Distributed 1.11.62.

NI/62/Fourth Meeting

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GOVERNING BOARD

Minutes of the meeting held at No. 5, Old Palace Yard, Westminster, London, S.W.1 on 22nd October, 1962.

Present: Lord Bridges (Chairman)
Dr. J. B. Adams
Professor J. M. Cassels
Sir John Cockcroft
Professor P. I. Dee
Professor B. H. Flowers
Sir Alan Hitchman
Sir William Hodge
Sir Harrie Massey
Sir William Penney
Professor D. H. Wilkinson
Professor A. W. Merrison
Dr. T. G. Pickavance
Dr. J. A. V. Willis (Secretary)

Apologies for absence were received from Sir Robert Aitken, Professor Brambell, Sir Harry Melville, Sir Keith Murray and Sir John Wolfenden.

Dr. W. L. Francis attended to speak for the D.S.I.R. in the absence of Sir Harry Melville.

1. MINUTES OF THE LAST MEETING

The Board approved the minutes of the meeting on 18th July, 1962.

2. COMMITTEES

Research Reactor Committee: Sir John Cockcroft said that the university high-flux experiments jeopardised by Messrs. A.E.I.'s decision to close down their "Merlin" reactor, would now be accommodated in the "Herald" reactor at the Atomic Weapons Research Establishment. Additional university experiments in Harwell reactors were also being supported, and the estimated cost of all the support of university reactor experiments was now £150,000 p.a. It was proposed to strengthen the Committee by two additional university representatives.

Physics Committee: Sir John Cockcroft said that the Physics Committee had studied the requirements for high-speed film measuring machines for bubble-chamber photographs. With the help of a small expert committee they had drawn up the following recommendations which they now made to the Board:-

(a) The analysis of bubble chamber photographs, most of which would ultimately come from Nimrod, should be decentralised into university groups.

(b) Several fast measuring machines should be provided, each provided with a connection to an existing local computer or with a small intermediate computer depending on the conditions at each site finally chosen.

(c) As a first step in a new programme, the Institute should purchase or construct one machine at an estimated cost of £30,000, to be located at Imperial College together with any necessary addition to the local computing facilities.

(d) The Physics Committee should consider the subsequent stages in the programme and report to the Board.

After discussion of some detailed points, the recommendations were accepted by the Board.

Atlas Computer Committee: Sir William Penney said that the Authority now found themselves unable to offer time on their Stretch or 7090 computers to university users as had been expected, because the capacity of Stretch was less than had been expected. Some time on the Harwell Mercury computer was however available. Some Members asked whether this matter could be reconsidered even if only a little time on one of the fast computers could be made available. The prospects seemed unhopeful, but the Board asked Dr. Pickavance to pursue the matter with the A.E.A. and the Atomic Energy Office to see if there was anything which could be done.

3. MR. J. J. WILKINS

Dr. Pickavance referred to the death of Mr. J. J. Wilkins, in a motor accident. He said that Mr. Wilkins had been one of the most capable senior physicists in the Laboratory and had carried responsibility for the Nimrod magnet and for the beam handling programme. His loss would deeply affect the work of the Laboratory, and would make reorganisation necessary. The Chairman expressed the Board's sympathy to Mrs. Wilkins and to Dr. Pickavance and his staff, and asked that everything possible should be done to help Mrs. Wilkins. Dr. Pickavance said that he hoped that the Institute would be able to help Mrs. Wilkins and her two children.

4. PROGRESS AT THE RUTHERFORD LABORATORY - NI/62/8

Dr. Pickavance introduced his report, and during a brief discussion he confirmed that the expected completion date for Nimrod construction was still unchanged at September, 1963, and that adequate beam handling equipment should be ready by the time it was needed.

5. PROGRESS WITH THE ELECTRON LABORATORY - NI/62/9

Professor Merrison gave details of the proposed site at Daresbury. Its communications were excellent; its subsoil satisfactory, and the cost of building the synchrotron and laboratory on it would not be greatly different from that at Wood Park. It was believed that it could be acquired with little delay, whereas there would be at least a year's delay at either Wood Park or Mickledale. A disadvantage of Daresbury was that the area of good building land available was only about 50 acres compared with the Board's original specification that 100 acres should be available if possible.

The following points were brought out in discussion:-

(a) Housing for staff might not need to be provided. There was speculative building in Runcorn and Frodsham and a little in Moore. The area was not very bad for housing and the numbers at the Laboratory would not be very great in relation to local housing resources.

(b) The site was on an outcrop of old red sandstone, which was everywhere within 10 ft. of the surface. Borings had been made at 10 points, and the report was good. No water table had been met down to 30-40 ft. There was no salt or coal below.

(c) It was planned to put the synchrotron and associated buildings on the part of the site south of the Keckwick road and there was plenty of room for them there. Diversion of the Keckwick road might be considered, but was not essential to the plan. The remaining portion of the I.C.I. plot of land, marked "Keckwick Hill" and

"Daresbury Firs" on the map was not good building land but I.C.I. might be anxious to sell it with the rest. Several members favoured buying the whole site.

Action I: The Board decided to apply for outline planning permission to build the Laboratory on the Daresbury site, and agreed that a brief press statement should be made afterwards, saying that this had been done. They also authorised the opening of negotiations with the owners for the purchase of the site.

Completing his report, Professor Merrison said that good progress was being made with the detailed estimate, particularly for the buildings. The Risley civil engineering organisation had given great assistance in the work. Negotiations were going on to determine the best way in which they could help in the future.

6. PROPOSED TRANSFER OF THE NATIONAL HYDROGEN BUBBLE CHAMBER - NI/62/10

Dr. Pickavance introduced paper NI/62/10 and said that one of the main reasons for proposing the transfer of the chamber to N.I.R.N.S. at a fixed date was that this would simplify the discussions about the right time to bring the bubble chamber back to the Rutherford Laboratory. It was recommended that discussions should be continued with the D.S.I.R. with the aim of making the transfer on 1.1.64. Dr. Francis said that the D.S.I.R. agreed with this recommendation and also that they had made provision for the cost of packing and returning the chamber to England. If the Treasury were agreeable the D.S.I.R. would meet this cost even after transfer of the chamber to the Institute.

In discussion the following points were made:

(a) Firm arrangements of the kind suggested would be important to the staff operating the bubble chamber. The Institute would be able to make them offers of employment from 1.1.64 and in certain cases might wish to make an offer of employment at an earlier date subject to satisfactory arrangements with the D.S.I.R. The present employing university would of course also be consulted.

(b) It was confirmed that the N.I.R.N.S. staffing forecasts included in principle provision for the hydrogen bubble chamber operating staff though not by the specific allocation of 22 posts corresponding to the present number of people in the team.

The Committee approved the proposal to transfer the National Hydrogen Bubble Chamber to the Institute ownership on 1.1.64 and asked Dr. Pickavance to continue the necessary negotiations with the D.S.I.R. and others concerned.

7. THEORETICAL PHYSICISTS IN THE N.I.R.N.S. - Paper NI/62/12

Professor Flowers introducing the discussion of the position of theoretical physicists in the N.I.R.N.S. said that he was not referring to theoretical physicists engaged in problems of accelerator design, beam handling equipment and the like but only with those concerned with high energy physics proper. He believed that there was a danger that a group of the latter kind might grow up at the Rutherford Laboratory in the wrong way for lack of proper planning from the start. It might be argued that such a group should be avoided altogether because it would be a drain on the small stock of first class theoretical physicists available. On the other hand the experimental physicists working in the laboratory would certainly like there to be a very good resident theoretical physics team and on the whole he thought that this was the overriding consideration. He thought, however, that it would be essential to attract a really first-class man to set up and lead this group. He suggested that an offer might be made to Professor Dalitz.

In a general discussion the following points were made:-

(a) The Chairman said that Sir Robert Aitken who had been unable to attend had written expressing some doubts on the ground (mentioned by Professor Flowers) that such a group would take away key staff from university theoretical physics departments.

(b) It was suggested as some compensation for this that such a group would train new men for the future. It was also pointed out that the objection to too many resident staff using the Institute's major accelerators did not apply to theoreticians.

(c) In the case of C.E.R.N. a theoretical group had been formed at first in Copenhagen under Professor Neils Bohr. This had been a good start but it had soon become necessary to set up a resident group in Geneva under Professor Weisskopf. This group always remained small (about 12) but succeeded in attracting much larger numbers of leading theoreticians as visitors.

(d) Many Members spoke strongly in favour of inviting Professor Dalitz or some other really leading expert with the qualities which would result in the collection of a very strong group of residents and visitors. Unless this could be achieved the general opinion was that no appointment should be made.

(e) It might be very helpful if some association with Oxford university could be arranged. However, it must be clear that the post at the Rutherford Laboratory would be a full time one.

(f) Finally it was emphasised that the theoretical physics group at the Rutherford Laboratory at present was almost wholly concerned with the kind of theoretical physics which Professor Flowers had said he was not referring to. The question of theoretical physics of the kind now under discussion had been carefully considered on a number of occasions and deliberately left open pending a discussion of the kind which had now taken place.

The Board invited Dr. Pickavance to approach Professor Dalitz and to make such other enquiries as he thought right, with a view to making a high level senior staff appointment for the right man for this post.

8. COMMITTEE ON GOVERNMENT SUPPORT OF CIVIL SCIENCE

The Chairman said that he had been asked to give evidence concerning the N.I.R.N.S. to the Trend Committee and had arranged for Sir John Cockcroft and Dr. Pickavance to join with him in doing so. If any Member had points to put forward he would be grateful if these could be communicated to Sir John Cockcroft or himself. He thought that one of the points about which the Trend Committee might be concerned would be the arrangement for the Institute's finances when the Atomic Energy Authority no longer dealt with them as part of the Atomic Energy vote. He intended to say that he would be in favour of the Minister for Science's office dealing with the Institute's finances in this case.

9. DUTIES OF THE SECRETARY OF THE N.I.R.N.S. - Paper NI/62/11

The Chairman said that paper NI/62/11 had been prepared as requested at the meeting on 22nd May, 1962. It was necessary to distinguish between the functions of the Secretary of the N.I.R.N.S. and those carried out as Secretary of the Rutherford Laboratory. All that was needed at present was to set out the former functions in brief and this was done in the paper. He suggested that this should be taken as a note of the present position, but there might of course be changes from time to time. The Board gave their general approval to paper NI/62/11.

J. A. V. Willis,
Secretary.

24th October, 1962.