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FAMILY COMMITTEE
Minutes of Meeting - March 16, 1950

REDACTED VERSION

A meeting of the Family Committee was held Thursday, March 16, 1950 at 1:15 PM in Room A-204.

Present:

Edward Teller, Chairman
Darol Froman
Carson Mark
Eric R. Jette
Marshall G. Holloway
Duncan P. MacDougall
Stanley W. Burriss
Richard F. Taschek
Roy W. Goranson

DEPARTMENT OF ENERGY DECLASSIFICATION
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AUTHORITY: ADD
RA: RPCarpenter

The minutes of the previous meeting were discussed. In order to send out the invitations to all people who are to attend the meetings, the Chairman is to be informed what additional men should be invited to specific meetings of the Family Committee. Additional people will be asked either (1) to substitute for members who cannot be present and whose division is nevertheless definitely interested in the subject of the meeting or (2) to give additional specific or necessary information on the subject to be discussed.

[redacted] DOE b(3)

According to comments of Burriss, it seems definitely preferable to take the X-ray measurement in a downward verticle direction. The experiment is planned in that way. [redacted] DOE b(3)

See sketch. (This cone indicated the direction in which the X-ray observation should be taken.)

[redacted]

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[redacted] DOE b(3)

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DOE b(3)

It has been, however, proposed by Holloway and it has been agreed by all present that this last statement shall be advanced as a plausible opinion and not as a final decision.

Teller pointed out that for the super, refrigeration will be needed eventually. Therefore, development of high pressure apparatus may not be useful for the engineering of the super but early development of low temperature equipment will have that usefulness.

DOE b(3)

It has been decided to return to the question of refrigeration and also to the possibility of using high pressure equipment instead of refrigeration at the meeting planned for the 6th of April.

Preliminary shots on these lenses indicate that after appropriate corrections have been made, satisfactory symmetry can be achieved.

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The following tentative modification which Goranson is working on has been therefore considered:

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Calculations on both implosion hydrodynamics and efficiency of this model will be required.

All shots are planned for .7 scale of the model above. It is of course not clear what the scale of the final model is going to be.

The positioning of D + T and possible development of jets have been discussed.

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[redacted] A report on this question is to be brought back at the earliest possible time.

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[redacted]

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[redacted] Such investigations are likely to yield conclusive results before the fall.

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[redacted] This model will need further investigation.

[redacted]

It was suggested that Teller, Mark and Goranson investigate these possibilities.

[redacted]

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[redacted]

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Arrangements are being made with the Bureau of Standards for construction of a machine with the capacity of 150 to 200 l/hr. This machine should be available for the 1952 tests. It also should supply enough liquid hydrogen to investigate the properties of large Dewars.

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It is probable that in the long run more than one such big machine will be needed even if one restricts one's thoughts to the direct interests of Los Alamos and forgets about problems of delivery. In particular, such a machine will be needed at the test site and such machines may be needed in Los Alamos and in Sandia. It has been accordingly decided that in the discussions with the Bureau of Standards, the possibility should be left open to ask for more than one liquifaction apparatus of this kind.

Teller mentioned information received from Manson Benedict concerning deuterium separation by distillation. Such a plant is being constructed. It is not planned to draw off liquid hydrogen from this apparatus at the present time. However, the apparatus will handle very great amounts of hydrogen near the liquifaction point. The safety factor in refrigeration capacity would permit to draw off 3600 l/hr of liquid hydrogen provided that the machine performs precisely as calculated. Actually this figure should be considered as an upper limit. It is quite possible, however, that in this way great quantities of liquid hydrogen will become available. The plant is to be completed around January 1952. If we want to utilize this liquid hydrogen as a refrigerant for deuterium, than the question would become transportation of liquid hydrogen in large quantities rather than the liquifaction of the gas. Hammel is going to attend a cryogenic meeting in the east. He will discuss the above questions with Dr. Benedict and Dr. Brickwedde. It is expected that the whole question of cryogenics will be discussed in detail on the meeting of the Family Committee scheduled for April 6th.

DOE b(3)

Agenda for the Next Meeting.

Longmire and Potts will be invited to this meeting.

DOE b(3)

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