ENTRY NO. 64

NAME OF MACHINE Medi-Physics Cyclotron DATE 8/30/78
INSTITUTION Medi-Physics, Inc.
ADDRESS 5855 Christie Ave., Emeryville, CA 94608

IN CHARGE D.K. Wells REPORTED by D.K. Wells

HISTORY AND STATUS

DESIGN, date Designed by the Cyclotron Corp. MODEL tests
ENG. DESIGN, date
CONSTRUCTION, date
FIRST BEAM date (or goal) Accepted 12/70
MAJOR ALTERATIONS None

OPERATION, 168 hr/wk; On Target 120 hr/wk
TIME DIST., in house 99 %, outside 1 %
USERS' SCHEDULING CYCLE 1 weeks
COST, ACCELERATOR
COST, FACILITY, total
FUNDED BY Medi-Physics, Inc.

ACCELERATOR STAFF, OPERATION and DEVELOPMENT

SCIENTISTS 1 ENGINEERS
TECHNICIANS 5 CRAFTS
GRAD STUDENTS involved during year
OPERATED BY Res staff or X Operators
BUDGET, op & dev
FUNDED BY Medi-Physics, Inc.

RESEARCH STAFF, not included above

USERS, in house outside
GRAD STUDENTS involved during year
RES. BUDGET, in house
FUNDED BY

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed ~100 m^2
movable m^2
TARGET STATIONS 8 in 1 rooms
STATIONS served at same time, max 1
MAG SPECTROGRAPH, type None
COMPUTER, model None
OTHER FACILITIES

REFERENCES/NOTES

(1) IEEE Trans. Nucl. Sci. NS-14 70-71 (1967)

(2) IEEE Trans. Nucl. Sci. NS-16 500-503 (1969)

MAGNET

POLE FACE diameter 97 cm; R extraction 42.4 cm
GAP, min 5 cm; Field 21 kG
max 10 cm; Field 13.5 kG
} at 2 X 10^6 ampere turns
AVERAGE FIELD at R ext 16.5 kG
CURRENT STABILITY 30 parts/10^6; $B_{max}/\langle B \rangle$ 1.22
NUMBER OF SECTORS ; SPIRAL, max 45 deg
POLE FACE COIL PAIRS: AVF None /sec;
Harmonic correction 1
Rad grad None /sec or Circ coils None
WEIGHT: Fe 19.5 tons; Coils tons
CONDUCTOR, Material and type
STORED ENERGY MJ
COOLING SYSTEM
POWER: Main coils 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 2 cm; DC BIAS 1.5 kV
TUNED by, coarse straps fine panel
RF 12 to 25 mHz, stable ± /10^6
Orb F to mHz; GAIN, max 100 kV/turn
HARMONICS, RF/Orb F, used None
DEE-Gnd, max 30 kV, min gap cm
STABILITY, (pk-pk noise)/(pk RF volt)
RF PHASE stable to ± deg
RF POWER input, max 70 kW
RF PROTECT circuit, speed μsec
Type Series tube
FREQUENCY MODULATION, rate /sec
MODULATOR, type
BEAM PULSE, width

VACUUM SYSTEM

PUMPS, No., Type, Size
OPERATING PRESSURE μTorr,
PUMPDOWN TIME hrs

ION SOURCES/INJECTION SYSTEM

Internal - "Cold Cathode" (1)

EXTRACTION SYSTEM

Electrostatic and magnetic channel

CONTROL SYSTEM

ENTRY NO. 64 (cont.)

CHARACTERISTIC BEAMS

	Particle	Goal (MeV)	Achieved (MeV)
ENERGY	P		22
	d		12
	He^3		32
CURRENT		(μA)	(μA)
Internal	p		400
	d		400
	He^3		100
External	p		60
	d		100
	He^3		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	____ %	____ 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	%
Isotope Production	~100 %
Development	%
	%
	%

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