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DR PICHAVANCE. 35

7 GeV PROTON SYNCHROTRON

Notes of a Meeting held in Mr. Bowles Office in Building 412 on Friday 11th July.

Present: Mr. P. Bowles  
Mr. G.E. Simmonds (Part-time)  
Mr. A.G. Hewitt  
Mr. J.A. Goode (Part-time)  
Mr. K. Stuart  
Mr. F.M. Telling

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1. The Meeting considered the draft proposals for the conditions of contract for the supply of day-work mechanical and electrical labour during the construction period.
2. The programmes were examined and the following list is representative of the type of work which will be undertaken by the day-work contractors:-

Magnet

1. Magnet Block testing and services to research programme.
2. Initial placing of magnet blocks.
3. Placing and levelling of magnet blocks.
4. Auxiliary work associated with magnet blocks.
5. Pole piece assembly and adjustment.
6. Final connections to all equipment & plant. (General to all sections).
7. Shielding Blocks. (The main civil contractor will assemble wall and demonstrate. Day-work contractor will handle any subsequent movement)

Injector

1. Installation of Linear Accelerator
  - R.F. Liner Cooling
  - Power Supply
  - Vacuum Equipment
2. Inflector
3. Local Control System

R.F. System

1. Services to experimental programme.
2. Accelerator Unit
  - Ferrite Frames
  - Cavity
  - Oil Cooling System
  - Vacuum Vessel
  - Cavity Trolley
3. Drive Chain
4. Primary Frequency Generator
5. Beam Control Unit

Vacuum System (All vacuum testing will be carried out by direct labour.)

1. Main vacuum vessels.
2. Vacuum coating equipment (assistance in handling)
3. Straight Sections.

4. Pumping Units.  
Pumps, controls & support frames  
Roughing pumps  
Roughing lines  
Pump Unit Services  
Refrigerator Services
5. Local Control Systems
6. Connections  
Bellows Units  
Pumping headers  
Valves
7. Auxiliaries  
Gas driers  
Leak detection equipment  
Vacuum gauges

#### Power Supplies

The installation work will be largely done by the main contractors. Agreement will subsequently be reached for any assistance required from day-work contractor.

#### Control System

Discussion required at early date to decide what break down is required and form of contract. Cannot define at this stage but three possible alternatives are:-

1. Contract for installation en-bloc of the entire control system.
2. Divide into packets and use day-work contractor to connect up.
3. Have cabling contractor put in multi-core cables.

#### M. & E. Services

1. Ventilating Plant. (Wire into control system)
2. Cooling Plant. (Connections into installed cooling plant under appropriate plant headings.)
3. It was agreed that the installation of all 50 cycle supplies from the distribution boards to termination points will be the responsibility of Mr. Herbert, New Work Division. The running of supplies from these termination points to various items of plant will be the responsibility of Mr. Hewitt's Section.
4. Graphs were tabled showing labour requirements and from these the estimated expenditure for mechanical installation was shown at £100,000 and electrical installation at £120,000. It was confirmed that this amount is available in the plant estimate. From the graphs it was noted that the maximum labour loading occurs during mid-1960.
5. It was agreed that a clause should be inserted in the contract so that when sufficient information is available on certain jobs the Supervising Officer can ask the day-work contractor for a quotation to be given, including an estimate of the man-hours involved.
6. Mr. Stuart commenting on the draft contract said that he proposed removing some conditions from the tender part and placing them in the section on general conditions. Mr. Stuart then outlined his amendments to the draft specification in detail. These amendments were all considered and accepted. The following points require further examination by Mr. Hewitt and Mr. Stuart:-
  1. It was agreed that the normal working week shall be 54 hours. The overtime rate per hour will therefore need to be re-designed on this basis.

2. If possible a schedule is required for plant hire. If unable to define then the schedule of hire charges will be based on those published by the Road Haulage Association.
3. Mr. Hewitt to reassess numbers of basic team.
4. Mr. Stuart pointed out that Clause 2 and 3 on Page 10 had been simplified and he would prefer the original wording. Although this was agreed in principle it was suggested that Mr. Goode should clarify this point with Mr. Stuart.
7. Mr. Stuart raised the question of placing orders for sub-contract work. Contract Section would delegate responsibility for placing these sub-contracts up to an authorised sum of £200 to the Supervising Officer. Beyond this figure and to a limit of £1,000 the authority would rest with the Project Engineer. It was agreed that sub-contracts over a value of £1,000 will be routed through the Oxford Office.
8. Mr. Simmonds' comments on the draft paper were examined & will be incorporated in the final draft. The following point requires further action by Mr. Hewitt:-
  1. The duties of Plant fitters require defining.
9. Mr. Stuart will prepare a final draft to the Project Group for comment. This final draft with any agreed amendments will need to be submitted to the Director of Contracts for final approval.
10. The following time-scale was agreed:-
 

Draft document from Mr. Stuart by	1. 8.58
Tenders out by	1. 9.58
Receipt of tenders by	1.10.58
Notify successful contractor by	1.12.58
Contract labour on site by	1. 1.59
11. A technical survey of firms considered suitable for this type of work is being undertaken by the Group and a list of firms considered suitable for invitation to tender will be submitted to Contracts Section in due course.

F.M. Telling

Building 412/T

15th July, 1958.