

35th Session of CERN Council

Tête-à-tête during the Council Meeting:

1. P. Lapostolle (left) and Prof. F. Perrin, French delegate to the Council
2. The President, Dr. G. Funke (sitting), and Dr. K. Herndl, from Austria
3. The Director General, Prof. B. P. Gregory (left) and the chairman of the Scientific Policy Committee, Prof. G. Puppi.

The Council held its 35th meeting at CERN on 21 and 22 September, with Dr. G. Funke as President. The meeting opened with tributes by the President to the late Sir John Cockcroft and the late Professor Arnold Schoch.

The Convention

The main purpose of this special session was to carry the revision of the CERN Convention to its final stage. This revision is to enable the proposed new Laboratory, which would house the large 300 GeV accelerator, to be operated under the same Council, Scientific Policy Committee and Finance Committee as the Laboratory at Meyrin. It has been obvious that the Member States attach great importance to ensuring that the revised Convention retains the spirit of the existing one, which has worked so well for many years. It has proved to have the right safeguards for the participating countries and yet to have sufficient flexibility to meet the somewhat unpredictable needs of sub-nuclear physics research.

Since the June Council session, there have been meetings of specialists in Stockholm and Geneva attended also by legal experts and the wording of the Convention, on such topics as the preservation of the rights of existing Member States (some of whom, for example, may not be able to join in future projects), voting procedures, financial provisions, etc., has been improved. The programme of activities of the Organization is to be specifically defined in the Convention though other activities could be added. Initially, the basic programme will comprise just

the one programme of the Meyrin Laboratory (involving the 28 GeV proton synchrotron and the 600 MeV synchro-cyclotron) to which all Member States must belong. The construction of the intersecting storage rings at the 28 GeV machine, and the construction and operation of a Laboratory with a proton synchrotron for energies about 300 GeV are activities which can be added to the basic programme at a later date. The 300 GeV, in particular, is expected to be added once the machine is operational. Any change in the programme shall require approval by a two-thirds majority of all Member States and participating countries, but the Meyrin Laboratory can cease to be part of the basic programme only if no participating country votes to the contrary.

There was considerable discussion on the desirability of feeding into the Convention itself some stipulation about control of the financial ceiling associated with a project, to be tied to the stipulation on control of the minimum period of participation in a project. The UK delegation in particular was concerned to guard against the possibility of being committed to a project of escalating costs and to have, at the outset, a very clear idea of financial commitments in order to be able to prepare reliable forward estimates for the national science budget.

Up to now, such a stipulation has not been specifically written into the Convention and the necessary financial framework has appeared in the 'working document' associated with each project. This method is rather more flexible, since a working document can be modified more easily if a major change in aims or circumstances

arises, under the control of the Council by a majority decision, whereas the Convention can only be changed by a unanimous decision. CERN will prepare a working document on the 300 GeV project to be considered at committee meetings in November prior to the next meeting of the full Council on 13 and 14 December.

Apart from the above topic which will be the subject of further discussion, the revised Convention emerged from this Council meeting with the general approval of all the Member States. The wording of some sections remains to be polished and it is hoped that the final version will be ready for the December meeting to be passed to governments.

300 GeV project team

Professor E. Amaldi and Professor W. Jentschke conveyed some of their impressions from the recent Cambridge accelerator conference (see page 199). They both remarked on the vigour and enthusiasm of the team which has been set up under Professor R. R. Wilson in the USA for the 200 GeV project. Professor Amaldi emphasized that the USA accelerator may well be in operation earlier than previously anticipated and that it was most important for Europe to regard the estimated completion date of 1976 for the 300 GeV project as a latest date and not one which could be moved back. Professor Jentschke said he was convinced that the American machine would be improved to 400 GeV very soon after its initial operation.

Professor G. P. Puppi commented that there is no real criterion for a precise selection of maximum energy in this new



1. CERN/PI 160.9.67



2. CERN/PI 158.9.67



3. CERN/PI 157.9.67

Sir John Cockcroft

high energy range. The 300 GeV design has been optimized for its technical feasibility and its overall reliability. It is a sound basis for going ahead. Professor Puppi also reported for the Scientific Policy Committee on the desirability of selecting the 300 GeV project leader and the top staff of the construction team as soon as possible. This has been done for the 200 GeV project in the USA, which has still not received final approval, and has helped a great deal in raising enthusiasm for the project. It has also made possible the recruitment of accelerator physicists from America and from Europe. If selection of the 300 GeV team is not initiated soon, Europe may well lose some of its best people to the American project.

The President was authorized by the Council to work out methods of setting up the 300 GeV project team.

Site selection procedure

Mr. J. H. Bannier presented an interim report of the Site Evaluation Panel (J. H. Bannier, Netherlands; A. Chavanne, Switzerland; J. K. Bøggild, Denmark, each representing countries who have not offered sites for the 300 GeV Laboratory). The panel has the task of establishing criteria and procedures for the selection of a site and, on this basis, of making a first evaluation of each of the nine remaining site proposals. The preliminary work was presented to Council to ensure general agreement with the lines being followed.

On the question of criteria the panel have drawn up a list of factors in three categories.

The first concerns the construction and development of the Laboratory, including such factors as the size and shape of the site, the possibilities for extension, etc.

The second concerns the operation of the Laboratory, with consideration of the availability and quality of cooling water, availability and price of electricity, etc.

The last category concerns features directly affecting the personnel. These include housing, education, etc.

Information on these factors for the respective sites is contained in the site reports presented to the Council in June 1967 (CERN/644/Rev.), and in the replies

given to a questionnaire concerning social matters. Dr. Bjerrum, the consultant geologist, continues his work clarifying data in the site reports. Mr. Bannier remarked that some selection on the basis of the technical aspects, particularly the first category, had effectively already been applied in narrowing the number of site proposals down to nine. They could all be expected to be acceptable and fairly close as regards these factors. This increases the relative importance of the other two categories. For all three categories, the selected site should be well above the acceptable minimum.

Social and personnel aspects will have a great influence on the success of the 300 GeV Laboratory. Whereas technical faults can usually be cured by greater expenditure, failure to attract the right personnel to the site could be a very damaging fault and most difficult to cure. Whereas the research physicist will undoubtedly be lured to the big machine no matter where it is situated, the laboratory will be in competition with other attractive projects for its vital engineers.

The Site Evaluation Panel is working towards having its report ready for the December Council meeting, giving their first evaluation of the sites and suggesting the procedure for the final selection.

Serpukhov; Bubble Chamber

The meeting concluded with two brief reports from the Director General, Professor B. P. Gregory, on the progress of the collaboration with Serpukhov and of the construction of the very large hydrogen bubble chamber.

Design of the fast ejection system and of the radio-frequency separators, to be provided by CERN for the 70 GeV proton synchrotron at Serpukhov in the USSR, are well advanced and will be presented for discussion at Serpukhov very soon. Agreement is near on the first electronics experiment to be carried out by a joint CERN-Serpukhov team as soon as the experimental programme starts at the machine.

The Steering Committee for the hydrogen bubble chamber project has met and has taken all the necessary decisions to start construction of the chamber.

With the death of Sir John Cockcroft at Churchill College, Cambridge, on September 18, CERN has lost a father figure in more senses than one. The technique of investigating the make-up of the nucleus by bombardment with other nuclei or nuclear components of high energy, goes back to the very early days of the discovery of radioactivity. In the beginning, this technique was limited to the use of natural radioactive decay products of significant energy but low intensity. Only when physics insight could be allied with the advancing technology of electrical engineering did the technique assume a new power. Cockcroft and Walton's proton accelerator of 1932, which for the first time demonstrated the transmutation of an element by artificial means, not only opened the way to our present world of particle physics but was a major milestone along the road of the 'atomic age'.

John Cockcroft was born in 1897 at Todmorden in Yorkshire, England, and soon showed his intellectual qualities. He gained a scholarship to Manchester University, but war interrupted his academic career and after serving in the Signals he returned to Manchester to become a student apprentice at Metropolitan-Vickers the well-known electrical engineering company, now AEI, and to study at Manchester College of Technology. He was encouraged to move to Cambridge where having gained high mathematical honours from St. John's College he became one of the fortunate young men to come under the influence of the fabulous Rutherford. There his engineering training and mathematical ability were a major asset to the team.

Particle physics research did not however hold him and during the latter part of the thirties he was engaged upon research into the secrets of radar which was to assume such military significance. It was here no doubt that he was able to gain experience in the complex world of military science which was to assume such importance with the development of nuclear weapons and was to bring the scientist down for ever from his ivory tower to the very forefront of public life.

For his pioneering work in particle physics he received an FRS and in 1951 the Nobel Prize, but it was as founder of