SUMMARY OF OPERATIONS - JUNE 1978

Program Planning Office

The shutdown for facility maintenance and development which began on May 22 was ended during the month of June and there was a resumption of activities in the experimental areas. The startup of the accelerator following this shutdown was slower than usual and there was some difficulty in achieving the normal operating intensity. During the two weeks of operation in June there were several interruptions for repairs, as can be seen in the operations history on the facing page.

Fortunately the experimental program fared reasonably well with the lower-than-normal intensities. This was due to the fact that most experiments were in a startup phase. In the Neutrino Area a new dichromatic train was tuned using a 300-GeV proton beam extracted especially for that purpose. Later new counter apparatus on the neutrino beam line in Lab E was also tested.

Very soon after the startup of operations the photoproduction experiment using the tagged-photon beam in P-East began collecting data. Consequently most of the available intensity was sent to that experimental area. There was a continuation of experiments in the Meson Area with a goal of completing or providing a significant amount of data for all of them before the "Pause." This interruption of experimental activities is now planned to begin on September 5. This date is projected as the tentative start of the next shutdown for maintenance and development if additional funds are available this fiscal year for electrical power.

FERMI NATIONAL ACCELERATOR LABORATORY
MONTHLY OPERATIONS HISTORY
JUNE 1978

Date	Accelerator	Internal Target Area	Proton Area	Neutrino Area	Meson Area
Thu. 6/1					
Fri. 6/2					
Sat. 6/3	Facility Maintenance & Development				
Sun. 6/4	(since May 22)				
Mon. 6/5					
Tue. 6/6					
Wed. 6/7					
Thu. 6/8					
Fri. 6/9	Reprs:345 KV Pwr Lines				
Sat. 6/10					
Sun. 6/11					
Mon. 6/12	Accelerator Startup & Tuneup for High Energy Physics				
Tue. 6/13					
Wed. 6/14					
Thu. 6/15					
Fri. 6/16	~4×10^{12}ppp		Photoprod.152B (PE)		Had.Dissoc. 272 (M1E)
Sat. 6/17	Tuning:Encl.C losses	OFF	Di-Lepton 288 (PC)		Bkwd. Scatt. 290 (M6W)
Sun. 6/18	~5.0×10^{12}ppp @300/400 GeV		Nuclear Scaling 592 (PW)	Tune dichro.train Neutrino 356 (NO)	K Charge Exch.585 (M4)
Mon. 6/19	Reprs: ES40				OFF (M2,M3)
Tue. 6/20					
Wed. 6/21	Accel. Repairs, Tuneup for HPP	Switch to H+ ion source			
Thu. 6/22	~1.0×10^{13}ppp @400 GeV (1 sec.flattop)				
Fri. 6/23		OFF			Same as above but Ξ^0 Prod.495 (M2)
Sat. 6/24					
Sun. 6/25					
Mon. 6/26	Accelerator Maintenance & Development				
Tue. 6/27					
Wed. 6/28	Accelerator Startup				
Thu. 6/29	Lambertson Installation continues				
Fri. 6/30	Alignment of extraction devices				

BEAM UTILIZATION BY

	Beam	Hours
PROTON AREA		
Photoproduction #152B	PE	140
Di-Lepton #288	PC	140
Nuclear Scaling #592	PW	90
NEUTRINO AREA		
Neutrino #356	N0	80
MESON AREA		
Nuclear Chemistry #81A	M0	-
Hadron Dissociation #272	M1E	110
Backward Scattering #290	M6W	100
Ξ^0 Production #495	M2	10
K Charge Exchange #585	M3	120
TOTAL HOURS FOR HIGH ENERGY PHYSICS		790

EXPERIMENTAL ACTIVITY -- JUNE 1978

Activities

tuneup and data: for study of elastic and inelastic Compton scattering

data: for high resolution study of the dimuon spectra produced by 400-GeV protons

data: to study connection between scaling phenomena and the determination of structure functions in the inclusive reaction $pA \rightarrow (p, d, t, \pi, K)X$

tuneup: for study of deep inelastic ν, $\bar{\nu}$ scattering using a dichromatic beam

data: 2 targets exposed

tuneup and data: for study of inelastic Coulomb excitation and diffractive production of hadrons

tuneup and data: $\pi^- p$ backward elastic scattering at 70 GeV/c incident momentum

tuneup: for measurement of the production spectrum and polarization of Ξ^0 and $\overline{\Lambda^0}$ hyperons

tuneup and data: for study of KN charge exchange scattering

FACILITY UTILIZATION SUMMARY -- JUNE 1978

I. Summary of Accelerator Operations

	Hours	
A. Accelerator use for physics research		
Accelerator physics research	0	
High energy physics research	161.1	
Subtotal		161.1
B. Other activities		
Accelerator setup and tuning to exp. areas	39.0	
Program interruption	333.4	
Unscheduled interruption	186.5	
Subtotal		558.9
C. Unmanned time		
Total		720.0

II. Summaries of High Energy Physics Research Use

	# of Expts.	Hours	Results
A. Counter experiments	8	790	
B. Bubble chember experiments			
C. Emulsion experiments			
D. Special target experiments	1		2 targets exposed
E. Test experiments			
F. Engineering studies and tests			
G. Other beam use			
Totals	9	790	

III. Number of Protons Accelerated and Delivered @ 400 GeV ($\times 10^{18}$p)

A. Beam accelerated in Main Ring	0.44
B. Beam delivered to experimental areas	0.42 (all 400 GeV except some 300 GeV to Neutrino Area)
Meson Area	0.08
Neutrino Area	
Slow Spill	0.0
Fast Spill	0.04 (300 & 400 GeV)
Proton Area	0.30

Victor Kirkman feeding one of this year's crop of buffalo calves. This one was rejected by its mother, but is doing fine with bottle feeding.

(Photograph by Fermilab Photo Unit)