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FAMILY COMMITTEE
Minutes of Thirtieth Meeting
January 11, 1951

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ADWD-235

SAH DOOR 6498 CCCC

A. Attendance.

The thirtieth meeting of the Family Committee was held Thursday, January 11, 1951 at 1:15 PM in Room E-117. Those present were

G. H. Best	D. P. MacDougall
J. C. Clark	J. C. Potts
F. de Hoffmann	L. E. Seely
G. K. Hess	R. F. Taschek
M. G. Holloway	E. Teller, Chairman
E. R. Jette	J. A. Wheeler
	H. F. York

B. Minutes of Twenty-Ninth Meeting.

The Committee unanimously adopted the minutes of the twenty-ninth meeting as reported in ADWD-230.

C. Booster.

Samples obtained from the Greenhouse sphere cases to be used for the booster gadget have been analyzed for nickel by CMR.

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1. X-ray Experiment.

York presented a review of the present status of the X-ray experiment.

In this connection, there is appended a memorandum (Appendix A) from York giving a more detailed breakdown of this uncertainty.

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It

was agreed that this change should be made and that MacDougall would co-ordinate the work.

2. Tritium Purification.

Jette reported that there had been a great deal of delay in the shops in finishing the column for the tritium purification.

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3. (n,2n) Experiment.

It turned out not to be satisfactory.

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If the reaction takes off successfully a considerable amount of radiation will be produced in the DT.

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However, this is not a really troublesome point since this effect is small and would not make itself felt until the husky reaction was already under way.

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4. Implosion and Nuclear Reaction.

before collapse.

Figure 1 shows the present design

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The present design differs from the original one.

Figure 2 shows the average active material compression vs. time indicated by the test shots.

5. Theoretical Calculations.

This temperature is still within the acceptable range.

Wheeler reported that a more elaborate and complete machine calculation paralleling the work reported on by de Hoffmann was in progress.

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It is believed that mixing is not likely to give rise to difficulties.

E. Next Meeting.

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Executive Secretary.

Distribution

1A	N. E. Bradbury	25A	E. Teller
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24A	R. F. Taschek	48A	" "

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APPENDIX A

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To: A. C. Graves and E. Teller

January 3, 1951

From: H. York and H. Bradner

Subject: Expected accuracy of temperature measurement in UCRL experiment

We think you may be interested in the following summary of the errors anticipated in our measurements. A detailed discussion of the points will be given in our pre-operation report.

[REDACTED] Therefore a given uncertainty in the flux determination results in $1/\theta$ as large uncertainty in the inside temperature.

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There are two major uncertainties:

	<u>Error</u>	<u>Error in T_i</u>
A) <u>Effective area of x-ray collimators during the time of observation.</u> It appears that this area may be uncertain to the order of	20 c/o	2.5 o/o
B) Normal opacity values will be uncertain to	20 o/o	2.5 o/o

The other uncertainties are small,

C) <u>Overall calibration</u>	10 o/o	1.3 o/o
D) <u>Explosion of fluorescer foil</u>	10 o/o	1.3 o/o
E) <u>Deviations from Planck spectrum will produce a small error.</u>		

F)

Even crude calculations of these last two sources will make the uncertainties unimportant compared with A) and B).

HY/kj

H. York/H.Bradner

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Fig. I

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