

For information

30th November 1962

NI/GP/62/38

IN CONFIDENCE

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

Refrigerator for Helium Bubble Chamber

Covering Note by the Secretary

The attached paper is submitted by correspondence as agreed at the meeting on 20th September (Minute 5 (g)), in order to avoid delay in placing this contract. A form is provided below for use in reply if desired.

To: The Secretary, NIRNS
Rutherford High Energy Laboratory
Harwell, Didcot, Berks.

NI/GP/62/38

From

I approve/do not approve the proposal in paper NI/GP/62/38 that a request be made to the Treasury for an increase of £55,000 and that the contract be placed with the British Oxygen Company for the refrigerator for the helium bubble chamber.

Signed

Date

IN CONFIDENCENATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCEGENERAL PURPOSES COMMITTEERefrigerator for Helium Bubble Chamber

Note submitted by T. G. Pickavance

1. At the General Purposes Committee meeting on 20th September 1962 an unexpected increase was reported in the cost of the refrigerator for the Helium Bubble Chamber. Of the seven tenders submitted, those which came nearest to meeting the technical specification were all much higher than the amount allowed for in the approved estimate. This amount was based on discussions of this specification with a number of the firms before going out to tender.
2. The technical aspects of the seven tenders submitted have now been studied in detail by the Helium Bubble Chamber Management Committee. Only two meet completely the required specification. Of these the lower, priced at £130,850, is from the British Oxygen Company and included in this sum is £2,230 for import duty on component parts. The alternative, from Linde (Munich), would cost £150,843 approximately £17,000 of which is the import duty. Technically Linde's design is superior to that of B.O.C.; it has greater refrigeration capacity, needs shorter transfer lines and has built-in gas storage. Both refrigerators, however, are capable of producing large quantities of liquid helium as a laboratory facility when the bubble chamber is not being refrigerated, but during bubble chamber operation the Linde installation can still supply 8 lts/hr against B.O.C.'s estimate of 2.2 lts/hr.
3. Of the remaining tenders A. D. Little, Elliott Brothers and Linde (USA) were technically unacceptable. Those from Petrocarbon and Sulzers fell short of the technical requirements and were more expensive than B.O.C., being £142,825 and £149,500 - £153,900 respectively.
4. The Treasury approval of 1st August 1961 for the Helium Bubble Chamber was £416,000, the capital part of which was broken down by the Institute as follows:

	£
Chamber (including £16,000 for spares)	58,000
Magnet	65,000
Refrigeration	80,000
Vacuum System, Control, etc.	56,500
Facilities for converting to horizontal field	16,500
	276,000
Total contingency	48,000
	<u>£324,000</u>

The details of the allowance for refrigeration were

	£
Refrigerator Contract	72,500
Transfer lines, Gas storage, etc.	7,500
	<u>80,000</u>
Contingency	10,000
	<u>£90,000</u>

It is proposed to amend this to:

	£
Refrigerator Contract	131,000
Transfer lines, Gas storage, etc.	7,500
	138,500
Contingency	6,500
	£145,000

The increase required is therefore £55,000 which would be spent during 1963/4 and 1964/5. A saving will be necessary elsewhere to meet this expenditure. It seems likely that the best solution would be to postpone the Helium Liquefier scheme included under the heading of General Plant in paper NI/GP"62/28, for which amounts of £20,000 in 1963/4 and £60,000 in 1964/5 were allowed.

5. The Committee are therefore asked to approve that the contract be placed with the British Oxygen Company and that a request be made to the Treasury for an increase of £55,000 to cover this.