

SUMMARY OF OPERATIONS - MARCH 1980

Program Planning Office

The accelerator has been undergoing maintenance and development for the past two months and began new operations at the end of March. The start-up was distributed over a number of separate periods in order to aid in the identification and solution of any problems which may have been incurred over the long shutdown. Also, during one of these periods, M4 beam tests were conducted in order to make that line operational for the first time since the Mesopause. The high-energy physics program resumed on March 21 with the accelerator running at 350 GeV.

During March all but one experiment was in a start-up or check-out mode. The only data-taking experiment was Particle Search #580 (M6). The failure of the M-West magnetic septa disrupted smooth operation in the M6 line. The temporary replacement, an EPB dipole, has allowed continued operation of that line, but Particle Search #580 has noted a reduction in rates. The M4 beam tests conducted during the start-up proved fruitful with Kaon Charge Exchange #585 reporting rates at pre-Mesopause levels.

FERMI NATIONAL ACCELERATOR LABORATORY
 MONTHLY OPERATIONS HISTORY
 MARCH 1980

Date	Accelerator	Internal Target Area	Proton Area	Neutrino Area	Meson Area
Sat. 3/1					
Sun. 3/2					
Mon. 3/3			M & D		
Tue. 3/4					
Wed. 3/5					
Thu. 3/6					
Fri. 3/7			Accelerator Startup		
Sat. 3/8					
Sun. 3/9					
Mon. 3/10					
Tue. 3/11			M & D		
Wed. 3/12					
Thu. 3/13					
Fri. 3/14			Accelerator Startup & Tuneup Meson (M4) Tests @200 GeV		
Sat. 3/15					
Sun. 3/16					
Mon. 3/17					
Tue. 3/18			M & D		
Wed. 3/19					
Thu. 3/20			Accelerator Startup		
Fri. 3/21					
Sat. 3/22	350 GeV 0.5 sec flattop		516 (PE) 326 (PW)	595 (N5) 610 (N1) 594 Test (NO)	580 (M6) 515 (M1) 585 (M4) OFF (M2,M3)
Sun. 3/23					
Mon. 3/24					
Tue. 3/25			Accelerator Research and Maintenance		
Wed. 3/26					
Thu. 3/27			Accelerator Startup		
Fri. 3/28	$\sim 7.0 \times 10^{12}$ ppp @350 GeV	591	516 (PE) 326 (PW)	595 (N5) 610 (N1) 594 Test (NO)	580 (M6) 515 (M1) 585 (M4) OFF (M2,M3)
Sat. 3/29	0.5 sec flattop				
Sun. 3/30	10 sec rep rate				
Mon. 3/31	Reprs: Linac; Preacc.				

BEAM UTILIZATION BY

	<u>Beam</u>	<u>Hours</u>
PROTON AREA		
Dimuon #326	PW	130
Photoproduction #516	PE	160
NEUTRINO AREA		
Particle Search #610	N1	100
Particle Search #595	N5	110
MESON AREA		
Particle Search #515	M1	160
Kaon Charged Exchange #585	M4	160
Particle Search #580	M6	160
INTERNAL TARGET AREA		
Particle Search #591	C0	160
		<hr/>
TOTAL HOURS FOR HIGH ENERGY PHYSICS		1140

EXPERIMENTAL ACTIVITY - MARCH 1980

Activities

start-up; beam line tune time in counters, and trigger studies

start-up; fixed tagging system and studied drift chambers

start-up; timing counters

start-up; beam line check-out and test data

start-up; beam line tune-up

start-up; set-up beam line and checked out chambers

start-up and data at 250 GeV

Initial check-out of equipment

FACILITY UTILIZATION SUMMARY - MARCH 1980

I. Summary of Accelerator Operations

	<u>Hours</u>	
A. Accelerator use for physics research		
High energy physics research	158.6	
Accelerator physics research	16.7	
Subtotal		175.3
B. Other Activities		
Program interruption	306.1	
Accelerator setup and tuning to experimental areas	244.5	
Subtotal		550.6
C. Unscheduled interruption		18.1
D. Unmanned time		-
Total		744.0

II. Summaries of High Energy Physics Research Use

	<u># of Expts.</u>	<u>Hours</u>	<u>Results</u>
A. Counter experiments	8	1140	
B. Bubble chamber experiments	-	-	
C. Emulsion experiments	-	-	
D. Special target experiments	-	-	
E. Test experiments	1	10	
F. Engineering studies and tests	-	-	
G. Other Beam Use	-	-	
Totals	<u>9</u>	<u>1150</u>	

III. Number of Protons Accelerated and Delivered ($\times 10^{17}$) at 350 GeV

A. Beam accelerated in Main Ring	2.99
B. Beam delivered to experimental areas	2.92
Proton Area	0.28
Neutrino Area	
Slow Spill	0.31
Fast Spill	0.07
Meson Area	2.26