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MINUTES OF THE TECH BOARD MEETING, 5 September 1946.

Present: Jette, Clarke, Froman, Kellogg, Holloway, Teller, Hall,
Nicodemus, Larkin, Shaffer, R. C. Smith, Seeman and Betts.

1. The necessity for continuation of RaLa experiments was discussed. It was pointed out that the present setup was of war time design and construction with minimum safety requirements and was unsatisfactory for continued operation on a peace time basis. This situation was aggravated by the recent receipt of a 3,000 Curie shipment of RaLa which resulted in over exposure of the personnel of the group handling these experiments. We now have two alternatives in order to meet requirements laid down by the Health Group which has temporarily closed down the whole operation:

- (1) To increase the staff in order to lower the daily doses received by each individual and operate with the present unsatisfactory equipment.
- (2) To keep the entire operation shut down in order to re-engineer the setup and to construct a new laboratory which will permit the operation to continue in the future on a sound and safe basis.

Spence, Froman, and Teller were asked to discuss the advantages and disadvantages of each alternative. Spence pointed out that there are two dangerous operations in the present setup; one is in packaging the source and the other is in decontamination of equipment used. He believes that the chemical process should be changed and feels that it will take six to eight men from six months to a year to develop a new process and prepare new designs and equipment to carry it out. He stated that in order to continue the present operation it would take him some time to build up his present staff to sufficient numbers to carry this out safely. He also stated that it is not to be an easy matter to find competent personnel to work out a new process and design. He pointed out that any change in the rate of acceptance of shipment of RaLa would probably affect a considerable group of people at Clinton Engineer Works. He was very reluctant to continue the operation with a new process and further construction, but stated that it could probably be managed if it was required.

Froman listed the advantages to continuing RaLa experiments as follows:

- (1) RaLa is the best method to check implosion compression.

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- (2) RaLa is the best method of comparing compressions obtained with different lens systems.
- (3) RaLa is used to check on the theory of the levitated gadget.
- (4) RaLa is used to study the effect on compression of asymmetry.
- (5) RaLa can be used to study the equation of state of metals with particular reference to cadmium.
- (6) RaLa can be used for studies of the effects of varying the size of the inner charge if this is decided to be the best advantage to be taken of possibly thinner lenses.

Teller discussed the general subject of possible future work that could be done using RaLa, studies of compressibility of tampers, possible application of implosion to the super and other basic research in connection with future weapons. Froman added the statement that even at the guessed cost of \$30,000 per shot RaLa is cheaper than any other method of obtaining comparable information. After considerable general discussion, it was decided:

- (1) RaLa is a long range requirement that should have permanent, safe operating facilities.
- (2) CMR Division is to plan its development.
- (3) Additional personnel must be procured for Spence to operate the present setup on a safe basis.
- (4) Oak Ridge is to be asked to skip the next scheduled shipment of RaLa. Jette is to call Miles Leveritt at Clinton to acquaint him with our desire in this matter and to determine whether or not it can be done without any serious dislocation of his organization.
- (5) Oak Ridge is to be asked to limit future shipments to 1500 Curies until further notice.
- (6) On the basis of the above steps we are to try to keep the RaLa program going.

Note: Personnel other than the Tech Board left the meeting at this time.

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2. The Tech Board discussed Schreiber's plan for changing our policy on shipment of plugs and active material. It was decided that as a matter of policy in the future plugs, active material and initiators should be shipped as an assembled unit when turned over to the Army for stock pile or bomb delivery. In order to accomplish this, plugs now at Sandia will be returned to the "Hill" and shipped to the Army at some future date complete with active material and initiators. In order to permit the Army to have a satisfactory operation of the stock pile under these conditions, it will be required that at least ten officers of the Special Engineer Battalion must be trained in the assembly and dis-assembly of plugs so that initiators can be kept at their proper level of activity. No shipments to stock pile of plug assembly will be made until such military personnel are trained in this operation. The Director is to advise the Commanding General of the Manhattan Project of this changed policy.

3. Froman stated that it has been recommended by Vier that initiators developed for a gun model should have a 0.1 range nickel hold-down layer on the polonium. This was approved by the Board with the statement that 10% additional polonium should be added to make up for the loss in efficiency caused by this nickel hold-down layer.

4. Froman stated that Vier also wants the responsibility for assembly of gun initiators to be given to Group CMR-3 at DP East. This was approved.

5. The Tech Board discussed item 8 of the minutes of the meeting of last week, and it was decided to amend those minutes to the effect that they approved the preparation of a plan by the Property Group of a system for instituting property passes at Tech Area gates; they did not want to go on record as approving this plan until they had a chance to review it in detail.

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