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Minutes of Modulator Committee Meeting of 11-10-50

Present: Turner (Chairman), Edwards, Jones, Lebacqz and Neal.

It was decided that, in the absence of strong arguments to the contrary, the accelerator should be in 30 sections of 320' each. This means that for Stage I there would be 30 Power Supplies each capable of running 8 modulators. (Always 1 klystron per modulator.)

The reasoning here runs--max rep rate is chosen at 360 pps. A convenient submultiple of this when using a number of sectors at different energies is 60. This gives 6 sectors. If the number of sections (which must be a multiple of 6) is more than 30, then there are fewer than 8 klystrons per section in Stage I and this raises costs of power distribution by about \$1,000,000. If the number of sections is less than 30, then the number of klystrons per section becomes so large (in Stage II) that phasing is difficult. So we need (for Stage I) 30 power supplies each rated at 600 KW output.

It was also decided to the same degree that the power supplies should be external to the tunnel. About half of them would be grouped around the middle entrance and about a quarter at each end.

Other problems which were not settled to the degree of the above included:

- (1) Can a series triode correct for variations in the pulse-to-pulse amplitude? (These might be due to Gap Drop Variations.)
- (2) Is dc charging or ac charging better for economy, efficiency, reliability? Investigations are to be made of costs of 360 cycle power from (a) alternators, (b) inverters, (c) resonant circuits, (d) anything else that might work.
- (3) Some circuits which were considered are attached. Some of the important criteria are: reliability of fault protection, simplicity, cost, standard items, etc.

Scribe Jones

