1.804E-04	6.239E-05
1.400E-00	6.412E-04	2.749E-04	6.920E-00	2.043E-04	5.733E-05
1.440E-00	4.900E-04	2.549E-04	7.040E-00	1.987E-04	5.004E-05
1.480E-00	4.600E-04	2.527E-04	7.160E-00	1.777E-04	4.643E-05
1.520E-00	6.241E-04	2.393E-04	7.280E-00	1.800E-04	4.258E-05
1.560E-00	6.710E-04	2.289E-04	7.400E-00	1.949E-04	4.099E-05
1.600E-00	5.578E-04	2.078E-04	7.520E-00	1.852E-04	3.771E-05
1.640E-00	5.030E-04	2.250E-04	7.640E-00	1.628E-04	3.553E-05
1.680E-00	4.913E-04	2.257E-04	7.760E-00	1.470E-04	3.239E-05
1.720E-00	3.923E-04	2.299E-04	7.880E-00	1.345E-04	2.834E-05
1.760E-00	3.304E-04	2.251E-04	8.000E-00	1.281E-04	2.609E-05
1.800E-00	4.354E-04	2.114E-04	8.170E-00	1.285E-04	2.323E-05
1.850E-00	5.439E-04	1.952E-04	8.310E-00	1.188E-04	1.893E-05
1.910E-00	3.866E-04	1.935E-04	8.450E-00	9.928E-05	1.514E-05
1.970E-00	3.361E-04	1.856E-04	8.590E-00	7.751E-05	1.245E-05
2.030E-00	4.682E-04	1.887E-04	8.730E-00	5.223E-05	9.620E-06
2.090E-00	3.969E-04	1.859E-04	8.870E-00	2.793E-05	6.969E-06
2.150E-00	2.861E-04	1.912E-04	9.010E-00	1.075E-05	5.387E-06
2.210E-00	2.983E-04	1.847E-04	9.150E-00	3.071E-06	4.294E-06
2.270E-00	3.329E-04	1.728E-04	9.300E-00	2.409E-07	2.848E-06
2.330E-00	3.370E-04	1.506E-04	9.440E-00	2.648E-07	2.351E-06
2.390E-00	3.861E-04	1.427E-04	9.620E-00	5.747E-07	1.512E-06
2.450E-00	4.196E-04	1.366E-04	9.780E-00	9.042E-07	1.389E-06
2.510E-00	4.725E-04	1.342E-04	9.940E-00	7.433E-07	1.188E-06
2.570E-00	4.644E-04	1.314E-04	1.010E-01	5.357E-07	6.647E-07
2.630E-00	3.770E-04	1.332E-04	1.026E-01	2.128E-07	4.259E-07
2.690E-00	3.075E-04	1.323E-04	1.042E-01	-1.283E-07	7.210E-07
2.750E-00	2.958E-04	1.323E-04	1.058E-01	-1.059E-07	6.573E-07

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (D/SE)	ERROR (D/SE)
3.000E-01 - 4.000E-01	9.293E-04	1.790E-04
4.000E-01 - 5.000E-01	6.601E-04	1.718E-04
5.000E-01 - 6.000E-01	6.640E-04	9.819E-05
6.000E-01 - 7.000E-01	4.185E-03	9.451E-05
7.000E-01 - 8.000E-01	1.798E-03	5.243E-05
8.000E-01 - 1.000E-00	4.447E-04	6.825E-05
1.000E-00 - 1.200E-00	1.975E-04	5.776E-05
1.200E-00 - 1.400E-00	1.528E-04	5.452E-05
1.400E-00 - 1.600E-00	1.136E-04	4.854E-05
1.600E-00 - 1.800E-00	8.788E-05	4.473E-05
1.800E-00 - 2.000E-00	8.454E-05	3.882E-05
2.000E-00 - 2.500E-00	1.852E-04	8.385E-05
2.500E-00 - 3.000E-00	1.715E-04	6.663E-05
3.000E-00 - 3.500E-00	1.964E-04	5.996E-05
3.500E-00 - 4.000E-00	1.679E-04	5.515E-05
4.000E-00 - 4.500E-00	9.800E-05	5.461E-05
4.500E-00 - 5.000E-00	1.188E-04	5.165E-05
5.000E-00 - 6.000E-00	1.758E-04	9.818E-05
6.000E-00 - 7.000E-00	1.896E-04	7.336E-05
7.000E-00 - 8.000E-00	1.694E-04	3.833E-05
8.000E-00 - 9.000E-00	8.431E-05	1.502E-05
9.000E-00 - 1.000E-01	1.604E-06	2.486E-06

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 1.00 TO 1.51 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (D/MEV)	ERROR (D/MEV)	PHOTON ENERGY (MEV)	I-SECTION (D/MEV)	ERROR (D/MEV)
3.025E-01	4.422E-02	4.784E-03	2.810E 00	4.078E-04	1.291E-04
3.175E-01	4.410E-02	4.524E-03	2.870E 00	3.848E-04	1.314E-04
3.325E-01	4.174E-02	4.521E-03	2.930E 00	3.587E-04	1.306E-04
3.475E-01	3.706E-02	4.397E-03	2.990E 00	4.237E-04	1.294E-04
3.625E-01	3.794E-02	4.524E-03	3.050E 00	4.046E-04	1.281E-04
3.775E-01	3.062E-02	4.298E-03	3.110E 00	2.738E-04	1.195E-04
3.925E-01	2.827E-02	4.190E-03	3.180E 00	2.249E-04	1.150E-04
4.100E-01	2.421E-02	4.529E-03	3.260E 00	3.864E-04	1.144E-04
4.300E-01	2.033E-02	4.315E-03	3.340E 00	3.653E-04	1.189E-04
4.500E-01	1.750E-02	4.794E-03	3.420E 00	2.516E-04	1.227E-04
4.700E-01	1.654E-02	4.479E-03	3.500E 00	3.590E-04	1.109E-04
4.900E-01	1.771E-02	3.805E-03	3.580E 00	4.303E-04	1.093E-04
5.100E-01	1.729E-02	3.126E-03	3.660E 00	3.368E-04	1.045E-04
5.300E-01	1.311E-02	2.487E-03	3.740E 00	3.055E-04	1.091E-04
5.500E-01	1.198E-02	2.126E-03	3.820E 00	3.072E-04	1.137E-04
5.700E-01	1.353E-02	1.948E-03	3.900E 00	3.219E-04	1.152E-04
5.900E-01	1.425E-02	2.032E-03	3.980E 00	3.484E-04	1.078E-04
6.100E-01	3.026E-02	2.031E-03	4.060E 00	3.202E-04	1.102E-04
6.300E-01	7.202E-02	2.272E-03	4.140E 00	3.006E-04	1.073E-04
6.500E-01	1.159E-01	2.144E-03	4.220E 00	3.165E-04	1.089E-04
6.700E-01	1.432E-01	1.995E-03	4.300E 00	3.043E-04	1.128E-04
6.900E-01	1.292E-01	1.799E-03	4.380E 00	2.642E-04	1.124E-04
7.100E-01	9.485E-02	1.619E-03	4.460E 00	2.242E-04	1.095E-04
7.300E-01	6.852E-02	1.539E-03	4.540E 00	2.080E-04	1.090E-04
7.500E-01	5.949E-02	1.426E-03	4.620E 00	2.135E-04	1.067E-04
7.700E-01	5.450E-02	1.414E-03	4.700E 00	1.982E-04	1.181E-04
7.900E-01	4.305E-02	1.261E-03	4.800E 00	1.774E-04	1.066E-04
8.100E-01	2.884E-02	1.259E-03	4.900E 00	2.188E-04	1.081E-04
8.300E-01	1.825E-02	1.299E-03	5.000E 00	2.505E-04	1.072E-04
8.500E-01	1.353E-02	1.336E-03	5.100E 00	2.042E-04	1.046E-04
8.700E-01	1.609E-02	1.535E-03	5.200E 00	2.011E-04	1.088E-04
8.900E-01	3.816E-02	1.612E-03	5.300E 00	2.091E-04	1.036E-04
9.100E-01	7.424E-02	1.746E-03	5.400E 00	1.759E-04	1.032E-04
9.300E-01	1.137E-01	1.691E-03	5.500E 00	1.406E-04	1.025E-04
9.500E-01	1.370E-01	1.974E-03	5.600E 00	1.460E-04	9.793E-05
9.700E-01	1.325E-01	1.782E-03	5.700E 00	1.858E-04	9.518E-05
1.000E 00	8.836E-02	1.602E-03	5.800E 00	2.126E-04	9.426E-05
1.040E 00	3.718E-02	1.139E-03	5.900E 00	1.831E-04	9.161E-05
1.080E 00	2.983E-02	9.033E-04	6.000E 00	1.493E-04	9.091E-05
1.120E 00	2.839E-02	7.264E-04	6.100E 00	1.507E-04	8.478E-05
1.160E 00	1.580E-02	5.502E-04	6.200E 00	1.588E-04	8.304E-05
1.200E 00	5.856E-03	4.122E-04	6.300E 00	1.590E-04	8.412E-05
1.240E 00	4.636E-03	3.923E-04	6.400E 00	1.858E-04	7.924E-05
1.280E 00	7.165E-03	4.362E-04	6.500E 00	2.500E-04	7.282E-05
1.320E 00	8.252E-03	4.476E-04	6.600E 00	2.621E-04	6.990E-05
1.360E 00	6.858E-03	3.951E-04	6.800E 00	2.026E-04	6.603E-05
1.400E 00	4.323E-03	3.602E-04	6.900E 00	1.329E-04	6.221E-05
1.440E 00	2.352E-03	3.181E-04	7.000E 00	8.645E-05	5.619E-05
1.480E 00	1.306E-03	2.669E-04	7.100E 00	6.906E-05	5.114E-05
1.520E 00	7.493E-04	2.365E-04	7.200E 00	6.847E-05	5.221E-05
1.560E 00	5.194E-04	2.260E-04	7.400E 00	1.423E-04	4.595E-05
1.600E 00	5.017E-04	2.132E-04	7.500E 00	2.027E-04	4.305E-05
1.640E 00	5.030E-04	2.210E-04	7.600E 00	2.244E-04	3.976E-05
1.680E 00	4.326E-04	2.197E-04	7.700E 00	1.891E-04	3.785E-05
1.720E 00	3.487E-04	2.253E-04	7.800E 00	1.124E-04	3.599E-05
1.760E 00	3.798E-04	2.171E-04	8.000E 00	4.838E-05	3.263E-05
1.800E 00	5.321E-04	2.070E-04	8.100E 00	4.569E-05	2.883E-05
1.850E 00	5.800E-04	1.794E-04	8.300E 00	8.665E-05	2.548E-05
1.910E 00	3.702E-04	2.047E-04	8.450E 00	1.146E-04	2.309E-05
1.970E 00	4.603E-04	1.743E-04	8.590E 00	1.018E-04	2.018E-05
2.030E 00	5.548E-04	1.760E-04	8.730E 00	7.471E-05	1.641E-05
2.090E 00	3.027E-04	1.858E-04	8.870E 00	5.738E-05	1.315E-05
2.150E 00	2.994E-04	1.879E-04	9.010E 00	4.601E-05	1.069E-05
2.210E 00	4.359E-04	1.802E-04	9.150E 00	3.290E-05	8.248E-06
2.270E 00	3.395E-04	1.684E-04	9.300E 00	1.775E-05	6.286E-06
2.330E 00	2.210E-04	1.581E-04	9.460E 00	7.099E-06	4.095E-06
2.390E 00	2.538E-04	1.452E-04	9.620E 00	2.157E-06	2.579E-06
2.450E 00	3.120E-04	1.372E-04	9.780E 00	7.248E-07	2.144E-06
2.510E 00	3.335E-04	1.288E-04	9.940E 00	1.905E-07	1.667E-06
2.570E 00	3.841E-04	1.354E-04	1.010E 01	3.859E-08	9.826E-07
2.630E 00	3.921E-04	1.288E-04	1.026E 01	-3.343E-08	8.051E-07
2.690E 00	3.304E-04	1.303E-04	1.042E 01	-2.642E-07	9.774E-07
2.750E 00	3.384E-04	1.287E-04	1.058E 01	-1.582E-07	8.848E-07

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (D/MEV)	ERROR (D/MEV)
3.000E-01 - 4.000E-01	3.662E-03	4.446E-04
4.000E-01 - 5.000E-01	1.989E-03	4.353E-04
5.000E-01 - 6.000E-01	1.549E-03	2.292E-04
6.000E-01 - 7.000E-01	9.883E-03	2.052E-04
7.000E-01 - 8.000E-01	6.420E-03	1.457E-04
8.000E-01 - 1.000E 00	1.362E-02	3.177E-04
1.000E 00 - 1.200E 00	6.180E-03	1.718E-04
1.200E 00 - 1.400E 00	1.289E-03	8.237E-05
1.400E 00 - 1.600E 00	2.859E-04	5.323E-05
1.600E 00 - 1.800E 00	8.656E-05	4.378E-05
1.800E 00 - 2.000E 00	9.358E-05	3.809E-05
2.000E 00 - 2.500E 00	1.679E-04	8.296E-05
2.500E 00 - 3.000E 00	1.865E-04	6.525E-05
3.000E 00 - 3.500E 00	1.602E-04	5.974E-05
3.500E 00 - 4.000E 00	1.714E-04	5.508E-05
4.000E 00 - 4.500E 00	1.452E-04	5.506E-05
4.500E 00 - 5.000E 00	1.022E-04	5.472E-05
5.000E 00 - 6.000E 00	1.887E-04	1.005E-04
6.000E 00 - 7.000E 00	1.848E-04	7.569E-05
7.000E 00 - 8.000E 00	1.371E-04	4.389E-05
8.000E 00 - 9.000E 00	7.482E-05	2.169E-05
9.000E 00 - 1.000E 01	1.264E-05	4.631E-06

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 1.51 TO 2.00 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	7.451E-02	9.436E-03	2.810E-00	6.513E-05	1.653E-04
3.175E-01	7.902E-02	8.569E-03	2.870E-00	7.885E-05	1.603E-04
3.325E-01	8.898E-02	8.747E-03	2.930E-00	2.208E-04	1.542E-04
3.475E-01	1.012E-01	8.683E-03	2.990E-00	3.498E-04	1.602E-04
3.625E-01	9.851E-02	8.678E-03	3.050E-00	3.708E-04	1.579E-04
3.775E-01	8.182E-02	8.372E-03	3.110E-00	2.830E-04	1.537E-04
3.925E-01	6.802E-02	8.573E-03	3.180E-00	1.508E-04	1.557E-04
4.100E-01	6.028E-02	8.296E-03	3.260E-00	1.003E-04	1.527E-04
4.300E-01	6.006E-02	8.172E-03	3.340E-00	3.200E-04	1.446E-04
4.500E-01	5.890E-02	8.171E-03	3.420E-00	3.676E-04	1.439E-04
4.700E-01	5.148E-02	8.380E-03	3.500E-00	1.585E-04	1.480E-04
4.900E-01	4.370E-02	6.747E-03	3.580E-00	5.189E-05	1.472E-04
5.100E-01	3.030E-02	5.935E-03	3.660E-00	2.032E-04	1.446E-04
5.300E-01	2.438E-02	4.951E-03	3.740E-00	3.740E-04	1.397E-04
5.500E-01	2.910E-02	4.045E-03	3.820E-00	1.018E-04	1.351E-04
5.700E-01	2.807E-02	3.957E-03	3.900E-00	1.990E-04	1.349E-04
5.900E-01	3.109E-02	4.142E-03	3.980E-00	1.340E-04	1.386E-04
6.100E-01	5.302E-02	4.098E-03	4.060E-00	1.409E-04	1.376E-04
6.300E-01	9.002E-02	4.460E-03	4.140E-00	2.088E-04	1.344E-04
6.500E-01	1.342E-01	4.185E-03	4.220E-00	2.490E-04	1.319E-04
6.700E-01	1.610E-01	3.948E-03	4.300E-00	2.182E-04	1.316E-04
6.900E-01	1.468E-01	3.568E-03	4.380E-00	1.792E-04	1.338E-04
7.100E-01	1.089E-01	3.273E-03	4.460E-00	1.395E-04	1.358E-04
7.300E-01	8.547E-02	3.358E-03	4.540E-00	3.413E-05	1.273E-04
7.500E-01	8.069E-02	3.093E-03	4.630E-00	2.641E-05	1.235E-04
7.700E-01	7.440E-02	3.007E-03	4.730E-00	1.668E-04	1.299E-04
7.900E-01	5.801E-02	2.808E-03	4.830E-00	2.495E-04	1.251E-04
8.100E-01	3.930E-02	2.831E-03	4.930E-00	2.496E-04	1.227E-04
8.300E-01	2.592E-02	2.989E-03	5.030E-00	2.813E-04	1.263E-04
8.500E-01	2.073E-02	3.199E-03	5.130E-00	2.493E-04	1.249E-04
8.700E-01	2.974E-02	3.537E-03	5.230E-00	1.648E-04	1.283E-04
8.900E-01	6.293E-02	3.648E-03	5.330E-00	1.548E-04	1.300E-04
9.100E-01	1.212E-01	3.947E-03	5.430E-00	1.822E-04	1.257E-04
9.300E-01	1.847E-01	3.820E-03	5.530E-00	1.718E-04	1.262E-04
9.500E-01	2.222E-01	4.488E-03	5.630E-00	1.406E-04	1.187E-04
9.700E-01	2.152E-01	4.197E-03	5.730E-00	1.360E-04	1.160E-04
1.000E-00	1.439E-01	3.710E-03	5.830E-00	1.282E-04	1.248E-04
1.050E-00	6.648E-02	3.077E-03	5.930E-00	9.477E-05	1.243E-04
1.080E-00	7.136E-02	2.817E-03	6.030E-00	7.258E-05	1.133E-04
1.120E-00	7.735E-02	2.532E-03	6.130E-00	8.798E-05	1.071E-04
1.160E-00	4.531E-02	2.017E-03	6.230E-00	1.134E-04	1.047E-04
1.200E-00	1.794E-02	1.733E-03	6.330E-00	1.485E-04	1.038E-04
1.240E-00	2.286E-02	1.774E-03	6.440E-00	2.064E-04	1.001E-04
1.280E-00	5.104E-02	2.286E-03	6.560E-00	2.161E-04	9.139E-05
1.320E-00	7.166E-02	2.320E-03	6.680E-00	1.358E-04	8.558E-05
1.360E-00	7.990E-02	2.463E-03	6.800E-00	4.610E-05	8.176E-05
1.400E-00	6.831E-02	2.136E-03	6.920E-00	1.119E-05	7.654E-05
1.440E-00	5.873E-02	1.914E-03	7.040E-00	2.790E-05	7.276E-05
1.480E-00	4.915E-02	1.473E-03	7.160E-00	7.789E-05	6.384E-05
1.520E-00	3.994E-02	1.205E-03	7.280E-00	1.363E-04	6.201E-05
1.560E-00	3.042E-02	1.203E-03	7.400E-00	1.595E-04	6.234E-05
1.600E-00	2.067E-02	7.679E-04	7.520E-00	1.272E-04	5.975E-05
1.640E-00	1.260E-02	5.927E-04	7.640E-00	7.044E-05	5.506E-05
1.680E-00	7.724E-03	4.623E-04	7.760E-00	5.942E-05	5.174E-05
1.720E-00	5.109E-03	3.994E-04	7.880E-00	7.961E-05	5.123E-05
1.760E-00	3.390E-03	3.641E-04	8.030E-00	1.221E-04	4.834E-05
1.800E-00	2.294E-03	3.310E-04	8.170E-00	1.490E-04	4.123E-05
1.850E-00	1.706E-03	3.159E-04	8.310E-00	1.242E-04	3.913E-05
1.910E-00	1.271E-03	2.551E-04	8.450E-00	6.876E-05	3.611E-05
1.970E-00	7.743E-04	2.447E-04	8.590E-00	3.638E-05	3.008E-05
2.030E-00	5.312E-04	2.189E-04	8.730E-00	3.530E-05	2.585E-05
2.090E-00	3.399E-04	2.159E-04	8.870E-00	4.337E-05	2.387E-05
2.150E-00	2.748E-04	2.157E-04	9.010E-00	5.298E-05	1.999E-05
2.210E-00	3.343E-04	2.053E-04	9.150E-00	5.756E-05	1.577E-05
2.270E-00	3.122E-04	1.857E-04	9.300E-00	4.823E-05	1.297E-05
2.330E-00	2.199E-04	1.906E-04	9.460E-00	2.670E-05	9.092E-06
2.390E-00	1.693E-04	1.776E-04	9.620E-00	1.081E-05	6.085E-06
2.450E-00	2.702E-04	1.481E-04	9.780E-00	2.714E-06	0.544E-06
2.510E-00	3.283E-04	1.731E-04	9.940E-00	8.668E-07	3.614E-06
2.570E-00	3.170E-04	1.679E-04	1.010E-01	1.339E-07	2.266E-06
2.630E-00	2.806E-04	1.693E-04	1.026E-01	1.288E-07	1.411E-06
2.690E-00	2.752E-04	1.571E-04	1.042E-01	2.374E-07	1.693E-06
2.750E-00	1.838E-04	1.514E-04	1.058E-01	1.071E-07	1.551E-06

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	8.508E-03	8.665E-04
4.000E-01 - 5.000E-01	5.565E-03	7.940E-04
5.000E-01 - 6.000E-01	3.051E-03	4.566E-04
6.000E-01 - 7.000E-01	1.167E-02	4.060E-04
7.000E-01 - 8.000E-01	8.169E-03	3.120E-04
8.000E-01 - 1.000E-00	2.191E-02	7.304E-04
1.000E-00 - 1.200E-00	1.348E-02	5.250E-04
1.200E-00 - 1.400E-00	1.061E-02	4.283E-04
1.400E-00 - 1.600E-00	8.909E-03	2.911E-04
1.600E-00 - 1.800E-00	1.589E-03	9.413E-05
1.800E-00 - 2.000E-00	2.712E-04	5.512E-05
2.000E-00 - 2.500E-00	1.510E-04	9.828E-05
2.500E-00 - 3.000E-00	1.118E-04	8.076E-05
3.000E-00 - 3.500E-00	1.336E-04	7.550E-05
3.500E-00 - 4.000E-00	1.016E-04	7.014E-05
4.000E-00 - 4.500E-00	9.181E-05	6.711E-05
4.500E-00 - 5.000E-00	7.808E-05	6.286E-05
5.000E-00 - 6.000E-00	1.665E-04	1.238E-04
6.000E-00 - 7.000E-00	1.150E-04	9.432E-05
7.000E-00 - 8.000E-00	9.510E-05	5.887E-05
8.000E-00 - 9.000E-00	7.973E-06	2.344E-06
9.000E-00 - 1.000E-01	2.678E-05	9.486E-06

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 2.00 TO 2.50 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	1.124E-01	1.461E-02	2.810E 00	1.897E-04	2.082E-04
3.175E-01	1.168E-01	1.426E-02	2.870E 00	2.776E-05	2.204E-04
3.325E-01	1.322E-01	1.370E-02	2.930E 00	1.040E-04	2.100E-04
3.475E-01	1.560E-01	1.400E-02	2.990E 00	3.283E-04	1.966E-04
3.625E-01	1.566E-01	1.378E-02	3.050E 00	4.823E-04	1.939E-04
3.775E-01	1.333E-01	1.254E-02	3.110E 00	4.578E-04	1.898E-04
3.925E-01	1.088E-01	1.298E-02	3.180E 00	2.879E-04	2.012E-04
4.100E-01	8.993E-02	1.231E-02	3.260E 00	9.203E-05	2.003E-04
4.300E-01	8.785E-02	1.294E-02	3.340E 00	1.416E-04	1.924E-04
4.500E-01	9.242E-02	1.217E-02	3.420E 00	3.231E-04	1.967E-04
4.700E-01	7.830E-02	1.242E-02	3.500E 00	3.376E-04	1.938E-04
4.900E-01	6.710E-02	1.084E-02	3.580E 00	3.021E-04	1.861E-04
5.100E-01	6.804E-02	9.350E-03	3.660E 00	4.446E-04	1.781E-04
5.300E-01	5.427E-02	8.083E-03	3.740E 00	5.661E-04	1.770E-04
5.500E-01	4.171E-02	7.288E-03	3.820E 00	4.101E-04	1.801E-04
5.700E-01	5.041E-02	6.520E-03	3.900E 00	1.324E-04	1.783E-04
5.900E-01	5.916E-02	7.035E-03	3.980E 00	4.375E-06	1.825E-04
6.100E-01	7.022E-02	6.716E-03	4.060E 00	3.854E-05	1.698E-04
6.300E-01	1.069E-01	7.857E-03	4.140E 00	9.658E-05	1.640E-04
6.500E-01	1.551E-01	7.015E-03	4.220E 00	8.754E-05	1.769E-04
6.700E-01	1.771E-01	6.545E-03	4.300E 00	6.893E-05	1.824E-04
6.900E-01	1.600E-01	6.317E-03	4.380E 00	1.310E-04	1.711E-04
7.100E-01	1.275E-01	5.750E-03	4.460E 00	1.749E-04	1.775E-04
7.300E-01	1.094E-01	5.823E-03	4.540E 00	1.354E-04	1.694E-04
7.500E-01	1.044E-01	5.429E-03	4.620E 00	7.806E-05	1.609E-04
7.700E-01	9.421E-02	5.333E-03	4.700E 00	8.122E-05	1.647E-04
7.900E-01	7.474E-02	5.076E-03	4.780E 00	4.352E-04	1.584E-04
8.100E-01	5.421E-02	5.089E-03	4.860E 00	2.498E-05	1.581E-04
8.300E-01	4.099E-02	5.285E-03	4.940E 00	4.578E-05	1.600E-04
8.500E-01	4.090E-02	5.468E-03	5.020E 00	2.378E-04	1.571E-04
8.700E-01	5.858E-02	6.055E-03	5.100E 00	3.137E-04	1.681E-04
8.900E-01	1.008E-01	5.989E-03	5.180E 00	1.881E-04	1.691E-04
9.100E-01	1.683E-01	6.451E-03	5.260E 00	5.683E-05	1.559E-04
9.300E-01	2.427E-01	6.330E-03	5.340E 00	8.930E-06	1.536E-04
9.500E-01	2.875E-01	7.377E-03	5.420E 00	6.261E-04	1.592E-04
9.700E-01	2.801E-01	6.949E-03	5.500E 00	3.205E-05	1.593E-04
1.000E 00	1.959E-01	6.506E-03	5.580E 00	1.793E-04	1.573E-04
1.040E 00	1.010E-01	5.403E-03	5.660E 00	3.366E-04	1.521E-04
1.080E 00	1.056E-01	5.006E-03	5.740E 00	3.604E-04	1.456E-04
1.120E 00	1.210E-01	4.586E-03	5.820E 00	2.692E-04	1.385E-04
1.160E 00	7.556E-02	3.737E-03	5.900E 00	1.546E-04	1.332E-04
1.200E 00	3.221E-02	3.173E-03	5.980E 00	5.588E-05	1.336E-04
1.240E 00	3.408E-02	3.343E-03	6.060E 00	6.395E-06	1.307E-04
1.280E 00	7.231E-02	4.118E-03	6.140E 00	3.082E-05	1.194E-04
1.320E 00	1.088E-01	4.261E-03	6.220E 00	1.311E-04	1.102E-04
1.360E 00	1.173E-01	4.386E-03	6.300E 00	1.904E-04	1.036E-04
1.400E 00	1.073E-01	4.313E-03	6.380E 00	2.070E-04	1.014E-04
1.440E 00	9.575E-02	3.997E-03	6.460E 00	1.997E-04	9.588E-05
1.480E 00	8.541E-02	3.320E-03	6.540E 00	1.303E-04	8.713E-05
1.520E 00	7.623E-02	2.868E-03	6.620E 00	7.280E 00	7.935E-05
1.560E 00	6.470E-02	2.761E-03	6.700E 00	4.797E-06	7.964E-05
1.600E 00	4.883E-02	1.883E-03	6.780E 00	2.976E-05	8.155E-05
1.640E 00	3.464E-02	1.551E-03	6.860E 00	8.754E-05	7.803E-05
1.680E 00	2.524E-02	1.382E-03	6.940E 00	1.498E-04	7.128E-05
1.720E 00	1.889E-02	1.340E-03	7.020E 00	1.875E-04	6.987E-05
1.760E 00	1.615E-02	1.170E-03	7.100E 00	1.462E-04	6.920E-05
1.800E 00	1.793E-02	1.199E-03	7.180E 00	4.334E-05	6.085E-05
1.840E 00	1.943E-02	1.045E-03	7.260E 00	1.455E-05	5.540E-05
1.880E 00	1.412E-02	8.650E-04	7.340E 00	7.112E-06	5.051E-05
1.920E 00	1.218E-02	8.124E-04	7.420E 00	7.076E-05	4.632E-05
1.960E 00	1.247E-02	7.467E-04	7.500E 00	1.052E-04	4.411E-05
2.000E 00	9.839E-03	6.347E-04	7.580E 00	8.347E-05	4.089E-05
2.040E 00	5.231E-03	4.471E-04	7.660E 00	3.758E-05	3.738E-05
2.080E 00	2.460E-03	3.441E-04	7.740E 00	1.779E-05	3.419E-05
2.120E 00	1.868E-03	2.995E-04	7.820E 00	2.744E-05	2.929E-05
2.160E 00	1.480E-03	2.615E-04	7.900E 00	4.495E-05	2.786E-05
2.200E 00	9.630E-04	2.320E-04	7.980E 00	2.770E-05	2.418E-05
2.240E 00	6.350E-04	2.246E-04	8.060E 00	2.010E-05	2.191E-05
2.280E 00	4.117E-04	2.259E-04	8.140E 00	1.657E-05	2.073E-05
2.320E 00	1.978E-04	2.106E-04	8.220E 00	1.635E-05	1.676E-05
2.360E 00	1.147E-04	2.125E-04	8.300E 00	1.294E-05	1.165E-05
2.400E 00	2.447E-04	2.095E-04	8.380E 00	1.039E-05	1.043E-05
2.440E 00	3.313E-04	2.044E-04	8.460E 00	6.805E-06	1.157E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	X-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	1.317E-02	1.363E-03
4.000E-01 - 5.000E-01	8.491E-03	1.215E-03
5.000E-01 - 6.000E-01	5.744E-03	7.566E-04
6.000E-01 - 7.000E-01	1.338E-02	6.912E-04
7.000E-01 - 8.000E-01	1.022E-02	5.503E-04
8.000E-01 - 1.000E 00	3.009E-02	1.232E-03
1.000E 00 - 1.200E 00	2.049E-02	9.423E-04
1.200E 00 - 1.400E 00	1.617E-02	7.962E-04
1.400E 00 - 1.600E 00	1.603E-02	6.446E-04
1.600E 00 - 1.800E 00	5.067E-03	2.776E-04
1.800E 00 - 2.000E 00	3.080E-03	1.885E-04
2.000E 00 - 2.500E 00	2.102E-03	1.962E-04
2.500E 00 - 3.000E 00	9.965E-05	1.054E-04
3.000E 00 - 3.500E 00	1.458E-04	9.792E-05
3.500E 00 - 4.000E 00	1.619E-04	9.054E-05
4.000E 00 - 4.500E 00	4.777E-05	4.682E-05
4.500E 00 - 5.000E 00	2.955E-05	8.094E-05
5.000E 00 - 6.000E 00	1.668E-04	1.591E-04
6.000E 00 - 7.000E 00	1.469E-04	1.219E-04
7.000E 00 - 8.000E 00	1.030E-04	7.930E-05
8.000E 00 - 9.000E 00	5.814E-05	5.084E-05
9.000E 00 - 1.000E 01	2.503E-05	2.716E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 2.50 TO 3.02 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	1.503E-01	2.152E-02	2.810E 00	1.543E-03	3.040E-04
3.175E-01	1.670E-01	1.946E-02	2.870E 00	9.973E-04	2.767E-04
3.325E-01	1.650E-01	1.991E-02	2.930E 00	5.702E-04	2.522E-04
3.475E-01	1.821E-01	1.971E-02	2.990E 00	4.820E-04	2.455E-04
3.625E-01	2.009E-01	1.959E-02	3.050E 00	5.550E-04	2.435E-04
3.775E-01	1.824E-01	1.852E-02	3.110E 00	5.205E-04	2.385E-04
3.925E-01	1.449E-01	1.759E-02	3.180E 00	3.309E-04	2.426E-04
4.100E-01	1.191E-01	1.887E-02	3.260E 00	1.488E-04	2.381E-04
4.300E-01	1.204E-01	1.813E-02	3.300E 00	9.337E-05	2.462E-04
4.500E-01	1.197E-01	1.782E-02	3.420E 00	1.612E-04	2.253E-04
4.700E-01	1.043E-01	1.749E-02	3.500E 00	2.863E-04	2.120E-04
4.900E-01	9.083E-02	1.449E-02	3.580E 00	3.749E-04	2.191E-04
5.100E-01	8.493E-02	1.384E-02	3.660E 00	4.087E-04	2.250E-04
5.300E-01	7.897E-02	1.185E-02	3.740E 00	3.560E-04	2.229E-04
5.500E-01	6.450E-02	1.026E-02	3.820E 00	2.686E-04	2.311E-04
5.700E-01	5.764E-02	9.984E-03	3.900E 00	1.886E-04	2.218E-04
5.900E-01	6.848E-02	1.015E-02	3.980E 00	9.718E-05	2.124E-04
6.100E-01	8.969E-02	1.020E-02	4.060E 00	3.160E-05	2.145E-04
6.300E-01	1.232E-01	1.095E-02	4.140E 00	-5.300E-06	2.133E-04
6.500E-01	1.669E-01	1.060E-02	4.220E 00	-4.692E-05	2.073E-04
6.700E-01	1.878E-01	9.454E-03	4.300E 00	-2.726E-06	1.977E-04
6.900E-01	1.697E-01	8.843E-03	4.380E 00	1.435E-04	1.981E-04
7.100E-01	1.365E-01	8.328E-03	4.460E 00	2.561E-04	1.932E-04
7.300E-01	1.168E-01	8.088E-03	4.540E 00	2.120E-04	1.885E-04
7.500E-01	1.143E-01	8.608E-03	4.630E 00	7.714E-05	1.953E-04
7.700E-01	1.110E-01	8.082E-03	4.730E 00	-5.210E-06	1.895E-04
7.900E-01	9.333E-02	7.459E-03	4.830E 00	-2.585E-05	1.857E-04
8.100E-01	6.896E-02	7.274E-03	4.930E 00	1.917E-05	2.009E-04
8.300E-01	5.637E-02	7.624E-03	5.030E 00	1.513E-04	2.069E-04
8.500E-01	6.375E-02	7.825E-03	5.130E 00	-3.674E-04	2.080E-04
8.700E-01	8.949E-02	8.648E-03	5.230E 00	4.513E-04	2.120E-04
8.900E-01	1.364E-01	8.928E-03	5.330E 00	3.145E-04	2.048E-04
9.100E-01	2.096E-01	9.518E-03	5.430E 00	8.629E-05	1.950E-04
9.300E-01	2.911E-01	9.174E-03	5.530E 00	-8.035E-05	1.966E-04
9.500E-01	3.411E-01	1.051E-02	5.630E 00	-1.496E-04	1.835E-04
9.700E-01	3.312E-01	9.707E-03	5.730E 00	-1.094E-04	1.821E-04
1.000E 00	2.334E-01	9.458E-03	5.830E 00	-2.427E-05	1.936E-04
1.040E 00	1.338E-01	8.118E-03	5.930E 00	4.792E-05	1.807E-04
1.080E 00	1.532E-01	7.523E-03	6.030E 00	9.716E-05	1.662E-04
1.120E 00	1.756E-01	7.073E-03	6.130E 00	1.333E-04	1.553E-04
1.160E 00	1.250E-01	5.709E-03	6.230E 00	1.487E-04	1.523E-04
1.200E 00	5.818E-02	5.054E-03	6.330E 00	1.634E-04	1.627E-04
1.240E 00	5.530E-02	5.443E-03	6.440E 00	1.946E-04	1.565E-04
1.280E 00	1.049E-01	6.341E-03	6.560E 00	2.219E-04	1.478E-04
1.320E 00	1.423E-01	6.819E-03	6.680E 00	1.737E-04	1.361E-04
1.360E 00	1.483E-01	6.666E-03	6.800E 00	8.108E-05	1.310E-04
1.400E 00	1.376E-01	6.456E-03	6.920E 00	1.099E-05	1.232E-04
1.440E 00	1.235E-01	5.814E-03	7.040E 00	1.224E-06	1.149E-04
1.480E 00	1.048E-01	4.981E-03	7.160E 00	4.907E-05	1.080E-04
1.520E 00	8.726E-02	4.239E-03	7.280E 00	1.190E-04	9.931E-05
1.560E 00	7.156E-02	4.039E-03	7.400E 00	1.631E-04	9.018E-05
1.600E 00	5.216E-02	3.180E-03	7.520E 00	1.548E-04	8.879E-05
1.640E 00	3.502E-02	2.805E-03	7.640E 00	1.076E-04	9.184E-05
1.680E 00	2.568E-02	2.441E-03	7.760E 00	4.428E-05	8.498E-05
1.720E 00	2.204E-02	2.399E-03	7.890E 00	-5.095E-06	7.333E-05
1.760E 00	2.362E-02	2.408E-03	8.030E 00	8.755E-06	7.101E-05
1.800E 00	2.864E-02	2.605E-03	8.170E 00	5.373E-05	6.864E-05
1.850E 00	3.046E-02	2.325E-03	8.310E 00	7.379E-05	6.159E-05
1.910E 00	2.461E-02	2.161E-03	8.450E 00	6.204E-05	5.692E-05
1.970E 00	2.485E-02	1.888E-03	8.590E 00	5.085E-05	5.113E-05
2.030E 00	2.819E-02	1.873E-03	8.730E 00	3.767E-05	5.222E-05
2.090E 00	2.345E-02	1.572E-03	8.870E 00	3.509E-05	5.205E-05
2.150E 00	1.345E-02	1.150E-03	9.010E 00	4.148E-05	4.588E-05
2.210E 00	8.917E-03	9.650E-04	9.150E 00	5.114E-05	4.273E-05
2.270E 00	1.118E-02	9.059E-04	9.300E 00	4.409E-05	4.074E-05
2.330E 00	1.319E-02	8.760E-04	9.460E 00	2.639E-05	3.787E-05
2.390E 00	1.301E-02	8.444E-04	9.620E 00	2.066E-05	2.881E-05
2.450E 00	1.277E-02	7.777E-04	9.780E 00	2.249E-05	2.668E-05
2.510E 00	1.109E-02	6.713E-04	9.940E 00	2.385E-05	2.603E-05
2.570E 00	7.327E-03	5.714E-04	1.010E 01	1.768E-05	2.064E-05
2.630E 00	3.782E-03	4.404E-04	1.026E 01	1.206E-05	1.245E-05
2.690E 00	2.117E-03	3.766E-04	1.042E 01	8.233E-06	1.146E-05
2.750E 00	1.796E-03	3.409E-04	1.058E 01	6.336E-06	1.136E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	1.718E-02	1.940E-03
4.000E-01 - 5.000E-01	1.138E-02	1.732E-03
5.000E-01 - 6.000E-01	7.584E-03	1.105E-03
6.000E-01 - 7.000E-01	1.472E-02	1.002E-03
7.000E-01 - 8.000E-01	1.145E-02	8.206E-04
8.000E-01 - 1.000E 00	3.723E-02	1.773E-03
1.000E 00 - 1.200E 00	2.927E-02	1.423E-03
1.200E 00 - 1.400E 00	2.202E-02	1.244E-03
1.400E 00 - 1.600E 00	1.431E-02	9.573E-04
1.600E 00 - 1.800E 00	5.782E-03	5.151E-04
1.800E 00 - 2.000E 00	5.341E-03	4.355E-04
2.000E 00 - 2.500E 00	7.663E-03	5.514E-04
2.500E 00 - 3.000E 00	1.533E-03	1.900E-04
3.000E 00 - 3.500E 00	1.443E-04	1.185E-04
3.500E 00 - 4.000E 00	1.464E-04	1.109E-04
4.000E 00 - 4.500E 00	3.126E-05	1.022E-04
4.500E 00 - 5.000E 00	2.583E-05	9.632E-05
5.000E 00 - 6.000E 00	1.059E-04	1.956E-04
6.000E 00 - 7.000E 00	1.344E-04	1.459E-04
7.000E 00 - 8.000E 00	7.649E-05	9.224E-05
8.000E 00 - 9.000E 00	4.766E-05	5.789E-05
9.000E 00 - 1.000E 01	3.216E-05	3.431E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 3.02 TO 3.51 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	1.967E-01	2.786E-02	2.810E 00	1.784E-02	1.160E-03
3.175E-01	1.910E-01	2.582E-02	2.870E 00	1.651E-02	1.052E-03
3.325E-01	2.060E-01	2.758E-02	2.930E 00	1.216E-02	8.428E-04
3.475E-01	2.391E-01	2.672E-02	2.990E 00	8.303E-03	7.595E-04
3.625E-01	2.575E-01	2.741E-02	3.050E 00	5.716E-03	5.858E-04
3.775E-01	2.452E-01	2.630E-02	3.110E 00	3.419E-03	4.768E-04
3.925E-01	1.980E-01	2.589E-02	3.180E 00	1.264E-03	1.768E-04
4.100E-01	1.347E-01	2.691E-02	3.260E 00	2.303E-04	3.506E-04
4.300E-01	1.376E-01	2.608E-02	3.340E 00	1.284E-04	3.338E-04
4.500E-01	1.682E-01	2.500E-02	3.420E 00	3.126E-04	3.101E-04
4.700E-01	1.509E-01	2.379E-02	3.500E 00	5.847E-04	2.782E-04
4.900E-01	1.176E-01	2.111E-02	3.580E 00	6.297E-04	2.728E-04
5.100E-01	9.667E-02	1.911E-02	3.660E 00	3.624E-04	2.907E-04
5.300E-01	8.864E-02	1.686E-02	3.740E 00	1.649E-04	3.057E-04
5.500E-01	8.976E-02	1.454E-02	3.820E 00	1.610E-04	2.826E-04
5.700E-01	8.996E-02	1.350E-02	3.900E 00	6.204E-05	2.629E-04
5.900E-01	8.289E-02	1.435E-02	3.980E 00	-1.081E-04	2.406E-04
6.100E-01	9.295E-02	1.389E-02	4.060E 00	-6.651E-05	2.436E-04
6.300E-01	1.418E-01	1.616E-02	4.140E 00	2.494E-04	2.574E-04
6.500E-01	1.982E-01	1.470E-02	4.220E 00	5.168E-04	2.623E-04
6.700E-01	2.154E-01	1.366E-02	4.300E 00	4.782E-04	2.450E-04
6.900E-01	1.907E-01	1.275E-02	4.380E 00	2.556E-04	2.300E-04
7.100E-01	1.540E-01	1.194E-02	4.460E 00	9.933E-05	2.209E-04
7.300E-01	1.350E-01	1.182E-02	4.540E 00	5.512E-05	2.171E-04
7.500E-01	1.335E-01	1.155E-02	4.620E 00	2.225E-05	2.357E-04
7.700E-01	1.237E-01	1.106E-02	4.700E 00	-7.310E-05	2.415E-04
7.900E-01	9.983E-02	1.030E-02	4.800E 00	-1.035E-04	2.288E-04
8.100E-01	8.173E-02	1.024E-02	4.900E 00	2.486E-05	2.335E-04
8.300E-01	7.958E-02	1.092E-02	5.000E 00	2.340E-04	2.357E-04
8.500E-01	8.806E-02	1.181E-02	5.100E 00	3.439E-04	2.366E-04
8.700E-01	1.095E-01	1.288E-02	5.200E 00	3.018E-04	2.292E-04
8.900E-01	1.598E-01	1.306E-02	5.300E 00	1.758E-04	2.118E-04
9.100E-01	2.430E-01	1.393E-02	5.400E 00	7.267E-05	2.113E-04
9.300E-01	3.312E-01	1.302E-02	5.500E 00	6.949E-05	2.249E-04
9.500E-01	3.804E-01	1.454E-02	5.600E 00	1.365E-04	2.258E-04
9.700E-01	3.669E-01	1.342E-02	5.700E 00	1.355E-04	2.102E-04
1.000E 00	2.630E-01	1.263E-02	5.800E 00	3.451E-05	2.023E-04
1.040E 00	1.535E-01	1.162E-02	5.900E 00	-9.412E-05	1.918E-04
1.080E 00	1.811E-01	1.073E-02	6.000E 00	-1.169E-04	1.931E-04
1.120E 00	2.086E-01	1.038E-02	6.100E 00	1.003E-05	1.858E-04
1.160E 00	1.560E-01	8.420E-03	6.200E 00	1.833E-04	1.803E-04
1.200E 00	8.459E-02	7.890E-03	6.300E 00	2.749E-04	1.740E-04
1.240E 00	7.856E-02	8.212E-03	6.400E 00	2.376E-04	1.703E-04
1.280E 00	1.350E-01	9.614E-03	6.500E 00	1.460E-04	1.528E-04
1.320E 00	1.793E-01	9.584E-03	6.600E 00	5.839E-05	1.423E-04
1.360E 00	1.879E-01	9.398E-03	6.800E 00	1.964E-05	1.324E-04
1.400E 00	1.707E-01	8.878E-03	6.920E 00	3.263E-05	1.215E-04
1.440E 00	1.440E-01	8.203E-03	7.040E 00	1.076E-04	1.187E-04
1.480E 00	1.191E-01	7.253E-03	7.160E 00	1.615E-04	1.066E-04
1.520E 00	9.651E-02	6.498E-03	7.280E 00	1.569E-04	8.930E-05
1.560E 00	7.753E-02	6.117E-03	7.400E 00	8.918E-05	8.695E-05
1.600E 00	6.121E-02	4.632E-03	7.520E 00	4.113E-05	9.372E-05
1.640E 00	4.553E-02	4.156E-03	7.640E 00	3.512E-05	9.257E-05
1.680E 00	3.506E-02	4.078E-03	7.760E 00	5.376E-05	8.167E-05
1.720E 00	3.235E-02	4.388E-03	7.880E 00	6.040E-05	7.171E-05
1.760E 00	3.561E-02	4.329E-03	8.000E 00	4.493E-05	7.337E-05
1.800E 00	4.368E-02	4.528E-03	8.170E 00	3.403E-05	6.930E-05
1.850E 00	5.064E-02	4.340E-03	8.310E 00	3.766E-05	6.071E-05
1.910E 00	4.115E-02	3.981E-03	8.450E 00	4.267E-05	5.171E-05
1.970E 00	3.670E-02	3.640E-03	8.590E 00	4.094E-05	4.471E-05
2.030E 00	4.463E-02	3.299E-03	8.730E 00	3.772E-05	4.298E-05
2.090E 00	3.815E-02	2.905E-03	8.870E 00	3.802E-05	3.550E-05
2.150E 00	2.358E-02	2.198E-03	9.010E 00	2.843E-05	2.822E-05
2.210E 00	1.540E-02	1.919E-03	9.150E 00	1.550E-05	2.617E-05
2.270E 00	1.785E-02	1.864E-03	9.300E 00	6.701E-06	2.203E-05
2.330E 00	2.084E-02	1.796E-03	9.460E 00	2.983E-06	1.770E-05
2.390E 00	1.924E-02	1.781E-03	9.620E 00	-2.525E-06	1.685E-05
2.450E 00	2.116E-02	1.750E-03	9.780E 00	-2.612E-06	1.527E-05
2.510E 00	1.970E-02	1.632E-03	9.940E 00	1.804E-06	1.643E-05
2.570E 00	1.263E-02	1.420E-03	1.010E 01	1.407E-05	2.082E-05
2.630E 00	1.022E-02	1.125E-03	1.026E 01	2.428E-05	1.623E-05
2.690E 00	1.259E-02	1.072E-03	1.042E 01	3.201E-05	1.431E-05
2.750E 00	1.558E-02	1.152E-03	1.058E 01	2.714E-05	1.802E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	2.198E-02	2.665E-03
4.000E-01 - 5.000E-01	1.472E-02	2.444E-03
5.000E-01 - 6.000E-01	9.860E-03	1.529E-03
6.000E-01 - 7.000E-01	1.679E-02	1.428E-03
7.000E-01 - 8.000E-01	1.295E-02	1.136E-03
8.000E-01 - 1.000E 00	4.291E-02	2.533E-03
1.000E 00 - 1.200E 00	3.482E-02	2.052E-03
1.200E 00 - 1.400E 00	2.844E-02	1.813E-03
1.400E 00 - 1.600E 00	2.208E-02	1.397E-03
1.600E 00 - 1.800E 00	7.940E-03	8.577E-04
1.800E 00 - 2.000E 00	8.583E-03	8.068E-04
2.000E 00 - 2.500E 00	1.241E-02	1.085E-03
2.500E 00 - 3.000E 00	6.944E-03	5.643E-04
3.000E 00 - 3.500E 00	8.828E-04	1.994E-04
3.500E 00 - 4.000E 00	1.286E-04	1.389E-04
4.000E 00 - 4.500E 00	1.211E-04	1.217E-04
4.500E 00 - 5.000E 00	-4.776E-06	1.171E-04
5.000E 00 - 6.000E 00	1.352E-04	2.172E-04
6.000E 00 - 7.000E 00	9.942E-05	1.581E-04
7.000E 00 - 8.000E 00	8.609E-05	9.090E-05
8.000E 00 - 9.000E 00	3.846E-05	5.181E-05
9.000E 00 - 1.000E 01	5.281E-06	1.938E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 3.51 TO 3.99 MEV. ANGLE = 125 DEGREES.

PROTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PROTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	2.064E-01	3.600E-02	2.810E 00	2.527E-02	1.931E-03
3.175E-01	2.278E-01	3.525E-02	2.870E 00	2.472E-02	1.856E-03
3.325E-01	2.649E-01	3.345E-02	2.930E 00	2.215E-02	1.610E-03
3.475E-01	2.659E-01	3.381E-02	2.990E 00	1.811E-02	1.362E-03
3.625E-01	2.746E-01	3.495E-02	3.050E 00	1.265E-02	1.227E-03
3.775E-01	2.769E-01	3.136E-02	3.110E 00	8.228E-03	1.097E-03
3.925E-01	2.280E-01	3.118E-02	3.180E 00	6.469E-03	8.762E-04
4.100E-01	1.723E-01	3.239E-02	3.260E 00	7.926E-03	8.763E-04
4.300E-01	1.712E-01	3.215E-02	3.340E 00	9.603E-03	8.613E-04
4.500E-01	1.719E-01	3.156E-02	3.420E 00	9.367E-03	8.402E-04
4.700E-01	1.602E-01	3.040E-02	3.500E 00	7.503E-03	7.459E-04
4.900E-01	1.365E-01	2.779E-02	3.580E 00	4.581E-03	6.074E-04
5.100E-01	1.251E-01	2.720E-02	3.660E 00	1.798E-03	4.987E-04
5.300E-01	1.177E-01	2.247E-02	3.740E 00	3.873E-04	3.791E-04
5.500E-01	1.013E-01	1.991E-02	3.820E 00	1.088E-04	3.459E-04
5.700E-01	9.303E-02	1.769E-02	3.900E 00	8.205E-05	3.116E-04
5.900E-01	1.007E-01	1.896E-02	3.980E 00	1.903E-05	3.047E-04
6.100E-01	1.248E-01	1.801E-02	4.060E 00	6.132E-05	2.937E-04
6.300E-01	1.672E-01	2.093E-02	4.140E 00	1.948E-04	2.867E-04
6.500E-01	2.149E-01	1.861E-02	4.220E 00	2.598E-04	2.768E-04
6.700E-01	2.332E-01	1.802E-02	4.300E 00	1.923E-04	2.875E-04
6.900E-01	2.048E-01	1.654E-02	4.380E 00	1.060E-05	2.729E-04
7.100E-01	1.623E-01	1.541E-02	4.460E 00	-1.113E-04	2.591E-04
7.300E-01	1.445E-01	1.520E-02	4.540E 00	-1.035E-04	2.553E-04
7.500E-01	1.483E-01	1.501E-02	4.620E 00	5.677E-05	2.702E-04
7.700E-01	1.407E-01	1.407E-02	4.700E 00	-1.730E-04	2.715E-04
7.900E-01	1.191E-01	1.364E-02	4.80E 00	1.316E-04	2.663E-04
8.100E-01	9.624E-02	1.339E-02	4.90E 00	1.151E-04	2.573E-04
8.300E-01	8.482E-02	1.405E-02	5.00E 00	2.700E-04	2.548E-04
8.500E-01	8.824E-02	1.496E-02	5.10E 00	4.005E-04	2.614E-04
8.700E-01	1.169E-01	1.610E-02	5.20E 00	2.841E-04	2.630E-04
8.900E-01	1.795E-01	1.610E-02	5.30E 00	-6.620E-06	2.514E-04
9.100E-01	2.664E-01	1.682E-02	5.40E 00	-2.204E-04	2.135E-04
9.300E-01	3.523E-01	1.548E-02	5.50E 00	-2.518E-04	2.060E-04
9.500E-01	4.053E-01	1.802E-02	5.60E 00	-1.143E-04	2.265E-04
9.700E-01	3.989E-01	1.701E-02	5.70E 00	7.455E-05	2.176E-04
1.000E 00	3.012E-01	1.679E-02	5.80E 00	2.068E-04	1.895E-04
1.040E 00	1.791E-01	1.520E-02	5.90E 00	3.038E-04	1.761E-04
1.080E 00	1.954E-01	1.397E-02	6.00E 00	3.204E-04	1.891E-04
1.120E 00	2.260E-01	1.329E-02	6.10E 00	3.120E-04	1.998E-04
1.160E 00	1.742E-01	1.393E-02	6.20E 00	2.287E-04	1.985E-04
1.200E 00	1.105E-01	1.042E-02	6.30E 00	1.203E-04	1.959E-04
1.240E 00	1.067E-01	1.056E-02	6.40E 00	3.697E-06	1.809E-04
1.280E 00	1.524E-01	1.263E-02	6.50E 00	-3.734E-05	1.597E-04
1.320E 00	2.056E-01	1.335E-02	6.60E 00	-1.034E-05	1.651E-04
1.360E 00	2.131E-01	1.293E-02	6.800E 00	4.224E-05	1.563E-04
1.400E 00	1.845E-01	1.268E-02	6.920E 00	7.729E-05	1.376E-04
1.440E 00	1.559E-01	1.151E-02	7.040E 00	9.508E-05	1.238E-04
1.480E 00	1.324E-01	1.036E-02	7.160E 00	7.937E-05	1.058E-04
1.520E 00	1.097E-01	9.196E-03	7.280E 00	7.122E-05	1.205E-04
1.560E 00	8.739E-02	8.461E-03	7.400E 00	5.862E-05	1.157E-04
1.600E 00	6.730E-02	6.760E-03	7.520E 00	4.502E-05	1.210E-04
1.640E 00	5.277E-02	6.365E-03	7.640E 00	3.869E-05	1.231E-04
1.680E 00	4.417E-02	6.095E-03	7.760E 00	4.385E-05	1.120E-04
1.720E 00	4.079E-02	6.374E-03	7.890E 00	6.952E-05	1.009E-04
1.760E 00	4.765E-02	6.376E-03	8.030E 00	8.948E-05	9.536E-05
1.800E 00	5.454E-02	6.612E-03	8.170E 00	6.502E-05	8.179E-05
1.850E 00	6.573E-02	6.180E-03	8.310E 00	5.509E-05	7.223E-05
1.910E 00	6.556E-02	5.348E-03	8.450E 00	5.841E-05	6.485E-05
1.970E 00	6.086E-02	4.724E-03	8.590E 00	6.579E-05	5.313E-05
2.030E 00	5.426E-02	4.836E-03	8.730E 00	5.850E-05	4.718E-05
2.090E 00	4.560E-02	4.343E-03	8.870E 00	4.848E-05	4.715E-05
2.150E 00	3.369E-02	3.264E-03	9.010E 00	2.378E-05	4.201E-05
2.210E 00	2.657E-02	3.335E-03	9.150E 00	-1.047E-06	3.903E-05
2.270E 00	2.723E-02	3.160E-03	9.300E 00	-8.663E-06	3.883E-05
2.330E 00	2.704E-02	3.031E-03	9.460E 00	4.110E-06	3.337E-05
2.390E 00	2.571E-02	2.715E-03	9.620E 00	2.487E-05	2.785E-05
2.450E 00	2.494E-02	2.635E-03	9.780E 00	3.794E-05	2.716E-05
2.510E 00	2.427E-02	2.505E-03	9.940E 00	4.063E-05	3.023E-05
2.570E 00	2.141E-02	2.303E-03	1.010E 01	3.165E-05	2.445E-05
2.630E 00	1.479E-02	2.001E-03	1.026E 01	2.255E-05	1.615E-05
2.690E 00	1.319E-02	2.006E-03	1.042E 01	1.217E-05	1.399E-05
2.750E 00	2.002E-02	1.934E-03	1.058E 01	8.100E-06	1.254E-05

INTEGRATED DATA

PROTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	2.516E-02	3.359E-03
4.000E-01 - 5.000E-01	1.707E-02	3.065E-03
5.000E-01 - 6.000E-01	1.213E-02	2.048E-03
6.000E-01 - 7.000E-01	1.888E-02	1.837E-03
7.000E-01 - 8.000E-01	1.437E-02	1.468E-03
8.000E-01 - 1.000E 00	4.660E-02	3.173E-03
1.000E 00 - 1.200E 00	3.902E-02	2.672E-03
1.200E 00 - 1.400E 00	3.314E-02	2.444E-03
1.400E 00 - 1.600E 00	2.442E-02	1.973E-03
1.600E 00 - 1.800E 00	9.614E-03	1.272E-03
1.800E 00 - 2.000E 00	1.261E-02	1.107E-03
2.000E 00 - 2.500E 00	1.641E-02	1.689E-03
2.500E 00 - 3.000E 00	1.020E-02	9.736E-04
3.000E 00 - 3.500E 00	4.576E-03	4.739E-04
3.500E 00 - 4.000E 00	6.143E-04	2.186E-04
4.000E 00 - 4.500E 00	4.975E-05	1.402E-04
4.500E 00 - 5.000E 00	4.565E-05	1.322E-04
5.000E 00 - 6.000E 00	9.704E-05	2.247E-04
6.000E 00 - 7.000E 00	1.032E-04	1.732E-04
7.000E 00 - 8.000E 00	6.265E-05	1.159E-04
8.000E 00 - 9.000E 00	5.947E-05	8.171E-05
9.000E 00 - 1.000E 01	1.673E-05	3.326E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 3.99 TO 4.52 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	2.384E-01	4.418E-02	2.810E 00	2.932E-02	2.599E-03
3.175E-01	2.016E-01	4.270E-02	2.870E 00	2.775E-02	2.523E-03
3.325E-01	2.610E-01	3.879E-02	2.930E 00	2.620E-02	2.408E-03
3.475E-01	3.244E-01	3.710E-02	2.990E 00	2.530E-02	2.352E-03
3.625E-01	3.322E-01	3.870E-02	3.050E 00	1.939E-02	1.918E-03
3.775E-01	2.912E-01	3.866E-02	3.110E 00	1.168E-02	1.710E-03
3.925E-01	2.412E-01	3.758E-02	3.180E 00	9.532E-03	1.654E-03
4.100E-01	2.102E-01	3.718E-02	3.260E 00	1.212E-02	1.561E-03
4.300E-01	2.010E-01	3.712E-02	3.340E 00	1.481E-02	1.550E-03
4.500E-01	1.877E-01	3.786E-02	3.420E 00	1.734E-02	1.457E-03
4.700E-01	1.708E-01	3.552E-02	3.500E 00	1.489E-02	1.253E-03
4.900E-01	1.675E-01	3.293E-02	3.580E 00	1.050E-02	1.083E-03
5.100E-01	1.681E-01	3.163E-02	3.660E 00	7.665E-03	9.268E-04
5.300E-01	1.384E-01	2.810E-02	3.740E 00	6.377E-03	8.997E-04
5.500E-01	1.053E-01	2.328E-02	3.820E 00	6.167E-03	8.078E-04
5.700E-01	9.059E-02	2.143E-02	3.900E 00	5.911E-03	7.211E-04
5.900E-01	9.259E-02	2.186E-02	3.980E 00	4.861E-03	7.070E-04
6.100E-01	1.078E-01	2.196E-02	4.060E 00	3.562E-03	6.500E-04
6.300E-01	1.455E-01	2.402E-02	4.140E 00	2.537E-03	5.248E-04
6.500E-01	1.997E-01	2.292E-02	4.220E 00	1.740E-03	4.297E-04
6.700E-01	2.372E-01	2.058E-02	4.300E 00	1.111E-03	4.085E-04
6.900E-01	2.288E-01	1.982E-02	4.380E 00	6.364E-04	3.662E-04
7.100E-01	1.862E-01	1.813E-02	4.460E 00	3.169E-04	3.148E-04
7.300E-01	1.567E-01	1.763E-02	4.540E 00	8.836E-05	3.099E-04
7.500E-01	1.530E-01	1.733E-02	4.630E 00	-1.461E-04	3.224E-04
7.700E-01	1.482E-01	1.684E-02	4.730E 00	-2.183E-04	3.250E-04
7.900E-01	1.297E-01	1.602E-02	4.830E 00	-7.225E-05	2.485E-04
8.100E-01	1.085E-01	1.528E-02	4.930E 00	1.180E-04	2.347E-04
8.300E-01	9.559E-02	1.614E-02	5.030E 00	1.077E-04	2.583E-04
8.500E-01	1.000E-01	1.732E-02	5.130E 00	-2.395E-05	2.547E-04
8.700E-01	1.320E-01	1.820E-02	5.230E 00	-3.569E-05	2.289E-04
8.900E-01	1.923E-01	1.887E-02	5.330E 00	1.372E-04	2.130E-04
9.100E-01	2.734E-01	2.003E-02	5.430E 00	3.234E-04	2.279E-04
9.300E-01	3.600E-01	1.840E-02	5.530E 00	3.157E-04	2.437E-04
9.500E-01	4.237E-01	2.145E-02	5.630E 00	1.717E-04	2.338E-04
9.700E-01	4.314E-01	2.016E-02	5.730E 00	6.671E-05	2.148E-04
1.000E 00	3.357E-01	2.015E-02	5.830E 00	1.505E-05	2.200E-04
1.040E 00	2.094E-01	1.733E-02	5.930E 00	-5.357E-05	2.236E-04
1.080E 00	2.283E-01	1.605E-02	6.030E 00	-1.100E-04	2.347E-04
1.120E 00	2.509E-01	1.569E-02	6.130E 00	-1.147E-04	2.057E-04
1.160E 00	2.035E-01	1.417E-02	6.230E 00	-9.612E-06	2.014E-04
1.200E 00	1.194E-01	1.238E-02	6.330E 00	8.023E-05	2.069E-04
1.240E 00	1.093E-01	1.262E-02	6.430E 00	1.116E-04	1.992E-04
1.280E 00	1.748E-01	1.532E-02	6.530E 00	1.477E-04	1.834E-04
1.320E 00	2.275E-01	1.602E-02	6.630E 00	1.603E-04	1.612E-04
1.360E 00	2.300E-01	1.595E-02	6.800E 00	1.270E-04	1.508E-04
1.400E 00	2.061E-01	1.496E-02	6.920E 00	7.859E-05	1.363E-04
1.440E 00	1.827E-01	1.348E-02	7.040E 00	7.433E-05	1.179E-04
1.480E 00	1.567E-01	1.153E-02	7.160E 00	6.146E-05	1.103E-04
1.520E 00	1.261E-01	1.046E-02	7.280E 00	3.681E-05	1.045E-04
1.560E 00	1.016E-01	1.009E-02	7.400E 00	8.122E-05	9.391E-05
1.600E 00	8.208E-02	8.347E-03	7.520E 00	1.809E-04	1.023E-04
1.640E 00	6.410E-02	7.830E-03	7.640E 00	2.478E-04	1.047E-04
1.680E 00	5.342E-02	7.774E-03	7.760E 00	2.142E-04	1.005E-04
1.720E 00	4.889E-02	8.297E-03	7.880E 00	8.594E-05	8.261E-05
1.760E 00	5.064E-02	8.281E-03	8.030E 00	-1.361E-05	8.416E-05
1.800E 00	6.426E-02	8.704E-03	8.170E 00	-4.702E-05	8.647E-05
1.850E 00	8.156E-02	7.553E-03	8.310E 00	-2.595E-05	7.475E-05
1.910E 00	7.444E-02	7.355E-03	8.450E 00	1.899E-05	6.764E-05
1.970E 00	6.731E-02	6.599E-03	8.590E 00	6.033E-05	6.162E-05
2.030E 00	6.620E-02	5.782E-03	8.730E 00	7.954E-05	5.783E-05
2.090E 00	5.579E-02	5.833E-03	8.870E 00	6.723E-05	4.820E-05
2.150E 00	4.159E-02	4.728E-03	9.010E 00	4.849E-05	4.241E-05
2.210E 00	3.223E-02	4.416E-03	9.150E 00	3.733E-05	3.879E-05
2.270E 00	3.580E-02	4.211E-03	9.300E 00	3.213E-05	3.324E-05
2.330E 00	3.904E-02	4.263E-03	9.460E 00	2.541E-05	2.904E-05
2.390E 00	3.696E-02	3.958E-03	9.620E 00	2.529E-05	2.492E-05
2.450E 00	3.603E-02	3.970E-03	9.780E 00	2.639E-05	2.697E-05
2.510E 00	3.487E-02	3.468E-03	9.940E 00	2.547E-05	2.503E-05
2.570E 00	3.056E-02	3.157E-03	1.010E 01	2.009E-05	1.790E-05
2.630E 00	2.326E-02	2.977E-03	1.026E 01	1.527E-05	1.334E-05
2.690E 00	2.060E-02	2.898E-03	1.042E 01	9.811E-06	1.350E-05
2.750E 00	2.540E-02	2.744E-03	1.058E 01	7.413E-06	1.258E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	2.706E-02	3.946E-03
4.000E-01 - 5.000E-01	1.977E-02	3.573E-03
5.000E-01 - 6.000E-01	1.377E-02	2.404E-03
6.000E-01 - 7.000E-01	1.836E-02	2.187E-03
7.000E-01 - 8.000E-01	1.549E-02	1.721E-03
8.000E-01 - 1.000E 00	4.990E-02	3.717E-03
1.000E 00 - 1.200E 00	4.470E-02	3.179E-03
1.200E 00 - 1.400E 00	3.628E-02	2.956E-03
1.400E 00 - 1.600E 00	2.844E-02	2.290E-03
1.600E 00 - 1.800E 00	1.147E-02	1.624E-03
1.800E 00 - 2.000E 00	1.466E-02	1.480E-03
2.000E 00 - 2.500E 00	2.131E-02	2.307E-03
2.500E 00 - 3.000E 00	1.338E-02	1.386E-03
3.000E 00 - 3.500E 00	7.266E-03	8.104E-04
3.500E 00 - 4.000E 00	3.789E-03	4.458E-04
4.000E 00 - 4.500E 00	8.824E-04	2.294E-04
4.500E 00 - 5.000E 00	-2.376E-05	1.428E-04
5.000E 00 - 6.000E 00	9.705E-05	2.318E-04
6.000E 00 - 7.000E 00	6.318E-05	1.820E-04
7.000E 00 - 8.000E 00	1.193E-04	1.008E-04
8.000E 00 - 9.000E 00	2.290E-05	6.668E-05
9.000E 00 - 1.000E 01	2.997E-05	3.057E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 4.52 TO 5.01 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	2.478E-01	4.878E-02	2.810E-00	3.803E-02	4.085E-03
3.175E-01	2.910E-01	4.899E-02	2.870E-00	3.806E-02	3.783E-03
3.325E-01	3.354E-01	4.639E-02	2.930E-00	3.412E-02	3.331E-03
3.475E-01	3.071E-01	4.544E-02	2.990E-00	2.974E-02	3.142E-03
3.625E-01	3.095E-01	4.638E-02	3.050E-00	2.416E-02	2.904E-03
3.775E-01	3.220E-01	4.503E-02	3.110E-00	1.840E-02	2.722E-03
3.925E-01	2.616E-01	4.570E-02	3.180E-00	1.707E-02	2.412E-03
4.100E-01	1.898E-01	4.359E-02	3.260E-00	2.025E-02	2.299E-03
4.300E-01	2.217E-01	4.351E-02	3.340E-00	2.038E-02	2.466E-03
4.500E-01	2.447E-01	4.190E-02	3.420E-00	2.065E-02	2.204E-03
4.700E-01	2.067E-01	4.108E-02	3.500E-00	1.957E-02	2.064E-03
4.900E-01	1.812E-01	3.881E-02	3.580E-00	1.419E-02	1.881E-03
5.100E-01	1.877E-01	3.749E-02	3.660E-00	9.588E-03	1.633E-03
5.300E-01	1.743E-01	3.335E-02	3.740E-00	9.021E-03	1.525E-03
5.500E-01	1.222E-01	2.702E-02	3.820E-00	1.105E-02	1.424E-03
5.700E-01	8.764E-02	2.352E-02	3.900E-00	1.341E-02	1.377E-03
5.900E-01	1.084E-01	2.487E-02	3.980E-00	1.452E-02	1.301E-03
6.100E-01	1.386E-01	2.313E-02	4.060E-00	1.244E-02	1.218E-03
6.300E-01	1.537E-01	2.588E-02	4.140E-00	9.117E-03	1.087E-03
6.500E-01	1.940E-01	2.517E-02	4.220E-00	7.537E-03	9.459E-04
6.700E-01	2.417E-01	2.297E-02	4.300E-00	6.780E-03	8.813E-04
6.900E-01	2.396E-01	2.181E-02	4.380E-00	5.703E-03	7.589E-04
7.100E-01	1.934E-01	2.075E-02	4.460E-00	4.710E-03	6.754E-04
7.300E-01	1.506E-01	2.033E-02	4.540E-00	3.789E-03	5.900E-04
7.500E-01	1.487E-01	1.981E-02	4.630E-00	2.511E-03	4.803E-04
7.700E-01	1.450E-01	1.890E-02	4.730E-00	1.122E-03	3.859E-04
7.900E-01	1.235E-01	1.841E-02	4.830E-00	2.658E-04	3.434E-04
8.100E-01	9.889E-02	1.866E-02	4.930E-00	-9.779E-05	3.135E-04
8.300E-01	8.869E-02	1.887E-02	5.030E-00	-1.945E-04	2.825E-04
8.500E-01	9.813E-02	1.921E-02	5.130E-00	-6.452E-05	2.450E-04
8.700E-01	1.133E-01	2.062E-02	5.230E-00	1.625E-04	2.523E-04
8.900E-01	1.981E-01	2.098E-02	5.330E-00	3.243E-04	2.604E-04
9.100E-01	2.849E-01	2.175E-02	5.430E-00	3.788E-04	2.521E-04
9.300E-01	3.737E-01	2.112E-02	5.530E-00	3.747E-04	2.319E-04
9.500E-01	4.389E-01	2.441E-02	5.630E-00	3.491E-04	2.338E-04
9.700E-01	4.504E-01	2.274E-02	5.730E-00	2.704E-04	2.471E-04
1.000E-00	3.595E-01	2.265E-02	5.830E-00	1.745E-04	2.522E-04
1.040E-00	2.169E-01	2.053E-02	5.930E-00	-5.482E-05	2.176E-04
1.080E-00	2.214E-01	1.950E-02	6.030E-00	-5.543E-06	2.144E-04
1.120E-00	2.580E-01	1.750E-02	6.130E-00	-1.758E-05	2.149E-04
1.160E-00	2.195E-01	1.531E-02	6.230E-00	-2.590E-05	2.159E-04
1.200E-00	1.340E-01	1.481E-02	6.330E-00	-3.920E-05	1.937E-04
1.240E-00	1.142E-01	1.523E-02	6.440E-00	-3.370E-05	1.805E-04
1.280E-00	1.739E-01	1.832E-02	6.560E-00	-9.032E-06	1.760E-04
1.320E-00	2.324E-01	1.849E-02	6.680E-00	4.015E-05	1.677E-04
1.360E-00	2.416E-01	1.853E-02	6.800E-00	1.147E-04	1.641E-04
1.400E-00	2.153E-01	1.731E-02	6.920E-00	1.403E-04	1.493E-04
1.440E-00	1.881E-01	1.629E-02	7.040E-00	1.369E-04	1.227E-04
1.480E-00	1.655E-01	1.468E-02	7.160E-00	1.466E-04	1.020E-04
1.520E-00	1.358E-01	1.371E-02	7.280E-00	1.385E-04	9.880E-05
1.560E-00	1.063E-01	1.339E-02	7.400E-00	1.107E-04	8.914E-05
1.600E-00	8.640E-02	1.119E-02	7.520E-00	4.986E-05	7.591E-05
1.640E-00	7.027E-02	1.025E-02	7.640E-00	-2.382E-07	6.341E-05
1.680E-00	5.713E-02	9.652E-03	7.760E-00	-1.244E-05	6.008E-05
1.720E-00	5.177E-02	9.744E-03	7.880E-00	3.913E-06	5.792E-05
1.760E-00	5.538E-02	9.569E-03	8.030E-00	2.976E-05	5.031E-05
1.800E-00	6.874E-02	1.006E-02	8.170E-00	5.388E-05	4.652E-05
1.850E-00	8.627E-02	9.589E-03	8.310E-00	6.966E-05	4.749E-05
1.910E-00	8.219E-02	9.728E-03	8.450E-00	7.441E-05	4.610E-05
1.970E-00	6.572E-02	8.471E-03	8.590E-00	8.125E-05	4.656E-05
2.030E-00	6.155E-02	8.646E-03	8.730E-00	7.371E-05	3.665E-05
2.090E-00	5.811E-02	6.804E-03	8.870E-00	4.702E-05	3.141E-05
2.150E-00	4.385E-02	6.328E-03	9.010E-00	1.844E-05	2.395E-05
2.210E-00	3.890E-02	5.383E-03	9.150E-00	1.297E-06	1.484E-05
2.270E-00	4.249E-02	5.307E-03	9.300E-00	-2.310E-06	1.077E-05
2.330E-00	4.231E-02	5.580E-03	9.460E-00	-5.960E-07	9.371E-06
2.390E-00	4.478E-02	4.845E-03	9.620E-00	1.690E-06	8.664E-06
2.450E-00	4.531E-02	4.767E-03	9.780E-00	6.694E-06	8.991E-06
2.510E-00	3.948E-02	4.556E-03	9.940E-00	9.003E-06	9.739E-06
2.570E-00	3.302E-02	4.502E-03	1.010E-01	1.300E-05	1.041E-05
2.630E-00	2.824E-02	4.242E-03	1.026E-01	1.676E-05	1.037E-05
2.690E-00	2.763E-02	3.975E-03	1.042E-01	1.805E-05	1.082E-05
2.750E-00	3.243E-02	3.892E-03	1.058E-01	1.534E-05	1.142E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	X-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	2.994E-02	4.656E-03
4.000E-01 - 5.000E-01	2.244E-02	4.119E-03
5.000E-01 - 6.000E-01	1.630E-02	2.719E-03
6.000E-01 - 7.000E-01	1.926E-02	2.386E-03
7.000E-01 - 8.000E-01	1.529E-02	1.966E-03
8.000E-01 - 1.000E-00	5.132E-02	4.214E-03
1.000E-00 - 1.200E-00	4.634E-02	3.654E-03
1.200E-00 - 1.400E-00	3.755E-02	3.455E-03
1.400E-00 - 1.600E-00	2.984E-02	2.899E-03
1.600E-00 - 1.800E-00	1.236E-02	1.987E-03
1.800E-00 - 2.000E-00	1.548E-02	1.808E-03
2.000E-00 - 2.500E-00	2.349E-02	2.941E-03
2.500E-00 - 3.000E-00	1.665E-02	1.977E-03
3.000E-00 - 3.500E-00	1.018E-02	1.234E-03
3.500E-00 - 4.000E-00	6.180E-03	7.865E-04
4.000E-00 - 4.500E-00	1.975E-03	4.705E-04
4.500E-00 - 5.000E-00	6.824E-04	2.056E-04
5.000E-00 - 6.000E-00	1.879E-04	2.472E-04
6.000E-00 - 7.000E-00	2.455E-05	1.827E-04
7.000E-00 - 8.000E-00	6.713E-05	8.104E-05
8.000E-00 - 9.000E-00	6.102E-05	4.214E-05
9.000E-00 - 1.000E-01	3.182E-06	1.127E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 5.01 TO 5.97 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	3.233E-01	5.369E-02	2.810E 00	3.997E-02	4.840E-03
3.175E-01	3.323E-01	5.062E-02	2.870E 00	3.915E-02	4.760E-03
3.325E-01	3.311E-01	5.154E-02	2.930E 00	3.687E-02	4.234E-03
3.475E-01	3.381E-01	5.140E-02	2.990E 00	3.449E-02	3.844E-03
3.625E-01	3.502E-01	4.763E-02	3.050E 00	3.134E-02	3.474E-03
3.775E-01	3.539E-01	4.801E-02	3.110E 00	2.824E-02	3.306E-03
3.925E-01	3.152E-01	4.735E-02	3.180E 00	2.740E-02	3.154E-03
4.100E-01	2.548E-01	4.710E-02	3.260E 00	2.525E-02	3.109E-03
4.300E-01	2.219E-01	4.607E-02	3.340E 00	2.895E-02	2.873E-03
4.500E-01	2.285E-01	4.663E-02	3.420E 00	3.119E-02	2.616E-03
4.700E-01	2.125E-01	4.566E-02	3.500E 00	2.905E-02	2.481E-03
4.900E-01	1.808E-01	4.506E-02	3.580E 00	2.215E-02	2.298E-03
5.100E-01	1.751E-01	4.641E-02	3.660E 00	1.798E-02	2.106E-03
5.300E-01	1.432E-01	3.925E-02	3.740E 00	1.674E-02	1.925E-03
5.500E-01	1.118E-01	3.058E-02	3.820E 00	1.686E-02	1.735E-03
5.700E-01	1.084E-01	2.704E-02	3.900E 00	1.776E-02	1.790E-03
5.900E-01	1.000E-01	2.719E-02	3.980E 00	1.662E-02	1.745E-03
6.100E-01	9.703E-02	2.626E-02	4.060E 00	1.331E-02	1.699E-03
6.300E-01	1.458E-01	3.048E-02	4.140E 00	1.188E-02	1.528E-03
6.500E-01	2.071E-01	2.732E-02	4.220E 00	1.256E-02	1.359E-03
6.700E-01	2.254E-01	2.649E-02	4.300E 00	1.189E-02	1.316E-03
6.900E-01	2.053E-01	2.393E-02	4.380E 00	1.035E-02	1.189E-03
7.100E-01	1.732E-01	2.260E-02	4.460E 00	9.584E-03	1.029E-03
7.300E-01	1.462E-01	2.179E-02	4.540E 00	8.598E-03	9.871E-04
7.500E-01	1.410E-01	2.108E-02	4.620E 00	7.131E-03	9.425E-04
7.700E-01	1.377E-01	2.035E-02	4.700E 00	6.748E-03	8.341E-04
7.900E-01	1.243E-01	1.987E-02	4.800E 00	6.145E-03	7.535E-04
8.100E-01	1.066E-01	2.000E-02	4.900E 00	4.760E-03	5.953E-04
8.300E-01	9.987E-02	2.022E-02	5.000E 00	3.791E-03	5.828E-04
8.500E-01	1.131E-01	2.090E-02	5.100E 00	3.005E-03	4.733E-04
8.700E-01	1.474E-01	2.301E-02	5.200E 00	2.259E-03	4.335E-04
8.900E-01	2.084E-01	2.418E-02	5.300E 00	1.688E-03	3.668E-04
9.100E-01	2.928E-01	2.544E-02	5.400E 00	1.147E-03	3.372E-04
9.300E-01	4.010E-01	2.336E-02	5.500E 00	6.366E-04	3.160E-04
9.500E-01	4.706E-01	2.554E-02	5.600E 00	2.151E-04	2.640E-04
9.700E-01	4.723E-01	2.359E-02	5.700E 00	-4.105E-05	2.479E-04
1.000E 00	3.620E-01	2.343E-02	5.800E 00	-1.178E-04	2.445E-04
1.040E 00	2.174E-01	2.163E-02	5.900E 00	-9.487E-05	2.379E-04
1.080E 00	2.477E-01	2.026E-02	6.000E 00	-2.479E-05	2.334E-04
1.120E 00	2.874E-01	1.896E-02	6.100E 00	8.103E-05	2.256E-04
1.160E 00	2.208E-01	1.723E-02	6.200E 00	1.675E-04	1.855E-04
1.200E 00	1.393E-01	1.675E-02	6.300E 00	1.962E-04	1.834E-04
1.240E 00	1.371E-01	1.757E-02	6.400E 00	1.941E-04	2.047E-04
1.280E 00	2.053E-01	2.001E-02	6.500E 00	1.231E-04	1.636E-04
1.320E 00	2.601E-01	2.042E-02	6.600E 00	8.172E-05	1.431E-04
1.360E 00	2.542E-01	1.964E-02	6.800E 00	8.587E-05	1.259E-04
1.400E 00	2.195E-01	1.984E-02	6.920E 00	1.150E-04	1.202E-04
1.440E 00	1.924E-01	1.833E-02	7.040E 00	1.026E-04	1.073E-04
1.480E 00	1.691E-01	1.604E-02	7.160E 00	2.695E-05	9.590E-05
1.520E 00	1.430E-01	1.478E-02	7.280E 00	-3.328E-05	8.744E-05
1.560E 00	1.173E-01	1.405E-02	7.400E 00	-3.283E-07	9.198E-05
1.600E 00	9.390E-02	1.219E-02	7.520E 00	1.003E-04	1.011E-04
1.640E 00	7.591E-02	1.177E-02	7.640E 00	1.850E-04	1.131E-04
1.680E 00	6.610E-02	1.166E-02	7.760E 00	1.660E-04	9.280E-05
1.720E 00	6.505E-02	1.225E-02	7.880E 00	7.629E-05	8.256E-05
1.760E 00	7.127E-02	1.194E-02	8.000E 00	-7.722E-06	9.163E-05
1.800E 00	8.246E-02	1.259E-02	8.170E 00	-2.225E-05	8.555E-05
1.850E 00	9.086E-02	1.220E-02	8.310E 00	1.509E-05	7.258E-05
1.910E 00	8.303E-02	1.111E-02	8.450E 00	5.322E-05	6.481E-05
1.970E 00	7.590E-02	1.034E-02	8.590E 00	6.172E-05	6.107E-05
2.030E 00	7.320E-02	9.411E-03	8.730E 00	2.872E-05	6.004E-05
2.090E 00	6.082E-02	8.708E-03	8.870E 00	-9.141E-07	5.853E-05
2.150E 00	5.055E-02	7.802E-03	9.010E 00	-4.369E-06	5.102E-05
2.210E 00	4.825E-02	6.814E-03	9.150E 00	1.694E-05	4.488E-05
2.270E 00	5.324E-02	6.421E-03	9.300E 00	3.951E-05	4.273E-05
2.330E 00	5.656E-02	6.386E-03	9.460E 00	4.396E-05	3.979E-05
2.390E 00	5.122E-02	5.988E-03	9.620E 00	3.613E-05	3.244E-05
2.450E 00	4.701E-02	5.741E-03	9.780E 00	2.667E-05	3.032E-05
2.510E 00	4.654E-02	5.898E-03	9.940E 00	2.401E-05	2.998E-05
2.570E 00	4.268E-02	5.490E-03	1.010E 01	2.391E-05	2.401E-05
2.630E 00	3.665E-02	5.199E-03	1.026E 01	2.212E-05	1.662E-05
2.690E 00	3.577E-02	4.955E-03	1.042E 01	1.967E-05	1.502E-05
2.750E 00	3.845E-02	4.642E-03	1.058E 01	1.442E-05	1.627E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	X-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	3.366E-02	4.900E-03
4.000E-01 - 5.000E-01	2.408E-02	4.518E-03
5.000E-01 - 6.000E-01	1.654E-02	3.076E-03
6.000E-01 - 7.000E-01	1.765E-02	2.703E-03
7.000E-01 - 8.000E-01	1.450E-02	2.141E-03
8.000E-01 - 1.000E 00	5.456E-02	4.587E-03
1.000E 00 - 1.200E 00	4.876E-02	3.921E-03
1.200E 00 - 1.400E 00	4.163E-02	3.841E-03
1.400E 00 - 1.600E 00	3.113E-02	3.170E-03
1.600E 00 - 1.800E 00	1.455E-02	2.394E-03
1.800E 00 - 2.000E 00	1.661E-02	2.265E-03
2.000E 00 - 2.500E 00	2.736E-02	3.557E-03
2.500E 00 - 3.000E 00	1.941E-02	2.436E-03
3.000E 00 - 3.500E 00	1.470E-02	1.528E-03
3.500E 00 - 4.000E 00	9.431E-03	9.915E-04
4.000E 00 - 4.500E 00	5.874E-03	6.846E-04
4.500E 00 - 5.000E 00	3.251E-03	4.042E-04
5.000E 00 - 6.000E 00	1.169E-03	3.425E-04
6.000E 00 - 7.000E 00	1.169E-04	1.711E-04
7.000E 00 - 8.000E 00	7.473E-05	9.568E-05
8.000E 00 - 9.000E 00	1.767E-05	6.863E-05
9.000E 00 - 1.000E 01	2.896E-05	3.766E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 5.97 TO 6.97 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	3.213E-01	6.233E-02	2.810E-00	5.172E-02	6.147E-03
3.175E-01	3.112E-01	6.082E-02	2.870E-00	4.930E-02	6.003E-03
3.325E-01	3.479E-01	5.795E-02	2.930E-00	4.580E-02	5.520E-03
3.475E-01	3.851E-01	5.716E-02	2.990E-00	4.340E-02	5.347E-03
3.625E-01	3.802E-01	5.446E-02	3.050E-00	3.944E-02	4.908E-03
3.775E-01	3.465E-01	5.442E-02	3.110E-00	3.446E-02	4.685E-03
3.925E-01	3.087E-01	5.468E-02	3.180E-00	3.286E-02	4.337E-03
4.075E-01	2.891E-01	5.330E-02	3.260E-00	3.501E-02	4.403E-03
4.200E-01	2.665E-01	5.378E-02	3.340E-00	3.506E-02	4.230E-03
4.300E-01	2.316E-01	5.415E-02	3.420E-00	3.435E-02	3.995E-03
4.400E-01	2.432E-01	5.149E-02	3.500E-00	3.316E-02	3.154E-03
4.500E-01	2.197E-01	5.284E-02	3.580E-00	2.880E-02	3.138E-03
4.600E-01	1.487E-01	5.613E-02	3.660E-00	2.571E-02	2.959E-03
4.700E-01	1.294E-01	5.561E-02	3.740E-00	2.396E-02	2.878E-03
4.800E-01	1.364E-01	5.532E-02	3.820E-00	2.146E-02	2.790E-03
4.900E-01	1.227E-01	2.981E-02	3.900E-00	2.013E-02	2.540E-03
5.000E-01	1.193E-01	3.132E-02	3.980E-00	2.098E-02	2.355E-03
6.100E-01	1.385E-01	2.906E-02	4.060E-00	2.172E-02	2.229E-03
6.300E-01	1.732E-01	3.133E-02	4.140E-00	1.913E-02	2.154E-03
6.500E-01	2.061E-01	3.053E-02	4.220E-00	1.682E-02	2.137E-03
6.700E-01	2.105E-01	2.976E-02	4.300E-00	1.794E-02	1.994E-03
6.900E-01	1.844E-01	2.862E-02	4.380E-00	1.820E-02	1.924E-03
7.100E-01	1.554E-01	2.726E-02	4.460E-00	1.523E-02	1.789E-03
7.300E-01	1.437E-01	2.635E-02	4.540E-00	1.200E-02	1.725E-03
7.500E-01	1.411E-01	2.579E-02	4.620E-00	1.034E-02	1.532E-03
7.700E-01	1.302E-01	2.438E-02	4.700E-00	1.037E-02	1.444E-03
7.900E-01	1.135E-01	2.244E-02	4.800E-00	1.052E-02	1.387E-03
8.100E-01	1.049E-01	2.212E-02	4.900E-00	9.807E-03	1.205E-03
8.300E-01	1.159E-01	2.310E-02	5.030E-00	8.432E-03	1.070E-03
8.500E-01	1.058E-01	2.468E-02	5.130E-00	6.914E-03	9.958E-04
8.700E-01	1.888E-01	2.687E-02	5.230E-00	5.371E-03	9.725E-04
8.900E-01	2.509E-01	2.826E-02	5.330E-00	4.264E-03	8.962E-04
9.100E-01	3.404E-01	3.010E-02	5.430E-00	3.978E-03	7.937E-04
9.300E-01	4.367E-01	2.706E-02	5.530E-00	3.879E-03	7.000E-04
9.500E-01	4.872E-01	3.004E-02	5.630E-00	3.780E-03	6.282E-04
9.700E-01	4.589E-01	2.769E-02	5.730E-00	3.772E-03	6.135E-04
1.000E-00	3.274E-01	2.770E-02	5.830E-00	3.384E-03	5.801E-04
1.050E-00	2.211E-01	2.423E-02	5.930E-00	2.698E-03	4.869E-04
1.080E-00	2.522E-01	2.263E-02	6.030E-00	2.119E-03	4.018E-04
1.120E-00	2.664E-01	2.164E-02	6.130E-00	1.653E-03	3.686E-04
1.160E-00	2.099E-01	1.902E-02	6.230E-00	1.178E-03	3.313E-04
1.200E-00	1.383E-01	1.847E-02	6.330E-00	8.338E-04	2.875E-04
1.240E-00	1.446E-01	1.946E-02	6.440E-00	6.345E-04	2.524E-04
1.280E-00	2.210E-01	2.411E-02	6.560E-00	4.871E-04	2.209E-04
1.320E-00	2.718E-01	2.866E-02	6.680E-00	3.105E-04	1.856E-04
1.360E-00	2.576E-01	2.391E-02	6.800E-00	1.544E-04	1.523E-04
1.400E-00	2.160E-01	2.342E-02	6.920E-00	7.430E-05	1.502E-04
1.440E-00	1.930E-01	2.112E-02	7.040E-00	4.304E-05	1.455E-04
1.480E-00	1.750E-01	1.918E-02	7.160E-00	1.251E-05	1.288E-04
1.520E-00	1.439E-01	1.817E-02	7.280E-00	4.174E-06	1.142E-04
1.560E-00	1.182E-01	1.727E-02	7.400E-00	2.867E-05	1.017E-04
1.600E-00	1.000E-01	1.496E-02	7.520E-00	8.026E-05	9.909E-05
1.640E-00	8.357E-02	1.460E-02	7.640E-00	1.360E-04	9.790E-05
1.680E-00	7.499E-02	1.437E-02	7.760E-00	1.438E-04	8.721E-05
1.720E-00	7.381E-02	1.478E-02	7.890E-00	9.426E-05	8.247E-05
1.760E-00	7.755E-02	1.429E-02	8.030E-00	4.122E-05	7.371E-05
1.800E-00	9.102E-02	1.439E-02	8.170E-00	1.134E-05	6.586E-05
1.850E-00	1.051E-01	1.406E-02	8.310E-00	-4.913E-06	6.896E-05
1.910E-00	8.717E-02	1.324E-02	8.450E-00	-1.146E-05	6.276E-05
1.970E-00	7.075E-02	1.182E-02	8.590E-00	-3.970E-06	5.111E-05
2.030E-00	7.499E-02	1.057E-02	8.730E-00	2.147E-05	4.619E-05
2.090E-00	7.073E-02	1.049E-02	8.870E-00	4.035E-05	4.414E-05
2.150E-00	6.145E-02	9.584E-03	9.010E-00	4.799E-05	3.964E-05
2.210E-00	5.631E-02	8.852E-03	9.150E-00	4.640E-05	3.959E-05
2.270E-00	5.616E-02	8.772E-03	9.300E-00	4.044E-05	3.842E-05
2.330E-00	5.652E-02	8.264E-03	9.460E-00	2.614E-05	3.420E-05
2.390E-00	5.424E-02	8.226E-03	9.620E-00	1.045E-05	2.633E-05
2.450E-00	5.650E-02	7.793E-03	9.780E-00	4.688E-06	2.785E-05
2.510E-00	5.843E-02	7.049E-03	9.940E-00	1.140E-05	2.725E-05
2.570E-00	4.982E-02	7.071E-03	1.010E-01	1.224E-05	2.695E-05
2.630E-00	4.323E-02	6.842E-03	1.026E-01	2.068E-05	1.709E-05
2.690E-00	4.539E-02	6.194E-03	1.042E-01	2.358E-05	1.530E-05
2.750E-00	4.980E-02	6.070E-03	1.058E-01	2.587E-05	2.099E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	3.437E-02	5.713E-03
4.000E-01 - 5.000E-01	2.754E-02	5.138E-03
5.000E-01 - 6.000E-01	1.836E-02	3.407E-03
6.000E-01 - 7.000E-01	1.825E-02	3.034E-03
7.000E-01 - 8.000E-01	1.371E-02	2.527E-03
8.000E-01 - 1.000E-00	5.816E-02	5.345E-03
1.000E-00 - 1.200E-00	4.774E-02	4.810E-03
1.200E-00 - 1.400E-00	4.312E-02	4.534E-03
1.400E-00 - 1.600E-00	3.152E-02	3.798E-03
1.600E-00 - 1.800E-00	1.609E-02	2.905E-03
1.800E-00 - 2.000E-00	1.761E-02	2.634E-03
2.000E-00 - 2.500E-00	3.034E-02	4.506E-03
2.500E-00 - 3.000E-00	2.414E-02	3.128E-03
3.000E-00 - 3.500E-00	1.757E-02	2.173E-03
3.500E-00 - 4.000E-00	1.215E-02	1.412E-03
4.000E-00 - 4.500E-00	9.142E-03	1.025E-03
4.500E-00 - 5.000E-00	5.255E-03	7.172E-04
5.000E-00 - 6.000E-00	4.518E-03	6.610E-04
6.000E-00 - 7.000E-00	7.349E-04	2.491E-04
7.000E-00 - 8.000E-00	6.827E-05	1.044E-04
8.000E-00 - 9.000E-00	1.406E-05	5.712E-05
9.000E-00 - 1.000E-01	2.520E-05	3.284E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 6.97 TO 8.03 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	3.224E-01	7.182E-02	2.810E 00	5.550E-02	7.847E-03
3.175E-01	3.477E-01	6.927E-02	2.870E 00	5.558E-02	7.129E-03
3.325E-01	3.940E-01	6.405E-02	2.930E 00	5.321E-02	6.818E-03
3.475E-01	3.980E-01	6.564E-02	2.990E 00	4.900E-02	7.028E-03
3.625E-01	3.594E-01	6.274E-02	3.050E 00	4.511E-02	6.510E-03
3.775E-01	3.423E-01	6.235E-02	3.110E 00	4.332E-02	6.077E-03
3.925E-01	3.339E-01	6.400E-02	3.180E 00	4.316E-02	5.900E-03
4.100E-01	2.686E-01	6.139E-02	3.260E 00	4.545E-02	5.449E-03
4.300E-01	2.163E-01	6.555E-02	3.340E 00	4.291E-02	5.708E-03
4.500E-01	2.756E-01	6.051E-02	3.420E 00	3.625E-02	5.165E-03
4.700E-01	3.236E-01	6.147E-02	3.500E 00	3.430E-02	4.741E-03
4.900E-01	2.572E-01	6.416E-02	3.580E 00	3.297E-02	4.689E-03
5.100E-01	1.495E-01	6.961E-02	3.660E 00	3.039E-02	4.106E-03
5.300E-01	1.178E-01	5.715E-02	3.740E 00	2.925E-02	3.883E-03
5.500E-01	1.180E-01	3.938E-02	3.820E 00	2.687E-02	3.638E-03
5.700E-01	9.660E-02	3.618E-02	3.900E 00	2.691E-02	3.628E-03
5.900E-01	1.010E-01	3.407E-02	3.980E 00	2.583E-02	3.495E-03
6.100E-01	1.495E-01	3.571E-02	4.060E 00	2.727E-02	3.248E-03
6.300E-01	2.007E-01	3.808E-02	4.140E 00	2.835E-02	3.340E-03
6.500E-01	2.223E-01	3.721E-02	4.220E 00	2.662E-02	3.150E-03
6.700E-01	2.074E-01	3.318E-02	4.300E 00	2.324E-02	3.019E-03
6.900E-01	1.850E-01	3.098E-02	4.380E 00	2.199E-02	2.801E-03
7.100E-01	1.741E-01	2.934E-02	4.460E 00	2.168E-02	2.668E-03
7.300E-01	1.628E-01	3.026E-02	4.540E 00	1.767E-02	2.569E-03
7.500E-01	1.391E-01	2.998E-02	4.630E 00	1.107E-02	2.542E-03
7.700E-01	1.129E-01	2.889E-02	4.730E 00	1.083E-02	2.468E-03
7.900E-01	1.002E-01	2.713E-02	4.830E 00	1.377E-02	2.099E-03
8.100E-01	1.018E-01	2.728E-02	4.930E 00	1.396E-02	2.046E-03
8.300E-01	1.165E-01	2.820E-02	5.030E 00	1.315E-02	2.038E-03
8.500E-01	1.512E-01	2.842E-02	5.130E 00	1.262E-02	1.816E-03
8.700E-01	2.116E-01	2.965E-02	5.230E 00	1.094E-02	1.984E-03
8.900E-01	2.981E-01	3.042E-02	5.330E 00	8.575E-03	1.767E-03
9.100E-01	3.942E-01	3.169E-02	5.430E 00	6.966E-03	1.519E-03
9.300E-01	4.656E-01	2.895E-02	5.530E 00	6.176E-03	1.397E-03
9.500E-01	4.813E-01	3.361E-02	5.630E 00	5.961E-03	1.447E-03
9.700E-01	4.386E-01	3.129E-02	5.730E 00	6.024E-03	1.317E-03
1.000E 00	3.241E-01	3.130E-02	5.830E 00	5.250E-03	1.239E-03
1.040E 00	2.220E-01	2.812E-02	5.930E 00	6.569E-03	1.103E-03
1.080E 00	2.539E-01	2.719E-02	6.030E 00	6.752E-03	9.960E-04
1.120E 00	2.843E-01	2.462E-02	6.130E 00	6.197E-03	9.013E-04
1.160E 00	2.188E-01	2.314E-02	6.230E 00	5.110E-03	7.819E-04
1.200E 00	1.859E-01	2.253E-02	6.330E 00	4.196E-03	6.924E-04
1.240E 00	1.641E-01	2.357E-02	6.440E 00	3.596E-03	6.451E-04
1.280E 00	2.507E-01	2.709E-02	6.560E 00	2.892E-03	6.037E-04
1.320E 00	2.828E-01	2.695E-02	6.680E 00	4.985E-03	5.146E-04
1.360E 00	2.578E-01	2.805E-02	6.800E 00	1.486E-03	4.411E-04
1.400E 00	2.289E-01	2.777E-02	6.920E 00	1.414E-03	3.961E-04
1.440E 00	2.010E-01	2.505E-02	7.040E 00	1.308E-03	3.148E-04
1.480E 00	1.727E-01	2.238E-02	7.160E 00	1.063E-03	2.438E-04
1.520E 00	1.445E-01	2.084E-02	7.280E 00	7.685E-04	2.043E-04
1.560E 00	1.168E-01	2.029E-02	7.400E 00	4.518E-04	1.711E-04
1.600E 00	9.829E-02	1.831E-02	7.520E 00	1.985E-04	1.502E-04
1.640E 00	9.004E-02	1.737E-02	7.640E 00	5.343E-05	1.180E-04
1.680E 00	8.193E-02	1.635E-02	7.760E 00	2.072E-05	8.152E-05
1.720E 00	7.322E-02	1.792E-02	7.880E 00	3.992E-05	7.405E-05
1.760E 00	7.514E-02	1.791E-02	8.030E 00	5.032E-05	6.964E-05
1.800E 00	9.270E-02	1.809E-02	8.170E 00	5.318E-05	5.908E-05
1.850E 00	1.107E-01	1.746E-02	8.310E 00	6.509E-05	5.777E-05
1.910E 00	9.805E-02	1.469E-02	8.450E 00	7.935E-05	5.655E-05
1.970E 00	7.655E-02	1.482E-02	8.590E 00	6.518E-05	5.610E-05
2.030E 00	7.198E-02	1.421E-02	8.730E 00	4.398E-05	5.479E-05
2.090E 00	7.596E-02	1.196E-02	8.870E 00	2.365E-05	4.564E-05
2.150E 00	6.490E-02	1.182E-02	9.010E 00	2.093E-05	4.316E-05
2.210E 00	5.623E-02	1.072E-02	9.150E 00	2.252E-05	4.236E-05
2.270E 00	5.908E-02	1.026E-02	9.300E 00	2.131E-05	3.932E-05
2.330E 00	5.621E-02	9.831E-03	9.460E 00	1.651E-05	3.756E-05
2.390E 00	5.659E-02	1.023E-02	9.620E 00	1.381E-05	3.587E-05
2.450E 00	6.271E-02	8.689E-03	9.780E 00	1.233E-05	3.919E-05
2.510E 00	6.271E-02	8.697E-03	9.940E 00	1.747E-05	4.757E-05
2.570E 00	5.727E-02	8.302E-03	1.010E 01	2.714E-05	4.376E-05
2.630E 00	5.246E-02	8.307E-03	1.026E 01	3.881E-05	3.229E-05
2.690E 00	5.127E-02	8.109E-03	1.042E 01	4.676E-05	3.041E-05
2.750E 00	5.304E-02	7.780E-03	1.058E 01	3.934E-05	3.386E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	3.581E-02	6.538E-03
4.000E-01 - 5.000E-01	3.015E-02	6.030E-03
5.000E-01 - 6.000E-01	1.853E-02	3.969E-03
6.000E-01 - 7.000E-01	1.929E-02	3.506E-03
7.000E-01 - 8.000E-01	1.380E-02	2.919E-03
8.000E-01 - 1.000E 00	6.047E-02	6.009E-03
1.000E 00 - 1.200E 00	4.847E-02	5.192E-03
1.200E 00 - 1.400E 00	4.597E-02	5.245E-03
1.400E 00 - 1.600E 00	3.190E-02	4.462E-03
1.600E 00 - 1.800E 00	1.652E-02	3.502E-03
1.800E 00 - 2.000E 00	1.900E-02	3.157E-03
2.000E 00 - 2.500E 00	3.153E-02	5.447E-03
2.500E 00 - 3.000E 00	2.716E-02	3.881E-03
3.000E 00 - 3.500E 00	2.106E-02	2.863E-03
3.500E 00 - 4.000E 00	1.478E-02	1.994E-03
4.000E 00 - 4.500E 00	1.243E-02	1.527E-03
4.500E 00 - 5.000E 00	6.695E-03	1.161E-03
5.000E 00 - 6.000E 00	8.197E-03	1.540E-03
6.000E 00 - 7.000E 00	3.479E-03	6.355E-04
7.000E 00 - 8.000E 00	4.431E-04	1.604E-04
8.000E 00 - 9.000E 00	5.254E-05	5.567E-05
9.000E 00 - 1.000E 01	1.752E-05	4.023E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 8.03 TO 9.02 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	3.355E-01	8.262E-02	2.810E-00	5.306E-02	9.576E-03
3.175E-01	3.550E-01	7.994E-02	2.870E-00	5.285E-02	9.318E-03
3.325E-01	4.032E-01	7.342E-02	2.930E-00	5.338E-02	8.776E-03
3.475E-01	4.063E-01	7.347E-02	2.990E-00	4.989E-02	8.541E-03
3.625E-01	3.887E-01	7.323E-02	3.050E-00	4.665E-02	7.823E-03
3.775E-01	3.848E-01	7.100E-02	3.110E-00	4.727E-02	7.853E-03
3.925E-01	3.641E-01	7.168E-02	3.180E-00	4.741E-02	7.130E-03
4.100E-01	3.107E-01	6.999E-02	3.260E-00	4.793E-02	7.585E-03
4.300E-01	2.898E-01	7.189E-02	3.340E-00	4.928E-02	6.980E-03
4.500E-01	3.340E-01	7.009E-02	3.420E-00	4.349E-02	7.134E-03
4.700E-01	3.575E-01	6.779E-02	3.500E-00	4.028E-02	6.699E-03
4.900E-01	3.035E-01	7.689E-02	3.580E-00	3.987E-02	5.726E-03
5.100E-01	1.915E-01	8.322E-02	3.660E-00	3.693E-02	5.553E-03
5.300E-01	8.971E-02	6.933E-02	3.740E-00	3.366E-02	5.472E-03
5.500E-01	6.715E-02	4.970E-02	3.820E-00	3.060E-02	5.572E-03
5.700E-01	9.192E-02	4.200E-02	3.900E-00	2.990E-02	5.366E-03
5.900E-01	1.133E-01	4.242E-02	3.980E-00	3.090E-02	5.218E-03
6.100E-01	1.524E-01	3.912E-02	4.060E-00	3.068E-02	4.777E-03
6.300E-01	2.026E-01	4.335E-02	4.140E-00	2.790E-02	4.310E-03
6.500E-01	2.132E-01	4.023E-02	4.220E-00	2.557E-02	4.451E-03
6.700E-01	1.915E-01	3.776E-02	4.300E-00	2.614E-02	4.544E-03
6.900E-01	1.780E-01	3.580E-02	4.380E-00	2.652E-02	4.352E-03
7.100E-01	1.739E-01	3.472E-02	4.460E-00	2.392E-02	4.295E-03
7.300E-01	1.630E-01	3.625E-02	4.540E-00	2.145E-02	4.268E-03
7.500E-01	1.458E-01	3.589E-02	4.620E-00	1.985E-02	3.697E-03
7.700E-01	1.277E-01	3.326E-02	4.700E-00	1.790E-02	3.632E-03
7.900E-01	1.217E-01	3.130E-02	4.830E-00	1.708E-02	3.305E-03
8.100E-01	1.304E-01	2.984E-02	4.930E-00	1.513E-02	3.385E-03
8.300E-01	1.442E-01	3.099E-02	5.030E-00	1.329E-02	3.254E-03
8.500E-01	1.670E-01	3.251E-02	5.130E-00	1.354E-02	2.871E-03
8.700E-01	2.232E-01	3.519E-02	5.230E-00	1.483E-02	2.960E-03
8.900E-01	3.235E-01	3.520E-02	5.330E-00	1.441E-02	2.681E-03
9.100E-01	4.345E-01	3.557E-02	5.430E-00	1.234E-02	2.819E-03
9.300E-01	5.033E-01	3.409E-02	5.530E-00	1.054E-02	2.590E-03
9.500E-01	4.975E-01	3.829E-02	5.630E-00	1.157E-02	2.319E-03
9.700E-01	4.250E-01	3.582E-02	5.730E-00	1.313E-02	2.095E-03
1.000E-00	2.892E-01	3.593E-02	5.830E-00	1.207E-02	2.017E-03
1.040E-00	2.358E-01	3.261E-02	5.930E-00	9.542E-03	1.891E-03
1.080E-00	2.884E-01	2.913E-02	6.030E-00	7.497E-03	1.889E-03
1.120E-00	2.790E-01	2.857E-02	6.130E-00	6.576E-03	1.746E-03
1.160E-00	2.014E-01	2.652E-02	6.230E-00	6.322E-03	1.616E-03
1.200E-00	1.379E-01	2.611E-02	6.330E-00	6.267E-03	1.584E-03
1.240E-00	1.769E-01	2.694E-02	6.440E-00	5.882E-03	1.358E-03
1.280E-00	2.639E-01	3.083E-02	6.560E-00	5.584E-03	1.294E-03
1.320E-00	2.913E-01	3.154E-02	6.680E-00	5.554E-03	1.170E-03
1.360E-00	2.669E-01	3.122E-02	6.800E-00	5.133E-03	1.081E-03
1.400E-00	2.289E-01	3.087E-02	6.920E-00	4.293E-03	8.723E-04
1.440E-00	1.900E-01	2.828E-02	7.040E-00	3.354E-03	8.663E-04
1.480E-00	1.678E-01	2.599E-02	7.160E-00	2.375E-03	7.854E-04
1.520E-00	1.568E-01	2.299E-02	7.280E-00	1.909E-03	6.124E-04
1.560E-00	1.368E-01	2.184E-02	7.400E-00	1.999E-03	5.488E-04
1.600E-00	1.124E-01	1.996E-02	7.520E-00	2.011E-03	5.451E-04
1.640E-00	9.659E-02	1.995E-02	7.640E-00	1.671E-03	5.035E-04
1.680E-00	8.973E-02	1.976E-02	7.760E-00	1.390E-03	3.929E-04
1.720E-00	8.912E-02	1.995E-02	7.890E-00	1.243E-03	3.264E-04
1.760E-00	9.914E-02	1.932E-02	8.030E-00	9.094E-04	2.690E-04
1.800E-00	1.194E-01	2.015E-02	8.170E-00	3.921E-04	1.961E-04
1.850E-00	1.236E-01	1.867E-02	8.310E-00	5.425E-05	1.226E-04
1.910E-00	9.059E-02	1.800E-02	8.450E-00	2.026E-05	7.008E-05
1.970E-00	7.919E-02	1.652E-02	8.590E-00	2.438E-05	5.618E-05
2.030E-00	7.969E-02	1.627E-02	8.730E-00	5.961E-05	5.066E-05
2.090E-00	7.084E-02	1.533E-02	8.870E-00	5.766E-05	4.822E-05
2.150E-00	6.720E-02	1.477E-02	9.010E-00	4.382E-05	4.211E-05
2.210E-00	5.993E-02	1.395E-02	9.150E-00	2.945E-05	3.999E-05
2.270E-00	6.437E-02	1.287E-02	9.300E-00	2.544E-05	4.211E-05
2.330E-00	6.716E-02	1.205E-02	9.460E-00	1.805E-05	3.515E-05
2.390E-00	6.433E-02	1.242E-02	9.620E-00	9.798E-06	3.240E-05
2.450E-00	6.273E-02	1.187E-02	9.780E-00	1.278E-05	3.532E-05
2.510E-00	6.085E-02	1.157E-02	9.940E-00	2.265E-05	4.019E-05
2.570E-00	5.293E-02	1.076E-02	1.010E-01	3.071E-05	4.284E-05
2.630E-00	4.887E-02	1.018E-02	1.024E-01	4.302E-05	3.380E-05
2.690E-00	5.465E-02	9.556E-03	1.042E-01	5.155E-05	3.186E-05
2.750E-00	5.683E-02	9.326E-03	1.058E-01	3.962E-05	3.492E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	3.786E-02	7.463E-03
4.000E-01 - 5.000E-01	3.599E-02	6.801E-03
5.000E-01 - 6.000E-01	1.936E-02	4.766E-03
6.000E-01 - 7.000E-01	1.976E-02	3.940E-03
7.000E-01 - 8.000E-01	1.465E-02	3.424E-03
8.000E-01 - 1.000E-00	4.264E-03	6.462E-03
1.000E-00 - 1.200E-00	4.884E-02	5.897E-03
1.200E-00 - 1.400E-00	4.768E-02	5.970E-03
1.400E-00 - 1.600E-00	3.282E-02	4.981E-03
1.600E-00 - 1.800E-00	1.947E-02	3.956E-03
1.800E-00 - 2.000E-00	1.985E-02	3.601E-03
2.000E-00 - 2.500E-00	3.390E-02	6.805E-03
2.500E-00 - 3.000E-00	2.676E-02	4.861E-03
3.000E-00 - 3.500E-00	2.330E-02	3.689E-03
3.500E-00 - 4.000E-00	1.713E-02	2.789E-03
4.000E-00 - 4.500E-00	1.347E-02	2.238E-03
4.500E-00 - 5.000E-00	9.005E-03	1.801E-03
5.000E-00 - 6.000E-00	1.243E-02	2.519E-03
6.000E-00 - 7.000E-00	5.757E-03	1.357E-03
7.000E-00 - 8.000E-00	1.905E-03	5.498E-04
8.000E-00 - 9.000E-00	1.677E-04	1.050E-04
9.000E-00 - 1.000E-01	2.106E-05	3.770E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 9.02 TO 9.99 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	3.619E-01	8.600E-02	2.810E 00	5.065E-02	9.649E-03
3.175E-01	3.280E-01	8.563E-02	2.870E 00	5.953E-02	9.354E-03
3.325E-01	3.786E-01	8.074E-02	2.930E 00	6.249E-02	9.088E-03
3.475E-01	4.536E-01	8.287E-02	2.990E 00	5.576E-02	9.795E-03
3.625E-01	4.314E-01	7.679E-02	3.050E 00	5.014E-02	9.365E-03
3.775E-01	3.656E-01	7.917E-02	3.110E 00	4.783E-02	8.787E-03
3.925E-01	3.265E-01	8.275E-02	3.180E 00	4.540E-02	8.498E-03
4.100E-01	2.902E-01	8.006E-02	3.260E 00	4.772E-02	8.150E-03
4.300E-01	2.843E-01	8.488E-02	3.340E 00	4.924E-02	8.316E-03
4.500E-01	3.192E-01	7.826E-02	3.420E 00	4.122E-02	7.525E-03
4.700E-01	3.469E-01	8.002E-02	3.500E 00	3.442E-02	7.004E-03
4.900E-01	3.034E-01	8.555E-02	3.580E 00	3.263E-02	6.990E-03
5.100E-01	1.656E-01	9.460E-02	3.660E 00	3.389E-02	7.302E-03
5.300E-01	7.378E-02	7.962E-02	3.740E 00	3.867E-02	6.489E-03
5.500E-01	1.014E-01	5.302E-02	3.820E 00	3.750E-02	6.472E-03
5.700E-01	1.365E-01	4.437E-02	3.900E 00	3.459E-02	6.360E-03
5.900E-01	1.328E-01	4.538E-02	3.980E 00	3.646E-02	6.337E-03
6.100E-01	1.527E-01	4.318E-02	4.060E 00	3.609E-02	5.694E-03
6.300E-01	1.902E-01	4.854E-02	4.140E 00	3.257E-02	5.756E-03
6.500E-01	2.016E-01	4.787E-02	4.220E 00	2.839E-02	5.429E-03
6.700E-01	1.889E-01	4.388E-02	4.300E 00	2.378E-02	5.450E-03
6.900E-01	1.584E-01	3.908E-02	4.380E 00	2.109E-02	5.387E-03
7.100E-01	1.683E-01	3.680E-02	4.460E 00	2.155E-02	4.997E-03
7.300E-01	1.303E-01	3.781E-02	4.540E 00	2.194E-02	4.589E-03
7.500E-01	1.448E-01	3.674E-02	4.630E 00	2.019E-02	4.568E-03
7.700E-01	1.311E-01	3.451E-02	4.730E 00	1.916E-02	4.604E-03
7.900E-01	1.139E-01	3.460E-02	4.830E 00	1.945E-02	4.467E-03
8.100E-01	1.285E-01	3.462E-02	4.930E 00	2.006E-02	4.243E-03
8.300E-01	1.556E-01	3.393E-02	5.030E 00	2.106E-02	4.092E-03
8.500E-01	1.698E-01	3.396E-02	5.130E 00	2.272E-02	3.827E-03
8.700E-01	2.002E-01	3.857E-02	5.230E 00	2.194E-02	4.071E-03
8.900E-01	2.841E-01	4.033E-02	5.330E 00	1.816E-02	3.885E-03
9.100E-01	3.949E-01	4.069E-02	5.430E 00	1.331E-02	3.436E-03
9.300E-01	4.676E-01	3.672E-02	5.530E 00	1.038E-02	3.322E-03
9.500E-01	4.666E-01	4.010E-02	5.630E 00	8.942E-03	3.003E-03
9.700E-01	4.087E-01	3.777E-02	5.730E 00	9.121E-03	3.108E-03
1.000E 00	2.991E-01	3.805E-02	5.830E 00	1.098E-02	2.968E-03
1.040E 00	2.278E-01	3.459E-02	5.930E 00	1.303E-02	2.752E-03
1.080E 00	2.645E-01	3.359E-02	6.030E 00	1.299E-02	2.513E-03
1.120E 00	2.769E-01	3.173E-02	6.130E 00	1.135E-02	2.433E-03
1.160E 00	2.162E-01	2.825E-02	6.230E 00	9.848E-03	2.209E-03
1.200E 00	1.639E-01	2.764E-02	6.330E 00	8.483E-03	2.187E-03
1.240E 00	1.840E-01	2.949E-02	6.440E 00	6.460E-03	2.233E-03
1.280E 00	2.582E-01	3.342E-02	6.560E 00	4.868E-03	1.975E-03
1.320E 00	3.057E-01	3.258E-02	6.680E 00	4.995E-03	1.786E-03
1.360E 00	2.747E-01	3.038E-02	6.800E 00	5.958E-03	1.773E-03
1.400E 00	2.236E-01	3.055E-02	6.920E 00	6.931E-03	1.740E-03
1.440E 00	2.012E-01	2.791E-02	7.040E 00	7.716E-03	1.470E-03
1.480E 00	1.778E-01	2.563E-02	7.160E 00	7.091E-03	1.337E-03
1.520E 00	1.440E-01	2.512E-02	7.280E 00	4.525E-03	1.255E-03
1.560E 00	1.195E-01	2.467E-02	7.400E 00	1.801E-03	1.110E-03
1.600E 00	1.007E-01	2.081E-02	7.520E 00	5.385E-04	9.727E-04
1.640E 00	8.611E-02	2.028E-02	7.640E 00	9.535E-04	9.027E-04
1.680E 00	8.784E-02	2.073E-02	7.760E 00	2.216E-03	8.236E-04
1.720E 00	9.425E-02	2.158E-02	7.890E 00	2.933E-03	7.587E-04
1.760E 00	9.494E-02	2.183E-02	8.030E 00	2.211E-03	6.750E-04
1.800E 00	1.026E-01	2.290E-02	8.170E 00	1.270E-03	6.108E-04
1.850E 00	1.161E-01	2.043E-02	8.310E 00	1.043E-03	4.718E-04
1.910E 00	1.010E-01	1.902E-02	8.450E 00	1.037E-03	3.946E-04
1.970E 00	7.355E-02	1.919E-02	8.590E 00	7.530E-04	3.130E-04
2.030E 00	6.765E-02	1.762E-02	8.730E 00	4.372E-04	2.749E-04
2.090E 00	6.988E-02	1.651E-02	8.870E 00	3.434E-04	2.058E-04
2.150E 00	6.681E-02	1.600E-02	9.010E 00	3.352E-04	1.424E-04
2.210E 00	5.748E-02	1.428E-02	9.150E 00	2.735E-04	1.323E-04
2.270E 00	5.834E-02	1.398E-02	9.300E 00	1.490E-04	9.190E-05
2.330E 00	6.222E-02	1.270E-02	9.460E 00	4.910E-05	4.907E-05
2.390E 00	6.018E-02	1.269E-02	9.620E 00	9.703E-06	3.765E-05
2.450E 00	6.036E-02	1.335E-02	9.780E 00	-3.961E-06	3.514E-05
2.510E 00	5.915E-02	1.311E-02	9.940E 00	-1.062E-06	3.028E-05
2.570E 00	5.057E-02	1.177E-02	1.010E 01	4.752E-06	2.812E-05
2.630E 00	4.982E-02	1.052E-02	1.026E 01	1.790E-05	2.283E-05
2.690E 00	5.285E-02	1.045E-02	1.042E 01	2.688E-05	2.576E-05
2.750E 00	4.997E-02	1.063E-02	1.058E 01	2.672E-05	2.824E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	X-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	3.776E-02	8.177E-03
4.000E-01 - 5.000E-01	3.540E-02	7.852E-03
5.000E-01 - 6.000E-01	2.138E-02	5.312E-03
6.000E-01 - 7.000E-01	1.785E-02	4.465E-03
7.000E-01 - 8.000E-01	1.305E-02	3.614E-03
8.000E-01 - 1.000E 00	6.023E-02	7.502E-03
1.000E 00 - 1.200E 00	4.864E-02	6.428E-03
1.200E 00 - 1.400E 00	4.897E-02	6.206E-03
1.400E 00 - 1.600E 00	3.218E-02	5.167E-03
1.600E 00 - 1.800E 00	1.850E-02	4.244E-03
1.800E 00 - 2.000E 00	1.964E-02	3.961E-03
2.000E 00 - 2.500E 00	3.140E-02	7.293E-03
2.500E 00 - 3.000E 00	2.711E-02	5.192E-03
3.000E 00 - 3.500E 00	2.308E-02	4.164E-03
3.500E 00 - 4.000E 00	1.770E-02	3.352E-03
4.000E 00 - 4.500E 00	1.380E-02	2.743E-03
4.500E 00 - 5.000E 00	1.005E-02	2.241E-03
5.000E 00 - 6.000E 00	1.482E-02	3.412E-03
6.000E 00 - 7.000E 00	7.657E-03	2.063E-03
7.000E 00 - 8.000E 00	3.335E-03	1.049E-03
8.000E 00 - 9.000E 00	9.111E-04	3.949E-04
9.000E 00 - 1.000E 01	9.731E-05	6.854E-05

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 9.99 TO 12.05 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	2.981E-01	1.013E-01	2.810E 00	4.945E-02	1.242E-02
3.175E-01	3.499E-01	9.315E-02	2.870E 00	4.980E-02	1.110E-02
3.325E-01	3.792E-01	9.057E-02	2.930E 00	4.989E-02	1.018E-02
3.475E-01	3.835E-01	9.458E-02	2.990E 00	4.737E-02	9.948E-03
3.625E-01	4.030E-01	8.867E-02	3.050E 00	4.904E-02	9.530E-03
3.775E-01	3.992E-01	8.947E-02	3.110E 00	4.863E-02	9.310E-03
3.925E-01	3.498E-01	9.436E-02	3.170E 00	4.317E-02	9.530E-03
4.100E-01	2.879E-01	8.928E-02	3.260E 00	4.172E-02	9.122E-03
4.300E-01	2.740E-01	9.421E-02	3.340E 00	4.098E-02	8.268E-03
4.500E-01	3.013E-01	8.789E-02	3.420E 00	4.156E-02	8.565E-03
4.700E-01	3.063E-01	9.130E-02	3.500E 00	4.050E-02	8.079E-03
4.900E-01	2.631E-01	9.508E-02	3.580E 00	3.437E-02	7.941E-03
5.100E-01	1.925E-01	1.009E-01	3.660E 00	3.208E-02	7.534E-03
5.300E-01	1.386E-01	8.301E-02	3.740E 00	3.413E-02	7.488E-03
5.500E-01	1.171E-01	5.897E-02	3.820E 00	3.629E-02	6.935E-03
5.700E-01	1.162E-01	5.248E-02	3.900E 00	3.841E-02	6.663E-03
5.900E-01	1.300E-01	5.029E-02	3.980E 00	3.649E-02	6.543E-03
6.100E-01	1.547E-01	4.853E-02	4.060E 00	3.160E-02	6.296E-03
6.300E-01	1.839E-01	5.712E-02	4.140E 00	2.729E-02	6.484E-03
6.500E-01	1.986E-01	5.533E-02	4.220E 00	2.375E-02	6.087E-03
6.700E-01	1.895E-01	5.242E-02	4.300E 00	2.339E-02	6.239E-03
6.900E-01	1.779E-01	4.577E-02	4.380E 00	2.365E-02	5.488E-03
7.100E-01	1.693E-01	4.206E-02	4.460E 00	2.166E-02	5.348E-03
7.300E-01	1.410E-01	4.205E-02	4.540E 00	2.119E-02	5.343E-03
7.500E-01	1.021E-01	4.197E-02	4.630E 00	2.338E-02	4.904E-03
7.700E-01	8.505E-02	4.108E-02	4.730E 00	2.296E-02	4.954E-03
7.900E-01	9.816E-02	3.739E-02	4.830E 00	2.098E-02	4.767E-03
8.100E-01	1.137E-01	3.467E-02	4.930E 00	2.128E-02	4.678E-03
8.300E-01	1.224E-01	3.472E-02	5.030E 00	2.060E-02	4.830E-03
8.500E-01	1.453E-01	3.654E-02	5.130E 00	1.553E-02	4.322E-03
8.700E-01	1.964E-01	4.067E-02	5.230E 00	1.585E-02	4.668E-03
8.900E-01	2.689E-01	4.055E-02	5.330E 00	1.551E-02	4.558E-03
9.100E-01	3.480E-01	4.126E-02	5.430E 00	1.492E-02	4.220E-03
9.300E-01	4.221E-01	4.042E-02	5.530E 00	1.406E-02	4.373E-03
9.500E-01	4.644E-01	4.433E-02	5.630E 00	1.299E-02	4.055E-03
9.700E-01	4.804E-01	4.156E-02	5.730E 00	1.312E-02	3.801E-03
1.000E 00	3.148E-01	4.209E-02	5.830E 00	1.481E-02	3.807E-03
1.040E 00	2.185E-01	3.957E-02	5.930E 00	1.534E-02	3.540E-03
1.080E 00	2.762E-01	3.649E-02	6.030E 00	1.419E-02	3.353E-03
1.120E 00	3.328E-01	3.570E-02	6.130E 00	1.327E-02	3.253E-03
1.160E 00	2.884E-01	3.369E-02	6.230E 00	1.232E-02	3.059E-03
1.200E 00	2.021E-01	3.062E-02	6.330E 00	1.025E-02	2.761E-03
1.240E 00	1.995E-01	3.041E-02	6.440E 00	8.512E-03	2.751E-03
1.280E 00	2.562E-01	3.560E-02	6.560E 00	8.296E-03	2.322E-03
1.320E 00	2.811E-01	3.639E-02	6.680E 00	8.208E-03	2.188E-03
1.360E 00	2.516E-01	3.459E-02	6.800E 00	6.630E-03	2.046E-03
1.400E 00	2.163E-01	3.288E-02	6.920E 00	9.386E-03	1.852E-03
1.440E 00	1.931E-01	2.905E-02	7.040E 00	8.419E-03	1.719E-03
1.480E 00	1.655E-01	2.936E-02	7.160E 00	6.575E-03	1.547E-03
1.520E 00	1.406E-01	2.900E-02	7.280E 00	5.618E-03	1.500E-03
1.560E 00	1.252E-01	2.768E-02	7.400E 00	4.881E-03	1.401E-03
1.600E 00	1.089E-01	2.374E-02	7.520E 00	3.715E-03	1.304E-03
1.640E 00	9.245E-02	2.415E-02	7.640E 00	3.003E-03	1.170E-03
1.680E 00	8.713E-02	2.327E-02	7.760E 00	3.267E-03	1.032E-03
1.720E 00	8.858E-02	2.332E-02	7.880E 00	3.679E-03	9.850E-04
1.760E 00	9.255E-02	2.311E-02	8.030E 00	3.323E-03	9.474E-04
1.800E 00	1.066E-01	2.257E-02	8.170E 00	2.679E-03	8.021E-04
1.850E 00	1.205E-01	2.279E-02	8.310E 00	2.203E-03	7.084E-04
1.910E 00	9.591E-02	1.977E-02	8.450E 00	1.656E-03	6.415E-04
1.970E 00	7.578E-02	2.068E-02	8.590E 00	8.949E-04	5.529E-04
2.030E 00	7.800E-02	1.867E-02	8.730E 00	5.527E-04	4.637E-04
2.090E 00	6.788E-02	1.802E-02	8.870E 00	7.174E-04	4.336E-04
2.150E 00	5.497E-02	1.791E-02	9.010E 00	9.146E-04	3.997E-04
2.210E 00	5.120E-02	1.574E-02	9.150E 00	9.120E-04	3.180E-04
2.270E 00	5.704E-02	1.612E-02	9.300E 00	6.779E-04	2.723E-04
2.330E 00	5.758E-02	1.533E-02	9.460E 00	3.809E-04	2.375E-04
2.390E 00	5.499E-02	1.384E-02	9.620E 00	1.060E-04	1.644E-04
2.450E 00	5.939E-02	1.309E-02	9.780E 00	6.494E-05	1.458E-04
2.510E 00	5.896E-02	1.350E-02	9.940E 00	4.692E-05	1.500E-04
2.570E 00	5.101E-02	1.125E-02	1.010E 01	5.656E-05	1.063E-04
2.630E 00	4.941E-02	1.218E-02	1.026E 01	8.116E-05	6.622E-05
2.690E 00	5.635E-02	1.152E-02	1.042E 01	8.088E-05	6.919E-05
2.750E 00	5.535E-02	1.147E-02	1.058E 01	7.037E-05	6.654E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	X-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	3.702E-02	9.253E-03
4.000E-01 - 5.000E-01	3.358E-02	8.828E-03
5.000E-01 - 6.000E-01	2.360E-02	5.819E-03
6.000E-01 - 7.000E-01	1.809E-02	5.205E-03
7.000E-01 - 8.000E-01	1.190E-02	4.098E-03
8.000E-01 - 1.000E 00	5.767E-02	7.925E-03
1.000E 00 - 1.200E 00	5.501E-02	7.273E-03
1.200E 00 - 1.400E 00	4.808E-02	6.762E-03
1.400E 00 - 1.600E 00	3.145E-02	5.742E-03
1.600E 00 - 1.800E 00	1.861E-02	4.682E-03
1.800E 00 - 2.000E 00	1.964E-02	4.208E-03
2.000E 00 - 2.500E 00	1.000E-02	7.998E-03
2.500E 00 - 3.000E 00	2.590E-02	5.865E-03
3.000E 00 - 3.500E 00	2.187E-02	4.494E-03
3.500E 00 - 4.000E 00	1.779E-02	3.638E-03
4.000E 00 - 4.500E 00	1.283E-02	3.006E-03
4.500E 00 - 5.000E 00	1.097E-02	2.452E-03
5.000E 00 - 6.000E 00	1.533E-02	4.195E-03
6.000E 00 - 7.000E 00	1.005E-02	2.550E-03
7.000E 00 - 8.000E 00	4.728E-03	1.301E-03
8.000E 00 - 9.000E 00	1.599E-03	6.213E-04
9.000E 00 - 1.000E 01	4.143E-04	2.271E-04

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 12.05 TO 12.04 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	3.871E-01	1.140E-01	2.810E 00	4.662E-02	1.193E-02
3.175E-01	4.287E-01	1.027E-01	2.870E 00	4.397E-02	1.156E-02
3.325E-01	4.250E-01	9.980E-02	2.930E 00	3.649E-02	1.120E-02
3.475E-01	4.433E-01	1.012E-01	2.990E 00	3.531E-02	1.045E-02
3.625E-01	4.288E-01	1.048E-01	3.050E 00	3.816E-02	9.757E-03
3.775E-01	3.779E-01	1.091E-01	3.110E 00	3.911E-02	9.889E-03
3.925E-01	3.446E-01	1.157E-01	3.180E 00	3.581E-02	9.579E-03
4.100E-01	3.213E-01	1.157E-01	3.260E 00	2.859E-02	1.071E-02
4.300E-01	2.887E-01	1.140E-01	3.340E 00	2.290E-02	9.425E-03
4.500E-01	2.888E-01	1.125E-01	3.420E 00	2.371E-02	8.815E-03
4.700E-01	2.731E-01	1.085E-01	3.500E 00	2.554E-02	7.564E-03
4.900E-01	2.260E-01	1.095E-01	3.580E 00	2.210E-02	7.614E-03
5.100E-01	1.868E-01	1.032E-01	3.660E 00	2.034E-02	8.259E-03
5.300E-01	1.574E-01	9.015E-02	3.740E 00	2.160E-02	7.890E-03
5.500E-01	1.255E-01	7.354E-02	3.820E 00	2.622E-02	7.635E-03
5.700E-01	1.013E-01	6.333E-02	3.900E 00	1.771E-02	5.025E-03
5.900E-01	9.678E-02	6.079E-02	3.980E 00	2.005E-02	6.927E-03
6.100E-01	1.254E-01	5.953E-02	4.060E 00	1.771E-02	6.938E-03
6.300E-01	1.725E-01	6.090E-02	4.140E 00	2.463E-02	6.406E-03
6.500E-01	1.954E-01	5.440E-02	4.220E 00	2.450E-02	6.562E-03
6.700E-01	1.873E-01	5.451E-02	4.300E 00	1.785E-02	6.751E-03
6.900E-01	1.723E-01	5.116E-02	4.380E 00	1.884E-02	6.342E-03
7.100E-01	1.537E-01	5.410E-02	4.460E 00	2.223E-02	6.099E-03
7.300E-01	1.300E-01	5.262E-02	4.540E 00	1.729E-02	5.866E-03
7.500E-01	1.184E-01	4.756E-02	4.630E 00	9.738E-03	5.357E-03
7.700E-01	1.131E-01	4.427E-02	4.730E 00	1.188E-02	5.963E-03
7.900E-01	1.015E-01	4.041E-02	4.830E 00	1.756E-02	5.448E-03
8.100E-01	9.167E-02	3.991E-02	4.930E 00	1.997E-02	5.387E-03
8.300E-01	1.071E-01	4.073E-02	5.030E 00	2.210E-02	5.374E-03
8.500E-01	1.467E-01	4.056E-02	5.130E 00	2.030E-02	4.892E-03
8.700E-01	1.832E-01	4.054E-02	5.230E 00	1.519E-02	5.556E-03
8.900E-01	2.122E-01	4.330E-02	5.330E 00	1.016E-02	5.362E-03
9.100E-01	2.502E-01	4.758E-02	5.430E 00	7.860E-03	5.201E-03
9.300E-01	3.043E-01	4.597E-02	5.530E 00	6.123E-03	5.127E-03
9.500E-01	3.438E-01	4.664E-02	5.630E 00	7.020E-03	4.716E-03
9.700E-01	3.321E-01	4.476E-02	5.730E 00	9.660E-03	4.218E-03
1.000E 00	2.503E-01	4.486E-02	5.830E 00	1.201E-02	3.977E-03
1.040E 00	1.872E-01	4.497E-02	5.930E 00	1.247E-02	3.770E-03
1.080E 00	1.985E-01	3.870E-02	6.030E 00	1.178E-02	4.041E-03
1.120E 00	3.027E-01	4.152E-02	6.130E 00	9.728E-03	3.697E-03
1.160E 00	3.695E-01	3.865E-02	6.230E 00	7.123E-03	3.424E-03
1.200E 00	2.802E-01	3.501E-02	6.330E 00	5.606E-03	3.384E-03
1.240E 00	1.910E-01	3.133E-02	6.440E 00	5.182E-03	3.340E-03
1.280E 00	2.036E-01	3.471E-02	6.560E 00	6.123E-03	3.394E-03
1.320E 00	2.402E-01	3.411E-02	6.680E 00	8.429E-03	2.972E-03
1.360E 00	2.262E-01	3.303E-02	6.800E 00	9.680E-03	2.803E-03
1.400E 00	1.866E-01	3.483E-02	6.920E 00	6.089E-03	2.697E-03
1.440E 00	1.639E-01	3.178E-02	7.040E 00	5.527E-03	2.544E-03
1.480E 00	1.438E-01	3.008E-02	7.160E 00	3.639E-03	2.252E-03
1.520E 00	1.121E-01	2.870E-02	7.280E 00	2.691E-03	2.042E-03
1.560E 00	8.763E-02	2.750E-02	7.400E 00	3.214E-03	1.856E-03
1.600E 00	8.102E-02	2.428E-02	7.520E 00	4.287E-03	1.811E-03
1.640E 00	7.759E-02	2.295E-02	7.640E 00	3.641E-03	1.790E-03
1.680E 00	6.801E-02	2.175E-02	7.760E 00	1.901E-03	1.562E-03
1.720E 00	5.806E-02	2.340E-02	7.880E 00	6.160E-04	1.351E-03
1.760E 00	6.339E-02	2.412E-02	8.030E 00	1.220E-03	1.366E-03
1.800E 00	8.430E-02	2.357E-02	8.170E 00	2.164E-03	1.271E-03
1.850E 00	9.593E-02	2.061E-02	8.310E 00	2.454E-03	1.000E-03
1.910E 00	6.440E-02	2.075E-02	8.450E 00	2.144E-03	8.461E-04
1.970E 00	4.372E-02	2.188E-02	8.590E 00	1.406E-03	8.273E-04
2.030E 00	5.269E-02	1.863E-02	8.730E 00	6.008E-04	6.894E-04
2.090E 00	6.301E-02	1.465E-02	8.870E 00	2.072E-04	5.678E-04
2.150E 00	6.250E-02	1.628E-02	9.010E 00	2.507E-04	5.381E-04
2.210E 00	5.688E-02	1.423E-02	9.150E 00	4.497E-04	4.936E-04
2.270E 00	4.703E-02	1.356E-02	9.300E 00	5.932E-04	4.138E-04
2.330E 00	4.673E-02	1.306E-02	9.460E 00	5.917E-04	3.339E-04
2.390E 00	5.213E-02	1.214E-02	9.620E 00	4.040E-04	2.674E-04
2.450E 00	4.621E-02	1.279E-02	9.780E 00	1.868E-04	2.035E-04
2.510E 00	3.684E-02	1.321E-02	9.940E 00	1.080E-04	1.561E-04
2.570E 00	3.323E-02	1.261E-02	1.010E 01	1.075E-04	1.092E-04
2.630E 00	3.266E-02	1.294E-02	1.025E 01	1.130E-04	8.976E-05
2.690E 00	3.328E-02	1.235E-02	1.042E 01	1.088E-04	8.679E-05
2.750E 00	3.923E-02	1.206E-02	1.058E 01	9.033E-05	8.263E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	4.065E-02	1.062E-02
4.000E-01 - 5.000E-01	3.151E-02	1.103E-02
5.000E-01 - 6.000E-01	2.066E-02	7.290E-03
6.000E-01 - 7.000E-01	1.705E-02	5.630E-03
7.000E-01 - 8.000E-01	1.233E-02	4.779E-03
8.000E-01 - 1.000E 00	4.509E-02	8.692E-03
1.000E 00 - 1.200E 00	5.312E-02	8.149E-03
1.200E 00 - 1.400E 00	4.362E-02	6.708E-03
1.400E 00 - 1.600E 00	2.559E-02	5.909E-03
1.600E 00 - 1.800E 00	1.390E-02	4.641E-03
1.800E 00 - 2.000E 00	1.390E-02	4.246E-03
2.000E 00 - 2.500E 00	2.644E-02	7.172E-03
2.500E 00 - 3.000E 00	1.879E-02	6.024E-03
3.000E 00 - 3.500E 00	1.526E-02	4.734E-03
3.500E 00 - 4.000E 00	1.170E-02	3.795E-03
4.000E 00 - 4.500E 00	1.043E-02	3.262E-03
4.500E 00 - 5.000E 00	7.742E-03	2.740E-03
5.000E 00 - 6.000E 00	1.209E-02	4.784E-03
6.000E 00 - 7.000E 00	7.809E-03	3.246E-03
7.000E 00 - 8.000E 00	3.022E-03	1.854E-03
8.000E 00 - 9.000E 00	4.003E-03	8.974E-04
9.000E 00 - 1.000E 01	3.844E-04	3.288E-04

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CU. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED 10 PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 10.04 TO 17.07 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	I-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	4.930E-01	1.270E-01	2.810E-00	2.380E-02	8.790E-03
3.175E-01	5.232E-01	1.250E-01	2.870E-00	2.821E-02	9.250E-03
3.325E-01	5.630E-01	1.252E-01	2.930E-00	2.652E-02	9.319E-03
3.475E-01	6.117E-01	1.209E-01	2.990E-00	2.402E-02	8.856E-03
3.625E-01	5.915E-01	1.270E-01	3.050E-00	2.461E-02	8.448E-03
3.775E-01	4.919E-01	1.252E-01	3.110E-00	2.561E-02	8.380E-03
3.925E-01	3.944E-01	1.373E-01	3.180E-00	2.387E-02	7.760E-03
4.100E-01	3.313E-01	1.238E-01	3.260E-00	2.497E-02	7.764E-03
4.300E-01	3.023E-01	1.273E-01	3.340E-00	2.434E-02	7.030E-03
4.500E-01	2.831E-01	1.272E-01	3.420E-00	2.641E-02	8.138E-03
4.700E-01	2.606E-01	1.201E-01	3.500E-00	9.188E-03	7.771E-03
4.900E-01	2.448E-01	1.193E-01	3.580E-00	9.228E-03	7.114E-03
5.100E-01	2.068E-01	9.896E-02	3.660E-00	1.856E-02	6.876E-03
5.300E-01	1.721E-01	9.718E-02	3.740E-00	1.559E-02	6.297E-03
5.500E-01	1.591E-01	8.108E-02	3.820E-00	1.274E-02	6.145E-03
5.700E-01	1.697E-01	8.073E-02	3.900E-00	1.521E-02	6.277E-03
5.900E-01	1.861E-01	7.455E-02	3.980E-00	2.051E-02	6.120E-03
6.100E-01	1.839E-01	7.074E-02	4.060E-00	2.150E-02	6.105E-03
6.300E-01	1.571E-01	7.921E-02	4.140E-00	1.869E-02	6.039E-03
6.500E-01	1.311E-01	7.578E-02	4.220E-00	1.405E-02	5.647E-03
6.700E-01	1.312E-01	7.405E-02	4.300E-00	8.770E-03	6.404E-03
6.900E-01	1.433E-01	6.779E-02	4.380E-00	4.301E-03	5.861E-03
7.100E-01	1.444E-01	6.009E-02	4.460E-00	2.254E-03	5.262E-03
7.300E-01	1.332E-01	5.622E-02	4.540E-00	4.565E-03	4.907E-03
7.500E-01	1.196E-01	5.493E-02	4.630E-00	1.006E-02	4.875E-03
7.700E-01	1.082E-01	4.941E-02	4.730E-00	1.216E-02	5.203E-03
7.900E-01	1.056E-01	4.872E-02	4.830E-00	1.117E-02	4.911E-03
8.100E-01	1.066E-01	4.632E-02	4.930E-00	1.154E-02	4.764E-03
8.300E-01	1.034E-01	4.199E-02	5.030E-00	1.094E-02	4.945E-03
8.500E-01	1.042E-01	4.073E-02	5.130E-00	7.080E-03	4.761E-03
8.700E-01	1.272E-01	4.214E-02	5.230E-00	4.808E-03	4.824E-03
8.900E-01	1.774E-01	4.355E-02	5.330E-00	5.024E-03	4.327E-03
9.100E-01	2.319E-01	4.564E-02	5.430E-00	6.390E-03	4.072E-03
9.300E-01	2.694E-01	4.624E-02	5.530E-00	7.723E-03	4.428E-03
9.500E-01	2.901E-01	4.802E-02	5.630E-00	9.310E-03	4.459E-03
9.700E-01	2.975E-01	4.834E-02	5.730E-00	8.948E-03	4.067E-03
1.000E-00	2.703E-01	5.086E-02	5.830E-00	5.761E-03	3.566E-03
1.040E-00	1.964E-01	4.357E-02	5.930E-00	1.418E-03	3.696E-03
1.080E-00	2.080E-01	4.130E-02	6.030E-00	-1.255E-03	3.767E-03
1.120E-00	2.971E-01	3.840E-02	6.130E-00	-8.945E-04	3.506E-03
1.160E-00	3.222E-01	3.996E-02	6.230E-00	2.117E-03	3.232E-03
1.200E-00	2.755E-01	3.510E-02	6.330E-00	5.500E-03	2.978E-03
1.240E-00	2.067E-01	3.129E-02	6.430E-00	8.217E-03	3.038E-03
1.280E-00	1.805E-01	3.192E-02	6.560E-00	9.111E-03	2.803E-03
1.320E-00	1.988E-01	3.266E-02	6.680E-00	7.620E-03	2.769E-03
1.360E-00	1.842E-01	3.284E-02	6.800E-00	4.306E-03	2.475E-03
1.400E-00	1.410E-01	3.435E-02	6.920E-00	1.419E-03	2.369E-03
1.440E-00	1.234E-01	3.085E-02	7.040E-00	5.289E-04	2.286E-03
1.480E-00	1.206E-01	2.951E-02	7.160E-00	1.190E-03	2.140E-03
1.520E-00	1.041E-01	2.877E-02	7.280E-00	2.159E-03	2.018E-03
1.560E-00	7.774E-02	2.699E-02	7.400E-00	2.744E-03	1.853E-03
1.600E-00	6.284E-02	2.581E-02	7.520E-00	2.655E-03	1.785E-03
1.640E-00	6.340E-02	2.561E-02	7.640E-00	2.133E-03	1.826E-03
1.680E-00	6.404E-02	2.362E-02	7.760E-00	1.337E-03	1.669E-03
1.720E-00	5.134E-02	2.488E-02	7.890E-00	6.991E-04	1.457E-03
1.760E-00	4.021E-02	3.998E-02	8.030E-00	9.792E-04	1.353E-03
1.800E-00	4.945E-02	2.277E-02	8.170E-00	1.471E-03	1.237E-03
1.850E-00	6.958E-02	1.826E-02	8.310E-00	1.686E-03	1.053E-03
1.910E-00	6.709E-02	1.978E-02	8.450E-00	1.270E-03	8.805E-04
1.970E-00	5.086E-02	1.722E-02	8.590E-00	7.831E-04	7.523E-04
2.030E-00	4.193E-02	1.593E-02	8.730E-00	4.316E-04	6.101E-04
2.090E-00	3.713E-02	1.748E-02	8.870E-00	3.084E-04	5.771E-04
2.150E-00	3.571E-02	1.476E-02	9.010E-00	3.321E-04	4.613E-04
2.210E-00	3.961E-02	1.390E-02	9.150E-00	3.101E-04	3.625E-04
2.270E-00	4.411E-02	1.336E-02	9.300E-00	4.196E-04	2.926E-04
2.330E-00	4.166E-02	1.237E-02	9.460E-00	2.906E-04	2.500E-04
2.390E-00	3.192E-02	1.305E-02	9.620E-00	1.064E-04	2.111E-04
2.450E-00	2.552E-02	1.194E-02	9.780E-00	1.248E-05	1.569E-04
2.510E-00	2.457E-02	1.140E-02	9.940E-00	3.575E-05	1.221E-04
2.570E-00	2.261E-02	1.179E-02	1.010E-01	7.864E-05	8.798E-05
2.630E-00	1.736E-02	1.201E-02	1.026E-01	1.024E-04	7.523E-05
2.690E-00	1.262E-02	1.062E-02	1.042E-01	1.196E-04	7.333E-05
2.750E-00	1.501E-02	9.127E-03	1.058E-01	1.112E-04	8.183E-05

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	I-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	5.259E-02	1.269E-02
4.000E-01 - 5.000E-01	3.090E-02	1.212E-02
5.000E-01 - 6.000E-01	2.232E-02	8.498E-03
6.000E-01 - 7.000E-01	1.490E-02	7.371E-03
7.000E-01 - 8.000E-01	1.221E-02	5.388E-03
8.000E-01 - 1.000E-00	1.981E-02	9.054E-03
1.000E-00 - 1.200E-00	5.177E-02	8.252E-03
1.200E-00 - 1.400E-00	3.902E-02	6.517E-03
1.400E-00 - 1.600E-00	2.110E-02	5.838E-03
1.600E-00 - 1.800E-00	1.096E-02	4.939E-03
1.800E-00 - 2.000E-00	1.228E-02	3.799E-03
2.000E-00 - 2.500E-00	1.437E-02	7.024E-03
2.500E-00 - 3.000E-00	1.075E-02	5.071E-03
3.000E-00 - 3.500E-00	1.109E-02	3.962E-03
3.500E-00 - 4.000E-00	6.961E-03	3.293E-03
4.000E-00 - 4.500E-00	5.999E-03	2.949E-03
4.500E-00 - 5.000E-00	5.072E-03	2.471E-03
5.000E-00 - 6.000E-00	6.485E-03	4.285E-03
6.000E-00 - 7.000E-00	4.265E-03	2.935E-03
7.000E-00 - 8.000E-00	1.461E-03	1.842E-03
8.000E-00 - 9.000E-00	9.556E-04	8.785E-04
9.000E-00 - 1.000E-01	2.229E-04	2.492E-04

DIFFERENTIAL CROSS SECTIONS FOR GAMMA RAY PRODUCTION IN CO. THE FIRST SET OF NUMBERS IS THE DOUBLY DIFFERENTIAL CROSS SECTION, WHILE THE SECOND SET IS THE GAMMA RAY PRODUCTION CROSS SECTION FOR THE DESIGNATED GAMMA RAY ENERGY INTERVALS. THIS SECOND SET RESULTS FROM INTEGRATION OF THE DOUBLY DIFFERENTIAL DATA. THE UNCERTAINTIES ARE GIVEN IN THE SAME UNITS AS THE DATA AND DO NOT INCLUDE AN ESTIMATED TO PERCENT ERROR IN ABSOLUTE NORMALIZATION.

INCIDENT NEUTRON ENERGY = 17.07 TO 20.10 MEV. ANGLE = 125 DEGREES.

PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)	PHOTON ENERGY (MEV)	X-SECTION (B/SR/MEV)	ERROR (B/SR/MEV)
3.025E-01	6.381E-01	1.675E-01	2.810E-00	2.960E-02	1.049E-02
3.175E-01	6.024E-01	1.570E-01	2.870E-00	2.241E-02	1.029E-02
3.325E-01	6.076E-01	1.500E-01	2.930E-00	2.488E-02	1.223E-02
3.475E-01	6.843E-01	1.445E-01	2.990E-00	3.038E-02	1.239E-02
3.625E-01	7.278E-01	1.499E-01	3.050E-00	2.795E-02	1.204E-02
3.775E-01	6.660E-01	1.669E-01	3.110E-00	2.333E-02	1.238E-02
3.925E-01	5.584E-01	1.831E-01	3.180E-00	2.567E-02	1.087E-02
4.100E-01	4.370E-01	1.809E-01	3.260E-00	3.525E-02	8.739E-03
4.300E-01	3.159E-01	1.808E-01	3.340E-00	3.214E-02	8.655E-03
4.500E-01	2.385E-01	1.710E-01	3.420E-00	2.010E-02	8.742E-03
4.700E-01	2.075E-01	1.667E-01	3.500E-00	1.524E-02	8.986E-03
4.900E-01	2.250E-01	1.401E-01	3.580E-00	1.755E-02	9.411E-03
5.100E-01	2.582E-01	1.264E-01	3.660E-00	1.626E-02	7.975E-03
5.300E-01	2.518E-01	1.169E-01	3.740E-00	1.019E-02	8.869E-03
5.500E-01	2.123E-01	9.878E-02	3.820E-00	7.695E-03	8.582E-03
5.700E-01	1.809E-01	9.875E-02	3.900E-00	1.213E-02	8.919E-03
5.900E-01	1.731E-01	8.436E-02	3.980E-00	1.547E-02	8.421E-03
6.100E-01	1.865E-01	8.686E-02	4.060E-00	1.388E-02	7.512E-03
6.300E-01	1.933E-01	8.597E-02	4.140E-00	1.136E-02	6.752E-03
6.500E-01	1.841E-01	9.590E-02	4.220E-00	1.256E-02	6.485E-03
6.700E-01	1.676E-01	9.035E-02	4.300E-00	1.500E-02	6.288E-03
6.900E-01	1.629E-01	8.396E-02	4.380E-00	1.413E-02	6.018E-03
7.100E-01	1.612E-01	8.093E-02	4.460E-00	1.109E-02	5.959E-03
7.300E-01	1.551E-01	7.683E-02	4.540E-00	8.768E-03	5.449E-03
7.500E-01	1.370E-01	7.216E-02	4.630E-00	5.913E-03	5.249E-03
7.700E-01	1.003E-01	7.052E-02	4.730E-00	1.461E-03	5.321E-03
7.900E-01	7.529E-02	5.962E-02	4.830E-00	7.555E-04	5.237E-03
8.100E-01	7.673E-02	5.318E-02	4.930E-00	4.645E-03	5.117E-03
8.300E-01	1.013E-01	5.571E-02	5.030E-00	7.321E-03	4.828E-03
8.500E-01	1.232E-01	5.721E-02	5.130E-00	6.198E-03	4.479E-03
8.700E-01	1.301E-01	5.544E-02	5.230E-00	6.349E-03	4.853E-03
8.900E-01	1.427E-01	5.319E-02	5.330E-00	7.871E-03	4.497E-03
9.100E-01	1.835E-01	5.106E-02	5.430E-00	7.524E-03	4.538E-03
9.300E-01	2.430E-01	5.118E-02	5.530E-00	6.190E-03	4.419E-03
9.500E-01	2.918E-01	5.669E-02	5.630E-00	4.747E-03	3.997E-03
9.700E-01	3.068E-01	5.541E-02	5.730E-00	2.788E-03	4.209E-03
1.000E-00	2.703E-01	5.669E-02	5.830E-00	8.566E-04	4.049E-03
1.040E-00	2.140E-01	5.289E-02	5.930E-00	3.172E-04	3.993E-03
1.080E-00	2.056E-01	5.209E-02	6.030E-00	1.478E-03	3.816E-03
1.120E-00	2.842E-01	4.800E-02	6.130E-00	2.757E-03	3.786E-03
1.160E-00	3.425E-01	4.623E-02	6.230E-00	2.620E-03	3.502E-03
1.200E-00	2.853E-01	4.375E-02	6.330E-00	2.013E-03	3.416E-03
1.240E-00	2.043E-01	3.751E-02	6.440E-00	2.405E-03	3.303E-03
1.280E-00	1.762E-01	4.582E-02	6.560E-00	3.465E-03	2.816E-03
1.320E-00	1.702E-01	4.663E-02	6.680E-00	3.331E-03	2.721E-03
1.360E-00	1.574E-01	4.573E-02	6.800E-00	2.295E-03	2.678E-03
1.400E-00	1.413E-01	4.243E-02	6.920E-00	2.075E-03	2.285E-03
1.440E-00	1.262E-01	3.593E-02	7.040E-00	2.230E-03	2.089E-03
1.480E-00	1.103E-01	3.378E-02	7.160E-00	1.837E-03	2.038E-03
1.520E-00	1.047E-01	3.256E-02	7.280E-00	8.458E-04	1.877E-03
1.560E-00	1.037E-01	3.304E-02	7.400E-00	6.466E-04	1.555E-03
1.600E-00	9.471E-02	3.267E-02	7.520E-00	8.349E-04	1.458E-03
1.640E-00	8.080E-02	3.159E-02	7.640E-00	9.664E-04	1.333E-03
1.680E-00	7.725E-02	3.036E-02	7.760E-00	8.028E-04	1.183E-03
1.720E-00	8.266E-02	2.974E-02	7.880E-00	5.423E-04	1.100E-03
1.760E-00	8.421E-02	2.867E-02	8.030E-00	7.130E-04	9.778E-04
1.800E-00	7.833E-02	2.693E-02	8.170E-00	8.290E-04	9.247E-04
1.850E-00	6.958E-02	2.720E-02	8.310E-00	7.800E-04	7.508E-04
1.910E-00	6.237E-02	2.397E-02	8.450E-00	5.104E-04	5.897E-04
1.970E-00	5.650E-02	2.241E-02	8.590E-00	3.172E-04	6.235E-04
2.030E-00	6.594E-02	2.305E-02	8.730E-00	3.267E-04	5.210E-04
2.090E-00	6.013E-02	2.015E-02	8.870E-00	2.598E-04	4.026E-04
2.150E-00	4.173E-02	1.971E-02	9.010E-00	1.476E-04	3.745E-04
2.210E-00	4.288E-02	1.808E-02	9.150E-00	2.154E-04	3.553E-04
2.270E-00	4.903E-02	1.656E-02	9.300E-00	-6.545E-05	3.110E-04
2.330E-00	4.267E-02	1.782E-02	9.460E-00	-6.846E-06	2.681E-04
2.390E-00	3.286E-02	1.684E-02	9.620E-00	6.231E-05	2.096E-04
2.450E-00	2.967E-02	1.767E-02	9.780E-00	1.143E-04	1.927E-04
2.510E-00	2.668E-02	1.671E-02	9.940E-00	6.559E-05	2.201E-04
2.570E-00	3.055E-02	1.655E-02	1.010E-01	1.062E-04	1.351E-04
2.630E-00	3.591E-02	1.388E-02	1.026E-01	9.504E-05	1.106E-04
2.690E-00	3.544E-02	1.049E-02	1.042E-01	1.125E-04	1.904E-04
2.750E-00	3.459E-02	9.984E-03	1.058E-01	8.098E-05	1.922E-04

INTEGRATED DATA

PHOTON ENERGY INTERVAL (MEV)	X-SECTION (B/SR)	ERROR (B/SR)
3.000E-01 - 4.000E-01	6.398E-02	1.592E-02
4.000E-01 - 5.000E-01	3.053E-02	1.678E-02
5.000E-01 - 6.000E-01	2.554E-02	1.043E-02
6.000E-01 - 7.000E-01	1.788E-02	8.848E-03
7.000E-01 - 8.000E-01	1.265E-02	7.209E-03
8.000E-01 - 1.000E-00	3.777E-02	1.091E-02
1.000E-00 - 1.200E-00	5.301E-02	9.980E-03
1.200E-00 - 1.400E-00	3.661E-02	8.758E-03
1.400E-00 - 1.600E-00	2.249E-02	6.894E-03
1.600E-00 - 1.800E-00	1.643E-02	6.009E-03
1.800E-00 - 2.000E-00	1.293E-02	4.946E-03
2.000E-00 - 2.500E-00	2.237E-02	9.329E-03
2.500E-00 - 3.000E-00	1.507E-02	6.208E-03
3.000E-00 - 3.500E-00	1.322E-02	5.038E-03
3.500E-00 - 4.000E-00	6.657E-03	4.365E-03
4.000E-00 - 4.500E-00	6.532E-03	3.280E-03
4.500E-00 - 5.000E-00	2.109E-03	2.628E-03
5.000E-00 - 6.000E-00	4.872E-03	4.362E-03
6.000E-00 - 7.000E-00	2.537E-03	3.078E-03
7.000E-00 - 8.000E-00	1.039E-03	1.537E-03
8.000E-00 - 9.000E-00	5.070E-04	6.547E-04
9.000E-00 - 1.000E-01	3.741E-05	2.664E-04

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