May 15, 1962.

To : The Members of the Nuclear Physics Research Committee

From : P. Preiswerk

Concerning: The programme for counter experiments, to be discussed at the NPRC meeting of May 16, 1962.

A. Present status of counter experiments at SC and PS

A status report for both SC and PS counter experiments on May 5, 1962 is attached to this memorandum.

B. PS counter experimental programme for Period II

There are no new developments. (See attached list). Decisions by the NPRC on final machine time allocation to experiments S_2, S_5 and S_{15} are still pending.

C. Decisions taken by the Electronic Experiments Committee regarding the programme for counter experiments at the PS for Period III.

The EEC met on 1st, 2nd and 15th May 1962, mainly to continue the discussion of the programme for counter experiments at the PS for Period III (23.10.1962 to 15.2.1963).

In the previous memorandum (3695/p), dated April 9, 1962, a very tentative programme was presented, based on the availability during Period III of the beams c_3, d_9 and q_1 in the South Hall, a_2 in the North Hall and o_3 in the East Area.

In some of these beams the choice between several possible experiments had not been definitely put forward.

After considering the desirability of the several proposed experiments from the point of view of a consistent physics programme in which full use is made of the special features of the PS machine, the following more definite programme is now recommended by the EEC. All counter experiments have been listed for which definite proposals have been received.

Notation:		
	a	first priority
	b	second priority
	(test)	full number of shifts requested only to be allocated after test runs have shown the experiment to be feasible.

Beam	Symbol	Name	Title	Recommended Priority
c_3	C_4	Taylor	p-p inelastic scattering	a
d_9	S_1	Jones	π-p elastic scattering	a
	S_5	Backenstoss	Pion form factor	Decision will be taken after result test run is known.
	C_5	Taylor	π-p diffraction scattering	Not in Period III
	S_{18}	Weber	π-p backward scattering	b(test)
	S_9	von Dardel	Test of special relativity	Not accepted
q_1	S_{17}	Sens	Beta decay of Λ	a(test)
a_2	L_2	Lundby	Strange particle physics	a
	S_{11}	Conversi	$p\bar{p}$ annihilation to electron pair	a(test) Time for production only when more than 35 shifts in beam a_2 are available in Period III.
o_3	S_{14}	Citron	Setting up of muon beam	Not decided

Requested and allocated machine time for

PS counter experiments in Period II

Beam	Symbol	Name	Title	Shifts requested	Shifts allocated by NPRC
c_3	S_8	Taylor	Deuteron production in p-p collisions	20	20
	N_4	Taylor	π -production at small angles	15	12+
d_8	D_6	v.Dardel	π^0 lifetime	12+4 p	15
d_9	S_2	Caldwell	Peripheral processes	30	20+ ?
	S_5	Backenstoss	Pion form factor	15	?
	S_{14}	Citron	μ -p scattering (tests)	10	10 p
a_2	A_2	(Lundby (Roberts	Setting up of beam a_2	15	15
	S_{11}	Conversi	$\bar{p}$-p annihilation to electron pair	30	10
	S_7	Roberts	$\Sigma - \Lambda$ parity	30-40	25 p + 10
q_1	S_6	Cork	$\Sigma - \Lambda$ parity	50 p	30 p + 10
Neutral	S_{15}	Wetherell	Charge exchange scattering	10 p	?

Remarks:

N_4 : Part of this experiment has been completed in Period I

STATUS OF ELECTRONICS EXPERIMENTS ON 5th MAY 1962

			Shifts obtained Jan-May, 1962
1) Citron	μ scattering in Carbon	Experiment completed	38 + o p
2) Rubbia	μ capture in Hydrogen	analysis continues (20% accuracy reached)	10
3) Farley	μ lifetime at rest	a new run is planned	24 + 4 p
4) Conversi	μ radiative capture	experiment completed	18
5) Heintze	search for $\pi^+ - \pi^0$ decay mode	experimental data taking and analysis is going on	64 + 54 p
6) Sens	capture of μ in O^{16}	equipment for preliminary runs ready	0
7) Dick	e^+ polarization	calibration check with positrons of B^8	60 + 18 p
8) Gorodetzky Muller Port Zichichi	muon depolarization in plastic scintillator as function of applied magnetic field (0-10 kilogauss)	some shifts have been allocated to this experiment	0

p means : as parasitic user.

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STATUS OF PS COUNTER EXPERIMENTS ON 5 MAY 1962

1)	Taylor		3 shifts have been allocated for measurements of the total cross section for p-p and p-n interaction at momenta 3.3 4.5 5.8 7.8 and 18.8 GeV/c. When the Glauber correction is applied, there is no detectable difference between the p-p and the p-n cross sections.
	N_4		Measurements were made of the negative particle production by 19 GeV/c proton on the Be and Pb in the range $\frac{1}{2}$ to 8 GeV/c and at angles of 0, 25, 50, 100 and 125 mrad.
2)	Backenstoss S_5	Pion form factor	Calibration of a total absorption detector. Photon production between 0° and 3° Lab by 8 GeV/c pions in H_2 and C measured.
3)	von Dardel D_6	π^o Lifetime	preparing the new run.
4)	Harting S_2	Diboson production	Analysis of the events of the preliminary run. Preparation of equipment for improved experiment.
5)	Lundby A_2, L_2	A_2 Beam	A_2 is being built, preparation of equipment.
6)	Fidecaro S_6	$\Sigma\Lambda$ parity	30 000 pictures to measure Σ^o polarization and 30 000 pictures for a preliminary investigation of the $\Sigma - \Lambda$ parity are being analyzed.

7)	Roberts S_7	$\Sigma - \Lambda$ parity	100 000 pictures have been taken for the Σ^0 polarization measurements and are being analyzed.
8)	Conversi S_{11}	p-p annihilation to electron pair	Test of Equipment.
9)	Citron S_{14}	μ-p scattering	Main effort was devoted to the study of various possibilities to extract a high flux of π-mesons from target in the East Area.
10)	Sens S_{17}	Beta decay of the Λ	Construction of equipment.