

7 GeV Proton Synchrotron

Notes of a meeting held in Mr. Bowles' office, Building 412, on Monday 28th July, 1958.

Present: Mr. P. Bowles - Chairman
Mr. G. E. Simmonds
Mr. A. G. Hewitt
Mr. G. N. Venn
Mr. H. Hadley

Introduction

This meeting was called to discuss the programme, the manufacture and the installation of the plant comprising the control system.

Control System

The meeting opened with a brief review of the memorandum A/MI dealing with the proposed design of the proton synchrotron control system and it was decided to proceed on the lines laid out in the memorandum.

Manufacture of Control Equipment

Two possibilities present themselves:-

- (a) one firm to be presented with all the necessary design information and this firm to manufacture all the units required, to lay and terminate all multicore cables and to complete installation work on site.
- (b) to do the same work but in stages and one firm would be used for the manufacture of the individual units which would later on be installed in racks and cubicles, possibly by a firm specialising in multicore cable work.

Scheme (a) is difficult unless all the design information could be collected together at any one time and handed over. This is not possible particularly as the control equipment required for the local control stations is being incorporated in the contracts for the plant to be controlled.

Scheme (b) is very flexible and allows changes to occur as may be required throughout the design period. It is proposed that the control equipment should be broken down into panel mounted units terminated in general with plugs and sockets. The firm would receive schematic diagrams of the unit with a front panel layout and a sketch showing the disposition of the main components. A drawing of a standard chassis arrangement will be included and the firm will be required to produce units from this information, producing any manufacturing drawings themselves (if any are required). The controls group will produce cable schedules and all further installation details as required to complete the work on site.

A technical survey is being carried out to select a suitable firm for the wiring of electronic chassis.

The following firms have been visited:-

G. & E. Bradley	London N.W.10	1st class R.F. work
Mervyn Instruments	Woking	Small firm being reorganised
Clifford and Small	Sutton	Good for relay and control board work.
Southern Instruments	Camberley	Not enough effort apart from oscilloscope display
Hutche on Duthie	Colnbrook	Suitable for installation work and junction boxes.
Camper and Nicholson	Gosport	Good. Suitable for installation work also.
J. Langham Thompson	Watford	Good, but probably expensive.

The following firms will also be considered:-

Lintotts

Sperrys

Flessey Nucleonics

Elliott

Everett Edgecombe

Horsham

Quite suitable.

These firms have not been visited but can obviously do the work to our specification, but being large organisations may have large overheads, and may require a greater formality so taking a longer time.

A draft specification will be produced and sent with the information obtained from the above firms to the contracts section by 30.9.58 so that tenders may be sent off by the 20.10.58 for return on the 20.11.58, a contractor to be appointed with a running contract by the 30.12.58.

Distribution: All present.
Dr. Pickavance.
Mr. Mullett.
Mr. Snowden.
Records.

Table of Major Items of Control Plant

Item	Type of Work	Firms	Completion Date	Cost Approx. \$	Remarks
Safety and Personnel Control	General Engineering	Various (as above)	Late '60	5,000	
Radiation Monitors	Electronics	Monitored by Electronics Division	Late '60	10,000	Agreement with Health Physics 20.12.58.
Misc. Power Supplies	Rectifier Units	Hastingshouse, S.T.C.	Late '60	500	
Control Cables (PHEM)	A.M. Cable Suppliers	Ealsman Henley, B.I.C.C.	Late '59 Early '60	20,000	Specify and order before end Nov. '58.
Intercomm. Equipment	{ Telephones P.A. System	Modern Telephones S.T.C. Siemens, A.T.E. Communication system Tenny	Early '59 Late '59	10,000	
Alarm Annunciator Unit	Telephone Relay Unit	S.T.C. A.T. & E.	Early '60	10,000	
Control Room Racks and Equipment including R.F. Units	Rack firms and Electronics Chassis	Imhof, Spencers J. Lagham Thompson as above list		2,500 40,000	
Control Desk and Equipment	Rack firms or coach-builders	Spencers, Mulliners Wiring as above list		5,000	
Miscellaneous Units	Various	Various	Late '60	12,000	
Design Contracts				10,000	
Installation				<u>10,000</u>	
Total				135,000	