

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCEGOVERNING BOARD

Minutes of the Meeting of the Governing Board held
in the Board Room, Treasury Buildings, Whitehall,
at 2.45 p.m. on Friday June 13th, 1958.

Present:- Lord Bridges (in the Chair)
Sir John Cockcroft
Professor J. Diamond
Mr. J. C. Gridley
Professor N. F. Mott
Sir James Mountford
Professor R. Peierls
Dr. B. F. J. Schonland
Sir George Thomson
Professor D. H. Wilkinson
Dr. T. G. Pickavance
Mr. P. J. Searby
Dr. J. A. V. Willis (Secretary)

Mr. L. S. Smith from the D.S.I.R. attended for the
discussion of item 2.

1. APOLOGIES FOR ABSENCE

Apologies for absence were received from Professor Blackett,
Professor Hodge, Professor Massey, Sir Harry Melville, Sir Philip
Morris and Sir Donald Perrott.

2. MINUTES OF LAST MEETING

2.1 The Board approved the minutes of their Second (1958)
meeting.

2.2 With regard to research reactors, the Board had before them
paper N.I. (58) 9 giving the text of the enquiry sent out by the
Secretary. The Secretary said that he had had a letter from
Sir Keith Murray suggesting that the Royal College of Science
and Technology, Glasgow, and also the Manchester College of
Technology should receive copies. Dr. Schonland also suggested
that a copy should be sent to the Royal Military College,
Shrivenham. The Board endorsed these suggestions. The
Secretary said that replies had been received from eight
universities so far, all but one expressing interest, particularly
from Departments of Chemistry. The Secretary was asked to
arrange for the responses to the enquiry to be analysed and
reported to the Research Reactor Committee so that they could
consider them.

2.3 With regard to the Annual Report, the Committee had before
them paper N.I. (58) 10 giving the final text as transmitted by
the Chairman to the Chairman of the A.E.A. The Chairman said
that it was proposed in this first year that the report should
appear as an Appendix to the report of the A.E.A. This was
agreed, but the Board decided that it should also be published
separately, so that in later years a complete set of Institute
reports might be available independently.

done
Just about all received
Analysis well in hand

ditto
enright

printed separately
copies available

2.4 With regard to the financing of the large bubble chamber, paper N.I. (58) 17 was handed round at the Meeting. Sir John Cockcroft said that, as requested at the last meeting, the A.E.A. and D.S.I.R. representatives had discussed the financing of this project and, as reported in the paper, had concluded that on balance the advantage lay in financing through the D.S.I.R. Mr. Smith said that the project was beset with complications, but the D.S.I.R. was prepared to continue to be responsible for it. The Board concurred in the view that this should remain a D.S.I.R. responsibility. In discussion the point was made that the D.S.I.R. might wish to obtain from the Institute an assurance that there was an ultimate requirement for the bubble chamber at the Rutherford Laboratory. The Board agreed that this assurance could be given.

Notified DSIR

Assurance requested
by DSIR 20th June
given 1st July = 10th July (Pek)
2.5

2.5 With regard to the erection and testing of the large bubble chamber, Sir John Cockcroft said that the Physics Committee had concluded that there was room for the necessary building at the Rutherford Laboratory, and that the necessary facilities could be provided there. Dr. Pickavance said that the bubble chamber consortium had decided to ask the Institute if they might erect and test the bubble chamber at the Rutherford Laboratory. The Board decided that in principle this request should be accepted.

Not formally asked

3. PROGRESS WITH THE 7 GEV ACCELERATOR

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

3.1 Magnet

Messrs. Sankeys have now succeeded in producing flat annealed plates. This has involved much increase in the heating and cooling time, but it has been found possible to anneal larger charges. We have insisted on maintenance of the contracted output of 5 blocks per week. A complete block has not yet been made from the flat plates now produced, but the first is expected in a week's time.

3.2 Pole Pieces

Specifications for magnet pole pieces are now going out to firms including both electrical and aircraft firms, since the pole pieces have to be made from steel plates cemented together by methods in which aircraft firms have experience.

3.3 Magnet Coils

Specifications are quite far advanced and negotiations have been in hand with Messrs. G.E.C., Brush and Metropolitan Vickers. Satisfactory samples have been received from the first of these firms, rather less satisfactory samples from the second, and the third firm now has samples ready for inspection. It is possible that firm price quotations may not be obtained for this item. Dr. Pickavance said that at the worst he hoped to obtain quotations on a cost plus fee basis.

3.4 Power Supply

A party of engineers from the English Electric Company with a member of the A.E.R.E. project team have just returned from a visit to the U.S.A. where they were able to get useful engineering information from the Westinghouse Company which made the power supply for the Berkeley and Brookhaven machines.

3.5 Buildings

The increased building estimates mentioned at the last meeting, now totalling £152,000, were studied in detail by the General Purposes Committee and approved. The A.E.A. are at present preparing a case for submission of the new estimates to the Treasury. The progress of construction was still one month behind schedule and the A.E.A. Industrial Group had been instructed not to spend money on trying to recover this month at present. The Arcon standard building which was approved by the Board as a rather late addition is now almost complete, demonstrating the great advantages of this type of building for speedy construction. Also, another extension of the Bolton and Paul prefabricated hut accommodation has been taken into use for the design team, and has greatly relieved their congestion.

With regard to the increased building estimates, the Chairman said that he had asked that the increase should be notified to the Treasury at this stage, but that it should be discussed with the A.E.A. whether this should be on a formal or informal basis at present.

4. RECOMMENDATIONS BY THE PHYSICS COMMITTEE

The Board had before them paper N.I. (58) 11.

- 4.1 With regard to the cosmic ray air shower experiment, Sir John Cockcroft said that Harwell would cease to carry on the Culham work at the end of 1958, but that the University group would take it over and subsequently the large experiment, the financing being arranged by D.S.I.R. Accordingly the Board agreed not to sponsor this work.

- 4.2 The other recommendations of the Physics Committee ^{and all that they do, are they not?} are dealt with in minute 2.5 above and minute 5 below.

5. RADIATION HAZARDS

- 5.1 The Board had before them papers N.I. (58) 12 and N.I. (58) 13. The Chairman summarised the problem saying that the Institute had a duty to aim at the highest standards of safety and precautions. Secondly they had a duty to arrange to get the best possible advice, and thirdly they must have their own organisation to carry out the necessary actions. Whatever the exact legal position might be, it seemed clear to him that they should take the greatest possible care. With regard to insurance, it seemed to him that this was a case where the insurance companies could offer neither a wide experience of similar risks, nor an expert advisory service. Though the final decision was not one for the Board, he was sure that this was a case for not insuring.

- 5.2 The Board noted that the Physics Committee had studied paper N.I. (58) 12 carefully and had endorsed it and, after discussion, they recorded general agreement with it and asked Dr. Pickavance to put to the Personnel Committee a proposal with regard to the appointment of a scientist for health physics duties as mentioned in paragraph 5.3 of the paper. In discussion of the paper the following points were also made:-

Pickavance
Secondment now
considered not necessary
if it is formally agreed
with A.E.A. that definite
duties are to be done
Dr. R.H.L.

- 1) The Director of the Rutherford Laboratory should be required to maintain a safety committee of his staff which would cover radiation damage as well as more normal hazards.
- 2) There would be a special need for carefully maintained

safety discipline in view of the rapidly changing population of research workers, many of whom would not be already accustomed to the kind of safety precautions which would have to be carried out.

- 3) The Director of the laboratory would be responsible for the safety of any operations carried out by people who were in the laboratory with his consent, not merely those operations which it had been agreed that they would carry out.

- 5.3 With regard to the paper N.I. (58) 13, the Secretary said that he had had a further letter from the Legal Adviser to the A.E.A. stating that the limits within which it might be possible to avoid liability by contract were even narrower than had been indicated. Further, as explained in note 1. on the first page of the paper, the Institute might prejudice their position with the factory inspectorate if they adopted a policy of attempting to limit their liability in a way which the A.E.R.E. could not do.

*
Action with A.E.A.
and Treasury. Refunds
so as to include the
proposals made later in
the paper if they
are agreed.

With regard to insurance, the Board agreed that a request should be made through the A.E.A. to the Treasury for permission not to insure against liability for radiation damage. It would follow that the Treasury and the A.E.A. would agree that liability, if it arose, would have to be a charge on public funds.

6. VISITING COMMITTEE

- 6.1 The Board had before them paper N.I. (58) 14 covering the minutes of the first meeting of the Visiting Committee. They approved the intention of the Visiting Committee to submit their minutes regularly for consideration by the Board.

- 6.2 With regard to the terms of reference proposed by the Visiting Committee, the Board decided that in item 3 the words "with representatives of A.E.R.E." should be inserted after "to consider". In item 5 the words "to the Governing Board of" should be deleted. The terms of reference thus amended and approved read as follows:-

X
1974 to K.C.

- "1) To consider and co-ordinate proposals for experiments on the accelerators at the Rutherford High Energy Laboratory.
- 2) To consider all matters which relate to the scientific welfare of visiting teams including the provision of equipment for the laboratories and the provision of workshop and other necessary facilities.
- 3) To consider with representatives of A.E.R.E. matters outside the scientific field which affect the general welfare of visiting teams.
- 4) To consider, periodically, progress reports from group leaders on the broad general state of the research work in progress on the accelerators.
- 5) To make recommendations to the Director of the Rutherford Laboratory on the above subjects".

- 6.3 The other points arising from the minutes of the Visiting Committee are discussed in the two following minutes.

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

7.1 Introducing paper N.I. (53) 15, Dr. Pickavance said that this paper had been revised after a thorough discussion by the Visiting Committee. Most of the amendments were points of clarification, but a new section had been added dealing with the financing of experiments. The object was to ensure the most efficient procedure for giving the universities what they need.

7.2 The Chairman said that this was a valuable addition, but after reading the paper he was still not quite clear what the exact effect would be. He had also received a letter from Sir Donald Perrott in which it was suggested that before any decision was taken on the financing of experiments, there should be discussion between the A.E.A., D.S.I.R. and U.G.C. representatives.

7.3 In a discussion of the new section of the paper, the following points were made:-

- 1) The D.S.I.R. has in its current quinquennial budget £500,000 for the support of experimental work at C.E.R.N. and the Institute. On an equal basis this would provide some £50,000 per year for support of experiments at the Institute. There was a case for regarding this money as the primary provision and coming to the Institute only if it proved insufficient.
- 2) Whereas the D.S.I.R. money was budgeted on a 5 yearly basis and was allocated at meetings which took place 3 or 4 times per year, it would be hoped that any money available through the Institute for support of research projects would be budgeted annually and allocated in effect at any time by the Director. This would probably be a more flexible and prompt system, except in the case of very large items.
- 3) The difficulty which several members wished to avoid was that a university would have to argue a proposal for an experiment before two separate bodies, the Institute for acceptance of the experiment and the D.S.I.R. for provision of money.
- 4) It was suggested that in the proposed informal discussion it would be valuable to include a representative user as well as the three departments concerned with providing facilities. This however would be for the U.G.C. to decide.

7.4 Sir John Cockcroft was invited by the Board to arrange for a discussion between Sir Harry Melville, Sir Keith Murray, Sir Donald Perrott and himself to advise the Board on the procedure for financing university experiments at the Rutherford Laboratory.

8. HOUSING, HOSTELS AND CATERING

8.1 Discussion of paper N.I. (53) 16 dealt mainly with houses (or flats). The Secretary in introducing the paper said that if the bubble chamber were erected and tested at the laboratory, the requirement for houses might be 3 or possibly 10 in 1960 with a slow increase thereafter.

In discussion the following points were made:-

- 1) Although a few people from universities will come to the

laboratory for long enough to want houses, they would still be primarily members of their university.

- 2) The A.E.R.E. would be prepared to arrange the building and management of the houses whether they were owned by the Institute or by the A.E.R.E.
- 3) Looking some 5 years ahead, it was clear that there would then be a fairly defined need for some houses or flats and that in order for the Institute to be able to allocate them in its own way it would be best for them to be under Institute control. It would be valuable if a number of A.E.R.E. houses could be transferred to the Institute initially, to give time for the Institute requirements to become defined, before a special building programme was undertaken.
- 4) In several existing foreign establishments of similar nature versatile accommodation is used e.g. flats which can be arranged for different individual sizes, or small houses used alternatively as accommodation for groups of single people.
- 5) Overseas visitors even on a 6 months visit, if bringing their families, will require houses or flats.
- 6) If the Institute undertakes a vigorous programme of Summer visitors this would greatly increase the housing needs.

done 8.2 The Secretary was instructed to prepare a paper for consideration by the General Purposes Committee making specific recommendations for action with regard to houses, flats and hostels for the next few years.

9. PHYSICS COMMITTEE

done The Secretary mentioned that Professors Cassels, Devons and Moon, and Dr. Pickavance had regularly attended the meetings of the Physics Committee, and Sir John Cockcroft and the Chairman were in favour of their being made full members. The Board agreed.

10. NEXT MEETING

It was agreed that the next meeting would be held at 2.45 p.m. on Friday October 3rd, 1958.