SNS EXPERIMENTS COMMITTEE

Decisions taken at the Thirty-sixth Meeting
on Tuesday and Wednesday, August 24 and 25, 1976

OPEN SESSION on Tuesday August 24

L. Van Hove spoke on a paper on proposed procedures for physicists making experiments at CERN which had been distributed earlier this year and on which a number of comments have been received. A revised version has been drawn up (see Appendix); any remarks on this version should be sent directly to him.

He went on explaining the letter J. Allaby had sent to all CERN users which discusses the way in which proposals should be written from now on.

He then briefly summarised some decisions the Council had reached during its June session and which concern the budget situation up to and including the year 1978 and commented on the physics situation and the SPS programme so far approved.

The following items were then discussed:

1 Proposal to Study the pp Interaction in the 41 GeV C.M. Energy Region in Omega: Search for New Bosons and Charmed States (CERN-Glasgow-Liverpool Collaboration; I. S. Hughes; SPSC/76-60/P 66 Rev)

2 Proposal to Investigate Direct Photon Production in pp Collisions Using BEBC with Ne-H$_2$ Filling (Imperial College; T. C. Bacon; SPSC/76-50/P 71)

3 Proposal for an Experiment in BEBC to Compare Neutral and Charged Current Neutrino Interactions Induced by $\nu_{\tau}$ and $\nu_{\chi}$ at the same Energy (Imperial College-Saclay Collaboration; B. Tallini; SPSC/76-52/P 72)

4 Systematic Search for Long-Lived Heavy Particles in the SL-Beam (Bologna-Saclay Collaboration; A. Muller; SPSC/76-55/P 73)
Status Report on Experiment NA5 and Proposal for Search for Charged Mesons and Baryons in High Energy Collisions with a Streamer Chamber Vertex Spectrometer (MPI Munich-Karlsruhe Collaboration; K P Pretzl; SPSC/76-62/P 37/Add 2)

CLOSED SESSION on Wednesday, August 25


I

APPROVAL OF THE MINUTES OF THE THIRTY-FIFTH MEETING

The Minutes of the Thirty-fifth Meeting (SPSC 35) were approved with the following correction: on page 2, 7th line from below should be added SPSC/75-74/P 31/Add 1/P 46/Add 2

II

STATUS REPORT ON THE SPS

J B Adams commented on the first trials of the fast extraction to the beginning of the beam line leading to the W-Area where the beam was directed to a beam dump. These tests were successful i.e. the beam could be extracted during a single turn with practically 100% efficiency. Tests of the slow extraction scheme will begin next week and it is hoped that an efficiency of about 90% can be achieved.

The intensity of the circulating beam which during the first test runs at 200 GeV was limited to about 4 \(10^{12}\) p/pulse when about 7 \(10^{14}\) p/pulse were injected has recently been brought up to 5 \(10^{12}\) p/pulse with 6 \(10^{12}\) p/pulse injected. One now knows that the SPS magnet system is very good in its acceptance. Nevertheless the emittance of the injector i.e., the CPS, though within the specified values, has to be tightly controlled. One has also observed beam instabilities in the SPS above 3-4 \(10^{12}\) p/pulse which require stabilisation to avoid beam losses. It may take therefore some time before regular intensities of \(10^{13}\) p/pulse can be reached.

G Brianti reviewed the progress of the W-Area installation where more than 90% of the magnets are now in place. The erection of the shielding is also well advanced and proceeds on schedule. The entire target area is completely installed and all elements have been tested including a 3-day continuous run. Work has now started to cover this area with shielding elements.

The beam monitoring elements are being prepared and the most important ones which are connected with the focussing properties are to be installed about in October. Other monitoring elements as e.g., particle identifiers etc., should be in place by the end of the year.

Work in the neutrino cave is proceeding and is foreseen to be completed by the end of November. All magnetic elements in the neutrino-beam will probably be installed by the middle of October, and it is hoped
that tests of the narrow-band neutrino beam can begin in December. Testing
of some of the surface beams in the W-Area may hopefully already start in
November.

III DISCUSSION OF AND DECISION ON EXPERIMENTS WITH BEBC AND GARGAMELLE

H. P. Reinhard presented a report on the various ways to operate
BEBC which are planned to become available for 1977 and 1978. Bare BEBC
may be operated with $H_2$ at any time. Runs with $H_2$-Ne-mixtures could begin
in January 1977 with a 70% Ne-concentration. Neon becoming available
only in limited quantities, this concentration can hopefully be increased
to 90% by January 1978 and to 95% by July 1978. Operation with $D_2$ could
possibly begin by January 1978 under the condition that electrolysis of
the heavy water be started without delay.

Runs with the new TST filled with $H_2$ may be scheduled soon after the next
shutdown during which it is planned to install this TST and to do a short
test-run thereafter using a Ne-$H_2$ mixture between 75 and 80%. Experience
with $D_2$ in a TST is limited to earlier tests done with the DESY bubble
chamber and a small TST of 7 liters. Extensive testing thus has to be
planned before actual runs can be scheduled. Tests of this kind could be
started during the second half of 1977, preferably immediately after the
physics run with the $H_2$-TST. If 80% turns out to be too low for the $D_2$-TST, new
tests must be run with mixtures between 92 and 95% Ne, which will be possible
from spring 1978 onwards.

J. H. Mulvey had contacted all groups having proposed an experiment
in BEBC and explained the answers he had received as to the manpower and
the analysis equipment available. Those groups which are interested in
more than one proposal also were asked to state their preferences.

He went on by announcing that H. Wenninger will act as coordinator
of BEBC experiments.

The SPSC discussed the possibility to delay the shutdown which is now
planned to begin in April 1977 by 4-8 weeks and asked the CERN management to
look into this question.

The SPSC then proceeded with a discussion of the BEBC and Gargamelle
experimental programme in the neutrino beam and took the following decisions:

1) Electrolysis of the heavy water should begin as soon as possible
as to have deuterium available at the earliest possible date.

2) Proposal P 72 (Ne-$H_2$; $\nu$ NB with 275 GeV and 75 GeV parent energy;
SPSC/76-52/P 72) is recommended for approval. The precise value of the
lower parent energy is to be determined at a later date and this part of
the proposal is recommended for scheduling only after the 1977 shutdown.

3) The combined proposal P 30 + P 33 (TST; $\nu$ WB; SPSC/74-116/P 30;
SPSC/74-119/P 33; SPSC/76-72/P 30/Add 5/P 33/Add 3) is recommended for
approval.

4) The wide band neutrino beam part of proposal P 16 ($D_2$; $\nu$ and $\bar{\nu}$ NB;
SPSC/74-72/P 16; SPSC/74-105/P 16/Add 1; SPSC/76-5/P 16/Add 2) is
recommended for approval.

5) The neutrino part of the proposal P 52 (GGM; $\nu$ and $\bar{\nu}$ NB with
60 GeV parent energy; SPSC/75-69/P 52) is recommended for approval.

Concerning the precise value of the parent energy and the date of the run...
the same conditions apply as for P 72. The decision on the $\pi$-part of the proposal has been deferred.

The SPSC then discussed the proposed BEBC programme with hadron beams and decided to recommend the following proposals in bare BEBC filled with $H_2$ for approval:

- $P \, 38 \quad K^- \, 70 \, \text{GeV/c} \quad \text{SPSC/75-2/P 38}$
- $P \, 62 \quad K^+ \, 70 \, \text{GeV/c} \quad \text{SPSC/76-15/P 62}$
- $P \, 57 \quad K^- \, 110 \, \text{GeV/c} \quad \text{SPSC/75-86/P 57 (K$^-\text{ part only}$)}$

The SPSC encourages CERN to carry out beam tests in order to check the feasibility of proposal $P \, 68$ which is requesting a separated $\bar{p}$-beam at 150 GeV/c.

IV DECISION ON THE OMEGA PROPOSAL P 66 REV.

The SPSC discussed the Omega proposal P 66 Rev (SPSC/76-60/P 66 Rev) and recommends a run of five days at one energy for approval in order to test the feasibility of the experiment. The collaboration is asked to restate their interest after the analysis of the results obtained.

V REFEREE'S REPORT AND DECISION ON THE OMEGA PROPOSAL P 69

The SPSC heard a referee's report on the Omega proposal P 69 (SPSC/76-35/P 69) and decided to recommend this proposal for approval.

VI DISCUSSION ON THE FRANM PROPOSAL P 6/ADD 3

The SPSC discussed the FRANM proposal P 6/Add 3 and decided to reconsider this proposal at a later meeting in view of some questions which need further clarification.

VII DISCUSSION ON THE OPEN SESSION

The SPSC nominated referees for some of the proposals which were presented at the Open Session.

VIII OTHER BUSINESS

P. Falk-Vairant announced that some preliminary discussions have been held as to a further extension of the N-Area facilities especially in view of a possible photon beam. Some of these ideas could possibly be discussed at the occasion of an Open Session of the SPSC.

E. Lohrmann expressed his gratitude to J.H. Mulvey who will be leaving CERN shortly for his valuable advice and help he had given while serving as a member of the Directorate.

I. Butterworth spoke on behalf of the SPSC members and extended his thanks to E. Lohrmann who is leaving the chair with this meeting to replace J.H. Mulvey as a Directorate member.
The SPSC has received the following documents:

- P 30 - Addendum 3 (CERN/SPSC/76-56/P 30/Add 3)
- P 30 - Addendum 4 (CERN/SPSC/76-57/P 30/Add 4)
- Bologna-Glasgow-Rutherford-Saclay-Torino Collaboration: Experiment to Investigate Direct Electron Production in Hadron Interactions Using BEBC Equipped with a Large Track Sensitive Target (ν-TST) (CERN/SPSC/76-59/P 64/Add 1)
- G de Lavassière, B R French W A Mitaroff C Palazzi-Cerrina R Strub, A S Thompson, P L Woodworth (CERN); T A Armstrong I S Hughes, B R Kumar G M Lewis R McCluskey, D T Stewart R M Turnbull (Glasgow); R A Donald, D N Edwards, W H Range (Liverpool); Spokesman: I S Hughes: Proposal to Study the pp Interaction in the 4.1 GeV C M Energy Region in the Omega: Search for New Bosons and Charmed States (CERN/SPSC/76-60/P 66 Rev)
- S Alborgotti R Attendoli E Calligariach R Dolfini G Cecchet, C Mantovani, L Mapelli, S Ratti (Pavia); G Alexander Y Oren A Levy D Lissauer, Y Gnat (Tel-Aviv); C Borreani F Marchetto E Menichetti B Quaissiati, G Rinaudo A E Werbrouck (Torino); Spokesman: G Rinaudo: Proposal to Investigate Direct Electron Production from pp Collisions at 70 GeV in BEBC Equipped with a Neutrino Track Sensitive Target (CERN/SPSC/76-61/P 74)
- P Astbury, A Duane, S L Lloyd D P Owen D M Weisdale M C S Williams A Wylie (Imperial College); J G McFwen (Southampton); Spokesman: A Duane and D P Owen: Proposal to Supplement the WA 11 Apparatus by Adding an Electromagnetic Shower Detector (SPSC/76-65/P 75)
- Proposal P 30,Addendum 5/Proposal P 33,Addendum 3 (CERN/SPSC/76-72/P 30/Add 5/P 33/Add 3)
- Aachen-Bonn-CERN-Oxford Collaboration; Spokesman: D R O Morrison: Letter of Intent on the Study of Neutrino and Anti-Neutrino Interactions in BEBC Filled with Hydrogen Using a Narrow Band Beam (CERN/SPSC/76-64/I 2.)
- Proposals and Letters of Intent Received up to August 10 1976 (CERN/SPSC/76-66/G 11)
- Approved SPS Experiments - August 10 1976 (CERN/SPSC/76-67/G 12 Rev)
IX NEXT MEETING

The next meeting of the SPSC will be held on Tuesday and Wednesday September 28 and 29, 1976

An Open Session has been scheduled for Tuesday September 28 at 9:00 in the Main Auditorium. A Closed Session will be held on Wednesday September 29 at 9:00 in the Conference Room, 6th floor, Main Building

R Budde
PROPOSED PROCEDURES FOR PHYSICISTS MAKING EXPERIMENTS

AT CERN

(second revision)

1. No formal distinction is made between the experimental teams containing CERN staff physicists and those which do not. Whenever possible experimental teams working at CERN should be composed at least partly of physicists from institutions of CERN Member States.

2. As a general policy CERN provides the basic facilities for performing experiments on its accelerators, whereas detectors and other equipment specific to each experiment are expected to be taken care of by the teams involved in the experiment, including teams from outside institutions. When a collaboration is formed for carrying out an experiment at CERN all participating institutions should provide physicists to work on the experiment and should contribute a fair share of technical and financial support. The composition of the collaboration and the proposed sharing of support between CERN and the outside institutions should be cleared with CERN before approval of the experiment.

3. For the purpose of points 4 and 5 below the term "outside physicist" refers to those physicists who take part in an experiment at CERN as participants from an
outside institution. The other physicists working at CERN in particular those who are staff members, fellows and fully paid associates are referred to as CERN physicists.

4 (a) Outside physicists are expected/have a reasonable level of technical and financial support from their home institution for the experiments in which they participate at CERN. They should make full use of that support in particular by spending the necessary fraction of their time at the home institution, for preparation of equipment as well as for data handling and computing. It is CERN policy to encourage outside physicists to share their time and activity between CERN and their home institution.

(b) CERN physicists are entitled to a reasonable level of support from CERN for the work they carry out in the laboratory.

5 On request and within the limits of its resources CERN may provide a share of technical and financial support to approved experiments including experiments in which no CERN physicist is involved. This sharing of support takes into account not only the needs of single experiments,
but also the physics priorities of the overall CERN programme. To assist him for matters of technical support, the EP Division leader appoints a staff member as Co-ordinator for technical support.

For each experimental proposal or approved experiment, the corresponding collaboration appoints one spokesman entitled to speak on its behalf. Throughout the preparation and running of an approved experiment, the collaboration should have a contactman in residence at CERN selected in agreement with CERN. The contactman may but need not be the same person as the spokesman.