RESEARCH ACTIVITIES DURING DECEMBER 1976

James MacLachlan

The accelerator operated for high-energy physics 343 of 595 hours scheduled in the month of December. The principal emphasis for the entire month was on the delivery of high-intensity 2-msec spill to the Neutrino Area for Neutrino #310. The low 58% operating efficiency reflects problems in the experimental areas as well as with the accelerator itself; however, continued progress on accelerator intensity made it possible to achieve important progress in the experimental program. A Booster accelerator intensity of 3×10^{13} p/Main-Ring pulse on Saturday, December 21, was followed by a new Main-Ring mark of 2.47×10^{13} protons/pulse the next day. As in November, the Main-Ring pulsed power feeder system caused the greatest interruption to the program. Once again a feeder fault under a service building was compounded by secondary faults in splices, thereby interrupting operation for $2\frac{1}{2}$ days starting Sunday morning, December 5. Nearly as great a disruption was caused by the loss of a preaccelerator ion source filament on December 13. The pump-down and conditioning of the new filament so limited intensity that scheduled accelerator studies and M&D were moved up a day; by the following weekend, beam intensity was again approaching 2×10^{13} p/pulse. Starting Monday, the 20th, the flattop was reduced to 100 msec to provide for fast extraction of the entire beam to the Neutrino Area. With this ramp it became possible to reduce the cycle time to about 6.8 sec and to average 10^{16} protons/hour. This mode of running was interrupted by a Christmas standby period of Friday through Sunday, December 24 through December 26,

inclusive. Operation was reestablished promptly following the standby. The high average intensity proved too much for a collimator on the Neutrino target train and the special period for neutrino running was curtailed on December 29. The Neutrino Area was turned off for repairs and accelerator studies were carried out while the backup program in the Proton Area was activated. The last day of the month the accelerator switched over to a 200/300 GeV ramp with 2 sec flattops at each energy for the backup program. By the end of the month, spill regulation problems etc. were under control, and the new mode of operation appeared to be successfully established.

The Neutrino Area was the focus of the research program throughout the month. Muon #398 was completed on December 1, and two days later Neutrino #310 was started up with a 2 msec spill. At $\sim 2\times 10^{13}$ p/pulse E310 obtained about 1 trigger per 3 pulses by gating the single triggers to the last part of the spill to enhance the fraction of multimuon triggers. The experiment received over 10^{18} protons on target and recorded somewhat over 30K optical spark-chamber pictures, including several hundred di-muon candidates. The 15-ft bubble chamber was scheduled to run in December for 15' tests of the proposal 15-ft ν/H_2 & Ne #460. The EMI was reconfigured by removing wider angle planes from the chamber and setting them behind the chamber in an outside shelter to provide double planes in the central region. The chamber itself had a varied set of problems, including leaks in recently modified optics ports, helium liquifier and expansion engine difficulties, and pluts in liquid helium lines. The chamber began producing pictures for physics on Wednesday, December 22, and on the next day, set a new record

of 10K pictures in a 24-hour period. The chamber was still operating satisfactorily after the holiday standby, although liquid helium production was marginal. The run for the experiment ended on December 29 with about 22K pictures in the 58% Ne mixture. Neutrino #482 was taking test data in Lab E throughout the month. During the high repetition rate running, an emulsion stack for Emulsions/New Particles #386 was placed in the neutrino beam. This experiment sought evidence for interactions of two energy neutrals in a low background emulsion poured locally and developed promptly. All beam to the Neutrino Area ended during the morning of Wednesday, December 29, when it was found that all three experiments were reporting 80-90% decrease in triggers. A visual examination of the train disclosed that the 8-ft steel collimator immediately downstream of the target had sagged into the beam. The heat resulting from the secondaries during the high-intensity running had heated the collimator to the point where it could no longer support its own weight.

The Proton Area crews worked vigorously in early December to restore Proton-East for Particle Search #325, following the completion of Photon Total Cross Section #25A on November 30. E325 began to run Saturday, December 11, and returned to data taking after a couple of days of startup and used 1.1×10^{17} protons on target at 400 GeV. The Proton Area went into standby December 20 during the high intensity running to the Neutrino Area, but following the train failure, all three lines started to come back up for the 200/300 GeV running which began on December 31. Proton-Central and Proton-West continued this month with Di-Hadron #494 and p-p

Elastic #177A respectively. During the standby period, E177A adjusted their target and recoil arm position to prepare for data taking at 200 GeV. That work was quickly completed for the unexpected reactivation of the area.

The Meson Area also had few changes from the November program. The biggest change was the installation of Multi-Muon #439 in the M2 line for tests of its magnetized beam dump approach to looking for high mass states with multi-muon decays. The experiment calls for $\sim 10^{10}$ protons/pulse, and, therefore, a major part of the test was establishing the feasibility of proper environmental shielding by piecemeal installation of shielding around the experiment. These tests appear successful, and the experiment reportedly works about as proposed, producing a clean, strong ψ signal. Form Factor #456 gathered data steadily in the M1W beam line, and Neutron Elastic #248 ran smoothly to completion in M3. In the M4 beam line, K^o Regeneration #226/#486 turned early in the month to data taking on the electron regeneration (E226) part of the experiment. Inclusive Scattering #118A devoted the month to completion of their -175 GeV data. They finished with enough time remaining to permit Di-Lepton #288 to use the single arm spectrometer to measure energy loss of muons in beryllium at 50 GeV. Beam to the Meson Area was turned off on December 20 as scheduled for the neutrino running.

Helium liquifier problems persisted in the Internal Target Area. Partly as a result of bringing in liquid helium, p-N Scattering #381 managed to run about half of the available time in the first two-thirds of the month p-p Polarization #313 also collected some data during the high repetition rate running before Christmas.

FACILITY UTILIZATION SUMMARY -- DECEMBER 1976

I. Summary of Accelerator Operations

			Hours	
A. Accelerator use for physics research				
Accelerator physics research			55.8	
High energy physics research			343.0	
Research during other use			(44.3)	
		Subtotal		398.8
B. Other activities				
Accelerator setup and tuning to experimental areas			11.6	
Program interruption	Scheduled	75.5	130.0	
	Adhoc	54.5		
Unscheduled interruption			203.6	
		Subtotal		345.2
C. Unmanned time				-
		Total		744.0

II. Summaries of High Energy Physics Research Use

	# of Expts.	Hours	Results
A. Counter experiments	13	2118.2	2 experiments complete
B. Bubble chamber expts.	-	-	
C. Emulsion experiments	1	-	1 stack; complete
D. Special target expts.	2	-	2 exposures
E. Test experiments	-	-	-
F. Engineering studies & tests	5	241.7	Yields in N3 line et al. & 22K 15-ft pictures
G. Other beam use	-	-	
	21	2359.9	

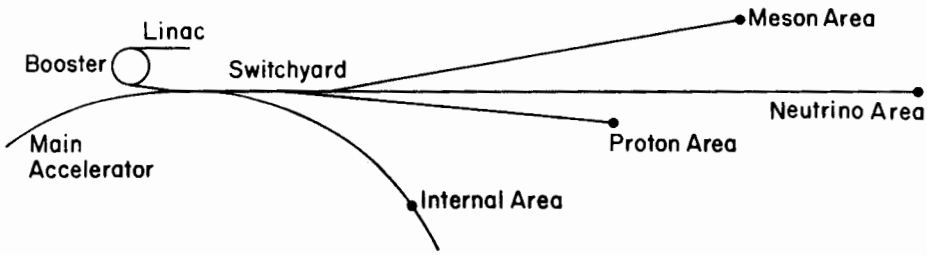
III. Number of Protons Accelerated and Delivered ($\times 10^{18}$)

		200/300 GeV		400 GeV	Total
A. Beam accelerated in Main Ring		0.04		2.05	2.09
B. Beam delivered to expt. areas		200	300	400	
Meson Area		0.00	0.00	0.28	
Neutrino Area					
	Slow Spill	0.00	0.00	0.04	
	Fast Spill	0.00	0.00	1.24	
Proton Area		0.02	0.01	0.13	
	Totals	0.02	0.01	1.69	1.72

IV. Beam Utilization by Experiment

	Hours	Results
A. Meson Area		
Nuclear Chemistry #81A	-	1 exposure
Inclusive Scattering #118A	195.8	Data
K^0 Regeneration #226/#486	221.5	Data
n Elastic Scattering #248	209.6	Data
Di-Lepton #288 Tests	12.7	dE/dx for μ in Be
Particle Search #439	167.6	Tests
Form Factor #456	225.1	Data
B. Neutrino Area		
Neutrino #310	241.6	Data
Emulsions/New Particles #386	-	1 stack; complete
Muon #398	6.7	Data; complete
Neutrino #482	173.9	Setup and test data
C. Proton Area		
p-p Elastic #177A	171.6	Data
Particle Search #325	119.0	Data
Nuclear Fragments #466		1 target exposure
Di-Hadron #494	193.9	Data
D. Internal Target Area		
p-p Polarization #313	49.2	Data
p-N Scattering #381	142.7	Data
Total	2130.9	

Fermi National Accelerator Laboratory



Experiments in the Research Areas

JANUARY - APRIL, 1977

Internal Area	Proton Area	Neutrino Area	Meson Area
PROTON-NUCLEON SCATT. #198A	PROTON EAST: PARTICLE SEARCH #325 PHOTOPRODUCTION #401	HADRON BEAM: PARTICLE SEARCH #379	M1 BEAM: POLARIZED SCATTERING #61 INCLUSIVE SCATTERING #324 FORM FACTOR #456
P-P POLARIZATION #313	PROTON CENTER: DI-LEPTON #288 DI-HADRON #494	NEUTRINO BEAM: 15-FT B.C. NEUTRINO #310	M2 BEAM: PARTICLE SEARCH #439 LAMBDA MAGNETIC MOMENT #440 INCLUSIVE NEUTRAL MESON #350
PROTON-NUCLEON SCATT. #381	PROTON WEST: P-P ELASTIC #177A	MUON/HADRON BEAM: PARTICLE SEARCH #369	M3 BEAM: NEUTRON-NUCLEUS INELASTIC #438
NUCLEAR FRAGMENTS #442			M4 BEAM: K^0 CHARGE RADIUS #226
			M6 BEAM: MULTIPARTICLE #110A BACKWARD SCATTERING #290 HADRON DISSOCIATION #396

PAGE 2 EXPERIMENTAL PROGRAM SITUATION REPORT (CONT'D)

AREA-BEAM		SPOKESPERSON	EXTENT OF RUN TO DATE	DATE COMPLETED
	LONG-LIVED PARTICLES #239	BATI	350 HOURS	3 FEB 74
	QUARK #276	VAN GINNEKEN	3 TARGETS EXPOSED	2 NOV 75
	SUPER-HEAVY ELEMENTS #285	LEDERMAN	3 TARGET EXPOSURES	2 AUG 76
	EMULSION/NEW PARTICLES #306	LORD	1 STACK	1 DEC 76
	DETECTOR DEVELOPMENT #34	HUGGETT	50 HOURS	26 JUN 74
	QUARK #297	LEIPUNER	50 HOURS	10 JUL 74
	DETECTOR DEVELOPMENT #327	ALLISON	50 HOURS	7 FEB 75
	PLASTIC DETECTORS #275	EDGE	4 STACKS	20 OCT 73
	EMULSION/PROTONS @ 300 #101	CARY	3 STACKS	20 OCT 73
	EMULSION/PROTONS @ 300 #195	LIN	3 STACKS	10 JUN 75
	EMULSION/PROTONS @ 300 #232	KING	2 STACKS	20 OCT 73
	EMULSION/PROTONS @ 300 #233	MEDORT	6 STACKS	20 OCT 73
	EMULSION/PROTONS @ 300 #237	LORD	5 STACKS	10 JUN 75
	EMULSION/PROTONS @ 300 #242	WIN	2 STACKS	20 OCT 73
	EMULSION/PROTONS @ 300 #244	JAIN	1 STACK	20 OCT 73
	EMULSION/PROTONS @ 300 #250	KUSUMOTO	1 STACK	20 OCT 73
	EMULSION/PROTONS @ 300 #329	TRETJAKOVA	2 STACKS	10 JUN 75
	EMULSION/PROTONS @ 300 #374	DAVIS	1 STACK	10 JUN 75
	EMULSION/PROTONS @ 300 #419	GIACOMELLI	1 STACK	10 JUN 75
	EMULSION/PROTONS @ 300 #421	BEHELEPOV	1 STACK	24 JUN 75
	EMULSION/PROTONS @ 200 #271	GOTTFRIED	10 STACKS	10 JUN 75
	EMULSION/MUONS @ 150 #255	JAIN	1 STACK	16 OCT 73
	EMULSION/MUONS @ 150 #205A	KUSUMOTO	2 STACKS	16 OCT 73
	EMULSION/PI- @ 200 #264	YOUNG	2 STACKS	7 OCT 74
	EMULSION/PI- @ 200 #328	TRETJAKOVA	5 STACKS	7 OCT 74
	EMULSION/PI- @ 200 #339	WOLFER	4 STACKS	9 JUN 75
	EMULSION/PI- @ 200 #362	JAIN	1 STACK	9 JUN 75
	EMULSION/PI- @ 200 #367	WILKES	4 STACKS	9 JUN 75
	EMULSION/PROTONS @ 400 #233	LORD	9 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #243	WIN	7 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #245	JAIN	1 STACK	9 DEC 75
	EMULSION/PROTONS @ 400 #249	WOLFER	3 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #251	KUSUMOTO	3 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #265	YOUNG	3 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #279	WING	3 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #292	GOTTFRIED	12 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #336	OGATA	2 STACKS	9 DEC 75
	EMULSION/TRUTONS @ 400 #346	EKSDONG	1 STACK	9 DEC 75
	EMULSION/PROTONS @ 400 #385	TSARASH	1 STACK	9 DEC 75
	EMULSION/PROTONS @ 400 #434	SOKEMOTO	4 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #435	MEDORT	14 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #436	BARE	3 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #461	LORD	6 STACKS	9 DEC 75
	EMULSION/PROTONS @ 400 #462	GIACOMELLI	1 STACK	9 DEC 75
	EMULSION/PROTONS @ 400 #463	TRETJAKOVA	2 STACKS	9 DEC 75
	TRACTOR SUPPORT #202	BARTLETT	COSMIC RAY FUNDING	19 MAY 76
DA -PD	PROTON TOTAL CROSS SECTION #25A	CALDWELL	1,850 HOURS	30 NOV 76
	PHOTOPRODUCTION #87A	LEE	2,500 HOURS	21 DEC 75
	PARTICLE SEARCH #130A	LIEBOVE	1,150 HOURS	4 APR 74
	PARTICLE SEARCH #300	CHONIN	750 HOURS	24 APR 76
	EMULSION/SLAC-LOUS @ BE 2 #340	BAKER	10 STACKS	5 OCT 76
	DI-MUON #356	LEE	400 HOURS	1 OCT 75
	EMULSION/ELECTRONS @ >100 #399	GOLDEN	6 STACKS	5 OCT 76
	DETECTOR DEVELOPMENT #493	GRUZE	50 HOURS	16 AUG 76
	EMULSION/ELECTRONS @ BI 2 #510	WIN	6 STACKS	5 OCT 76
-PC	MUON SEARCH #40	ADAIR	500 HOURS	1 DEC 75
	LEPTON #70	LEDERMAN	2,600 HOURS	1 DEC 74
	PARTICLE SEARCH #107	LEDERMAN	200 HOURS	6 NOV 73
	MUON SEARCH #425	ADAIR	250 HOURS	2 JUL 76
	DI-MUON #436	ADAIR	200 HOURS	29 OCT 75
-PP	PARTICLE PRODUCTION #284	WALKER	1,150 HOURS	3 OCT 76
ITA-C-D	PROTON-PROTON SCATTERING #10A	COOL	700 HOURS	24 JUN 73
	PHOTON SEARCH #63A	WALKER	2,600 HOURS	13 MAR 75
	PROTON-PROTON MISSING MASS #67A	SAMMES	600 HOURS	3 AUG 73
	MAGNOM SEARCH #120	CLINE	1,200 HOURS	29 MAY 73
	PARTICLE SEARCH #184	ZAMBONI	800 HOURS	29 MAY 74
	PROTON-DEUTERON SCATTERING #186	BELISARIOS	450 HOURS	19 AUG 74
	PROTON-NUCLEON INCLUSIVE #198	SAMMES	1,050 HOURS	9 MAY 73
	PROTON-PROTON INELASTIC #221	FRANKLIN	950 HOURS	5 SEP 74
	PROTON-NUCLEON INELASTIC #317	COOL	1,400 HOURS	1 NOV 75
	PROTON-PROTON INELASTIC #321	LEE-FRANZINI	1,900 HOURS	20 SEP 76
	PARTICLE SEARCH #363	OLSEN	650 HOURS	9 APR 75
	PARTICLE PRODUCTION #418	SAMMES	950 HOURS	22 OCT 75

I. EXPERIMENTS THAT ARE IN PROGRESS (37):

			EXTENT OF RUN TO DATE	DATE OF RECENT RUN
MT -PP	TOTAL CROSS SECTION #104	COOL	1,400 HOURS	1 JAN 75
	INCLUSIVE SCATTERING #324	WEISBERG	900 HOURS	1 JAN 77
	SHADOW JETS #266	HOGGETT	1,200 HOURS	1 OCT 76
	POLARIZED SCATTERING #01	CHAMBERLAIN	700 HOURS	1 JUL 76
	BOSE FACTOR #450	STORK	650 HOURS	1 JAN 77
-NP	EXCLUSIVE NEUTRAL MESON #350	KENNEY	400 HOURS	1 OCT 76
-MM	K ZERO CHARGE RATIOS #220	WILSON	300 HOURS	1 JAN 77
	K ZERO CROSS SECTION #480	EINSTEIN	550 HOURS	1 JAN 77
-PM	EXCLUSIVE SCATTERING #119A	FRIEDMAN	2,150 HOURS	1 JAN 77
-PARES	BRUTAL CHERENKOV #81A	KAUFMAN	149 BOMBARDMENTS	1 JAN 77
DA -MUONTRON	15-FOOT BUBBLE/N2 #45A	PETERSON	162K PIX	1 APR 76
	15-FOOT ANTI-NEUTRINO/N2 #31A	DERRICK	64K PIX	1 APR 76
	15-FOOT ANTI-NEUTRINO/N2 BLOCK 180	MUNSEE	76K PIX	1 JUL 75
	15-FOOT NEUTRINO/N2 & BE #53A	GALTAY	64K PIX	1 JUL 76
	NEUTRINO #313	CLINE	1,200 HOURS	1 JAN 77
-MUON/HADRON	TEST MUON TRANSLATION #501	LANDE	2 TARGET EXPOSURES	1 JAN 77
-15-.T	15-FOOT PI- - C @ 100 #63A	MIYAGAWA	31K PIX	1 APR 75
	15-FOOT PI- - BUBE @ 200 #69	TRESTER	4K PIX	1 JUL 75
	15-FOOT PI- - P @ 300 #304	HUSON	20K PIX	1 APR 76
-90-13	30-INCH HYDRIB #299	FLESS	43K PIX	1 JAN 77
	30-INCH BEBS - D @ 100 #345	EKSDONG	61K PIX	1 OCT 76
PA -PP	PARTICLE SEARCH #325	CROWIN	800 HOURS	1 JAN 77
	MULTIPLE FRAGMENTS #400	KAUFMAN	4 TARGET EXPOSURES	1 JAN 77
-PC	DI-LEPTON #260	LEDERMAN	2,900 HOURS	1 JAN 77
	DI-HADRON #494	GOOD	1,400 HOURS	1 JAN 77
-PN	SHOTCH SEARCH #95A	COX	1,850 HOURS	1 JAN 77
	PROTON-PROTON ELASTIC #177A	CLEAR	1,450 HOURS	1 JAN 77
ITA-C-D	PROTON-NUCLEON SCATTERING #198A	OLSEN	1,550 HOURS	1 JAN 77
	PROTON-PROTON POLARIZATION #313	FRAL	1,400 HOURS	1 JAN 77
	PROTON-NUCLEON SCATTERING #361	BALANUD	250 HOURS	1 JAN 77
	NUCLEAR FRAGMENTS #442	TURKOT	200 HOURS	1 JAN 77

PAGE 3 EXPERIMENTAL PROGRAM SITUATION REPORT (CONT'D)

AREA-BEAM		SPOKESPERSON	EXTENT OF RUN TO DATE	DATE OF RECENT RUN
C. EXPERIMENTS THAT ARE IN TEST STAGE (5):				
MA -M2	MULTI-MUON #439	GARELICK	150 HOURS	1 JAN 77
-M6	HADRON DISSOCIATION #396	GOULIANOS	300 HOURS	1 OCT 76
	MULTIPARTICLE #110A	DZIERBA	50 HOURS	1 OCT 76
NA -NEUTRINO	NEUTRINO #482	BARISH	250 HOURS	1 JAN 77
-15-FT	PARTICLE SEARCH #379	WOJCICKI	450 HOURS	1 JAN 77
D. EXPERIMENTS BEING INSTALLED (5):			EXTENT OF APPROVAL	
MA -M2	LAMBDA MAGNETIC MOMENT #440	BUNCE	160 HOURS	
-M6	BACKWARD SCATTERING #290	BAKER	900 HOURS	
NA -MUON/HADRON	PARTICLE SEARCH #369	KIRK	600 HOURS	
-OTHER	MONOPOLE #502	BARTLETT	COSMIC RAY RUNNING	
PA -PE	PHOTOPRODUCTION #401	GORMLEY	300 HOURS	
E. EXPERIMENTS TO BE SET UP WITHIN A YEAR (20):				
MA -M1	PARTICLE SEARCH #354	COOL	PARASITIC RUNNING	
	HADRON DISSOCIATION #272	FERBEL	600 HOURS	
-M2	HADRON JETS #395	SELOVE	450 HOURS	
	LAMBDA POLARIZATION #441	PONDROM	150 HOURS	
	INCLUSIVE NEUTRON #404	JONES	PARASITIC RUNNING	
	MUON SEARCH #453	FRISCH	600 HOURS	
	PARTICLE SEARCH #411	VON GOELER	250 HOURS	
	PARTICLE SEARCH #413	VON GOELER	150 HOURS	
	PARTICLE SEARCH #468	STEINBERG	300 HOURS	
-M3	NEUTRON-NUCLEUS INELASTIC #438	JONES	200 HOURS	
-M4	INCLUSIVE K-SHORT #383	KOBRAK	500 HOURS	
-M6	ASSOCIATED PRODUCTION #99	DIEBOLD	500 HOURS	
	PARTICLE SEARCH #430	SANDWEISS	TEST RUNNING	
NA -NEUTRINO	NEUTRINO #253	MO	PARASITIC RUNNING	
-MUON/HADRON	DI-MUON #444	SMITH	400 HOURS	
	MUON #20JA	KERTH	500 HOURS	
	MUON #391	KERTH	250 HOURS	
PA -PE	PHOTOPRODUCTION #152B	HEUSCH	350 HOURS	
	PHOTOPRODUCTION #450	LEE	300 HOURS	
ITA-C-O	PROTON-HELIUM SCATTERING #289	MALAMUD	700 HOURS	
F. OTHER APPROVED EXPERIMENTS (27):				
MA -M2	LAMBDA-BAR PRODUCTION #495	HELLER	400 HOURS	
-M6	INCLUSIVE SCATTERING #451	BARTON	400 HOURS	
	FORM FACTOR #446	ECKLUND	500 HOURS	
NA -NEUTRINO	15-FOOT NEUTRINO/D2 #151A	SNOW	100K PIX	
	15-FOOT NEUTRINO/D2 #227	ENGELMANN	100K PIX	
	15-FOOT ANTI-NEUTRINO/D2 #390	GARFINKEL	300K PIX	
	NEUTRINO #356	BARISH	1,000 HOURS	
	15-FOOT NEUTRINO/H2 & NE #380	BALTAY	200K PIX	
	15-FOOT ANTI-NEUTRINO/H2&NE#308	STEVENSON	200K PIX	
-15-FT	15-FOOT P - P & NE @ 400 #291	MANN	25K PIX	
-30-IN	30-INCH PI+ & P - P @ 300 #277	BARNES	300K PIX	
	30-INCH PBAR - P @ 200 #392	NEALE	100K PIX	
	30-INCH PI- - P @ 150 #393	PLESS	400K PIX	
	30-INCH PI- - HI 2 @ 300 #304	WALKER	200K PIX	
	30-INCH P - P @ 500 #207	ENGELMANN	50K PIX	
-OTHER	DETECTOR DEVELOPMENT #206	YODH	200 HOURS	
	EMULSION/PI- @ 200 #481	TAKAHASHI	EMULSION EXPOSURE	
	EMULSION/PI- @ > OR = 200 #503	OGATA	EMULSION EXPOSURE	
	EMULSION/PI- @ > OR = 200 #506	DAKE	EMULSION EXPOSURE	
	EMULSION/PROTONS @ 400-500 #499	IWAI	EMULSION EXPOSURE	
	EMULSION/PROTONS @ 500 #508	WOLTER	EMULSION EXPOSURE	
PA -PE	PARTICLE SEARCH #400	PEOPLES	400 HOURS	
	PHI PHOTOPRODUCTION #263	CHEN	600 HOURS	
-PC	CHARGED HYPERON #497	LACH	400 HOURS	
-PW	PION INCLUSIVE #250	PIRONE	800 HOURS	
	C-TEST #302	CESTER-BEGGE	400 HOURS	
	MULTIGAMMA #192	GUIRAGOSSIAN	400 HOURS	
PENDING PROPOSALS (40):			EXTENT OF REQUEST	
MA -M1	DETECTOR DEVELOPMENT #427	YUAN	200 HOURS	
	HIGH ENERGY CHANNELING #507	GIBSON	250 HOURS	
	PARTICLE STUDY #515	ROSEN	1,000 HOURS	
-M2	LAMBDA BETA DECAY #361	PONDROM	300 HOURS	
	PARTICLE SEARCH #477	WEINSTEIN	500 HOURS	
	PROTON POLARIZATION #505	YAMIN	100 HOURS	
-M3	K STAR PRODUCTION #449	ABOLINS	600 HOURS	
	NEUTRON-DEUTERON ELASTIC #479	ROBERTS	300 HOURS	
-M6	HADRON DISSOCIATION #312	EDELSTEIN	1,000 HOURS	
	PARTICLE SEARCH #469	CUTTS	150 HOURS	
	MULTIPARTICLE #523	DZIERBA		
NA -NEUTRINO	NEUTRINO #355	BARISH	1,400 HOURS	
	15-FOOT NEUTRINO/H2 & NE #389	TEWNER	100K PIX	
	15-FOOT NEUTRINO/H2 & NE #455	PETERSON	200K PIX	
	NEUTRINO #496	CHEN	1,000 HOURS	
	15-FOOT NEUTRINO/D2&HI Z #521	VANDER VELDE	200K PIX	
-MUON/HADRON	PION DISSOCIATION #318	ASCOLI	400 HOURS	
	MUON #348	WILSON	800 HOURS	
	DI-MUON #443	PILCHER	400 HOURS	
	MUON #448	WILSON	300 HOURS	
	TEST PARTICLE SEARCH #457	BRANDENBURG	100 HOURS	
	MUON #487	SESSOMS	800 HOURS	
-15-FT	15-FOOT P - P @ > OR = 300 #208	TAKIBAEV	75K PIX	
-30-IN	30-INCH PBAR - P @ 100 #394	WHITMORE	2,000K PIX	
	30-INCH HYBRID #488	PLESS	2,500K PIX	
	30-INCH PIGP - PGNE @ 100 #504	GULJAMOV	30K PIX	
	30-INCH PBAR - D @ 200 #511	FRIDMAN	150K PIX	
PA -PE	PHOTOPRODUCTION #450	CALDWELL	600 HOURS	
	PHOTOPRODUCTION #516	NASH	1,000 HOURS	

NOTES: THE ABILITY TO SET UP THESE EXPERIMENTS DURING THE NEXT YEAR IS CONTINGENT ON THE AVAILABILITY OF FUNDS.

DURING 1977 IT IS PLANNED FOR 30-INCH BUBBLE CHAMBER EXPOSURES TO TOTAL AT LEAST 500K PICTURES.

PAGE 4 EXPERIMENTAL PROGRAM SITUATION REPORT (CONT'D)

AREA-BEAM		SPOKESPERSON	EXTENT OF REQUEST
-FC	CHARGED HYPERON #353	ECKLUND	600 HOURS
-PK	HADRON JETS #246	SELOVE	600 HOURS
	ELASTIC SCATTERING #301	GETTMER	1,000 HOURS
	DI-MUON #326	PIROUE	400 HOURS
	ELASTIC SCATTERING #347	WALKER	1,200 HOURS
	HADRON-NUCLEON SCATTERING #420	GUIRAGOSSIAN	1,100 HOURS
	ELECTROPRODUCTION #454	GUIRAGOSSIAN	1,500 HOURS
	ELECTRON PRODUCTION #518	TAYLOR	500 HOURS
	HADRON JETS #519	SCHLEIN	900 HOURS
ITA-C-0	PROTON-PROTON SCATTERING #500D	FRANZINI	1,000 HOURS
	PROTON POLARIZATION #522	OGREN	840 HOURS