



# ALLIS-CHALMERS MANUFACTURING COMPANY, INC.

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October 7, 1947

Dr. Marcello D. de Sousa Santos,  
Departamento de Fisica,  
Da Universidade de Sao Paulo,  
Av. Brigadeiro Luiz Antonio No. 784,  
Sao Paulo, Brazil

Dear Dr. Santos:

RE: BETATRON AND POWER CENTER EQUIPMENT

We are sending you herewith assembly drawing of the Betatron magnet unit and general installation specifications covering the unit.

We are also sending you four copies of drawing No. 342-595 covering the general arrangement and floor plan of the power center equipment. We have previously furnished you with drawings covering the switchgear and transformer separately and this last mentioned drawing will show the complete assembly.

We are making the poles and wafer of your unit of Trancor-X, which will permit of a higher energy output of machines. We have calculated this output to be approximately 28 MEV but, of course, cannot definitely guarantee this output until the factory tests are made. It will of course be necessary for the machine to operate on 60 cycles when a higher output than around 22 or 23 MEV is desired as the cooling arrangement of the machine is not sufficient to allow it to operate at 180 cycles at the higher MEV.

Of course this means substituting a transformer for the tripler on these occasions. The transformer should be of 50 Kva capacity with a low tension of 440 volts and a high tension of 2300 volts, single phase. Approximately one-half of the total number of capacitors would be used at the 60 cycle operation.

A system could be incorporated in your control to enable the operator to switch from the tripling transformer to the step-up transformer and retune the capacitors for 60 cycle operation.

Our progress since the strike has not been as good as was contemplated due to lack of full man-power and consequently our present



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schedule for your equipment is to ship the Betatron parts somewhere in the latter part of December, the 100 Kva transformer at about the same time, and the high voltage switchgear would come forward around the middle of January.

We will check this schedule from time to time and endeavor to keep you advised.

Some time ago you expressed a desire to obtain a donut which would allow the emission of the Electron Beam. This matter has been receiving our consideration for some time and while it is perfectly possible to produce such donuts, development work is not yet far enough along to have anything available at this time. According to the present schedule it will probably be a year before this type of donut will be available.

With kindest personal regards.

Yours very truly,

ALLIS CHALMERS MFG. CO.

BY

GE SCHULTZ:HC

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