

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

General Purposes Committee

Proposed Computer

Note to Members of the Governing Board

The enclosed G.P.C. paper, like other G.P.C. papers, is circulated to the Board for information.

In view of the firm recommendation of the Physics Committee, and the inclusion of the items in the estimates, which were discussed by the Board (the type of computer under consideration was in fact mentioned at the Board meeting), the Chairman would like to be in a position to approve the paper, if the G.P.C. so desire.

Members of the Board who are not members of the G.P.C. are therefore invited, if they have any objection to the proposals in the paper, to let the Chairman or me know before the G.P.C. meeting on February 11th.

Rutherford High Energy Laboratory
Harwell.
1st February, 1960.

J.A.V. Willis
Secretary

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCEGENERAL PURPOSES COMMITTEEProposed Orion Computer for the Rutherford LaboratoryNote submitted by T. G. Pickavance

1. During the past six months an evaluation of the computing needs of the National Institute has been made in consultation with physicists, computing experts and representatives of various computing firms. Alternative solutions for meeting the problem have been discussed before the Physics Committee of the National Institute and there was unanimous agreement to seek immediate approval to install a Ferranti ORION computer costing between £250,000 and £350,000 (excluding building and maintenance) at the Rutherford Laboratory.
2. Messrs. Ferranti have intimated that an ORION could be delivered and working on site by early 1962 provided an order is placed before the end of March. An order placed after this date is likely to add several months to the delivery date.
3. A committee of computing specialists has been asked by the Physics Committee to advise on the choice of peripheral equipment for ORION. Individual members of the committee have been consulted and we are now in a position to make a fairly reliable list of the items required.
4. Details of costs are shown in the appendix. We have been assured by Ferranti that these costs are correct within 5%.
5. Total Cost

The cost of the equipment recommended together with installation, buildings etc., is estimated to be as follows:-

	£
Computer (8,000 words) and equipment	249,310
Extra 8,000 word core store	51,800
Building (2,400 sq.ft.)	30,000
Installation (including maintenance for the first year)	30,000
Tape-editing equipment	7,500
Tape reels	5,000
	<u>£ 373,610</u>

Some margin is required for inaccuracy in the prices quoted and for possible small changes in the list of equipment. Financial approval for expenditure up to £400,000 on the project is therefore requested. It is probable that later on additional equipment would be needed as the use of the machine develops. If so, this would be the subject of a further request in say two years time.

6. In order to have the computer in time for use when experimental results from Nimrod are expected, it is necessary to place an order now (at latest by the end of March). There would however be no expenditure in 1960/61 and the greater part would probably not come until 1962/63. In our Estimates 1960/61, expenditure in the project was indicated in the forecast for future years as follows:-

	1961/2	1962/3
Plant	nil	£250,000
Buildings	£10,000	£ 20,000

7.

Approval is requested for the purchase of an ORION computer for the Rutherford Laboratory, at a cost not exceeding £400,000, including the necessary building.

APPENDIX

Details of Costs

A 8,000 word ORION

(a) Central computer (16,000 word drum and 8,000 word core store Flexowriter, one input and one output channel)	£111,250
(b) Extra input channel	1,000
(c) Floating point	3,500
(d) T R 7 tape reader	2,000
(e) T R 5 tape reader (2 at £460 each)	920
(f) Output punch (teletype + "black box")	1,000
(g) Spare (no black box)	750
(h) Magnetic tape control units (2 at £15,500 each)	31,000
(i) Magnetic tape desks (6 at £8,540)	51,240
(j) Extra drum	5,150
(k) On line printer (ICT)	41,500

Total £ 249,310

B Cost of extra 8,000 words core store

51,800

Total £ 301,110