

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GOVERNING BOARD

Minutes of the meeting held at No. 5 Old Palace Yard, Westminster
on September 18th 1961

Present: Lord Bridges (Chairman)
Dr J. B. Adams
Professor F. W. R. Brambell
Professor J. M. Cassels
Sir John Cockcroft
Sir Alan Hitchman
Sir Harry Melville
Professor R. E. Peierls
Dr T. G. Pickavance
Dr J. A. V. Willis (Secretary)

Apologies for absence were received from Sir Robert Aitken, Professor Dee, Sir William Hodge, Sir Harry Massey, Sir Keith Murray, Sir William Penney, Professor Wilkinson and Sir John Wolfenden. In many cases this was due to advancement of the date of the meeting, at comparatively short notice, from October 24th on which it had been originally arranged.

The Chairman welcomed Dr Adams, who was taking part in a Board meeting for the first time.

1. Minutes of the meeting on May 24th 1961

The Secretary submitted a note reporting with apologies that the last two minutes were omitted from the duplicated copies of the draft minutes of the meeting on May 24th 1961 as circulated to Members. Subject to any comment by Members not present, the Board approved the insertion of the missing minutes in the records of the meeting on May 24th 1961, as follows:-

7. Financial Powers of the G.P.C.

The Chairman said that paper NI/61/13 proposed the proper authorisation of the General Purposes Committee to give financial approvals.

ACTION 3: On the understanding that all appropriate matters would be referred to them, as hitherto, the Board adopted the draft resolution proposed in paper NI/61/13 as follows:-

The Institute hereby authorise their General Purposes Committee to approve on their behalf any expenditure and any financial commitments which are within the powers of the Institute themselves. This authorisation is to have effect both as to the past, and in future until it is rescinded. The General Purposes Committee is the Committee as constituted under that name by the Institute on the 28th of May 1957, and as changed from time to time by the Institute in the past and in future.

8. Research Reactors

Sir John Cockcroft said that the recommendations on the covering page of NI/61/14 were made by the Research Reactor Committee. Sir Harry Melville agreed with the proposal, and

drew attention to the generous action of A.E.I. Ltd. He suggested that the value of their contribution should be assessed and reported to the Board for information.

ACTION 4: The Board approved the support by the Institute of university work with the A.E.I. Merlin reactor under arrangements controlled by the Research Reactor Committee, as proposed in paper NI/61/14.

2. Minutes of the last meeting

The Board approved the minutes of the meeting on July 4th 1961.

3. Matters arising out of the minutes

(a) Electron Laboratory (Minute 7)

The Chairman said that he had held a preliminary meeting to consider the organisation and management of the proposed laboratory, as agreed in minute 7.3. One or more further meetings would be required before recommendations were ready to put to the Board. Those taking part in the preliminary meeting with him had been Sir John Cockcroft, Sir Harry Massey, Sir James Mountford and Dr Pickavance. Professor Mansfield-Cooper had been invited but had been unable to attend.

The working party to co-ordinate the preparatory work for the laboratory agreed in minute 7.2(c) had been formed with Dr Pickavance as Chairman, and had already met twice.

(b) Annual Report (Minute 8)

The Chairman said that it had been agreed that the Institute's accounts would be published in the Annual Report, and that the Treasury wanted the accounts to appear with the minimum of delay. The date by which the audit would normally be completed was the end of September, so if the Annual Report were made up to the end of March as at present, it would be more than six months out of date when published. He would not consider this satisfactory and he therefore proposed that future reports should be for the academic year, to the end of September, and that the 1960-61 report should include a supplement, bringing it up to date at the end of September 1961. The Board agreed to this proposal.

4. Committee Minutes

Atlas Computer Committee

The Chairman said that the Atlas Computer project had been approved by the Treasury and the question of research use by university economics departments, etc. (Minute 3(a) of NI/ACC/61/First Meeting) had been satisfactorily settled.

Dr Pickavance said that he had attended, in Sir William Penney's absence, a meeting of the Royal Society's Computer Committee, and he was able to confirm that there was no confusion between the functions of the two committees.

5. Progress at the Rutherford Laboratory

Dr Pickavance made a brief verbal report, of which the following is a summary:-

The P.L.A. would be shut down from the end of September for two months to open the new experimental area and install new apparatus. After re-opening, the machine would go on to three-shift operation.

Nimrod The Injector had first run on August 1st. A maximum current of 200 microamperes at 15 MeV had been reached so far, and the performance gave confidence that the design current of 10 mA would be achieved.

The rate of production of magnet polepieces by English Electric was unsatisfactory, in spite of assurances from the Chairman of the firm. Further approaches would be necessary.

The power-supply alternators, also from English Electric, were not yet satisfactory, but he understood that the firm was now making good progress towards eliminating the faults.

The vacuum vessel position was better, since Marston Excelsior had now made satisfactory specimens of nearly every portion. There was, however, some indication of further financial difficulty on this item.

Most of the rest of the Nimrod items were progressing satisfactorily. A revised programme would be worked out in October.

Auxiliary Apparatus The hydrogen bubble chamber magnet had been dismantled for shipment to C.E.R.N. The hydrogen liquefier had been operated satisfactorily into a heat load.

Organisation Dr Stafford had just taken up the new responsibilities in connection with Nimrod Nuclear Physics which were discussed last May (Paper NI/P/61/7).

Staff The number of staff of all grades was 646 on September 14th. In addition, 51 were in process of recruitment.

After a discussion on the future expenditure with Treasury representatives on July 10th, the deliberate general slowing down of recruitment had been lifted, but Dr Pickavance said that he had taken 25 posts into a reserve to preserve some flexibility.

In discussion of Dr Pickavance's report, it was suggested that a penalty clause for delay in contracts was effective, even if the penalty was small, for example $\frac{1}{2}$ per cent per month, with a maximum of 5 per cent. Sir Alan Hitchman said that the A.E.A. Contracts Department did not normally include a penalty clause in their contracts, but he would examine the suggestion.

The Chairman particularly welcomed the better report on the vacuum chamber.

6. Future expenditure by the Institute

6.1 The Chairman reminded the Board of the letter from Mr Turnbull, referred to in Dr Pickavance's note of 17th August and reproduced as an Appendix to paper NI/61/20. In this letter, Mr Turnbull had conveyed the Treasury's request that future expenditure should be restricted and had made specific suggestions. The present meeting had been arranged so that the Board could take the decision on which the reply would be based, and paper 61/20 had been prepared to give the necessary information. The cuts indicated in Table II of the paper did not represent a suggested revised programme, but were a series of suggestions of feasible cuts on separate items. He thought that the Board would consider that some of these cuts were altogether excessive, and that others, while feasible, were particularly undesirable.

6.2 The first question discussed was the trend of total expenditure at the Rutherford Laboratory (excluding Atlas) which is shown as falling sharply (from £6.2M. in 1962-63 to £4.7M. in 1966-67 in Table II of the paper). It was pointed out that total expenditure at C.E.R.N. and at Brookhaven increased steadily through the construction and operation stages. At C.E.R.N., a continuing 5 per cent or even 10 per cent per annum increase,

excluding any cost of living increase, was forecast. It was agreed that at the Rutherford Laboratory there has been an unusual overlap of expenditure on the machine construction and on beam handling and experimental apparatus, and although the point is partly answered by the argument that expenditure depends mainly on staff numbers and that these are to increase, not decrease, it was agreed that some reduced peak in the Rutherford Laboratory expenditure should remain in the forecast.

6.3 The Chairman next asked for the items in Table II to be reviewed one by one, to identify those where the individual cut was excessive, or where some other comment was needed. The conclusions were as follows:-

Staff While recognising the many uncertainties in forward estimates of the number required, the Board asked Dr Pickavance to take the rather lower numbers in Table II as the guide, with the rider that excessive haste should be avoided in trying to recruit the difficult grades, and that in the meantime adequate reserves of complement should be kept for them.

Items (a)-(d) (non-capital) were either dependent on staff numbers, or relatively fixed requirements, and there was little scope for reduction.

Items (e)-(h) were already committed contractually.

Item (i) (Heavy Liquid Bubble Chamber) The slowing down indicated would represent a sacrifice, but not a very great one.

Item (j) (Beam Handling Plant) This is the £1M. initial beam handling scheme. Table II should be corrected by the addition of 0.05 in 1963-64 and in 1964-65, and of 0.06 in 1965-66.

Item (k) (Minor Items) This item represents all the capital schemes and items under £100,000, and is one of the places where an addition to reduce the "peak" should go.

Item (l) (Peach Croft Housing) The Chairman recommended that this item should not be cut. Housing was urgently necessary in order to obtain the required staff, and the Peach Croft scheme was a good opportunity which would not recur. The Board agreed with this view.

Item (m) (Helium Bubble Chamber) The indicated slowing down was accepted, on the understanding that the development would not have to come to a stop.

Item (n) (Beam Handling - Phase II) The reduction was considered much too great.

Item (o) (Nuclear Physics Apparatus) Again, the reduction was considered much too great.

Item (p) (Capital Accelerator Development) The cut was accepted.

Item (q) (Second Experimental Area). The cut was accepted.

Item (r) (High Flux Reactor) The cut was accepted.

Item (s) (University use of reactors) The reduction was considered excessive.

Items (t) and (u) (Electron Laboratory) The postponement of the previously-estimated expenditure by one year was considered acceptable, provided that approval of the project was not delayed. The rate of expenditure shown in Table I was probably optimistic in any case.

4 Summarising the discussion, the Chairman said that the amounts shown in Table II against items j, k, n, o and s were too small. These should be increased in order to arrive at totals to be proposed to the Minister for Science. Sir Alan Hitchman recommended adequate increases, coupled with a substantial shadow cut, particularly in the first two years.

It was agreed that Dr Pickavance and the Secretary should draft, for approval by the Chairman, a reply to the Minister for Science's office on the basis of the wishes expressed by the Board.

J. A. V. Willis
Secretary
Rutherford High Energy Laboratory
Harwell.

21st September 1961.