

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GOVERNING BOARD

Minutes of the Meeting of the Governing Board held
in the Board Room, Treasury Buildings, Whitehall,
at 2.45 p.m. on Tuesday, April 1st, 1958.

Present:-

Lord Bridges (in the chair)

Professor P.M.S. Blackett	Sir James Mountford
Professor J. Diamond	Sir Donald Perrott
Mr. J. Gridley	Dr. B.F.J. Schonland
Professor W.V.D. Hodge	Professor D.H. Wilkinson
Sir Harry Melville	Dr. T.G. Pickavance
Professor H.S.W. Massey	Dr. J.A.V. Willis (Secretary)
Professor N.F. Mott	

1. APOLOGIES FOR ABSENCE

Apologies for absence were received from Sir John Cockcroft, Sir Philip Morris, Professor Peierls, and Sir George Thomson.

2. MINUTES OF LAST MEETING

The Board approved the minutes of their first (1958) meeting, subject to a correction in the 13th line of Minute 6. The sentence should read "it was concluded that at present the correct course is for the University to find the money from its own income or to obtain it from the D.S.I.R."

With reference to Minute 3 the Board had before them a note by the Secretary, N.I. (58) 6, reporting progress with the draft Royal Charter. No comments were made on this.

Referring to minute 4 the Chairman said that the Visiting Committee had now been established and its first meeting had been arranged for April 21st.

Referring to minute 7 the Chairman said that Dr. Stafford had been appointed.

3. REPORT ON PROGRESS OF THE 7 GeV ACCELERATOR

Dr. Pickavance gave a progress report in which the outstanding items were the following:-

Magnet Experiments to establish the method of annealing the steel plates have been in progress at Messrs. Sankey's. The first experiments resulted in very severe buckling and the experiments are slow because of the very long annealing time. With the fullest co-operation from the A.E.R.E. project team however, improvements have already been achieved.

Magnet Coils The three men who visited Brookhaven brought back helpful information and the project team feel in a position to design satisfactory supports for the coils. With the approval of the General Purposes Committee the raw copper for the magnet coils was bought and paid for during the financial year 1957-58 and at the lowest point of the recent dip in the market price for copper.

Magnet Power Supply As approved by the General Purposes Committee contracts totalling about £1,000,000 have been placed with Messrs. Brown Boveri and the English Electric Company for the converter plant and the rotating machinery respectively with arrangements for close co-operation between the two firms under the chairmanship of a member of the project team. So far the co-operation has been very satisfactory.

Vacuum Pumping Equipment Tenders for 44 high vacuum units have just been received from Messrs. Edwards (£154,000), Messrs. Leybold (£164,000), and Metropolitan Vickers (£242,000), Messrs. Edwards equipment besides being the cheapest is also preferred technically by the project team. The price is higher than the amount allowed in the estimate but since the pumping system is a part of a major item in the estimates the position will not be clear until prices are obtained for the remainder of that item. In the meantime no action to alter the total estimates is contemplated.

Injector Discussions with Messrs. Metropolitan Vickers have been very unsatisfactory and the prospects of obtaining a satisfactory firm price tender for design and construction of the three major components of the injector from this firm or from any other appear to be remote. In the meantime the design work has been proceeding within the project group at Harwell and the project committee now propose to place a contract with Vickers Armstrong Aircraft for the completion and detailing of A.E.R.E. designs for the drift tubes and the linear accelerator liner on A.E.R.E. drawing blanks. These items will then be put out to competitive tender and it is known that several firms are capable of tendering.

For the third main item, the vacuum vessel, it is proposed to go out to tender at once, the necessary information being already available.

Building Building work is still slightly behind schedule but is at present slowly catching up. The latest estimate by the consultants and the A.E.A. Industrial Group shows an increase of £100,000 in the total estimated cost. Dr. Pickavance will submit a paper on this subject to the General Purposes Committee.

Opening the discussion on Dr. Pickavance's report the Chairman said that the decision to split the contract for the magnet power supply between two firms had been an anxious one but would provide the combination of equipment preferred by the project committee; also it would save money. The news that the two firms were in fact co-operating very well was most encouraging. In reply to Professor Wilkinson Dr. Pickavance confirmed that the quotation from Messrs. Leybold for vacuum pumps did not include import duty. Messrs. Edwards' quotation was therefore unquestionably the lowest.

Sir Donald Perrott, commenting on the project as a whole, pointed out that the estimates had not been cut in connection with the current financial stringency. On the other hand there was little or no prospect of obtaining approval for increased capital expenditure up to April 1960 since the Treasury had ruled that forward estimates up to that date must be treated as the maximum available. The Secretary asked whether this meant that the Institute could not contemplate any new project involving capital expenditure before 1960. The Chairman replied that this was broadly true but exceptional cases might arise or the financial situation might alter before April 1960.

4. THE USE OF THE PROTON LINEAR ACCELERATOR BY VISITING TEAMS

The Board had before them Dr. Pickavance's paper N.I. (58) 5. Introducing this paper Dr. Pickavance said that the intention was to set out clearly what expenses would be borne by the Institute and what by Universities in connection with work at the Institute. For practical reasons the proposals went rather further in the direction of Institute expenditure than the arbitrary assumptions in the previous paper N.I. (58) 1.

Sir Donald Perrott asked who would decide whether a proposed piece of equipment requested by a University at Institute expense was justified. Dr. Pickavance replied that he proposed that this decision should be taken by the Visiting Committee, no doubt within financial limits granted to them by the Institute, as part of their general duty of planning the use of the machine. Professor Blackett said that the proposals seemed to him to be on the generous side. He urged that the arrangements should be kept flexible. A notable case would shortly come up for discussion, namely the large bubble chamber, which if successful would be used at the Institute. He would prefer to get funds for this through D.S.I.R. Mr. Gridley said that Sir Keith Murray and he in brief discussion of the paper had also thought that the proposals were on the generous side. Dr. Pickavance said that for the proton linear accelerator he estimated that the additional amount of money to be channelled through the Institute according to these proposals would be £30,000 a year. This was not a very large sum in relation to the cost of running the machine which the Institute would deal with anyway. The proposed arrangement would enable to programme of work with the machine to be planned in a much more satisfactory way than if the individual Universities had to get approval for their apparatus separately from a different body from that which approved the experimental programme. Dr. Schonland pointed out that the proposals included provision of workshop effort through A.E.R.E. services and said that the amount of workshop effort desired and available would have to be discussed with A.E.R.E. Professor Massey urged that the Institute should have some workshop facilities within its own control. Dr. Pickavance confirmed that discussions with the A.E.R.E. on this subject would take place shortly and that it was intended to include a powerful local workshop within the Institute. Sir Harry Melville suggested that for administrative simplicity the arrangements at CERN should be followed, both for equipment and for travelling and subsistence expenses. He asked whether the members of the Visiting Committee would be familiar with the arrangements at CERN and Dr. Pickavance confirmed that they would. Sir James Mountford suggested that the agreement between DSIR and the University Grants Committee on the financing of research with University accelerators should be taken into account. Referring to paragraph 2.10 of the proposals Professor Wilkinson put in a plea for good library facilities. Dr. Schonland replied that the new A.E.R.E. library about to be built had been planned with the needs of the Institute in mind as well as those of the A.E.R.E. It would be close to the Rutherford Laboratory and accessible.

Summing up the discussion the Chairman said that there was some difference of view on the question of how much of the cost should be financed through the Institute. He would like to defer any decisions until the Visiting Committee had discussed the paper from a practical point of view.

5. RESEARCH REACTORS

Dr. Schonland introducing paper N.I. (58) 7, the recommendations by the Research Reactors committee, said that the actions recommended to the Board at the present time were to collect information on Universities' interests and secondly to provide office and laboratory facilities adjacent to the A.E.R.E. and perhaps a scientific liaison service. These facilities would be useful for the kind of research which had to be close to a reactor to allow quick transport of samples, and the scientific liaison service might meet the need expressed for example by Professor Maddock for much closer knowledge of the irradiation conditions. If any experiments required personal access by the University worker to the reactors inside the A.E.R.E. this would have to be arranged direct with the A.E.R.E.

In discussion of recommendation (4) in the paper it was suggested that the working party of northern Universities should be enlarged and formalized and should undertake the general enquiry about Universities interests in the use of reactors. It was concluded however that it would be better to leave the present working party as an entirely informal body for the present, until the results of the enquiry from Universities were available.

THE BOARD

1. Took note of N.I. (58) 7
2. Instructed the Secretary to write to the Vice-Chancellors of Universities in the United Kingdom inviting them to state whether they are interested in using reactors and if so for what type of work, and also to indicate how many people would like to use the Harwell reactors and for what purpose during 1958 and 1959.
3. Deferred decision on the other recommendations of the research reactor committee.

6. DRAFT ANNUAL REPORT

The Board had before them paper N.I. (58) 8, a draft by the Secretary of a brief report for the year ended 31st March 1958. The Secretary mentioned a few amendments suggested by Mr. Searby and the Board endorsed the suggestion to add a few words at the end of the paragraph on membership to explain the change in representation of the Royal Society. In the same paragraph they asked for the names in each group to be put in alphabetical order.

THE BOARD

4. Approved the draft report amended as above.

7. LARGE BUBBLE CHAMBER

Professor Blackett referred to the large hydrogen bubble chamber being planned by a group of Universities. He proposed that it should be erected at the Rutherford Laboratory. Considerable resources such as workshop effort and a hydrogen liquifier would be required and therefore he thought that the proposal should be considered in good time. Dr. Pickavance said that he would prepare a statement on what space and facilities could be offered in 1960 at the National Institute site. There was a brief discussion on the financing of the bubble chamber project. Professor Blackett suggested that this should be considered at a future meeting. The Chairman said that he would like a joint paper from the D.S.I.R. and the A.E.A. as a basis for this discussion.

The Committee

5. Invited the A.E.A. and D.S.I.R. representatives to consider the advantages of financing the large British bubble chamber project through the D.S.I.R. and through the Institute respectively, and to prepare a paper for a future meeting of the Board.

8. NEXT MEETING

THE BOARD

6. Agreed to hold their next meeting at 2.45 p.m. on Friday June 19th and provisionally agreed to hold the following meeting on a date to be fixed in mid-October.

A.E.R.E. Harwell,
22nd. April, 1958.

J.A.V. Willis
Secretary

Distribution

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