

IN CONFIDENCE

14th November, 1958.

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NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

7 GEV PROTON SYNCHROTRON MAGNET POWER SUPPLY
REPORT ON NEGOTIATIONS WITH THE ENGLISH ELECTRIC CO.

Note by the Secretary

The result of negotiations with the English Electric Co. was reported to the Committee by Mr. Bowles at the meeting on 24th October. As then promised, the details are now summarised for the information of the Committee.

The Committee have already given the necessary authorisations for this contract, and no further action is requested.

7 GeV PROTON SYNCHROTRON.Summary of negotiation with the English Electric Co.
on the contractual price for the Rotary Plant for the
Magnet Power Supply.

Arising from the inevitable change in design of the Rotary Plant for the Magnet Power Supply, negotiations have had to take place over a long period to arrive at a fair and reasonable figure for the proposed plant. The following notes are to summarise the position and to indicate to the Committee the price which it is proposed to pay for the equipment at present specified.

1. In March 1958 the Committee authorised English Electric to proceed with the design and manufacture of the rotating machines at a figure of £450,866. This included £9,800 for Supervisory Gear which was omitted from their original offer.
 2. Further detailed technical discussions revealed that English Electric preferred not to supply the air blast breakers and related equipment and it was agreed to delete this item from their contract. Messrs. Brown-Boveri have now quoted £2,018 for this item of equipment.
 3. Discussion with English Electric at the end of May indicated that barring gear and cooling of the flywheel were highly desirable although it was felt that these items were not essential to meet the specification. The barring gear has been estimated by A.E.R.E. at £2,000 and the flywheel cooling at £6,000.
 4. From the above considerations it is deduced that £456,848 would have been paid for the 3,000 r.p.m. motor generator set.
 5. In mid-June it became evident that a 3,000 r.p.m. set could not be made to comply with the short-circuit clauses in our specification, even if special steel was used for the rotor. In consequence of this English Electric prepared two alternatives and it was decided that their offer of a 1,000 r.p.m. set was the only one which satisfied all our conditions.
 6. On the 3rd July English Electric indicated that the cost of the proposed equipment would not exceed £490,000. This figure included 2 fly-wheels and separately driven ventilating fans.
 7. Arising from more detailed estimating English Electric informed A.E.R.E. on the 29th July that they had revised the ceiling price to £478,000. This figure included only one fly-wheel but a second one could be supplied as an extra, bringing the ceiling to £486,500. A second fly-wheel costing £8,500 was agreed on the 31st July.
 8. The above ceiling price included separately driven fans, the value of which is estimated by A.E.R.E. at £9,000, and by English Electric at £13,000.
 9. A final quotation for the 1,000 r.p.m. set was received from English Electric on the 17th October at £472,250.
 10. The extras mentioned above, viz fly-wheel at £8,500 and separate fans at £9,000, cannot be regarded as essential to meet the original specification. Hence it is suggested that the minimum price for 1,000 r.p.m. set to meet the specification is £454,750. (See attached sheet.)
 11. It is considered that the final price of £472,250 is fair and reasonable for plant to meet the original specification plus the extras now required. The attached sheet shows that the new price is marginally more attractive than the initial quotation.
- Recommendations. It is recommended that the English Electric should now be given financial cover for a total expenditure of £472,250.

7 GeV PROTON SYNCHROTRON.

Comparison between English Electric quotations
for 3,000 r.p.m. and 1,000 r.p.m. motor-generator sets.

<u>3,000 r.p.m. Set.</u>	<u>£</u>
Original English Electric quotation	440,966
Extras:-	
Supervisory gear	9,900
Barring gear	4,000
Fly-wheel cooling	6,000
Less:-	
Air blast breakers and related equipment (not to be supplied by English Electric)	4,018
<u>Final Price which would have been paid for 3,000 r.p.m. set.</u>	<u>£456,848</u>

<u>1,000 r.p.m. Set.</u>	<u>£</u>
English Electric quotation	472,250
Less:-	
Extras now required -	
Additional fly-wheel	8,500
Separate ventilating fans	9,000
	17,500
<u>Minimum Price for 1,000 r.p.m. set which would meet the specification</u>	<u>£454,750</u>