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SCIENCE RESEARCH COUNCIL

RESEARCH REACTOR COMMITTEE

AGENDA

For the Second meeting of the Joint SRC/AEA
Research Reactor Committee to be held on
Thursday, 23rd June 1966 at 2.30 p.m. at
State House, High Holborn, Room 1515 (Fifteenth Floor)

1. Minutes of last meeting (RR6(65/66))
2. Matters arising.
3. Neutron Beam Facilities for Universities (RR7(65/66))
4. University Utilisation of Herald (verbal report).
5. Any other business.

G. L. Cooper
Secretary

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IN CONFIDENCE

RR 8 (65/66)

SCIENCE RESEARCH COUNCIL
UNIVERSITY SCIENCE AND TECHNOLOGY BOARD
RESEARCH REACTOR COMMITTEE

Minutes of the Second Meeting of the Joint
S.R.C./A.E.A. Research Reactor Committee
held at State House, London, on 23rd June, 1966

Present: Sir John Cockcroft - Chairman
Dr. V.S. Crocker
Professor J. Diamond
Dr. P.E. Egelstaff
Mr. J.J. McEnhill
Professor E.W.J. Mitchell
Mr. L.S. Smith
Mr. R.M. Fishenden - Joint Secretary, A.E.A.
Mr. G.L. Cooper - Joint Secretary, S.R.C.

Apologies for absence were received from Professor Anderson and Dr. Curran.

1. Minutes of the previous meeting

The Committee approved the minutes of the last meeting.

2. Matters arising

(a) Terms of reference

The Chairman reported that he had written to Sir Harry Melville proposing that the Committee should report direct to Council rather than the U.S.T. Board of Council. Sir Harry had replied that Council were not inclined to accept the proposal mainly on the grounds that they preferred to see the requirements of physics, chemistry, etc. for reactor facilities considered in relation to the other needs of these subjects rather than separated because of their high cost. It followed that, in the Council's view, the Committee should be associated with the U.S.T. Board of S.R.C.

(b) Scottish Universities Reactor

It was reported that the Committee's recommendations, concerning the parts falling within S.R.C.'s responsibility of the Scottish Consortium's proposals to extend their Reactor Centre (Item 3 of Minutes), had subsequently been accepted by the U.S.T. Board, Council and ultimately the Treasury, through the Department of Education and Science. There had, however, been some dispute over the remaining part of the proposal, involving the additional accommodation which is the responsibility of the U.G.C. On the advice of Professor Hall's Panel, which had been set up to examine the application, the Committee had at their last meeting recommended to the U.G.C. that all the extra office and laboratory accommodation requested be provided with the exception of the lecture theatre, mechanical engineering laboratory and demonstration area. The Scottish Consortium had appealed against the recommendation to exclude the lecture theatre and the mechanical engineering laboratory, and Dr. Curran - who was unable to be present to state the objections in person - had written asking the Committee to reconsider their recommendation on the following grounds:-

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M.J.

- (i) The lecture theatre is required because the existing one is limited to 30 persons, thus preventing fusion of several classes with the aim of cutting down on teaching time; also it is claimed that the existing lecture room is too small for scientific meetings and colloquia which it is desirable to hold at the Centre from time to time: use of the NEL lecture theatre for such purposes, as proposed by the Committee, is inconvenient owing to its distance from the Centre. Also it is in some respects considered to be too large for the needs of the Centre.
- (ii) The case for the mechanical engineering laboratory still stands. The alternative proposal suggested by the Committee of using the Reactor Hall is not feasible, since this is a restricted area with controlled access which must be kept clean: also large parts are fenced off "radiation areas" and the remaining space is already rather full.

These objections were considered by the Committee. It was concluded that a case for the lecture theatre still had not been made. While accepting that occasionally it would be desirable to hold scientific meetings at the Centre for which the existing lecture room would be inadequate, the likely frequency of such events hardly seemed to justify building a separate large lecture theatre just for this purpose, particularly in view of the availability of the adjoining NEL. The inconvenience of the latter being approximately $\frac{1}{4}$ mile from the Centre, was not considered to be a serious objection in view of the situation at much bigger research establishments. Furthermore, the argument in support of additional lecture accommodation for teaching purposes (as opposed to colloquia, conferences etc.) to enable larger and separate classes to be held simultaneously was not considered justified, one reason being that such numbers could not be accommodated for subsequent demonstrations or teaching classes. The Committee were therefore unable to accept the arguments presented in favour of the lecture theatre and confirmed their earlier decision to advise the U.G.C. against providing this additional accommodation.

With regard to the mechanical engineering laboratory, the prevailing view was again in support of the earlier decision, mainly on the grounds that mechanical engineering work associated with nuclear engineering should be accommodated in the engineering laboratories of the Universities rather than at the Centre. There was, however, some doubt expressed as to the volume of experiments involving, for example, rigs or loops, which would justify a laboratory of this kind. Dr. Crocker (a member of Professor Hall's Panel) was therefore invited on behalf of the Committee to re-examine the case for the laboratory in consultation with the other members of the Panel, and the Committee delegated to Chairman authority to reverse their earlier decision if a favourable recommendation in support of the laboratory were made.

[NOTE BY SECRETARY: Dr. Crocker subsequently reported that he had discussed the requirement with the Centre staff. Three rigs are at present under construction: a loop containing a mass spectrometer, used for circulating organic liquids through the reactor, an isotope separation experiment incorporating a 12 ft. long drift tube, and apparatus for measuring beta energies from fission products after irradiation. Other experiments involving out-of-pile equipment are contemplated. Adequate space is required for the assembly of these experiments and while a case could still be argued in favour of carrying out assembly of at least some of the equipment at the Universities, he feels on balance that it would not be unreasonable to accept the case for providing 600 sq. ft. of laboratory space at the Centre for this purpose. The other members of the Panel concur with this view⁷.

(c) Membership

It was announced that Professor Anderson had accepted the invitation to join the Committee, as proposed at the last meeting (Item 7 of Minutes). He was, however, unable to be present on this occasion.

3. Future of the Committee

The Chairman said it was necessary to introduce an additional item on the agenda in view of a letter he had recently received from Sir Harry Melville concerning the future of the Committee. Following the dissolution of the NIRNS an agreement had been made in April, 1965, between AEA and SRC that the Committee should continue as a joint advisory Committee, subject to review after one year. Sir Harry had given the view of SRC that it may be timely to consider winding up the Committee, for two main reasons. First, the Committee has now dealt with all the proposals for low power university reactors which are likely to be coming forward, and with the impending transfer of responsibility for supporting the three reactor centres to the Universities at the end of the quinquennium, the work of the Committee in this field has therefore probably come to a natural end. Secondly, as reported in Item 4 below, SRC have now given their approval to the Committee's recommendations concerning university access to neutron beam facilities on high power reactors operated by the AEA. The proposed Users Panel which will control the university use of these facilities will effectively cover this area of responsibility, and this again raises the question as to whether there is a need to continue the Committee. The U.S.T. Board had been consulted at their meeting on the 20th June and they had tentatively agreed that the Committee might be disbanded subject to the agreement of the AEA. They also wished to have the Committee's reaction before reaching a final decision.

The Chairman invited the Committee's views on this proposal, and the following points were made in discussion:

- (i) Some members questioned the assumption that no further proposals for new university reactors would be made. In reply it was stated that SRC had already considered in its forward look how it would wish to allocate the funds it is likely to receive from the Department of Education and Science over the next five years between the various major projects which have been under discussion (two of which are University use of AEA reactor facilities and the High Flux Beam Reactor) and it is extremely unlikely that even if the Committee were to recommend support of a new university reactor scheme, that SRC would be able to meet the financial commitment.
- (ii) Professor Diamond strongly urged the view that the Committee should continue. He thought it still had an important function to fill advising the SRC on reactor matters generally. Furthermore, he believed that all proposals for experiments on reactors should come to the Committee and had therefore been concerned at the proposal contained in the paper outlining the terms of reference of the Committee (Paper RR 1(65/66)) presented at the last meeting (which he had been unable to attend) that applications for such experiments should be considered by the appropriate subject Committee (Physics, Chemistry, etc.) rather than the Research Reactor Committee. He felt this was the wrong decision and illustrated his point by reference to a recent application from Manchester in support of a scheme to promote

neutron activation analysis at the Manchester/Liverpool Reactor Centre, which had been considered, and rejected, by the Chemistry Committee. In reply the SRC representatives said that the two alternative procedures for dealing with applications had been considered at some length, but on balance it was felt that the new arrangements indicated were preferable, mainly on the grounds that proposals for experiments involving reactors should be considered directly in competition with other proposals in the same discipline. This had been accepted in principle by the Committee at their last meeting.

- (iii) Some members, while accepting the point made in (i) above, nevertheless thought there would be occasions when medium-sized university projects involving reactors (e.g. development of existing Centres) or other radiation facilities would arise and asked by what mechanism would SRC arrive at a technical appraisal of their merits if the Committee no longer existed? The suggestion that ad hoc panels could be convened as the occasions arose was not well received and it was felt that better consistency and continuity would be achieved by putting all such proposals to the same Committee.
- (iv) With regard to the arrangements needed for advising on university use of the high power AEA reactors, it was agreed that the new Users Panel could effectively take over responsibility from the Committee, with the Panel reporting direct to the Board rather than through the Committee.

Summing up, the Chairman said that most members appeared to be in favour of keeping the Committee in existence although it was accepted that its original tasks and responsibilities had been to some extent either completed or taken over by other bodies. As a compromise he suggested that the Committee might be invited to meet annually simply to review all SRC supported work involving reactors (e.g. activities at the three University Centres; utilisation of AEA reactor facilities; High Flux Beam Reactor project - if approved) and advise the SRC generally on any matters of organisation or finance which it was felt called for comment. The Committee would then be available if SRC wished to seek an expert assessment on any specific project or policy matter involving reactors. The Committee agreed with this suggestion. The Chairman said he would reply to Sir Harry Melville informing him of the Committee's views.

Neutron Beam facilities for Universities

The Committee noted Paper RR 7(65/66) setting out the developments which had occurred and decisions reached within SRC arising from the Committee's endorsement of the Mitchell Panel recommendations, and were pleased to hear that, subject to receiving D.E.S. approval, the SRC had agreed to support university use of AEA neutron beam facilities to the extent recommended by the Committee (i.e. approximately £300,000 per annum). Responsibility for controlling university use of the facilities on behalf of SRC was to be vested in a Users Panel which would report to the U.S.T. Board, and the Committee were asked to nominate four university representatives, one of whom would be Chairman. The following names were agreed:

Professor Mitchell (Reading) - Chairman
Professor Anderson (Oxford) - or alternative
Professor Cochran (Edinburgh)
Dr. Squires (Cambridge)

The proposed terms of reference of the Panel were approved.

The Committee were also pleased to hear that SRC had agreed to support the AEA High Flux Beam Reactor project, and were prepared in principle to share the running costs up to an estimated contribution of £750,000 per annum subject to funds being available. Dr. Egelstaff asked the Committee to note however that the project had not yet received formal sanction; similarly the statement in the paper that the reactor, if built, would be used by international teams (mainly from Europe) was premature in that final agreement on this matter had still to be reached. Dr. Crocker outlined the committee structure which has already been set up informally to plan the project. The Users Committee is chaired by Dr. Lomer and reporting to it are the Neutron Beam Specification Working Party (Dr. Egelstaff), the Irradiation Users Working Party (Dr. Crocker) and the Shielding and Background Control Working Party (Dr. Wade).

5. University Utilisation of HERALD

Mr. McEnhill made a brief statement on recent activities at HERALD. He reported that the liquid nitrogen cryostats were now fully operational and over 100 irradiations had been made in the past year. More faults had developed since the last meeting with the compressor for the cold neutron source, but these had been rectified and the final proving run was now in progress.

Following on the recommendations of the Mitchell Panel, some preliminary discussions had been held with the aim of specifying two diffractometers for HERALD. This question would now become the responsibility of the Users Panel.

OR/3/517.

✓ RMP

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Please find enclosed the following:

1. Minutes of the last meeting of the Committee (RR 6 (65/66)).
2. A reprint of a recent article on Russian research reactors which is being circulated to members at the request of the Chairman. attached.
3. A reprinted copy of the Mitchell Panel Report (RR 3 (65/66)).
4. Six new applications for S.R.C. research grants involving research reactors. As announced at the last meeting, these are being considered for financial approval by the appropriate subject committees of the S.R.C. University Science and Technology Board, but are also referred to members of the Research Reactor Committee for information. Any comments members may wish to make will be taken into account before the final decisions on each application are reached. [It will be noted that the application from Professor Bacon includes an appreciable sum (£90,000) for reactor hire charges; such charges are the subject of discussions underway between S.R.C. and A.E.A. arising from the recommendations of the Mitchell Panel.]

See
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G.L. Cooper
Joint Secretary, S.R.C.

State House,
High Holborn,
London, W.C.1.

For Thursday June 23rd.

JW