FACILITY UTILIZATION SUMMARY -- APRIL 1977

I. Summary of Accelerator Operations

			Hours	
A. Accelerator use for physics research				
Accelerator physics research			60.6	
High energy physics research			305.0	
Research during other use			(14.7)	
		Subtotal		365.6
B. Other activities				
Accelerator setup and tuning to experimental areas			2.3	
Program interruption	Scheduled	257.0	259.1	
	Ad hoc	2.1		
Unscheduled interruption			92.0	
		Subtotal		353.4
C. Unmanned time				
		Total		719.0*

II. Summaries of High Energy Physics Research Use

	# of Expts.	Hours	Results
A. Counter experiments	11	2288.4	4 expts. completed
B. Bubble chamber experiments	-	-	-
C. Emulsion experiments	1	-	1 stack in progress
D. Special target experiments	1	-	1 target irradiation
E. Test experiments	-	-	-
F. Engineering studies and tests	-	-	-
G. Other beam use	-	-	-
	13	2288.4	

III. Number of Protons Accelerated and Delivered ($\times 10^{18}$ ppp)

A. Beam accelerated in Main Ring				1.28†
B. Beam delivered to experimental areas				
Meson Area			0.27	
Neutrino Area			0.82	
	Slow Spill	0.02		
	Fast Spill	0.80		
Proton Area			0.03	
		Total		1.12

*One hour lost in changeover to CDT

†Includes 0.02×10^{18} accelerated to 450 GeV.

BEAM UTILIZATION BY

	Beam	Run Dates	Hours
MESON AREA			
Nuclear Chemistry #81A	M0	4/7	-
Backward Scattering #290	M6W	4/1-4/19	250.2
n-N Inelastic #438	M3	4/1-4/18	248.5
Multi-Muon #439	M2	4/1-4/19	278.7
Form Factor #456	M1W	4/1-4/13	169.5
High Energy Channeling #507	M1W	4/14-4/19	111.6
NEUTRINO AREA			
Neutrino #310	N0	4/1-4/20	266.0
Particle Search #379	N5	4/1-4/20	266.5
Emulsion/ν #536	N0	4/1-4/20	-
PROTON AREA			
p-p Elastic #177A	PW	4/1-4/18	135.3
Di-Lepton #288	PC	4/7-4/19	98.0
Photoproduction #401	P1	4/2-4/19	180.7
INTERNAL TARGET			
p-N Scattering #198A	C0	4/1-4/19	283.4
HOURS FOR EXPERIMENTS			2288.4

EXPERIMENT -- APRIL 1977

Activities

data: 1 target exposed to 400-GeV protons

tests & data: 30 and 50 GeV/c $\pi^+ p \rightarrow p\pi^+$ with forward and backward magnetic spectrometers

data: complete; neutron inelastic cross sections on various complex nuclei

tests & data: high mass multi-muon states produced by 400-GeV protons on a magnetized iron beam dump

data: complete; form factor of the K^- meson by $K^- e$ scattering at 250 GeV/c

tests & data: channeling of +35 GeV/c and +250 GeV/c hadrons by a cooled single crystal of Germanium

data: antineutrino events in an iron scintillator targets calorimeter with a downstream toroidal muon spectrometer

data: 400-GeV protons on a variable density target calorimeter with a downstream toroidal muon spectrometer

data: emulsion stack in an antineutrino beam produced by the sign selected bare target train

data: complete; p-p elastic scattering at 400 GeV, $-10 \leq t \leq 15$ $(GeV/c)^2$ with a two-arm spectrometer

setup & tests: high-mass dimuon states with a two-arm spectrometer and beryllium absorber

setup & tests: production of high mass states by a broad band photon beam

data: complete; p-p scattering up to 270 GeV and $|t| = 2 (GeV/c)^2$

At the right, construction of the concrete pad for the cooling-ring experiment (see NALREP, December 1976) is taking place. It will be covered by a prefabricated steel-frame building. Protons of energy 200 MeV will be brought from the linac through the proton-radiography port, visible at the lower left of the new ring.

At the left of the photograph beyond the West Gallery, we see the rearrangement of the booster shielding berm that is taking place as part of the construction of a backward injection line that will join the Main Ring at F17.