ENTRY NO. 109

NAME OF MACHINE ..... Anna and Louis Hand Cyclotron Complex
INSTITUTION ..... Mount Sinai Medical Center
ADDRESS ..... 4300 Alton road, Miami Beach, Florida 33140
TEL (305)674-2465 .... TELEX
IN CHARGE Ronald D. Finn ..... REPORTED BY J. Dwyer/K. Koh

HISTORY AND STATUS

DESIGN, date ..... Model tests 1971
ENG DESIGN, date ... Cyclotron Corporation CS-30
CONSTRUCTION, date 1971
FIRST BEAM, date (or goal) ... 1972
MAJOR ALTERATIONS ..... none
COST, ACCELERATOR
COST, FACILITY, total
FUNDED BY .. Mount Sinai Medical Center

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ..... 3 ..... ENGINEERS ... 2
TECHNICIANS ..... 3 ..... CRAFTS ... 1
GRAD STUDENTS involved during year 0
OPERATED BY .... 3 ... Research staff or ..... 4 ... Operators
OPERATION ..... 90 ... hr/wk. On target ..... 65 .... hr/wk
TIME DISTR. in house 100 ..... %, outside ..... %
BUDGET, op & dev
FUNDED BY .. Mount Sinai Medical Center

RESEARCH STAFF, not included above

USERS, in house ..... 7 ..... outside 4
GRAD STUDENTS involved during year 1
RESEARCH BUDGET, in house
FUNDED BY .. Mount Sinai Medical Center

MAGNET

POLE FACE, diameter (compact) ... 96 ... cm, R-extraction . 42 ... cm
R injection ... 0 cm
GAP, min .5 .. cm, Field .14.4. kG
max 10 .. cm, Field .22.5. kG } at 1.6×10^5 Ampere turns
AVERAGE FIELD at R ext ... 18 ... kG
B max/<B> 1.3
NUMBER OF SECTORS { compact .. 3 ... / separated ..... } Spiral, max 23.3 deg
SECTOR ANGLE (SSC) ..... deg
TRIMMING COILS ... (3) 800A-turns each
CONDUCTOR, material and type . copper foil
STORED ENERGY (cryogenic) ..... MJ
POWER: main coils . 58 . max kW: current stability 3×10^{-4}
trimming coils ..... max kW: current stability .....
WEIGHT: Fe . coils ..... tons: coils .. 20.5 ..... tons
COOLING system .... 60F water
ION ENERGY (Bending limit) E/A = . 27.5 .... q^2/A^2 MeV/amu
(Focusing limit) E/A = . 26.5 ..... q/A MeV/amu

ACCELERATION SYSTEM

DEES, number ... 2 ..... angle ..... 90 ..... deg
BEAM APERTURE ... 0.3 .... cm; DC Bias . 1.5 ..... kV
TUNED by, coarse ... straps ..... fine .....
RF ... 12 ..... to 26.6 ..... MHz, stable ± 1×10^{-4}
Orb F , 12 ..... to 26.6 ..... MHz
HARMONICS, RF/Orb F, used . first
DEE–Gnd, max ..... 35 ..... kV, min gap .... 4 ..... cm
STABILITY, (pk-pk noise)/(pk RF volt) .. 1%
ENERGY GAIN, max ..... 100 ..... kV/turn
RF PHASE, stable to ± ..... deg
RF POWER input, max. ..... 40 ..... kW
FREQUENCY MODULATION, rate ..... /s
modulator, type 1
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE .. 4×10^{-5} ..... Torr or mbar
PUMPS, No, Type, Size ... 10" oil diffusion
..... (2) 4" oil diffusion

ION SOURCES

..... P.I.G.

INJECTION SYSTEM

Electrostatic

EXTRACTION SYSTEM

Electrostatic

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed ... 90 .. m^2; movable ..... m^2
TARGET STATIONS ..... 7 ..... in . 2 rooms .. rooms
STATIONS served at same time, max 2
MAG SPECTROGRAPH, type
COMPUTER model . Perkin-Elmer 3220
OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	Achieved	CURRENT (pμA) Internal	External
proton		26	200	65
deuteron		15	200	50
helium-3		40	100	50
SECONDARY			(part/s)	

BEAM PROPERTIES

MEASURED CONDITIONS

PULSE WIDTH .... RF deg .... pμA of ..... MeV ..... ions
PHASE EXC. max .. RF deg .... pμA of ..... MeV ..... ions
EXTRACT eff ..... % .... pμA of ..... MeV ..... ions
RESOL ΔE/E ..... % .... pμA of ..... MeV ..... ions
EMITTANCE
(π mm-mrad) .... axial .... pμA of ..... MeV .....
.... rad

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS .... SOLID STATES PHYSICS .....
BIOMEDICAL APPLICAT. 50% .. ISOTOPE PRODUCTIONS . 50% ....

REFERENCES/NOTES

1)
2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.