



BROOKHAVEN NATIONAL LABORATORY  
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Upton, Long Island, New York 11973

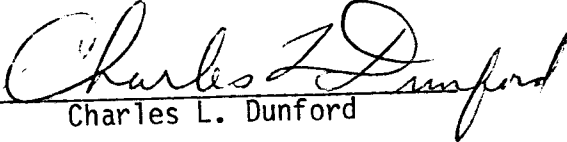
National Nuclear Data Center  
Bldg. 197D

(516) 282-2901, 2902  
FTS 666

4C-1/175

DATE: June 2, 1986  
TO: Distribution  
FROM: V. McLane  
SUBJECT: EXFOR Corrections And Requested Data Sets

Enclosed are corrections and requested data for Br, Kr, Rb, Sr, Y, Zr, Nb, Er, Tl, U232, U233, and U234.

  
Charles L. Dunford

VM:a1

Distribution  
V. Manokhin  
J. J. Schmidt  
N. Tubbs  
NNDC (6)

cc: Arilla  
Cutler  
Gardarias  
Goulo  
Limmer  
Lemuel  
Okamoto  
Oshumove  
Schmidt  
Schwever  
Sib

Completeness Check References for Area 3

Z	A	Q	LAB	EN	RNGE	REFERENCE	DATE	AUTHOR
				EV				
ZR	0	TOT	3 BUC	1.5-3	5.5-3	P INDC(SEC)-35,10	7309	RAPEANU+
ZR	0	TOT	3 RAM	1.0+6	2.0+6	R AECD/EP-18	7012	HUSAIN.
U	233	NF	3 TUD	1.5+7		J IP, 21, 344	8500	KOVALENKO+



TITLE TOTAL AND SCATTERING CROSS SECTION MEASUREMENTS ON RB AND CS WITH FAST NEUTRONS  
 (N.COETZEE,E.BARNARD)

AUTHOR (3SAFPEL)  
 INSTITUTE (R.PEL-191,43,69100) FULL DETAIL.TBLS,FIGS.IN AFRIKANS  
 REFERENCE (P,INDC(SEC)-35,7309) TO BE PUBLISHED.BRIEF,NO DATA  
 (P,INDC(SAF)-4,17,72) DATA BEING ANALYZED.BRIEF,NO DATA  
 (P,INDC(SAF)-3,7,7105) VERY BRIEF,NO DATA GIVEN  
 (P,INDC(SAF)-18,170,7108) SAME AS INDC(SAF)-3.NO DATA  
 (P,INDC(SEC)-2,7004) LEVEL ENERGIES ONLY  
 (P,INDC(SAF)-1,5,6905) TO BE COMPLETED.NO DATA GIVEN  
 (P,INDC(SAF)-2,7004) TO BE COMPLETED.NO DATA GIVEN  
 (VDC) 3-MEV PULSED AND BUNCHED(KLYSTRON) VAN DE GRAAF  
 (SCIN) PLASTIC SCINTILLATOR NE102A, 10.CM DIA AND 2.5  
 CM THICK,VIEWED EITHER BY TWO (RCA8575) PHOTOMULTIPLIER  
 TUBES IN COINCIDENCE FOR LOW ENERGIES OR BY A SINGLE  
 (PHILLIPS XPI1040) TUBE FOR HIGHER ENERGIES.

FACILITY (N) NEUTRONS  
 DETECTOR (P-T) T(P,N) PROTON ON TRITIUM  
 (P-LI7) LI-7(P,N) PROTON ON LITHIUM  
 LITHIUM METAL TARGET WAS 300 KEV THICK  
 TRANSMISSION. SAMPLE THICKNESS WAS VARIED BETWEEN  
 3.4 AND 5.0 CM TO PRODUCE MAXIMUM BEAM ATTENUATION  
 OF ABOUT 20 PERCENT.  
 (TOP) TIME OF FLIGHT. ACCELERATOR PULSE RATE, 1.E6 HZ.  
 PULSE LENGTH, 2 NANOSEC. FLIGHT PATH WAS VARIED BETWEEN  
 4 (AT LOW ENERGY) AND 7 METERS (AT HIGH E). ENERGY  
 CALIBRATION WAS CHECKED BY TRANSMISSION THROUGH AN IRON  
 ABSORBER AND BY COMPARING THE FLIGHT TIMES OF NEUTRONS  
 AND GAMMAS FROM THE LITHIUM TARGET.  
 DATA WERE AVERAGED OVER INTERVALS CORRESPONDING TO THE  
 EXPERIMENTAL RESOLUTION AS FOLLOWS....  
 INCIDENT NEUTRON E,KEV.....AVERAGING INTERVAL,KEV  
 LESS THAN 500. 1.  
 500. TO 800. 2.  
 OVER 800. 5.

ERR-ANALYS (DATA-ERR) STATISTICAL UNCERTAINTY AFTER SUMMING GROUPS  
 OF CHANNELS TO CORRESPOND WITH THE TIME-OF-FLIGHT  
 RESOLUTION AND CONSIDERING THE INTEGRATED COUNTS  
 OBTAINED BOTH WITH AND WITHOUT THE SAMPLE  
 DATA RECEIVED FROM BARNARD 720210

STATUS (720210R) 1.  
 HISTORY (730820C) 2.  
 COMPILLED IN EXFOR. 5.

ENDRIB	42	0	30178	1	3
NOCOMMON	0	0	30178	1	4
ENDSUBENT	45	0	30178	1	5
ENTRY	1	1	30178	1	6
SUBENT	30698	850823	30178	1	7
BIB	11	850823	30178	1	8
TITLE	13	13	30178	1	9
AUTHOR	MEASUREMENT OF (N,2N) REACTION CROSS SECTIONS				
INSTITUTE	BY X-RAY SPECTROSCOPY				
REFERENCE	(A,REGGUG,G.PAIC,M.BERRADA)				
MONITOR	(3MORMOH) SECOND AUTHOR				
FACILITY	(P,MOH-5,14,82)				
INC-SOURCE	(CCW,3MORMOH)				
METHOD	(D-T) X-RAY SPECTROSCOPY				
DETECTOR	(GE-1N)				
ERR-ANALYS	NO INFORMATION				
HISTORY	(850318C) DG.-				
COMMON	13	0	30698	1	15
	1	3	30698	1	16
	1	3	30698	1	17

*trans. ref. no. 01004*  
*ZP, 260, 197, 1905 for RB*  
*ZP, 207, 1, 1941 for CS*

TRANS 0 860430  
ENTRY 30008 850219  
SUBENT 30008001 850219  
BIB 15 37  
TITLE REACTION MECHANISM AND SHELL EFFECTS FROM THE  
INTERACTION OF 14.6 MEV NEUTRONS WITH NUCLEI  
(F.STROHAL,N.CINDRO,B.EMAN)

AUTHOR (3VUGRBZ)  
INSTITUTE (J.NP,30,49,6202) FULL DESCRIPTION, DATA TABLES,GRAPHS  
REFERENCE (B,61MANCH,,571,6109) DESCRIPTION OF EXP, DATA TABLES  
(J,JP/G,2,405,7606)NEW DIFFERENT RESULT FOR SR84,86,88  
(NB93(N,2N) ONLY, EXFOR 30348.  
(CCW) 200 KEV COCKCROFT-WALTON ACCELERATOR  
(D-T) DEUTERIUM-TRITIUM REACTION  
(13-AL-27(N,A)11-NA-24,,SIG)

FACILITY ALUMINIUM FOILS USED AS MONITOR FOR  
INC-SOURCE LONG LIVED ISOTOPES, ASSUMED CROSS-SECTION = 115. MB  
MONITOR (26-FE-56(N,P)25-MN-56,,SIG)  
FE-56 FOILS USED FOR SHORT LIVED  
ISOTOPES, CROSS-SECTION ASSUMED TO BE 110. MB  
(ACTIV) ACTIVATION  
(GEMUC,NAICR) GEIGER COUNTER FOR BETA PARTICLES AND  
MAI CRYSTAL (HARSCHAW 7.6CM BY 7.6CM) FOR GAMMAS  
THIN SAMPLES PRESSED BETWEEN TWO AL  
OR FE FOILS

CORRECTION COUNTING RATES CORRECTED FOR ISOTOPE ABUNDANCE,COUNTING  
EFFICIENCY, GEOMETRY, SELF-SCATTERING AND -ABSORPTION,  
AIR- AND WINDOW-ABSORPTION FOR BETA COUNTING. FOR  
GAMMA COUNTING CRYSTAL EFF ERROR DIMINISHED THROUGH  
CONSIDERATION OF RATIO OF EFFICIENCIES AT SIMILAR EN  
ERRORS QUOTED ARE DUE TO STATISTICS, RESOLUTION OF  
GAMMA PEAKS, CRYSTAL EFFICIENCY, CHEMICAL SEPARATIONS  
AND NON-LINEAR BETA-DECAY CURVES. THE ENERGY-ERROR  
WAS DUE TO POOR GEOMETRY  
UNCERTAINTY IN BRANCHING RATIOS OF GAMMA RAYS WAS NOT  
INCLUDED IN ERROR ESTIMATE.  
CROSS-SECTIONS WERE CALCULATED BY COMPARING THE NO OF  
COUNTS OF THE SAMPLE WITH THOSE OF THE STANDARD USED  
DATA TAKEN FROM NUCL.PHYS.,30(1962)49, TABLES 2,3,4.  
(700612C)  
(760907U) ADD IREF., MINOR MODIFICATIONS.

ANALYSIS  
STATUS HISTORY (700612C)  
ENDBIB COMMON 37  
EN 5  
MEV +EN-RSL -EN-RSL MONIT1 MONIT2  
1.4600E+01 2.0000E-01 3.0000E-01 1.1500E+02 1.1000E+02  
ENDCOMMON 3  
ENDSUBENT 44  
SUBENT 30008004 840503  
BIB (35-BR-81(N,2N)35-BR-80,,SIG)  
REACTION STATUS (DEP) DEPENDENT DATA(SUM) OF SUB-ENTRIES .002 AND .003  
ENDBIB 2  
NOCOMMON 0  
DATA DATA 1  
DATA DATA-ERR 2  
MB 1  
1.0470E+03 9.8000E+01  
ENDDATA 3  
ENDSUBENT 10  
SUBENT 30008017 840503  
BIB 2  
REACTION (35-BR-81(N,P)34-SE-81-M,,SIG)  
PART-DET (B-) BETA

0 0 0  
30008 0 1  
30008 1 1  
30008 1 2  
30008 1 3  
30008 1 4  
30008 1 5  
30008 1 6  
30008 1 7  
30008 1 8  
30008 1 9  
30008 1 10  
30008 1 11  
30008 1 12  
30008 1 13  
30008 1 14  
30008 1 15  
30008 1 16  
30008 1 17  
30008 1 18  
30008 1 19  
30008 1 20  
30008 1 21  
30008 1 22  
30008 1 23  
30008 1 24  
30008 1 25  
30008 1 26  
30008 1 27  
30008 1 28  
30008 1 29  
30008 1 30  
30008 1 31  
30008 1 32  
30008 1 33  
30008 1 34  
30008 1 35  
30008 1 36  
30008 1 37  
30008 1 38  
30008 1 39  
30008 1 40  
30008 1 41  
30008 1 42  
30008 1 43  
30008 1 44  
30008 1 45  
30008 1 199999  
30008 4 1  
30008 4 2  
30008 4 3  
30008 4 4  
30008 4 5  
30008 4 6  
30008 4 7  
30008 4 8  
30008 4 9  
30008 4 10  
30008 4 11  
30008 4 499999  
30008 17 1  
30008 17 2  
30008 17 3  
30008 17 4

ENDBIB		2	0	0	30008	17	5
NOCOMMON		0	0	0	30008	17	6
DATA		2	1	1	30008	17	7
DATA	DATA-ERR				30008	17	8
MB	MB				30008	17	9
ENDDATA	3.2000E+01 8.0000E+00	3	0	0	30008	17	10
ENDSUBENT		10	0	0	30008	17	11
SUBENT	30008019		840503		30008	1799999	
BIB		2	2	2	30008	19	1
REACTION	(35-BR-81(N,P)34-SE-81,.,SIG)				30008	19	2
STATUS	(DEP) DEPENDENT DATA(SUM) OF SUB ENTRIES .017 AND .018				30008	19	3
ENDBIB		2	0	0	30008	19	4
NOCOMMON		0	0	0	30008	19	5
DATA		2	0	0	30008	19	6
DATA	DATA-ERR			1	30008	19	7
MB	MB				30008	19	8
ENDDATA	5.7000E+01 1.0000E+01	3	0	0	30008	19	9
ENDSUBENT		10	0	0	30008	19	10
SUBENT	30008030		840503		30008	1999999	11
BIB		2	2	2	30008	30	1
REACTION	(35-BR-81(N,A)33-AS-78,.,SIG)				30008	30	2
PART-DET	(B-) BETA				30008	30	3
ENDBIB		2	0	0	30008	30	4
NOCOMMON		0	0	0	30008	30	5
DATA		2	0	0	30008	30	6
DATA	DATA-ERR			1	30008	30	7
MB	MB				30008	30	8
ENDDATA	1.0700E+02 2.0000E+01	3	0	0	30008	30	9
ENDSUBENT		10	0	0	30008	30	10
ENDENTRY		5	0	0	30008	3099999	11
ENDTRANS		1	1	1	30008	9999999	
					Z99999999999999		

*data point wrong high?*

TRANS 0 860509 30601 0 0  
 ENTRY 30601 850326 30601 0 1  
 SUBENT 30601001 850326 30601 1 1  
 BIB 14 41 30601 1 2  
 TITLE ISOMER RATIO IN (N,2N) REACTION AND SPIN DEPENDENCE  
 OF LEVEL DENSITY OF NUCLEI WITH N ABOUT 50  
 (FAM ZUI HIEN, NGO KUANG ZUI, NGUEN TAK AN)  
 AUTHOR (3VN NNR) 30601 1 3  
 INSTITUTE (J,VF,35,257,8202) 30601 1 4  
 REFERENCE (J,SNP,35,145,8202) 30601 1 5  
 (C,80KIEV,1,254,8009) 30601 1 6  
 (R,INDC(VN)-1,8201) 30601 1 7  
 METALLIC SAMPLES FROM NATURAL MIXTURE OF ISOTOPES FOR  
 MO AND ZN. 30601 1 8  
 OXIDE SAMPLE FROM NATURAL MIXTURE OF ISOTOPES FOR SN. 30601 1 9  
 METALLIC SAMPLE ENRICHED TO 41 PER-CENT ON SE-74 IN 30601 1 10  
 CASE OF SE-74 MEASUREMENT 30601 1 11  
 (CCW) NEUTRON GENERATOR WITH 10\*\*10 NEUTR/SEC 30601 1 12  
 (D-T) DEUTERON-TRITIUM 30601 1 13  
 (ACTIV) ACTIVATION METHOD 30601 1 14  
 (GELI) GERMANIUM-LITHIUM DETECTOR 30601 1 15  
 (DG) DECAY GAMMAS 30601 1 16  
 (DATA-ERR) TOTAL ERROR. 30601 1 17  
 THE SPIN-CUT-OFF PARAMETER FOR FERMI-GAS LEVEL 30601 1 18  
 DENSITY MODEL WAS DERIVED FROM ISOMER RATIO VALUES. 30601 1 19  
 THE DERIVED VALUES AS RATIOS TO RIGID-BODY 30601 1 20  
 VALUES ARE 30601 1 21  
 MO-91 0.98 30601 1 22  
 ZR-89 0.87 30601 1 23  
 SR-85 0.90 30601 1 24  
 SE-74 0.87 30601 1 25  
 ISOMER RATIOS WERE MEASURED FOR (G,N) REACTION 30601 1 26  
 AT MICROTRON WITH MAXIMUM ENERGY OF BREMSESTRAHLUNG 30601 1 27  
 SPECTRUM 14.5 MEV. THE VALUES ARE 30601 1 28  
 TARGET NUCLEUS ISOM.RATIO 30601 1 29  
 MO-92 1.54+-0.15 30601 1 30  
 ZR-90 1.52+-0.04 30601 1 31  
 SR-86 0.70+-0.07 30601 1 32  
 SE-74 7.5 +-1.0 30601 1 33  
 THE CALCULATIONS OF ISOMER RATIO IN CASE OF SE-74 30601 1 34  
 HAVE SUPPORTED THE SCHEME IG=9/2+, IM=3/2- 30601 1 35  
 DATA WERE TAKEN FROM PAPER SUBMITTED FOR PUBLICATION 30601 1 36  
 IN YADERNAYA FIZIKA 30601 1 37  
 (811020C) VP. 30601 1 38  
 (840302U) 1,2 AND 4-TH REFERENCES ADDED 30601 1 39  
 41 0 30601 1 40  
 2 3 30601 1 41  
 EN-RSL 30601 1 42  
 COMMON 30601 1 43  
 ENDBIB 30601 1 44  
 EN 30601 1 45  
 MEV 30601 1 46  
 1.4500E+01 2.0000E-01 30601 1 47  
 ENDCOMMON 3 0 30601 1 48  
 ENDSUBENT 48 0 30601 1 49  
 ENDENTRY 1 1 30601 1 49  
 ENDTTRANS 1 1 30601 1 49  
 Z999999999999999

*Submitted reference?*





AT 14.7 MEV-  
(K.C.GARG, C.S.KHURANA)

AUTHOR (K.C.GARG, C.S.KHURANA)  
INSTITUTE (3INDPAT)  
REFERENCE (J,IPA,17,525,7908) SUMMARY OF EXPERIMENT ONLY,  
DETAILS TO BE PUBLISHED

MONITOR NO INFORMATION

FACILITY (VDG)  
INC-SOURCE (D-T)  
METHOD (ACTIV) ACTIVATION OF MILLISECOND ISOMERS WITH  
PULSED BEAM TECHNIQUE

DETECTOR (NAICR)  
ERR-ANALYS NO INFORMATION  
STATUS DATA TAKEN FROM INDIAN J.PURE APPL.PHYS.17,525(1979).  
(APRVD) APPROVED BY GARG, 11/4/80  
(800317C) OS.

HISTORY 16 0  
ENDBIB 1  
COMMON 3

MEV 1.4700E+01

ENDCOMMON 3  
ENDSUBENT 23 0  
SUBENT 30534003 840911 2

BIB 2  
REACTION (39-Y-89(N,2N)39-Y-88-M, $\sigma$ ,SIG)  
DECAY-DATA (39-Y-88-M,14.5MSEC,DG,700.)

ENDBIB 2 0  
NOCOMMON 0 0  
DATA 2 1  
DATA DATA-ERR 1

MB 1.0300E+02 1.5000E+01

ENDDATA 3 0  
ENDSUBENT 10 0  
ENDENTRY 2 1  
ENDTRANS 2 1

30534 1 4  
30534 1 5  
30534 1 6  
30534 1 7  
30534 1 8  
30534 1 9  
30534 1 10  
30534 1 11  
30534 1 12  
30534 1 13  
30534 1 14  
30534 1 15  
30534 1 16  
30534 1 17  
30534 1 18  
30534 1 19  
30534 1 20  
30534 1 21  
30534 1 22  
30534 1 23  
30534 1 24  
30534 199999 24  
30534 1 1  
30534 3 2  
30534 3 3  
30534 3 4  
30534 3 5  
30534 3 6  
30534 3 7  
30534 3 8  
30534 3 9  
30534 3 10  
30534 399999 11  
3053499999999 11  
Z99999999999999 11

*Handwritten notes:*  
30534-199999-24  
30534-1-1  
30534-3-2  
30534-3-3  
30534-3-4  
30534-3-5  
30534-3-6  
30534-3-7  
30534-3-8  
30534-3-9  
30534-3-10  
30534-399999-11  
3053499999999-11  
Z99999999999999-11

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TRANS 0 860521
ENTRY 30394 850311
SUBENT 30394001 850121
BIB 14 31
TITLE -NUCLEAR ACTIVATION CROSS SECTIONS OF (N,P) REACTION
AT 14.7 MEV.-
AUTHOR (V.K.TIKKU,H.SINGH,B.SETHI)
INSTITUTE (3INDSAH)
REFERENCE (C,72CHANDG,2,115,7212)
(P,INDC(SEC)-35,98,7308)=
(P,BARC-695,22,73)) SAME AS 72CHANDIGR. NO DATA GIVEN.
NO INFORMATION ON ZR.
SAMPLE SPECTROSCOPICALLY PURE, MIXED WITH THE MONITOR REACTION30394
UNLESS AN INTERNAL MONITOR WAS AVAILABLE. THE TARGET 30394
SAMPLE WAS PACKED IN A THIN POLYTHENE BAG FOR 30394
IRRADIATION. 30394
MONITOR (13-AL-27(N,P)12-MG-27,,SIG) 30394
= 53+-5 MB (T(1/2)=9.5MIN); 30394
(13-AL-27(N,A)11-NA-24,,SIG) 30394
= 114+-7 MB (T(1/2)=15HR), BOTH TAKEN 30394
FROM POULARIKAS AND FINK, PHYS.REV.115(1959)989. 30394
THE MONITOR SAMPLE WAS IN THE SHAPE OF AL(2)-O(3). 30394
(CCW) 400 KW CASCADE GENERATOR. 30394
FACILITY (D-T) 30394
INC-SOURCE FLUX DENSITY WAS AROUND 5.E+9 N/CM2/SEC. 30394
METHOD (ACTIV) ACTIVATION. 30394
DETECTOR (GELI) 32.2 CM3 GE(LI) DETECTOR. THE SYSTEM RESOLUTION30394
OF THE DETECTOR COUPLED TO ORTEC UNITS WAS FOUND TO BE 30394
2.1 KEV FOR THE 1332 KEV GAMMA-RAY OF CO-60. 30394
PART-DET (DG) DECAY GAMMAS. 30394
ERR-ANALYS NO FURTHER INFORMATION. 30394
STATUS DATA TAKEN FROM TABLE OF PROC.NUCL.PHYS.AND SOLID STATE 30394
PHYS.SYMP., CHANDIGARH, 28 DEC 1972 TO 1 JAN 1973, 30394
VOL15B,115. 30394
HISTORY (770331C) KO. 30394
ENDBIB 0 3
COMMON 31 6
EN EN-RSL MONIT1 MONIT1-ERR MONIT2 MONIT2-ERR
MEV MEV MB MB MB MB
1.4700E+01 3.0000E-01 5.3000E+01 1.1400E+02 7.0000E+00 3.0394
ENDCOMMON 30394
ENDSUBENT 38 0 30394
SUBENT 30394008 850121 30394
BIB 3 4
REACTION (40-ZR-90(N,P)39-Y-90-M,,SIG) 30394
HALF-LIFE (HL,39-Y-90-M) = 3.1 HR. 30394
COMMENT THEORETICAL VALUE OBTAINED USING STATISTICAL MODEL OF 30394
COMPOUND NUCLEUS IS '1.00 MB'. 30394
ENDBIB 4 0 30394
NOCOMMON 0 0 30394
DATA DATA 3 HL 30394
DATA MB HR 1 30394
3.7800E+01 6.8000E+00 3.1000E+00 30394
ENDDATA 3 0 30394
ENDSUBENT 12 0 30394
ENDENTRY 1 1 30394
ENDTRANS 1 1 30394
Z99999999999999999

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TRANS	0	860521		0	0	0
ENTRY	30438	850826		0	0	1
SUBENT	30438001	850826		0	0	1
BIB	16	25		0	0	2
TITLE	THE CROSS SECTIONS OF (N,2N), (N,P), (N,A) REACTIONS FOR 14.8 MEV NEUTRONS ON ISOTOPES OF CR AND ZR					
AUTHOR	(K.SAILER, S.DAROCZY, P.RAICS, S.NAGY)					
INSTITUTE	(3HUNKOS)					
REFERENCE	(C.77KIEV,1,246,7704) IN RUSSIAN (P.INDC(SEC)-61,55,7710) SUPERSEDED ==THIS ENTRY SUPERSEDES EXFOR.30441.					
SAMPLE	.CR203 POWDER .FOIL OF NATURAL ZR					
FACILITY	(CCW)					
INC-SOURCE	(D-T)					
METHOD	(ACTIV)					
PART-DET	(DG)					
DETECTOR	(GELI)					
MONITOR	(13-AL-27(N,A)11-NA-24, SIG. EVAL)					
CORRECTION	(Y.KANDA+,C.68WASH,1,193,6803)					
ERR-ANALYS	MEASURED GAMMA-SPECTRA WERE CORRECTED FOR SELF-ABSORPTION AND OVERLAPPING OF DETECTOR PULSES. STATISTICAL ERRORS, ESTIMATED SYST.ERROR OF 5 PER-CENT NOT INCLUDED					
STATUS	DATA TAKEN FROM PROCEED. OF 4. ALL-UNION CONF. ON NEUTRON PHYS., KIEV 1977, VOL.1,246, TABLE 2. (APRVD) APPROVED BY DAROCZY 21/08/1978. (780426C) OS. (850624U) DG.-SOME CORRECTIONS AFTER AUTHOR'S APPROVAL					
HISTORY	25	0	30438	1	1	27
ENDBIB	3	0	30438	1	1	28
COMMON	3	0	30438	1	1	29
EN	EN-RSL	MONIT	30438	1	1	30
MEV	MEV	MB	30438	1	1	31
ENDCOMMON	1.4810E+01	2.5000E-01	1.1170E+02	0	0	32
ENDSUBENT	3	0	30438	1	1	33
ENDENTRY	32	0	30438	1	1	33
ENDTRANS	1	1	30438	1	1	199999
	1	1	30438999999999			30438999999999
			Z99999999999999			Z99999999999999

*The name in brackets is CR*

TRANS 30352 860521  
ENTRY 30352 850314  
SUBENT 30352001 850314  
BIB 16  
TITLE KEV NEUTRON CAPTURE IN ZIRCONIUM-91.  
AUTHOR (J.W. BOLDEMAN, B.J. ALLEN, A.R. DEL. MUSGROVE, R.L. MACKLIN)  
INSTITUTE (3AULAUA)  
INSTITUTE (1USAORL) LAST AUTHOR'S ADDRESS.  
((R, AE/C/E-367, 7601) = (R, INDC(AUL)) -25, 7601))  
REFERENCE (J, NP/A, 246, 1.7507) RES. PAR. OF ZR-90, EXFOR30329.  
SAMPLE ENRICHED SAMPLE, 88.5 PERCENT ZR-91.  
MONITOR ((3-LI-6(N, T)2-HE-4, SIG)  
UTTLEY ET AL., 3RD CONF. NEUTRON CROSS-SECTIONS+TECH. KNOXVILLE 1971, P. 551, FOR BELOW 100 KEV. 30352  
FORT AND MARQUETTE, NEUTRON STAND. REF. DATA, IAEA(1974)11330352  
COATES ET AL., IBID, P. 110 AND POENITZ, Z. PHYS. 268(1974) 30352  
359, FOR ABOVE 100 KEV. 30352  
FACILITY (LINAC) OAK RIDGE ELECTRON LINEAR ACCELERATOR (ORELA) 30352  
INC-SOURCE (PHOTO) 30352  
METHOD (TOF) TIME OF FLIGHT, PATH = 40 M. 30352  
DETECTOR (SCIN) TWO NON-HYDROGENOUS LIQUID SCINTILLATORS WITH 30352  
LOW NEUTRON SENSITIVITY. THE DETECTOR RESPONSE IS 30352  
PROPORTIONAL ONLY TO THE TOTAL GAMMA-RAY ENERGY RELEASE 30352  
. LI-6 GLASS SCINTILLATOR (0.5 MM THICK) FOR NEUTRON 30352  
FLUX MONITORING. 30352  
(G) GAMMAS. 30352  
(AREA) MONTE CARLO AREA ANALYSIS USING ORNL/RPI CODE OF 30352  
SULLIVAN ET AL., RENNELAER POLYTECH. INST. -USAEC REPORT 30352  
RPI-328-155(1969), (UNPUBLISHED). 30352  
. FOR SEVERAL RESONANCES IN THE PRESENT DATA SET, 30352  
SHAPE ANALYSIS OF CAPTURE DATA TO GET THE NEUTRON-WIDTH 30352  
SELF-SHIELDING AND MULTIPLE-SCATTERING CORRECTIONS WERE 30352  
PERFORMED IN THIS MONTE-CARLO CODE. 30352  
COMPILER'S NOTE = CAPTURE YIELD DATA ARE REPORTED, BUT 30352  
NOT CAPTURE CROSS-SECTIONS. 30352  
DATA FROM AE/C/E367(1976) TABLE 1 AND RESULT. 30352  
(APRVD) APPROVED BY MUSGROVE (LETT. FROM ALLEN, 77/02/04) 30352  
(760923C) KO. - 'APRVD' ADDED. CORRECTION IN SUBENTRY 30352  
HISTORY .002. - 30352  
(770401A) KO. - 'APRVD' ADDED. CORRECTION IN SUBENTRY 30352  
(771118U) KO. - AMENDMENT ON .002- 30352  
ENDBIB 37 30352  
NOCOMMON 0 30352  
ENDSUBENT 40 30352  
SUBENT 30352002 840530 12 30352  
BIB 4 30352  
REACTION 1((40-ZR-91(N, 0)), EN) 30352  
2((40-ZR-91(N, EL)), WID) 30352  
3((40-ZR-91(N, EL)), WID, G)\* 30352  
((40-ZR-91(N, G)), WID)/ 30352  
((40-ZR-91(N, TOT)), WID) 30352  
NO FURTHER INFORMATION. 30352  
ERR-ANALYS A NEUTRON-WIDTH AT 3.162 KEV RESONANCE-ENERGY WAS 30352  
COMMENT ASSUMED TO BE 1.4 EV. 30352  
HISTORY (770401A) KO. - ALTERATION OF 'EN-RES' TO 'DATA 1'. RE- 30352  
ARRANGEMENT OF SEQUENCE OF RESONANCE ENERGIES, 26.95, 30352  
27.13 AND 27.30 KEV. CONFIRMED BY AUTHOR, 77/02/04. - 30352  
(771118U) KO. - CORRECTION OF DATA-ERR 1 AT 15.78 KEV. - 30352  
ENDBIB 12 30352  
NOCOMMON 0 30352  
DATA 9 30352  
DATA-IDATA-ERR 9 119 30352  
DATA-ZDATA 3DATA-ERR 3 30352  
KEY EV EV EV

0 30352 0 0  
1 30352 1 1  
2 30352 2 2  
3 30352 3 3  
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99 30352 99 99  
100 30352 100 100

770401A 771118U

EV	EV	EV	EV	EV	EV	EV	EV
3.1620E+00	6.0000E-03	9.0000E-03	30352	2	21		
3.6170E+00	8.5000E-02	7.0000E-03	30352	2	22		
3.6480E+00	7.0000E-03	5.2000E-02	30352	2	23		
3.8690E+00	7.0000E-03	5.0000E-03	30352	2	24		
3.8690E+00	5.4000E-02	5.0000E-03	30352	2	25		
4.0120E+00	8.0000E-03	6.0000E-03	30352	2	26		
4.0120E+00	8.0000E-03	6.0000E-03	30352	2	27		
4.2830E+00	8.0000E-03	6.0000E-03	30352	2	28		
4.3330E+00	5.2000E-02	5.0000E-03	30352	2	29		
4.3330E+00	9.0000E-03	5.0000E+00	30352	2	30		
4.7540E+00	2.1400E-01	2.1000E-02	30352	2	31		
4.9850E+00	1.0000E-02	8.0000E-03	30352	2	32		
4.9850E+00	8.2000E-02	8.0000E-03	30352	2	33		
5.3670E+00	1.0000E-02	5.0000E-03	30352	2	34		
5.3670E+00	4.5000E-02	5.0000E-03	30352	2	35		
5.5330E+00	1.1000E-02	2.0000E-03	30352	2	36		
5.5330E+00	1.2000E-02	2.0000E-03	30352	2	37		
5.6400E+00	1.1000E-02	1.5000E+01	30352	2	38		
5.6400E+00	6.2000E-02	6.0000E-03	30352	2	39		
5.8320E+00	1.1000E-02	7.0000E-03	30352	2	40		
5.8320E+00	6.9000E-02	7.0000E-03	30352	2	41		
6.0980E+00	1.2000E-02	6.0000E-03	30352	2	42		
6.0980E+00	5.8000E-02	6.0000E-03	30352	2	43		
6.1870E+00	1.2000E-02	3.0000E-03	30352	2	44		
6.1870E+00	2.9000E-02	3.0000E-03	30352	2	45		
6.4810E+00	1.3000E-02	2.0000E-03	30352	2	46		
6.4810E+00	6.0000E-03	2.0000E-03	30352	2	47		
6.7680E+00	1.4000E-02	6.0000E-03	30352	2	48		
6.7680E+00	4.4000E-02	5.0000E-03	30352	2	49		
6.8670E+00	1.4000E-02	5.0000E-03	30352	2	50		
7.0470E+00	5.0000E-02	5.0000E-03	30352	2	51		
7.0470E+00	1.4000E-02	5.0000E+00	30352	2	52		
7.1340E+00	1.5100E-01	1.5000E-02	30352	2	53		
7.1340E+00	1.4000E-02	1.5000E-02	30352	2	54		
7.2670E+00	8.9000E-02	9.0000E-03	30352	2	55		
7.2670E+00	1.5000E-02	4.0000E+00	30352	2	56		
7.3620E+00	9.5000E-02	1.0000E-02	30352	2	57		
7.3620E+00	1.5000E-02	1.0000E-02	30352	2	58		
7.7680E+00	6.4000E-02	6.0000E-03	30352	2	59		
7.7680E+00	1.5000E-02	5.0000E+00	30352	2	60		
8.5100E+00	2.00300E-01	2.0000E-02	30352	2	61		
8.5100E+00	1.7000E-02	8.0000E-03	30352	2	62		
8.5270E+00	1.7000E-02	7.0000E-03	30352	2	63		
8.5270E+00	6.6000E-02	7.0000E-03	30352	2	64		
8.8650E+00	1.8000E-02	1.5000E+01	30352	2	65		
8.8650E+00	1.4000E-02	2.0000E-03	30352	2	66		
8.9550E+00	1.8000E-02	5.0000E-03	30352	2	67		
8.9550E+00	4.6000E-02	5.0000E-03	30352	2	68		
9.0450E+00	1.8000E-02	7.0000E-03	30352	2	69		
9.0450E+00	7.1000E-02	7.0000E-03	30352	2	70		
9.1090E+00	1.8000E-02	7.0000E-03	30352	2	71		
9.1090E+00	6.9000E-02	7.0000E-03	30352	2	72		
9.2390E+00	1.8000E-02	5.0000E+00	30352	2	73		
9.2390E+00	7.5000E-02	8.0000E-03	30352	2	74		
9.3100E+00	1.9000E-02	8.0000E-03	30352	2	75		
9.3100E+00	1.9000E-02	6.0000E-03	30352	2	76		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	77		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	78		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	79		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	80		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	81		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	82		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	83		
9.8390E+00	2.0000E-02	6.0000E-03	30352	2	84		

9.8850E+00	1.1500E-01	1.2000E-02	4.0000E+00
1.0000E+01	2.0000E-02	1.0000E+01	
1.0140E+01	2.0000E-02	6.0000E-03	
1.0530E+01	1.0500E-01	1.1000E-02	
1.0560E+01	2.0000E-02	1.1000E-02	
1.0710E+01	1.0500E-01	1.1000E-02	
8.5000E-02	2.0000E-02	9.0000E-03	
1.0750E+01	2.0000E-02	8.0000E-03	
1.1080E+01	6.5000E-02	7.0000E-03	
1.1110E+01	2.0000E-02	8.0000E-03	
1.1130E+01	2.0000E-02	8.0000E-03	
1.1240E+01	1.6000E-02	3.0000E-03	
1.2120E+01	2.0000E-02	5.0000E-03	
1.2180E+01	2.0000E-02	7.0000E-03	
1.2230E+01	2.0000E-02	2.0000E-02	
1.2330E+01	1.4700E-01	1.5000E-02	
1.2560E+01	2.0000E-02	4.0000E-03	
1.2940E+01	5.6000E-02	6.0000E-03	
1.3170E+01	1.4300E-01	1.4000E-02	
1.3270E+01	3.0000E-02	6.0000E-03	
1.3320E+01	5.9000E-02	6.0000E-03	
1.3580E+01	3.0000E-02	8.0000E-03	
1.3710E+01	3.0000E-02	9.0000E-03	
1.3810E+01	4.8000E-02	6.0000E-03	
1.4100E+01	3.0000E-02	6.0000E-03	
1.4200E+01	1.4100E-01	1.4000E-02	
1.4260E+01	5.8000E-02	6.0000E-03	
1.4600E+01	7.7000E-02	8.0000E-03	
1.4860E+01	3.0000E-02	8.0000E-03	
1.5190E+01	3.0000E-02	8.0000E-03	
1.5250E+01	7.1000E-02	8.0000E-03	
1.5780E+01	3.0000E-02	1.7000E-02	
1.6200E+01	1.6500E-01	1.7000E-02	
	3.0000E-02	7.0000E-03	
	6.4000E-02	7.0000E-03	
	3.0000E-02		

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30352	2	148

1.6710E+01 7.5000E-02 8.0000E-03  
 1.6860E+01 3.0000E-02 8.0000E-03  
 1.6990E+01 3.0000E-02 5.0000E-03  
 1.7070E+01 7.0000E-02 8.0000E-03  
 1.7470E+01 3.0000E-02 7.0000E-03  
 1.7820E+01 1.0000E-02 1.1000E-02  
 1.8560E+01 4.0000E-02 1.4000E-02  
 1.8660E+01 4.0000E-02 7.0000E-03  
 1.9520E+01 1.5500E-01 1.6000E-02  
 1.9610E+01 4.0000E-02 1.6000E-02  
 1.9780E+01 6.9000E-02 8.0000E-03  
 1.9830E+01 4.0000E-02 1.0000E-02  
 2.0040E+01 4.0000E-02 9.0000E-03  
 2.0190E+01 4.0000E-02 9.0000E-03  
 2.0220E+01 1.4400E-01 1.5000E-02  
 2.0270E+01 4.0000E-02 2.0000E+01  
 2.0320E+01 1.6800E-01 1.7000E-02  
 2.0410E+01 4.0000E-02 9.0000E-03  
 2.0650E+01 4.0000E-02 8.0000E-01  
 2.0920E+01 4.0000E-02 1.0000E-02  
 2.1250E+01 1.2700E-01 1.3000E-02  
 2.1320E+01 4.0000E-02 9.0000E-03  
 2.1520E+01 6.4000E-02 9.0000E-03  
 2.1720E+01 8.1000E-02 1.0000E-02  
 2.1780E+01 4.8000E-02 1.0000E+02  
 2.2190E+01 4.0000E-02 7.0000E-03  
 2.2480E+01 1.0600E-01 1.1000E-02  
 2.2620E+01 4.0000E-02 9.0000E-03  
 2.2760E+01 7.7000E-02 9.0000E-03  
 2.2820E+01 4.0000E-02 1.0000E-02  
 2.3340E+01 5.0000E-02 8.0000E-03  
 2.3720E+01 1.2700E-01 9.0000E-03  
 5.0000E-02 8.0000E-02 1.0000E-02  
 5.0000E-02 1.0000E-02 1.0000E-02

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2.4240E+01	1.0100E-01	1.1000E-02	3.0352	2	213
5.0000E-02	5.0000E-02	4.0000E+01	3.0352	2	214
3.6400E-01	3.7000E-02		3.0352	2	215
2.4330E+01	5.0000E-02		3.0352	2	216
7.7000E-02	1.0000E-02		3.0352	2	217
2.4810E+01	5.0000E-02		3.0352	2	218
8.9000E-02	1.1000E-02		3.0352	2	219
2.4930E+01	5.0000E-02		3.0352	2	220
1.4100E-01	1.5000E-02		3.0352	2	221
2.5280E+01	5.0000E-02		3.0352	2	222
9.3000E-02	1.1000E-02		3.0352	2	223
2.5720E+01	5.0000E-02		3.0352	2	224
8.0000E-02	1.0000E-02		3.0352	2	225
2.6000E+01	5.0000E-02		3.0352	2	226
5.0000E-02	2.0700E-01	2.1000E-02	3.0352	2	227
2.6580E+01	5.0000E-02		3.0352	2	228
1.0200E-01	1.2000E-02		3.0352	2	229
2.6950E+01	5.0000E-02		3.0352	2	230
5.1000E-02	7.0000E-03		3.0352	2	231
2.7130E+01	5.0000E-02		3.0352	2	232
1.9600E-01	2.1000E-02		3.0352	2	233
2.7300E+01	5.0000E-02		3.0352	2	234
1.0500E-01	1.2000E-02		3.0352	2	235
2.7390E+01	5.0000E-02		3.0352	2	236
1.0000E-02	1.0000E-02		3.0352	2	237
7.2000E-02	1.0000E-02		3.0352	2	238
2.7610E+01	6.0000E-02		3.0352	2	239
1.3000E-01	1.4000E-02		3.0352	2	240
2.7950E+01	6.0000E-02		3.0352	2	241
1.1000E-01	1.2000E-02		3.0352	2	242
2.8060E+01	6.0000E-02		3.0352	2	243
1.3100E-01	1.4000E-02		3.0352	2	244
2.8770E+01	6.0000E-02		3.0352	2	245
8.8000E-02	1.0000E-02		3.0352	2	246
2.8960E+01	6.0000E-02		3.0352	2	247
1.8300E-01	1.9000E-02		3.0352	2	248
2.9090E+01	6.0000E-02		3.0352	2	249
1.4800E-01	1.5000E-02		3.0352	2	250
2.9180E+01	6.0000E-02		3.0352	2	251
1.0600E-01	1.1000E-02		3.0352	2	252
2.9340E+01	6.0000E-02		3.0352	2	253
6.4000E-02	8.0000E-03		3.0352	2	254
2.9550E+01	6.0000E-02		3.0352	2	255
1.4300E-01	1.5000E-02		3.0352	2	256
2.9740E+01	6.0000E-02		3.0352	2	257
1.3400E-01	1.4000E-02		3.0352	2	258
3.0060E+01	6.0000E-02		3.0352	2	259
1.9400E-01	2.0000E-02		3.0352	2	260
1.9400E-01	2.0000E-02		3.0352	2	260
242			3.0352	2	260
259			3.0352	2	260
30352003			299999	1	1
840530			3.0352	3	2
3			3.0352	3	3
5			3.0352	3	4
2			3.0352	3	5
3			3.0352	3	6
5			3.0352	3	7
8			3.0352	3	8
9			3.0352	3	9
10			3.0352	3	10
11			3.0352	3	11
12			3.0352	3	12
13			3.0352	3	13
14			3.0352	3	14
15			3.0352	3	15

REACTION NO ERROR GIVEN.  
 ERR-ANALYS THIS LEVEL SPACING HAS BEEN OBTAINED, ASSUMING THAT THE LEVEL DENSITY IS INDEPENDENT OF PARITY AND SHOWS A  
 COMMENT LEVEL DENSITY IS INDEPENDENT OF PARITY AND SHOWS A  
 (2J+1) DEPENDENCE.

ENDBIB  
 COMMON EN-MIN  
 KEV EN-MAX  
 3.0000E+00 3.0000E+01  
 ENDCOMMON 3  
 DATA 2  
 MOMENTUM L 1



EV	NO-DIM	30352	3	16
6.7000E+02	0.0000E+00	30352	3	17
ENDDATA		30352	3	18
SUBENT	30352004	30352	39999	
BIB		30352	4	1
REACTION	(40-ZR-91(N,G)40-ZR-92.,SIG.,AV)	30352	4	3
	AVERAGED OVER BROAD ENERGY GROUPS	30352	4	4
ERR-ANALYS	NO FURTHER INFORMATION.	30352	4	5
ENDBIB		30352	4	6
NOCOMMON		30352	4	7
DATA		30352	4	8
EN-APRX	DATA	30352	4	9
KEY	MB	30352	4	10
3.0000E+01	6.0000E+01	30352	4	11
ENDDATA		30352	4	12
ENDSUBENT		30352	4	13
ENDENTRY		30352	4	14
ENTRY	30423	30352	49999	
SUBENT	30423001	30352	99999	
BIB		30423	0	1
TITLE		30423	1	2
		30423	1	3
AUTHOR		30423	1	4
		30423	1	5
		30423	1	6
		30423	1	7
		30423	1	8
		30423	1	9
		30423	1	10
		30423	1	11
		30423	1	12
		30423	1	13
		30423	1	14
		30423	1	15
		30423	1	16
		30423	1	17
		30423	1	18
		30423	1	19
		30423	1	20
		30423	1	21
		30423	1	22
		30423	1	23
		30423	1	24
		30423	1	25
		30423	1	26
		30423	1	27
		30423	1	28
		30423	1	29
		30423	1	30
		30423	1	31
		30423	1	32
		30423	1	33
		30423	1	34
		30423	1	35
		30423	1	36
		30423	1	37
		30423	1	38
		30423	1	39
		30423	1	40
		30423	1	41
		30423	1	42
		30423	1	43
		30423	1	44
		30423	1	45

Duplicate of 60406016

TRANSMISSION:  
 THE CORRECTED TRANSMISSION DATA WERE ANALYSED WITH  
 NONLINEAR LEAST SQUARES FITTING EMPLOYED SINGLE-LEVEL  
 DOPPLER BROADENED RESONANCE THEORY. 30423 1 46  
 THE ABSOLUTE ERROR IN NORMALIZATION WAS ESTIMATED TO BE 30423 1 47  
 ABOUT 5 PERC. STATISTICAL ERRORS WERE SMALL BELOW 12 30423 1 48  
 KEV, BUT INCREASED TO 5 PERCENT NEAR 20 KEV. 30423 1 49  
 THE ERRORS IN SELF-SHIELDING, MULTIPLE SCATTERING AND 30423 1 50  
 PROMPT NEUTRON DETECTION WERE AT MOST 2 PERC. AND WERE 30423 1 51  
 GENERALLY LESS THAN 1 PERCENT. (CAPTURE MEASUREMENT) 30423 1 52  
 NO FURTHER INFORMATION. 30423 1 53  
 (APRVD) APPROVED BY MUSGROVE, 78/11/16. 30423 1 54  
 (771117C) KO. 30423 1 55  
 (781204U) KO.-'APRVD' ADDED.- 30423 1 56  
 (790525U) KO.-REVISED DATA IN SUBENTRIES .003 TO .005. 30423 1 57  
 AND NEW ENTRY .006 - 30423 1 58  
 (820127U) ERROR HEADINGS IN SUBENT 4 CHANGED. OS 30423 1 59  
 (821122U) DG.-INSERTION OF CORRIGENDUM IN REFERENCE. 30423 1 60  
 30423 1 61  
 30423 1 62  
 30423 1 63  
 30423 1 64  
 30423 1 65  
 19999 1

ERR-ANALYS  
 STATUS HISTORY  
 (771117C) KO.  
 (781204U) KO.-'APRVD' ADDED.-  
 (790525U) KO.-REVISED DATA IN SUBENTRIES .003 TO .005.  
 AND NEW ENTRY .006 -  
 (820127U) ERROR HEADINGS IN SUBENT 4 CHANGED. OS  
 (821122U) DG.-INSERTION OF CORRIGENDUM IN REFERENCE.

ENDBIB  
 NCCOMMON  
 ENDSUBENT  
 SUBENT  
 BIB  
 REACTION

1(40-ZR-91(N,0),,EN)  
 2(40-ZR-91(N,0),,L)  
 3(40-ZR-91(N,0),,J)  
 4(40-ZR-91(N,EL),,MID)  
 5(40-ZR-91(N,EL),,MID,,2G)  
 6(40-ZR-91(N,G),,MID)  
 7(40-ZR-91(N,G),,MID,,2G)  
 8(40-ZR-91(N,EL),,MID,,G)\*  
 (40-ZR-91(N,G),,MID)/  
 (40-ZR-91(N,TOT),,MID))

COMMENT  
 1 THE VALUES ARE FROM TRANSMISSION MEASUREMENT. THEY ARE  
 CONSIDERED TO BE MORE RELIABLE THAN THOSE FROM CAPTURE  
 DATA WHICH ARE SYSTEMATICALLY 0.2 PERCENT HIGHER.  
 2 THE VALUE IS CALCULATED FROM CAPTUR-KERNEL ASSUMING  
 STATISTICAL WEIGHT-FACTOR G = 0.5.  
 (ASSUM 40-ZR-91(N,G),,MID) FROM MACKLIN ET AL.,  
 NUCL.SCI.ENG.62(1977) (IN PRESS 77/11/17).  
 (1.) L-VALUE ASSIGNMENT IS UNCERTAIN.  
 (2.) J-VALUE ASSIGNMENT IS UNCERTAIN.  
 DATA TAKEN FROM TABLE 1 OF AUST.J.PHYS.30(1977)391.

ASSUMED  
 FLAG  
 STATUS  
 ENDBIB  
 COMMON  
 DATA-ERR  
 PER-CENT  
 ENDCOMMON

DATA  
 DATA  
 DATA-ERR  
 DATA  
 DATA  
 EV  
 MILLI-EV  
 MILLI-EV  
 MILLI-EV

1.8180E+02 0.0000E+00 3.0000E+00 7.3000E+00 1.0000E-01 8.5100E+00 30423 2 38  
 1.0000E-01 1.0000E+00 2.0000E+00 4.0000E+00 1.0000E-01 3.3000E+00 30423 2 41  
 30423 2 42  
 30423 2 43

1.8180E+02 0.0000E+00 3.0000E+00 7.3000E+00 1.0000E-01 8.5100E+00 30423 2 38  
 1.0000E-01 1.0000E+00 2.0000E+00 4.0000E+00 1.0000E-01 3.3000E+00 30423 2 41  
 30423 2 42  
 30423 2 43



5.3150E+03	1.0000E+00			2.4000E+01	30423	2	108
2.0000E+00					30423	2	109
1.0000E+01	0.0000E+00				30423	2	110
5.5160E+03	1.3700E+02	2.0000E+00	1.2960E+04	2.5000E+02	1.0800E+04	30423	2 111
5.7000E+01	5.0000E+00				30423	2	112
5.6290E+03	1.0000E+00				30423	2	113
3.0000E+01	6.0000E+00				30423	2	114
6.4000E+01	1.0000E+00				30423	2	115
5.8200E+03	1.0000E+00				30423	2	116
1.5000E+01	5.0000E+00				30423	2	117
5.4000E+01	1.0000E+00				30423	2	118
6.0860E+03	1.0000E+00				30423	2	119
1.0000E+01	2.0000E+00				30423	2	120
2.7000E+01	1.0000E+00				30423	2	121
6.1750E+03	1.0000E+00				30423	2	122
5.0000E+00	1.0000E+00				30423	2	123
5.0000E+00	1.0000E+00				30423	2	124
5.0000E+00	1.0000E+00				30423	2	125
6.4670E+03	0.0000E+00	3.0000E+00	4.2200E+03	1.0000E+02	4.9250E+03	30423	2 126
	1.1700E+02	1.0000E+01			30423	2	127
6.6000E+01	6.0000E+00				30423	2	128
6.7540E+03	1.0000E+00				30423	2	129
5.0000E+01	4.0000E+00				30423	2	130
4.0000E+01	1.0000E+00				30423	2	131
6.8540E+03	1.0000E+00				30423	2	132
4.0000E+02	9.3000E+01	9.0000E+00			30423	2	133
5.1000E+01	5.0000E+00	1.0000E+00			30423	2	134
7.00320E+03	1.0000E+00	3.0000E+00	4.2900E+03	1.2000E+02	5.0050E+03	30423	2 135
	2.6600E+02				30423	2	136
1.4600E+02	1.4000E+01				30423	2	137
7.1190E+03	1.0000E+00				30423	2	138
6.0000E+01	8.0000E+00				30423	2	139
8.8000E+01	1.0000E+00				30423	2	140
7.2530E+03	4.1300E+02	4.0000E+01	2.3750E+03	2.0000E+02	1.1800E+03	30423	2 141
	1.0000E+00				30423	2	142
8.8000E+01	0.0000E+00				30423	2	143
7.3470E+03	1.5400E+02	2.0000E+00	7.4000E+03	2.5000E+02	6.1670E+03	30423	2 144
	1.5000E+01				30423	2	145
6.3000E+01	5.0000E+00				30423	2	146
7.7510E+03	1.0000E+00	2.0000E+00	3.3600E+03	2.0000E+02	2.8000E+03	30423	2 147
	5.0800E+02	5.0000E+01			30423	2	148
1.8400E+02	1.8000E+01				30423	2	149
8.4940E+03	1.0000E+00				30423	2	150
8.0000E+01	5.0000E+00				30423	2	151
7.5000E+01	1.0000E+00				30423	2	152
8.5100E+03	6.0000E+00				30423	2	153
1.0000E+02	1.0000E+00				30423	2	154
5.6000E+01	6.0000E+00				30423	2	155
8.9380E+03	1.0000E+00				30423	2	156
2.0000E+01	4.0000E+00	1.0000E+00			30423	2	157
4.3000E+01	1.0000E+00				30423	2	158
9.0240E+03	1.0000E+00				30423	2	159
2.5000E+01	7.0000E+00	1.0000E+00			30423	2	160
6.9000E+01	1.0000E+00				30423	2	161
9.0890E+03	1.0000E+00				30423	2	162
2.5000E+01	7.0000E+00				30423	2	163
2.5000E+01	1.0000E+00				30423	2	164
6.7000E+01	7.0000E+00				30423	2	165
9.2170E+03	1.0000E+00				30423	2	166
5.0000E+01	6.0000E+00				30423	2	167
6.4000E+01	0.0000E+00				30423	2	168
9.2900E+03	0.0000E+00				30423	2	169
1.5000E+01	4.0000E+00	1.0000E+00			30423	2	170
3.7000E+01	1.0000E+00				30423	2	171
9.8170E+03	1.0000E+00				30423	2	171



4.7000E+01	5.0000E+00	1.0000E+00		30423	2	236
1.3679E+04	1.0000E+00			30423	2	237
4.0000E+02			3.5800E+02	30423	2	238
1.6800E+02	1.6000E+01			30423	2	239
1.3784E+04	0.0000E+00		3.8500E+03	30423	2	240
4.0000E+02			1.2800E+02	30423	2	241
6.2000E+01	6.0000E+00			30423	2	242
1.4069E+04	0.0000E+00		7.5700E+03	30423	2	243
6.0000E+02			1.8100E+02	30423	2	244
8.8000E+01	8.0000E+00			30423	2	245
1.4176E+04	1.0000E+00		4.1000E+02	30423	2	246
2.0000E+02			1.4100E+02	30423	2	247
5.2000E+01	6.0000E+00			30423	2	248
1.4224E+04	1.0000E+00		7.8000E+02	30423	2	249
3.0000E+02			1.9900E+02	30423	2	250
7.8000E+01	8.0000E+00			30423	2	251
1.4570E+04	1.0000E+00		2.6300E+02	30423	2	252
1.0000E+03			1.0500E+04	30423	2	253
1.2800E+02	1.2000E+01			30423	2	254
1.4824E+04	0.0000E+00		1.4300E+02	30423	2	255
5.0000E+02			2.8100E+03	30423	2	256
6.8000E+01	7.0000E+00			30423	2	257
1.5166E+04	1.0000E+00		7.9600E+03	30423	2	258
1.0000E+03			3.8600E+02	30423	2	259
1.8400E+02	1.8000E+01			30423	2	260
1.5220E+04	0.0000E+00		9.1000E+01	30423	2	261
1.2500E+03			1.0525E+04	30423	2	262
4.5000E+01	6.0000E+00			30423	2	263
1.5754E+04	1.0000E+00		1.4700E+02	30423	2	264
1.5000E+02			4.7500E+02	30423	2	265
5.6000E+01	6.0000E+00			30423	2	266
1.5968E+04	1.0000E+00		1.8700E+02	30423	2	267
5.0000E+02			4.4500E+03	30423	2	268
9.0000E+01	9.0000E+00			30423	2	269
1.6177E+04	1.0000E+00		1.5325E+04	30423	2	270
1.0000E+03			30423	2	271	
8.2000E+01	9.0000E+00		1.6600E+02	30423	2	272
1.6679E+04	0.0000E+00			30423	2	273
3.0000E+02			1.4300E+02	30423	2	274
1.6079E+04	0.0000E+00		1.2000E+03	30423	2	275
6.4000E+01	6.0000E+00			30423	2	276
1.6826E+04	1.0000E+00		7.6000E+01	30423	2	277
6.0000E+01		1.0000E+00		30423	2	278
2.9000E+01	4.0000E+00			30423	2	279
1.6955E+04	1.0000E+00		3.9600E+03	30423	2	280
3.0000E+02			1.4300E+02	30423	2	281
6.9000E+01	7.0000E+00			30423	2	282
1.7039E+04	1.0000E+00		2.3000E+02	30423	2	283
6.0000E+01			1.6600E+02	30423	2	284
4.8000E+01	5.0000E+00	1.0000E+00		30423	2	285
1.7434E+04	1.0000E+00	3.0000E+00	1.0000E+03	30423	2	286
		2.0000E+01		30423	2	287
			6.0660E+03	30423	2	288
1.0900E+02	1.0000E+01			30423	2	289
1.7788E+04	1.0000E+00		3.1200E+02	30423	2	290
5.0000E+02				30423	2	291
1.3500E+02	1.4000E+01		1.0250E+03	30423	2	292
1.8532E+04	1.0000E+00			30423	2	293
2.0000E+02			1.0600E+02	30423	2	294
4.8000E+01	5.0000E+00	1.0000E+00		30423	2	295
1.8634E+04	1.0000E+00	2.0000E+00	8.2250E+03	30423	2	296
		4.5000E+01		30423	2	297
1.6300E+02	1.6000E+01			30423	2	298
1.9487E+04	1.0000E+00		4.3800E+02	30423	2	299
3.0000E+02				30423	2	
1.6100E+02	1.6000E+01			30423	2	

1.9588E+04 2.4200E+0230423 2 300  
1.5000E+02 30423 2 301  
6.8000E+01 30423 2 302  
1.9747E+04 1.0000E+00 1.1800E+0330423 2 303  
2.5000E+02 30423 2 304  
8.5000E+01 9.0000E+00 30423 2 305  
1.9791E+04 1.9900E+02 2.3400E+0230423 2 306  
1.5000E+02 2.5000E+0230423 2 307  
6.2000E+01 7.0000E+00 30423 2 308  
ENDDATA 279 0 30423 309  
ENDSUBENT 308 0 30423 299999  
SUBENT 30423003 850319 30423 3  
BIB 3 30423 3  
REACTION 1(40-ZR-91(N,0),,D) 30423 3  
2(40-ZR-91(N,EL),,STF) 30423 3  
STATUS DATA TAKEN FROM TABLE IX OF 1978 HARWELL CONF. ON  
NEUTRON PHYSICS AND NUCLEAR DATA, P.449. P-WAVE LEVEL-  
SPACING TAKEN FROM TABLE2 OF AUST.J.PHYS.30(1977)391.  
HISTORY (790525A) KO. -REVISED VALUE - 30423 3  
ENDBIB 6 30423 3  
COMMON EN-MAX 2 30423 3  
EN-MIN 2 30423 3  
KEY EN-MAX 3 30423 3  
KEY 3.0000E+00 2.0000E+02 30423 3  
ENDCOMMON 3 30423 3  
DATA 5 30423 3  
MOMENTUM L DATA 1DATA-ERR 1DATA 2DATA-ERR 2  
NO-DIM EV NO-DIM NO-DIM  
0.0000E+00 6.4000E+02 1.2000E+02 4.2000E-05 1.2000E-05  
1.0000E+00 3.0000E+02 5.0000E+01 5.7000E-04 1.0000E-04  
ENDDATA 4 30423 3  
ENDSUBENT 19 0 30423 399999  
SUBENT 30423004 850319 30423 4  
BIB 4 30423 4  
REACTION (40-ZR-91(N,G),,WID,,AV) 30423 4  
ERR-ANALYS (ERR-S) STATISTICAL ERROR 30423 4  
(ERR-T) STANDARD DEVIATION 30423 4  
STATUS DATA FROM TABLE 2 OF AUST.J.PHYS.30(1977)391.  
SAME RESULT APPEARS IN TABLE IX OF 1978 HARWELL CONF. ON  
NEUTRON PHYSICS AND NUCLEAR DATA, P.449.  
HISTORY (790525U) KO. - EN-MAX(20KEV) EXTENDED. - 30423 4  
ENDBIB 7 30423 4  
COMMON EN-RES-MIN 2 30423 4  
EN-RES-MAX 2 30423 4  
KEY EN-RES-MIN 3 30423 4  
KEY 3.0000E+00 2.0000E+02 30423 4  
ENDCOMMON 3 30423 4  
DATA 4 30423 4  
MOMENTUM L DATA ERR-S ERR-T  
NO-DIM MILLI-EV MILLI-EV MILLI-EV  
0.0000E+00 1.4000E+02 8.0000E+00 3.0000E+01  
1.0000E+00 2.2000E+02 1.2000E+01 1.1000E+02  
ENDDATA 4 30423 4  
ENDSUBENT 20 0 30423 499999  
SUBENT 30423005 850121 30423 5  
BIB 3 30423 5  
REACTION (40-ZR-91(N,G)40-ZR-92,,SIG,,AV) 30423 5  
STATUS FINAL DATA TAKEN FROM TABLE II OF 1978 HARWELL CONF. ON  
NEUTRON PHYSICS AND NUCL. DATA, P.449. 30423 5  
HISTORY (790525A) KO. -ALTERATION AND ADDITION OF DATA. - 30423 5  
ENDBIB 4 30423 5  
NOCOMMON 0 30423 5  
DATA 4 30423 5  
EN-MIN 4 30423 5  
EN-MAX 4 30423 5  
DATA 15 30423 5  
DATA-ERR 10 30423 5

KEY	KEY	MB	MB
3.0000E+00	4.0000E+00	2.8700E+02	1.4000E+01
4.0000E+00	5.0000E+00	3.9100E+02	2.0000E+01
5.0000E+00	6.0000E+00	1.3700E+02	7.0000E+00
6.0000E+00	8.0000E+00	2.1800E+02	1.1000E+01
8.0000E+00	1.0000E+01	1.5600E+02	8.0000E+00
1.0000E+01	1.5000E+01	1.4000E+02	1.0000E+01
1.5000E+01	2.0000E+01	7.2000E+01	5.0000E+00
2.0000E+01	3.0000E+01	6.4000E+01	6.0000E+00
3.0000E+01	4.0000E+01	5.5000E+01	7.0000E+00
4.0000E+01	5.0000E+01	4.0000E+01	6.0000E+00
5.0000E+01	6.0000E+01	3.6000E+01	6.0000E+00
6.0000E+01	8.0000E+01	2.8000E+01	5.0000E+00
8.0000E+01	1.0000E+02	2.6000E+01	5.0000E+00
1.0000E+02	1.5000E+02	2.2000E+01	5.0000E+00
1.5000E+02	2.0000E+02	1.7000E+01	5.0000E+00
ENDDATA		17	0
ENDSUBENT		26	0
SUBENT	30423006		850121
BIB		4	6
REACTION	(40-ZR-91(N,G)40-ZR-92,,SIG,,SPA)		
ERR-ANALYS	NO FURTHER INFORMATION.		
STATUS	DATA TAKEN FROM TABLE VIII OF 1978 HARWELL CONF. ON		
HISTORY	NEUTRON PHYSICS AND NUCLEAR DATA, P.449.		
ENDBIB	(790525C) KO-NEW SUBENTRY. _		
NOCOMMON		6	0
DATA		0	0
EN-DUMMV	DATA	3	1
KEY	MB	MB	DATA-ERR
4.5000E+01	6.0000E+01	8.0000E+00	
ENDDATA		3	0
ENDSUBENT		14	0
ENDENTRY		7	0
ENDTRAN		2	1

30423	5	11
30423	5	12
30423	5	13
30423	5	14
30423	5	15
30423	5	16
30423	5	17
30423	5	18
30423	5	19
30423	5	20
30423	5	21
30423	5	22
30423	5	23
30423	5	24
30423	5	25
30423	5	26
30423	5	27
30423	5	27
30423	6	1
30423	6	2
30423	6	3
30423	6	4
30423	6	5
30423	6	6
30423	6	7
30423	6	8
30423	6	9
30423	6	10
30423	6	11
30423	6	12
30423	6	13
30423	6	14
30423	6	15
30423	6	15
30423999999999	6	14
30423999999999	6	15
299999999999999	6	14



TRANS	07	860513	0	0	0	0
ENTRY	30577	840911	30577	0	0	1
SUBENT	30577001	840911	30577	1	1	1
BIB	13	30	30577	1	2	2
TITLE	MEASUREMENT OF CROSS SECTION FOR NEUTRON INDUCED REACTIONS AT 14 MEV VIA ACTIVATION TECHNIQUE					
AUTHOR	(N,T,MOLLA,M,MIZANUL ISLAM,M,MIZANUR RAHMAN,S,KHATUN)					
INSTITUTE	(3BANRAM)					
REFERENCE	(P,INDC(BAN)-002,1,8302) DATA FOR 14 REACTIONS GIVEN					
	(W,MOLLA,810105) PROGRESS REPORT ON IAEA RESEARCH CONTRACT NO.2498/RB					
	(W,MOLLA,810403)					
SAMPLE	HIGH PURITY SAMPLES (BETTER THAN 99.99 PERCENT)					
FACILITY	(VDG)					
INC-SOURCE	(D-T)					
METHOD	(ACTIV)					
DETECTOR	(GELI)					
ANALYSIS	DETECTOR EFFICIENCY, BRANCHING RATIOS AND INTERNAL CONVERSION COEFFICIENTS WERE TAKEN INTO ACCOUNT IN THE DETERMINATION OF CROSS SECTIONS.					
ERR-ANALYS	(ERR-S) STATISTICAL ERROR					
	(ERR-T) TOTAL ERROR. THIS INCLUDES SYSTEMATICAL ERRORS FROM THE FOLLOWING SOURCES (IN PERCENT)					
	-COUNTING EFFICIENCY (4.0)					
	-BACKGROUND ESTIMATION (3.0)					
	-NEUTRON FLUX (5.0)					
	-DECAY CURVE ANALYSIS (5.0)					
	-WEIGHING (0.01)					
	-TIMING (0.5)					
STATUS	WORK SUPPORTED BY IAEA RESEARCH CONTRACT NO.2498/RB. DATA TAKEN FROM PROGRESS REPORT RECEIVED 1981/01/05 AND LETTER RECEIVED 1981/04/03.					
HISTORY	(810407C) OS.					
	(830511A) DATA FOR FOUR (N,2N) REACTIONS ADDED. VP.					
ENDBIB	30	0	3	30577	1	31
COMMON	2	0	3	30577	1	32
EN	EN-RSL			30577	1	33
MEV	1.4800E+01	3.0000E-01	0	30577	1	34
ENDCOMMON	3	0	0	30577	1	35
ENDSUBENT	37	0	0	30577	1	36
SUBENT	30577009	840911	30577	1	37	37
BIB	3	3	30577	9	1	38
REACTION	(41-NB-93(N,2N)41-NB-92-M.,SIG)					
DECAY-DATA	(41-NB-92-M,10,15D,DG,934.,0.99)					
MONITOR	(33-AS-75(N,2N)33-AS-74.,SIG)					
ENDBIB	3	0	0	30577	9	7
NOCOMMON	0	0	0	30577	9	8
DATA	5	1	1	30577	9	8
ERR-S	ERR-T	MONIT	MONIT-ERR			
MB	MB	MB	MB			
1.6330E+03	1.0990E+02	1.7900E+02	9.7000E+02	8.0000E+01		10
ENDDATA	3	0	0	30577	9	11
ENDSUBENT	11	0	0	30577	9	12
ENDENTRY	2	0	1	30577	9	12
ENTRY	30658	850326	30577	9	999999	12
SUBENT	30658001	840912	30577	9	999999	13
BIB	13	29	30658	1	1	1
TITLE	(N,2N) CROSS-SECTION MEASUREMENT OF NB-93,AU-197 AND U-238 WITH FISSION-NEUTRON SPECTRUM					
AUTHOR	(G,SHANI)					
INSTITUTE	(3ISLNEG)					
REFERENCE	(J,ANE,10,(9),473,83)					
SAMPLE	HALF-INCH DIAMETER FOLDS OF NB-0.13847 G, AU-1.2215 G, 30658					

*values high, corrected with R+H*

DEPLETED U(0.3 PERCENT U-235)-0.24388 G., AL-0.03669 G

MONITOR (41-NB-93(N, INL)41-NB-93-M, SIG) 30658 1 10

MONIT-REF (13-AL-27(N, A)11-NA-24, SIG) 30658 1 11

(, G. SHANI, J, NT, 51, 83, 80) FOR NB-93 30658 1 12

(, A. CALAMAN, R, IAEA-156, 74) FOR AL-27 30658 1 13

INC-SOURCE (CF252) 300 MICRO-G CF-252 NEUTRON SOURCE 30658 1 14

METHOD (ACTIVE) SAMPLES WERE IRRADIATED FOR 7 DAYS, MEASUREMENTS 30658 1 15

WERE REPEATED SIX TIMES FOR EACH SAMPLE. 30658 1 16

DETECTOR (GELLI) DETECTOR 45CC, 1.9KEV RESOLUTION AT 30658 1 17

1.17MEV 30658 1 18

(NAICR) SEVERAL MEASUREMENTS WERE MADE FOR A COMPARISON 30658 1 19

WITH A CALIBRATED 3X3 INCH NA-I SCINTILLATOR 30658 1 20

(SCIN) NEUTRON SPECTRUM WAS MEASURED WITH A 0.5X0.5INCH 30658 1 21

NE213 LIQUID SCINTILLATOR. 30658 1 22

ERR-ANALYS ERRORS GIVEN INCLUDE THE FOLLOWING- 30658 1 23

SELF-ABSORPTION IN THE FOIL 30658 1 24

DETECTOR EFFICIENCY 30658 1 25

STATISTICAL ERROR (LESS THAN 1 PERCENT) 30658 1 26

SPREAD OF VALUE FOR EACH MEASUREMENT 30658 1 27

FISSION SPECTRUM FROM A CF-252 SOURCE 30658 1 28

HISTORY (831011C) DG.- 30658 1 29

(840507U) DG.-COSMETIC CHANGES IN BIB AND COMMON 30658 1 30

SECTIONS.- 30658 1 31

ENDBIB 29 0 32

COMMON 3 3 33

EN-DUMMY MONIT1 MONIT2 30658 1 34

MEV B MB 30658 1 35

2.0000E+00 1.8800E+00 7.2500E-01 30658 1 36

ENDCOMMON 3 3 37

ENDSUBENT 36 840912 30658 1 37

SUBENT 30658 2 199999 30658 1 38

BIB 3 3 39

REACTION (41-NB-93(N, 2N)41-NB-92-M, SIG) 30658 2 40

DECAY-DATA (41-NB-92-M, 10.15D, DG., 394., 0.99) 30658 2 41

STATUS DATA TAKEN FROM ANN. NUCL. ENERGY, 10, NO9, (1983), 473, 30658 2 42

TABLE 1. 30658 2 43

ENDBIB 4 0 44

NOCOMMON 0 0 45

DATA 2 1 46

DATA DATA-ERR 30658 2 47

MB 30658 2 48

5.4900E-01 7.0000E-02 30658 2 49

ENDDATA 3 0 50

ENDSUBENT 12 0 51

SUBENT 30658 003 850326 30658 2 52

BIB 3 4 53

REACTION (79-AU-197(N, 2N)79-AU-196, SIG) 30658 3 54

DECAY-DATA (79-AU-196-G, 6.18D, DG., 356., 0.94) 30658 3 55

STATUS DATA TAKEN FROM ANN. NUCL. ENERGY, 10, NO9, (1983), 473, 30658 3 56

TABLE 1. 30658 3 57

ENDBIB 4 0 58

NOCOMMON 0 0 59

DATA 2 1 60

DATA DATA-ERR 30658 3 61

MB 30658 3 62

4.3000E+00 5.0000E-01 30658 3 63

ENDDATA 3 0 64

ENDSUBENT 12 0 65

SUBENT 30658 004 840912 30658 3 66

BIB 3 4 67

REACTION (92-U-238(N, 2N)92-U-237, SIG) 30658 4 68

DECAY-DATA (92-U-237, 6.7D, DG., 208., 0.23) 30658 4 69

STATUS DATA TAKEN FROM ANN. NUCL. ENERGY, 10, NO9, (1983), 473, 30658 4 70

TABLE 1. 30658 4 71

ENDBIB	4	0	0	30658	4	7
NOCOMMON	0	0	0	30658	4	8
DATA	2	1	0	30658	4	9
DATA				30658	4	10
MB				30658	4	11
1.2200E+01	1.5000E+00	3	0	30658	4	12
ENDDATA				30658	4	13
ENDSUBENT	12	0	0	30658	4	14
ENDENTRY	4	0	0	30658	4	15
ENTRY				30658	4	16
SUBENT	30807	1	0	30658	4	17
	30807001	850823	0	30658	4	18
		850823	0	30658	4	19
BIB	11	20	0	30658	4	20
TITLE				30658	4	21
AUTHOR				30658	4	22
INSTITUTE				30658	4	23
REFERENCE				30658	4	24
				30658	4	25
				30658	4	26
				30658	4	27
				30658	4	28
				30658	4	29
				30658	4	30
				30658	4	31
				30658	4	32
				30658	4	33
				30658	4	34
				30658	4	35
				30658	4	36
				30658	4	37
				30658	4	38
				30658	4	39
				30658	4	40
				30658	4	41
				30658	4	42
				30658	4	43
				30658	4	44
				30658	4	45
				30658	4	46
				30658	4	47
				30658	4	48
				30658	4	49
				30658	4	50
				30658	4	51
				30658	4	52
				30658	4	53
				30658	4	54
				30658	4	55
				30658	4	56
				30658	4	57
				30658	4	58
				30658	4	59
				30658	4	60
				30658	4	61
				30658	4	62
				30658	4	63
				30658	4	64
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				30658	4	84
				30658	4	85
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				30658	4	88
				30658	4	89
				30658	4	90
				30658	4	91
				30658	4	92
				30658	4	93
				30658	4	94
				30658	4	95
				30658	4	96
				30658	4	97
				30658	4	98
				30658	4	99
				30658	4	100

*30658 4 100*

```

MONITOR (R,INDC(ROM)-15,,8301)
          (92-U-235(N,F),,SIG) FOR AVERAGE FLUX DETERMINATION.
          THE CHARACTERISTICS OF THE FISSION CHAMBER WITH
          U-235 DEPOSIT ARE - TOTAL MASS OF DEPOSIT 96.60
          MICROGRAMS (2.281E+17 NUCLEI OF U-235),
          THE ISOTOPIC COMPOSITION (IN ATOM PERCENT)
          U-235 - 99.89 , U-234 - 0.02 , U-236 - 0.04 ,
          U-238 - 0.07
INC-SOURCE (D-T) NEUTRON GENERATOR TEXAS (MODEL 9900)
STATUS WORK PERFORMED UNDER IAEA INTERREGIONAL PROJECT
          INT/1/018
          THIS EXFOR ENTRY SUPERSEDES THE ENTRY 30647
          (850914C) DG.-
HISTORY 21 0 3
ENDBIB COMMON
EN 2
MEV MONIT B
1.4750E+01 2.2100E+00
ENDCOMMON 3 0
ENDSUBENT 28 0
SUBENT 30813004 851210 -M 13
BIB 7 13
REACTION (41-NB-93(N,2N)41-NB-92,,SIG)
SAMPLE PURE METAL FOIL. WEIGHT - 1.574339 G, DIAMETER - 15 MM,
          THICKNESS - 1 MM. PURITY - 99.837 PERCENT.
          (ACTIV)
METHOD (GELI) 100 CM3 GE-LI DETECTOR
DETECTOR (FISCH) FOR AVERAGE FLUX DETERMINATION
CORRECTION FOR GAMMA SELF-ABSORPTION AND IMPURITIES
ERR-ANALYS (ERR-T) TOTAL ERROR. PARTIAL COMPONENTS (IN PERCENT)
          -STATISTICS 0.63 - 1.6
          -CALIBRATION IN ABSOLUTE EFFICIENCY 1.55 - 2.17
          -BACKGROUND SUBTRACTION 0.50 - 1.20
          -ABSOLUTE FLUX DETERMINATION 2.13 - 2.50
          DATA TAKEN FROM TAB.7,REV.ROUM,PHYS.29(1984)421.
STATUS 13 0
ENDBIB 0
NOCOMMON 0
DATA 2 1
DATA ERR-T 2
MB MB 1
4.9480E+02 2.0200E+01 1
ENDDATA 3 0
ENDSUBENT 21 0
ENDENTRY 2 1
ENDTRANS 6 1
30813 1 11
30813 1 12
30813 1 13
30813 1 14
30813 1 15
30813 1 16
30813 1 17
30813 1 18
30813 1 19
30813 1 20
30813 1 21
30813 1 22
30813 1 23
30813 1 24
30813 1 25
30813 1 26
30813 1 27
30813 1 28
30813 1 29
30813 199999 1
30813 4 2
30813 4 3
30813 4 4
30813 4 5
30813 4 6
30813 4 7
30813 4 8
30813 4 9
30813 4 10
30813 4 11
30813 4 12
30813 4 13
30813 4 14
30813 4 15
30813 4 16
30813 4 17
30813 4 18
30813 4 19
30813 4 20
30813 4 21
30813 499999 22
30813999999999 22
Z99999999999999 22

```

*gamma constant with 0.5 to m.s.*

TRANS	0	860530	0	0	0	0	0	0	0
ENTRY	30491	850121	30491	0	0	0	0	0	1
SUBENT	30491001	850121	30491	1	1	1	1	1	1
BIB	15	33	30491	1	1	1	1	1	2
TITLE	PRE-COMPOUND DECAY IN (N,2N) REACTIONS AT 14.2 MEV.								
AUTHOR	(N.LAKSHMANA DAS, C.V. SRINIVASE RAO, B.V. THIRUMALA RAO, J. RAMA RAO)								
INSTITUTE	(3INDAUW)								
REFERENCE	(J,PRM,17,(1),99,8107)								
	(C,77PUNE,2,138,7712)								
	(C,74BOMBAY,2,105,7410) PREVIOUS RESULTS (ND142,GD160, ER162)								
MONITOR	1(13-AL-27(N,A)11-NA-24,,SIG)								
	2(13-AL-27(N,P)12-MG-27,,SIG) OWN VALUE OF AUTHORS								
	3(29-CU-63(N,2N)29-CU-62,,SIG)								
	4(29-CU-65(N,2N)29-CU-64,,SIG)								
MONIT-REF	1(20798002,J.C.ROBERTSON,J.JONE,27,531,7308) FOR								
	13-AL-27(N,A)								
	3(20536008,S.M.GAIM,J,NP/A,185,614,7205) FOR								
	29-CU-63(N,2N)								
	4(20536009,S.M.GAIM,J,NP/A,185,614,7205) FOR								
	29-CU-65(N,2N)								
DECAY-MON	1(11-NA-24,15,HR)								
	2(12-MG-27,9.5MIN)								
	3(29-CU-62,9.7MIN)								
	4(29-CU-64,12.7HR)								
FACILITY	(CCW,3INDAUW)								
INC-SOURCE	(D-T)								
METHOD	(ACTIV)								
DETECTOR	(GELI)								
PART-DET	(DG)								
ERR-ANALYS	NO FURTHER INFORMATION.								
STATUS	DATA TAKEN FROM TABLE OF 20TH NUCL.PHYS.AND SOLID STATE								
	PHYSICS SYMP.,POONA, PUNE,INDIA, 26-30 DEC.1977.								
	(790611C) KO.								
HISTORY	(820429U) VP. FIRST REFERENCE ADDED, MONITOR AND MONITOR-REF MODIFIED, MONITOR VALUES GIVEN IN COMMON								
ENDBIB	33	0	30491	1	1	1	1	1	36
COMMON	6	3	30491	1	1	1	1	1	37
EN	EN-RSL	MONIT	1MONIT	2MONIT	3MONIT	430491	1	1	38
MEV	MEV	MB	MB	MB	MB	30491	1	1	39
	1.4200E+01	2.0000E-01	1.1550E+02	7.2000E+01	5.9300E+02	9.2600E+02	30491	1	40
ENDCOMMON	3	0	30491	1	1	1	1	1	41
ENDSUBENT	40	0	30491	2	2	2	2	2	199999
SUBENT	30491002	850121	30491	2	2	2	2	2	1
BIB	4	5	30491	2	2	2	2	2	2
REACTION	(51-SB-121(N,2N)51-SB-120,,SIG)								
COMMENT	EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,								
	250 +- 75 MB.								
STATUS	(SPSDD,30517003) SAME RESULT IN FINAL PUBLICATION.								
HISTORY	(791002D) KO. -SUPERSEDED.-								
ENDBIB	5	0	30491	2	2	2	2	2	7
NOCOMMON	0	0	30491	2	2	2	2	2	8
NODATA	0	0	30491	2	2	2	2	2	9
ENDSUBENT	9	0	30491	2	2	2	2	2	10
SUBENT	30491003	850121	30491	2	2	2	2	2	299999
BIB	4	5	30491	3	3	3	3	3	1
REACTION	(51-SB-123(N,2N)51-SB-122,,SIG)								
COMMENT	EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,								
	175 +- 85 MB.								
STATUS	(SPSDD,30517004) SAME RESULT IN FINAL PUBLICATION.								
HISTORY	(791002D) KO. -SUPERSEDED.-								
ENDBIB	5	0	30491	3	3	3	3	3	3
NOCOMMON	0	0	30491	3	3	3	3	3	8

*Not given in 1971 articles  
but in papers 541*

*Copy of papers in 1971*

*4*

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DATA          DATA-ERR      2          1
DATA          MB
1.9480E+03  1.9500E+02
ENDDATA      3
ENDSUBENT    11
SUBENT       30491009      850121
BIB          2
REACTION     (70-YB-170(N,2N)70-YB-169, SIG)
COMMENT      EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,
              211 +- 122 MB.
ENDBIB      3
NOCOMMON    0
DATA        DATA-ERR      2          1
DATA          MB
2.0370E+03  1.2200E+02
ENDDATA      3
ENDSUBENT    11
SUBENT       30491010      850121
BIB          2
REACTION     (72-HF-176(N,2N)72-HF-175, SIG)
COMMENT      EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,
              163 +- 128 MB.
ENDBIB      3
NOCOMMON    0
DATA        DATA-ERR      2          1
DATA          MB
2.1240E+03  1.2800E+02
ENDDATA      3
ENDSUBENT    11
ENDENTRY     11
ENDTRANS     1

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```

30491 8 8 8
30491 8 8 10
30491 8 8 11
30491 8 8 12
30491 899999 1 1
30491 9 9 2
30491 9 9 3
30491 9 9 4
30491 9 9 5
30491 9 9 6
30491 9 9 7
30491 9 9 8
30491 9 9 9
30491 9 10
30491 9 11
30491 9 12
30491 999999 1
30491 10 2
30491 10 3
30491 10 4
30491 10 5
30491 10 6
30491 10 7
30491 10 8
30491 10 9
30491 10 10
30491 10 11
30491 10 12
30491 10999999
30491 99999999
Z99999999999999

```

NODATA 0 0  
 ENDSUBENT 9 0  
 SUBENT 30491004 850121  
 BIB 3  
 REACTION (60-ND-142(N,2N)60-ND-141,.(SIG)  
 COMMENT EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,  
 221 +- 93 MB.  
 STATUS 4 THIS ENTRY REPLACES EXFOR30389.002.  
 ENDBIB 0  
 NOCOMMON 0  
 DATA 0  
 DATA DATA-ERR 2 1  
 MB 1  
 1.7350E+03 9.3000E+01 3 0  
 ENDDATA 12 0  
 ENDSUBENT 3 0  
 SUBENT 30491005 850121 2 3  
 BIB 2  
 REACTION (60-ND-150(N,2N)60-ND-149,.(SIG)  
 COMMENT EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,  
 440 +- 118 MB.  
 STATUS 3  
 ENDBIB 0  
 NOCOMMON 0  
 DATA 0  
 DATA DATA-ERR 2 1  
 MB 1  
 1.6790E+03 1.1800E+02 3 0  
 ENDDATA 11 0  
 ENDSUBENT 3 0  
 SUBENT 30491006 850121 2 3  
 BIB 3  
 REACTION (64-GD-160(N,2N)64-GD-159,.(SIG)  
 COMMENT EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,  
 327 +- 95 MB.  
 STATUS 4 THIS ENTRY REPLACES EXFOR30389.004.  
 ENDBIB 0  
 NOCOMMON 0  
 DATA 0  
 DATA DATA-ERR 2 1  
 MB 1  
 1.8680E+03 9.5000E+01 3 0  
 ENDDATA 12 0  
 ENDSUBENT 3 0  
 SUBENT 30491007 850121 2 3  
 BIB 3  
 REACTION (68-ER-162(N,2N)68-ER-161,.(SIG)  
 COMMENT EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,  
 287 +- 240 MB.  
 STATUS 4 THIS ENTRY REPLACES EXFOR30389.003.  
 ENDBIB 0  
 NOCOMMON 0  
 DATA 0  
 DATA DATA-ERR 2 1  
 MB 1  
 1.8860E+03 2.4000E+02 3 0  
 ENDDATA 12 0  
 ENDSUBENT 3 0  
 SUBENT 30491008 850121 2 3  
 BIB 2  
 REACTION (70-YB-168(N,2N)70-YB-167,.(SIG)  
 COMMENT EXTRACTED PRE-EQUILIBRIUM CONTRIBUTION IS,  
 270 +- 195 MB.  
 ENDBIB 3 0  
 NOCOMMON 0

30491 3 10  
 30491 399999  
 30491 4 1  
 30491 4 2  
 30491 4 3  
 30491 4 4  
 30491 4 5  
 30491 4 6  
 30491 4 7  
 30491 4 8  
 30491 4 9  
 30491 4 10  
 30491 4 11  
 30491 4 12  
 30491 4 13  
 30491 499999  
 30491 5 1  
 30491 5 2  
 30491 5 3  
 30491 5 4  
 30491 5 5  
 30491 5 6  
 30491 5 7  
 30491 5 8  
 30491 5 9  
 30491 5 10  
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 30491 7 5  
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 30491 7 7  
 30491 7 8  
 30491 7 9  
 30491 7 10  
 30491 7 11  
 30491 7 12  
 30491 799999  
 30491 8 1  
 30491 8 2  
 30491 8 3  
 30491 8 4  
 30491 8 5  
 30491 8 6  
 30491 8 7

*not given in PM957*  
*should be noted*  
*initials are to go and no. given*  
*in Table I*