UCRL 73
cy 66/A
c. 2

UNIVERSITY OF
CALIFORNIA

Radiation Laboratory

TWO-WEEK LOAN COPY

*This is a Library Circulating Copy
which may be borrowed for two weeks.
For a personal retention copy, call
Tech. Info. Division, Ext. 5545*

BERKELEY, CALIFORNIA

UCRL-73
c. 2

**Special Review of
Declassified Reports**

Authorized by USDOE JK Bratton
Unclassified TWX P182206Z May 79

REPORT PROPERLY DECLASSIFIED

AUG 15 1979

Derived Classifier

Date

Lawrence Radiation Laboratory Library
University of California, Berkeley

[illegible]

UNCLASSIFIED

UCRL-73
Physics-General-

UNIVERSITY OF CALIFORNIA
Radiation Laboratory

Contract No. W-7405-Eng-48

DOWNGRADE TO ~~SECRET~~
ON 1-7-53 BY _____
(SIC)

SUMMARY OF THE RESEARCH PROGRESS MEETING

Margaret Foss Folden

March 18, 1948

Special Review of Declassified Reports

Authorized by USDOE JK Bratton

Unclassified TWX P182206Z May 79

REPORT PROPERLY DECLASSIFIED

Derivative Classifier

8-15-79
Date

8-20-79
Date

Berkeley, California

UNCLASSIFIED

UCRL-73
Physics-General-

UNIVERSITY OF CALIFORNIA
Radiation Laboratory

Contract No. W-7405-Eng-48

DOWNGRADE TO ~~SECRET~~
ON 1-7-53 BY
(SIC)

SUMMARY OF THE RESEARCH PROGRESS MEETING

Margaret Foss Folden

March 18, 1948

Special Review of Declassified Reports

Authorized by USDOE JK Bratton

Unclassified TWX P182206Z May 79

REPORT PROPERLY DECLASSIFIED

Derivative Classifier

Date

8-15-79

8-20-79

Date

Berkeley, California

UCRL-73
Physics-General~~RESTRICTED~~Standard DistributionCopy No.

Argonne National Laboratory	1-10
Atomic Energy Commission, Washington	11-13
Brookhaven National Laboratories	14-21
Carbide & Carbon Chemicals Corp (K-25 Area)	22-23
Carbide & Carbon Chemicals Corp (Y-12 Area)	24-25
Oak Ridge National Laboratories	26-33
General Electric Company	34-37
Hanford Engineer Works	38-39
Iowa State College	40
Los Alamos	41-43
Madison Square Area	44
Monsanto Chemical Company	45
National Bureau of Standards	46-47
Patent Advisor	48
Library Branch, Oak Ridge, (NEPA)	49
Library Branch, Oak Ridge	50-64
University of Rochester	65
University of California, Radiation Laboratory	
Information Division	66-68
Chemistry	69-70 total no. copies

UNCLASSIFIED

Summary of the Research Progress Meeting

Margaret Foss Folden

March 18, 1948

Proton-Proton Scattering at 7 Mev. C. L. Oxley, University of Rochester, N. Y.

Scattering experiments have been performed with protons from the cyclotron scattered in hydrogen gas. Photographic plates were used in a camera which recorded simultaneously individual protons scattered at angles from 10.5° to 45° . 5000 tracks were counted in each of nine narrow angular ranges to give good statistical accuracy. An experimentally determined correction was necessary due to proton penetration of the edges of the slits which admitted scattered protons to the photographic plates. The energy of the protons was determined by magnetic deflection and from ionization ranges. Analysis of the results shows an s phase shift somewhat lower than that predicted by extrapolation of the earlier low energy data as analyzed in terms of square well, Gauss and meson potentials. On the assumption of central p wave scattering the results are fitted by a p phase shift of $-.22^\circ$ which corresponds to scattering from a repulsive square well with interior Coulomb potential, range e^2/mc^2 and height 2.2 Mev. Extending the Rarita-Schwinger neutron-proton interactions to the proton-proton system for a prediction of tensor 3P wave scattering the experimental results are found to be reconcilable with the "symmetrical" theory and with the "charged" theory as formally constructed by them.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

The "neutral" theory gives 3P scattering in definite disagreement with the experimental results.

Some Animal Experiments with 90 Mev Neutrons. R. L. Dobson.

Comparison of x-rays to neutrons in biological effectiveness has shown a factor of 3.0 to 14.

Dr. Dobson showed slides illustrating the effect of various dosages of x-rays and neutrons on the red and white cell count and upon the weight of rats as shown in Figures 1 to 4.

In neutron irradiations the animals were placed in a cage surrounded by paraffin, 3 inches thick, about 15 feet from the source. Thimble chambers for physical measurements were imbedded in the paraffin.

Photomicrographs of bone marrow following irradiation were also shown. Figure 5 shows normal bone marrow and Figure 6 shows bone marrow irradiated with 3,500 n where the blood vessels are crowded with red cells and the normal structure destroyed.

Figure 5.

Figure 6.

At dosage rates of 445 rep per hr, none died while at 815 rep per hr, 100% died. The LD 50 is 670.

Yields of Spallation Products of Antimony. M. Lindner

Data obtained from deuteron bombardment of antimony was presented in Table I and discussed.

TABLE I

Element A	t 1/2	Type	200.D ⁺	100 D ⁺
Te 121	140 d	K	3×10^{-2} b	
119	4.5 d	K	4×10^{-2}	7×10^{-2} b
118	6.0 d	K	3×10^{-2}	5×10^{-2}
Sb 124	60 d	β^-	3×10^{-3}	
122	2.8 d	β^-	9×10^{-2}	
120	5.8 d	K	1.5×10^{-1}	1.5×10^{-1}
119	40 hr	K	3×10^{-1}	2×10^{-1}
Sn 121	28 hr	β^-		5×10^{-4}
113	100 d	K	1.5×10^{-2}	
In 114	48 d	I.T. β^-	3×10^{-2}	5×10^{-3}
111	2.8 d	K	1×10^{-1}	1×10^{-3}
Cd 107	7 hr	K	1×10^{-2}	$< 10^{-4}$
109	330 d	K	7×10^{-3}	1.5×10^{-4}
115	2.5 d	β^-	3×10^{-4}	3×10^{-5}
115	43 d	β^-	1×10^{-3}	1×10^{-4}
Ag 112	3.2 hr	β^-	3×10^{-3}	4×10^{-5}
111	7.5 d	β^-	1×10^{-3}	8×10^{-5}
106	8 d	K	2×10^{-2}	10^{-5}
Pd 112	21 hr	β^-	1.5×10^{-6}	$\leq 10^{-7}$
111	26 min	β^-	6×10^{-4}	
109	13 hr	β^-	4×10^{-5}	
103	17 d	K	2×10^{-4}	
100	4 d	K	10^{-5}	
Ru 106	1 yr	β^-	4×10^{-6}	
105	4.5 hr	β^-	2×10^{-5}	
103	4.2 d	β^-	8×10^{-6}	
97	2.5 d	K	2×10^{-5}	
Mo 99	67 hr	β^-	4.5×10^{-6}	$\leq 10^{-7}$
Y 87	80 hr	K	6×10^{-7}	
91	58 d	β^-	2×10^{-6}	