ENTRY NO. 68

NAME OF MACHINE Anna and Louis Hand Cyclotron Complex DATE July 1978
INSTITUTION Mount Sinai Medical Center
ADDRESS 4300 Alton Road, Miami Beach, Florida

IN CHARGE J. E. Beaver REPORTED by J. E. Beaver

HISTORY AND STATUS

DESIGN, date _____ MODEL tests 1971
ENG. DESIGN, date Cyclotron Corp. CS-30
CONSTRUCTION, date _____
FIRST BEAM date (or goal) 1972
MAJOR ALTERATIONS None

OPERATION, 80 hr/wk; On Target 75 hr/wk
TIME DIST., in house 60 %, outside 40 %
USERS' SCHEDULING CYCLE one weeks
COST, ACCELERATOR _____
COST, FACILITY, total _____
FUNDED BY Mount Sinai Medical Center

ACCELERATOR STAFF, OPERATION and DEVELOPMENT

SCIENTISTS 2 ENGINEERS 3
TECHNICIANS 2 CRAFTS 0
GRAD STUDENTS involved during year 0
OPERATED BY _____ Res staff or x Operators
BUDGET, op & dev _____
FUNDED BY Mount Sinai Medical Center

RESEARCH STAFF, not included above

USERS, in house 3 outside 1
GRAD STUDENTS involved during year 0
RES. BUDGET, in house _____
FUNDED BY Mount Sinai Medical Center

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed 90 m^2
movable _____ m^2
TARGET STATIONS 8 in 2 rooms
STATIONS served at same time, max 1
MAG SPECTROGRAPH, type _____
COMPUTER, model _____
OTHER FACILITIES _____
Target facility
Hot cells
Chemistry facility

REFERENCES/NOTES

MAGNET

POLE FACE diameter 91 cm; R extraction 42 cm
GAP, min 7 cm; Field _____ kG
max 12 cm; Field _____ kG
AVERAGE FIELD at R ext _____ kG
} at _____ X 10^6 ampere turns
CURRENT STABILITY _____ parts/10^6; $B_{max}/\langle B \rangle$ _____
NUMBER OF SECTORS 3 ; SPIRAL, max _____ deg
POLE FACE COIL PAIRS: AVF _____ /sec;
Harmonic correction _____
Rad grad _____ /sec or Circ coils _____
WEIGHT: Fe 24 tons; Coils 1 tons
CONDUCTOR, Material and type Copper
STORED ENERGY _____ MJ
COOLING SYSTEM Distilled water
POWER: Main coils 60 max, kW
Trimming coils _____ max, kW
YOKE/POLE AREA _____ %
SECTOR ANGLE (Sep Sec) _____ deg
ION ENERGY (Bending limit) E/A = _____ q^2/A^2 MeV
(Focusing limit) E/A = _____ q/A MeV

ACCELERATION SYSTEM

DEES, number 2 angle 90 deg
BEAM APERTURE _____ cm; DC BIAS _____ kV
TUNED by, coarse Mag fine Mag
RF _____ to _____ mHz, stable ± _____ /10^6
Orb F _____ to _____ mHz; GAIN, max _____ kV/turn
HARMONICS, RF/Orb F, used _____
DEE-Gnd, max _____ kV, min gap _____ cm
STABILITY, (pk-pk noise)/(pk RF volt) _____
RF PHASE stable to ± _____ deg
RF POWER input, max _____ kW
RF PROTECT circuit, speed _____ μsec
Type _____
FREQUENCY MODULATION, rate _____ /sec
MODULATOR, type _____
BEAM PULSE, width _____

VACUUM SYSTEM

PUMPS, No., Type, Size one 25 cm diffusion pump
OPERATING PRESSURE 4 μTorr,
PUMPDOWN TIME 1 hrs

ION SOURCES/INJECTION SYSTEM

Internal Penning

EXTRACTION SYSTEM

Electrostatic deflector + mag channel

CONTROL SYSTEM

Conventional

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CHARACTERISTIC BEAMS

	Particle	Goal (MeV)	Achieved (MeV)
ENERGY	P		26.5
	d		15
	He-3		39
CURRENT		(μA)	(μA)
Internal	P		300
	d		250
External	P		50
	d		50
		(part/s)	(part/s)
Secondary			

BEAM PROPERTIES

	Measured		Conditions			
Pulse Width	____	RF deg	____ μA of	____	MeV	____
Phase Exc, max	____	RF deg	____ μA of	____	MeV	____
Extract Eff	70	%	____ μA of	____	MeV	____
Res, ΔE/E	____	%	____ μA of	____	MeV	____

Emittance

(mm-mrad) { ____ axial / ____ radial } ____ μA of ____ MeV ____

OPERATING PROGRAMS, time dist

Basic Nuclear Physics	%
Solid State Physics	%
Bio-Medical Applications	10 %
Isotope Production	80 %
Development	10 %
	%
	%

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, OPERATION SUMMARY, ADDITIONAL REFERENCES