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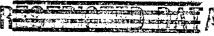


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MINUTES OF MEETING OF MTA REVIEW COMMITTEE HELD SEPTEMBER 26, 1951

Milton F. Moore

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MINUTES OF MEETING OF MTA REVIEW COMMITTEE HELD SEPTEMBER 26, 1951

Present: UCRL: Alvarez, Bradner, Brobeck, Latimer, Lawrence, Lofgren,

Norton, Pitzer, Reynolds, Thornton, Twitchell

CR&D: Cope, Hansen, Hildebrand, Kent, Mayer, Miller, Powell

AEC: Derry, Fidler, Flaherty, Fleckenstein, Moore, O'Donnell

Hildebrand opened the meeting by describing the program on the Mark I accelerator. The shot peening has been completed, but the cleaning-up process has not. The contract with DPI to convert oil diffusion pumps to mercury has not been completed and 24 pumps have been shipped. The remaining 24 pumps will be shipped when it has been decided whether it will be necessary to pump down again before completion of liner installation. It is thought that all the converted diffusion pumps will be back from DPI in November. The No. 1 power supply is in the stage of being tested. The earliest completion date for Mark I turn-up is late February or mid-March, depending upon whether it is possible to simultaneously perform head welding and installation of liner panels.

Concurrent installation of liner panels and welding of the vessel heads is possible providing the filmes from welding and the dust from wire brushing of the weld are not considered a serious problem preventing clean-up once the panels are installed. If it is not possible to do the above jobs simultaneously there will be an additional delay of three weeks in construction. It was the consensus that, even though the fumes and dust would create a problem, the work should be done concurrently. It was decided that most of the fumes could be removed from the tank by means of temporary ventilation.

Brobeck wanted to know whether it had been decided to wash the tank. The consensus was that no attempt should be made to do so. Washings on test panels show no improvements in the X-ray level.

Brobeck listed all of the units UCRL is assembling for Mark I and pointed out the percentage completion and necessary design changes. It is not anticipated that any portion of the work assembled by UCRL will delay the completion date of Mark I.



<u>Drift Tube</u>	Number of Units Complete	Percent of Total Assembly	- Are Design Changes Necessary?
Support	0/8	75	Yes
Stem	8/8	99	No
Shell	1/8	70	Yes
Magnets	2/8	95	Yes

The space between the drift tube shell and the magnet will be evacuated through the drift tube stem by an external connection from stem to vessel.

÷	Number of Units Complete	Percent of Total Assembly	Are Design Changes Necessary?
Oscillator	4/19	70	Yes
Pre-exciter	0/2	70	Yes
Injector	0/2	35	Yes

With regard to the oscillators, all designs have been frozen, with the exception of the parasitic supression rings.

Twitchell commented that a tough engineering problem is making a 20-inch diameter rotating vacuum seal to work in a dry condition. This vacuum seal is to be used on the pre-exciter transmission lines.

Hildebrand presented a CR&D problem concerning negotiations for A-12 engineering contracts. The contracts for the first phase (general engineering studies) are about completed and the second phase (detailed engineering) should be started. The problem is the freezing of a few fundamental parameters of A-12 such as length and diameter of the vessel so that detailed studies may proceed. If we are not in a position at this time to freeze the design to this extent then a cut-back in the engineering effort is necessary. For CR&D to make a decision on the engineering effort required it is necessary that UCRL state their position relative to design freezing.

UCRL representatives stated that there are objections to a design freeze at the present time. Allowing the engineers to go ahead now on detailed engineering drawing of a design based upon a few frozen parameters would build up a large amount of engineering inertia precluding the possibility of major changes in tank dimension, even though advantageous. Such changes are entirely possible and can be more firmly

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stated after completion of tests in the near future using the B-l cavity. These tests are being made to determine in large cavities at high voltage gradients whether X-ray production and excessive sparking can be controlled by pre-treating cavity surfaces. Similar tests on small cavities showed that such control is possible.

If the B-1 cavity tests confirm the previous results a decision may be reached to use long thin drift tubes ("stove-pipe" drift tubes) for A-12, and/or to shorten the tank. These changes in tank dimensions increase the shunt impedance and therefore increase the operating efficiency. Lawrence stated that the B-1 cavity tests are a turning point concerning the tank dimensions.

It was agreed that the problem concerning detailed engineering should be looked at carefully before reaching a decision.

UCRL and CR&D will discuss all aspects of this problem immediately in order to reach a decision in the near future.



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