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Mr P. Bowles

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NI/GP/61/31

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

Beam Transport Plant: Contract for Sixteen 8-inch Quadrupole Magnets

Covering Note by the Secretary

In the attached paper, submitted by the Chairman of the Nuclear Equipment Project Committee, approval is requested for a contract with Messrs. Oerlikon for sixteen quadrupoles, at a price not exceeding £75,000 in Swiss currency (plus up to £15,000 import duty if a duty-free import licence is not granted). This firm were the lowest tenderers and their tender is technically acceptable. There is adequate provision for this item in the approved estimate for beam transport equipment.

The question of the justification for expenditure of foreign currency will no doubt be considered particularly by the A.E.A. London Office.

I shall be grateful if members will let me know whether they approve the proposed contract action. If there are no objections, I will ask the Chairman whether he will give approval on behalf of the Committee.

Rutherford High Energy Laboratory,
HARWELL.

Circulation : to Members of the General Purposes Committee
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Note only

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

Note prepared by J. J. Wilkins
Submitted by L. B. Mullett

Quadrupole magnets Type 1 for NIMROD beam transport

1. Paper NI/GP/61/4 has outlined the initial scheme for providing beam transport plant for NIMROD. Quadrupole magnets are among the items of equipment listed in the paper.
2. A design and specification has been prepared for a high-power quadrupole magnet of 8 inch aperture. A minimum of sixteen quadrupoles of this 'type 1' design are required for the initial scheme. Each quadrupole consists essentially of (i) a yoke and pole assembly made of good quality mild steel, weighing about 5 tons; (ii) four water-cooled coils wound from hollow copper tubing; (iii) four pole-pieces.
3. Tenders have been invited from twelve firms for supply of sixteen 'type 1' quadrupoles, less the pole-pieces mentioned above. Separate and later ordering of the pole-pieces has been adopted in order to give more time for proving their design.
4. Three tenders have been received, as follows:-

Lintott Eng: (Horsham)	£104,880
A.E.I. (Trafford Park)	£98,064
Oerlikon Eng: (Zurich, Switzerland):	
Alternative I (using British copper tube)	942,000 S.F. $\approx$ £78,000
Alternative II (using German copper tube)	870,000 S.F. $\approx$ £71,910
- The Oerlikon prices quoted above are subject to variations in raw material costs, etc. Fixed prices, about 4% higher, are also quoted as alternatives. The Oerlikon prices may also be subject to import duty which, we are advised, may be up to 20% of the price quoted.
5. The lowest tender, viz. alternative II Oerlikon, is technically acceptable.
6. After discussion of the tenders we concluded that the proposed methods of manufacturing the steel components are unnecessarily elaborate. The tenderers have been asked to consider alternative methods, assisted by some design modifications. Price reductions, if any, are not likely to affect the sequence of the tenders.
7. Approval is requested to negotiate a contract with Oerlikon at a total price not exceeding £75,000. This request has been discussed with and endorsed by the A.E.A. Oxford Contract Office. The exact contract price will depend on (i) the choice of a fixed price or a price subject to variations, and (ii) the outcome of the technical discussions mentioned above.