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Symbol: TM-55

Group Ref: TMG-M25

This document consists of 5 pages 2 Fie.

April 19, 1952

7 pgs total

MINUTES OF THE TWENTY-FIFTH MEETING OF THE THEORETICAL MEGATON GROUP

16 April 1952

1. The twenty-fifth meeting of the TMG convened at 9:00 AM, Wednesday, 16 April 1952, in the W-Division Conference Room. Those present were:

W. Aron	C. L. Longmire
G. Bell	J. C. Mark, Chairman
H. A. Bethe	H. L. Mayer
A. A. Broyles	L. W. Nordheim
E. D. Cashwell	J. Pasta
C. Evans	R. Pennington
F. Evans	J. C. Potts
B. E. Freeman	F. Reines
E. Frieman	J. R. Reitz
D. K. Froman	A. Rosenbluth
W. B. Goad	M. Rosenbluth
R. W. Goranson	P. R. Stein
W. Grasberger	J. L. Tuck
G. M. Grover	S. M. Ulam
L. Henyey	M. C. Walske
M. G. Holloway	J. A. Wheeler
F. C. Hoyt	L. Wilets
R. M. Landshoff	G. M. Wing
R. D. Levee	E. J. Zadina

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1ST REVIEW DATE: 8-8-97	AUTHORITY: OAC OADC EADD
NAME: Bill [unclear]	2ND REVIEW DATE: 10/15/97
AUTHORITY: ADD	NAME: [unclear]

Agenda Topics

- (2) Status of Oak Ridge on L1⁶.
- (3) Matterhorn Investigations on "Mixing".
- (4) Future Plans for Matterhorn.
- (5) Matterhorn Burning Calculations.
- (6) Radiation Shock Calculations of Richtmyer.

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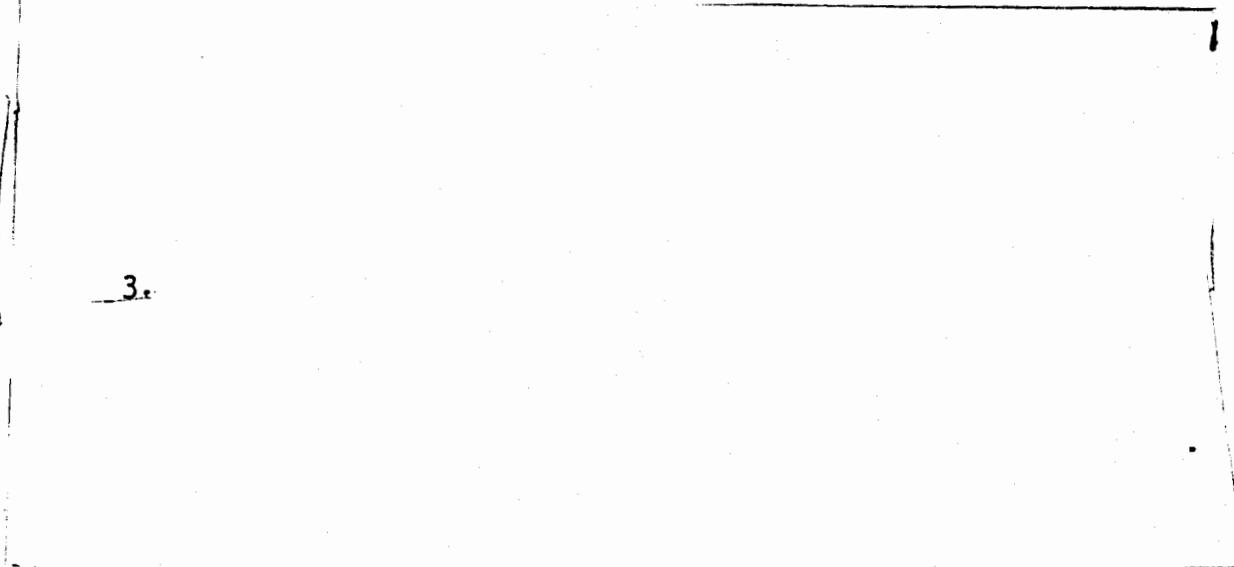
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2. Nordheim reported that the Oak Ridge pilot plant has been operating satisfactorily on a few stages for Li^6 enrichment from 7 to 12%. The large plant is expected to be completed mid February, 1953 and be in production June 1953. Its output will be 4 lbs of 95% Li^6 per day (output would be doubled for 90% Li^6 and tripled or quadrupled for 80% Li^6).

A better process has meanwhile been discovered which will be much cheaper in operation and use only one-fifth as much mercury. This discovery was made too late to be included in the present plant design.

In view of the above quoted dependence of output on Li^6 purity specification, it would appear desirable to reduce the Li^6 concentration to the functional minimum.

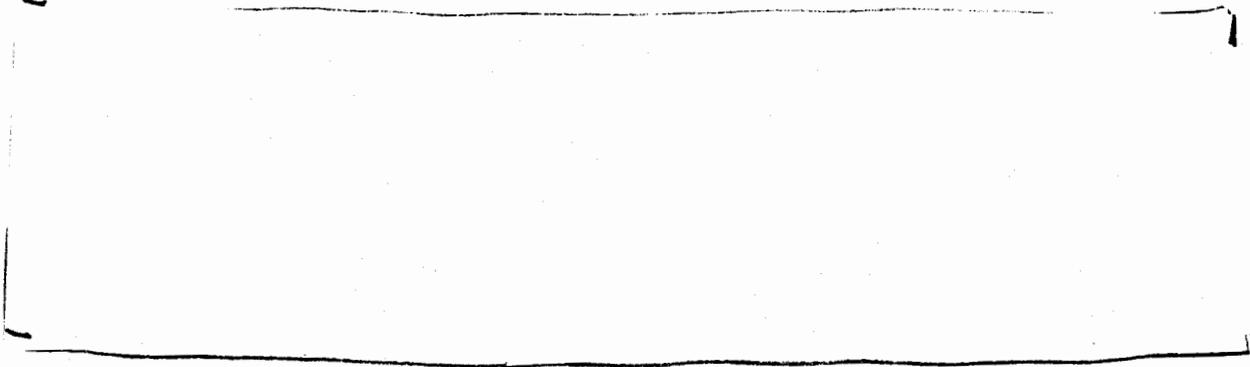


DOE
b(2)

3.

DOE
b(3)

Heney suggested a method for machine calculation of a steady state solution.



DOE
b(3)

4. Henyey outlined some tentative future plans for Matterhorn investigation. These include:

[Redacted]

DOE
b(3)

(c) Investigation of a combination of (a) and (b).

[Redacted]

DOE
b(3)

[Redacted]

DOE
b(3)

5. Steady State Burning Calculations

Wilets outlined the initial conditions and functional relationships assumed for the latest Matterhorn SEAC burning calculation.

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[Redacted]

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Compton opacity was assumed in the deuterium.

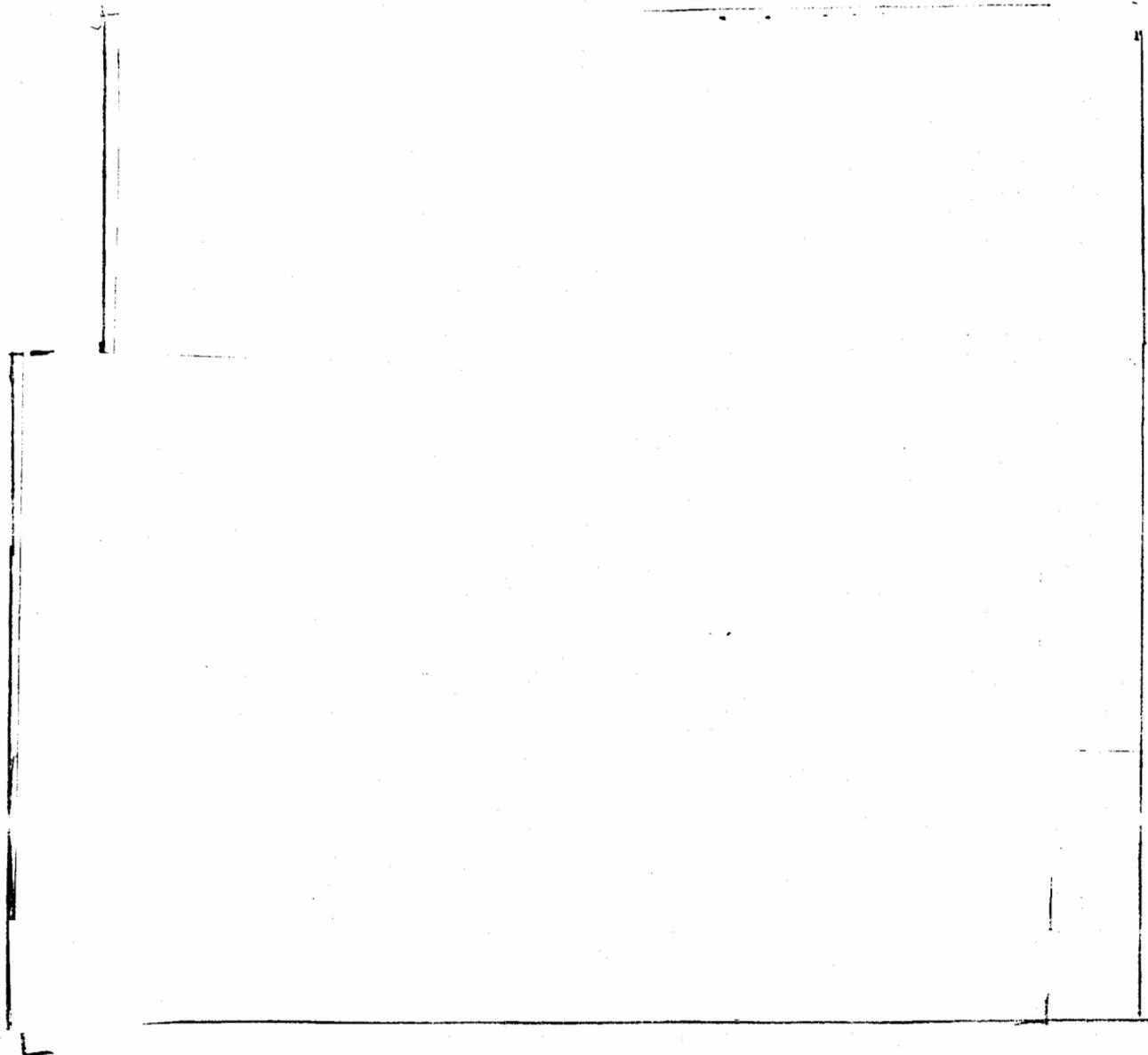
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Pertinent results are shown in Figures 1 and 2 (complete SEAC listings are available in Goranson's office).

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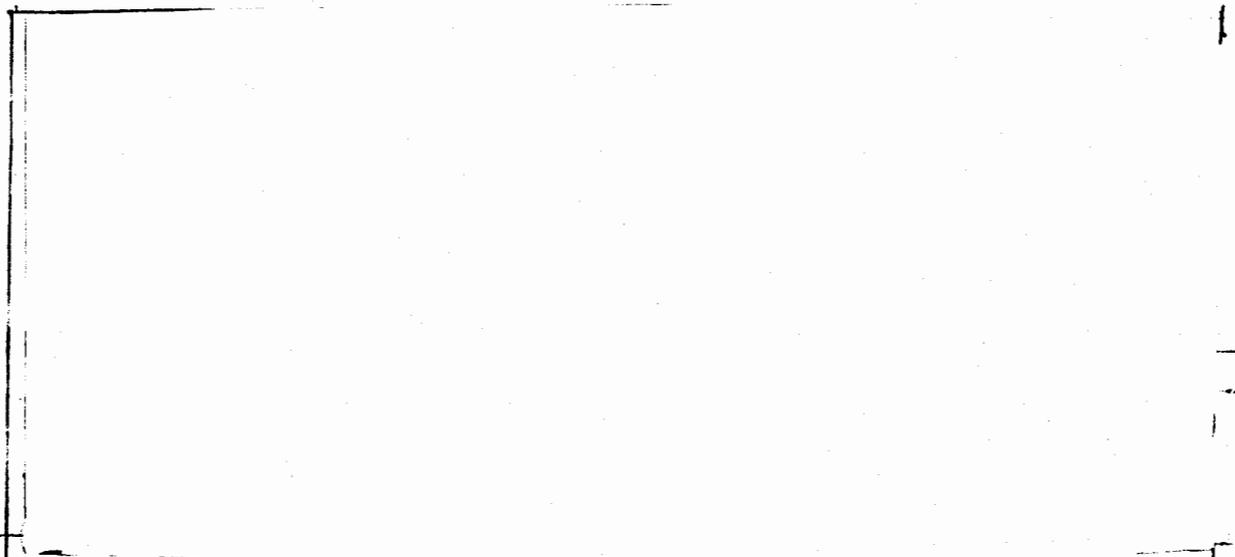
6. Results of Richtmyer's Radiation Implosion Calculations



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(5)



JOE
(5)

7. According to information just received by Agnew, military specification on diameter has been reduced from 72" (as reported in section 9 of the 17th minutes) to 64".

R. W. Goranson
R. W. Goranson

Distribution:

- 1A - H. H. Barschall
- 2A - G Bell
- 3A - H. A. Bethe
- 4A - W. Bouricius
- 5A - N. E. Bradbury
- 6A - S. W. Burris
- 7A - B. G. Carlson
- 8A - F. de Hoffmann
- 9A - F. Evans
- 10A - B. E. Freeman
- 11A - D. K. Froman
- 12A - R. B. Gibney
- 13A - R. W. Goranson
- 14A - A. C. Graves
- 15A - L. E. Hightower
- 16A - M. G. Holloway
- 17A - F. C. Hoyt
- 18A - E. R. Jette
- 19A - R. M. Landshoff
- 20A - R. B. Lazarus
- 21A - C. L. Longmire
- 22A - J. C. Mark
- 23A - H. L. Mayer
- 24A - N. Metropolis
- 25A - L. W. Nordheim
- 26A - W. E. Ogle
- 27A - J. Pasta
- 28A - F. Reines
- 29A - J. R. Reitz
- 30A - R. D. Richtmyer
- 31A - M. Rosenbluth
- 32A - R. W. Spence
- 33A - P. R. Stein
- 34A - E. Teller
- 35A - J. L. Tuck
- 36A - S. M. Ulam
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FIG. 2



SP 5
4/13

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10 X 10 to the 1/2 inch, 6th lines across.

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