ENTRY NO. 20

NAME OF MACHINE ..... Cyclotron 520 ... CGA-MeV

INSTITUTION .. Atomic Energy Commission Biology Department

ADDRESS ..... Orsay. FRANCE

TEL ..(6)...908 77 23 ..... TELEX .....

IN CHARGE . C Crouzel ..... REPORTED BY ..... C. Crouzel .....

HISTORY AND STATUS

DESIGN, date ..... 1973 ..... Model tests .....

ENG DESIGN, date .....

CONSTRUCTION, date ... 1974 .....

FIRST BEAM, date (or goal) 1975 .....

MAJOR ALTERATIONS .....

.....

COST, ACCELERATOR .....

COST, FACILITY, total .....

FUNDED BY ..... AEC .....

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ..... ENGINEERS .....

TECHNICIANS ..... CRAFTS .....

GRAD STUDENTS involved during year .....

OPERATED BY ..... Research staff or ..... Operators

OPERATION ..... 30 ..... hr/wk. On target ..... 30 ..... hr./wk

TIME DISTR. in house .... 100 ..... % Outside ..... %

BUDGET, op & dev .....

FUNDED BY .....

RESEARCH STAFF, not included above

USERS, in house ..... outside .....

GRAD STUDENTS involved during year .....

RESEARCH BUDGET, in house .....

FUNDED BY .... AEC .....

MAGNET

POLE FACE, diameter (compact) ..120. cm, R extraction ..52. cm

R injection ..... cm

GAP, min ..8.6. cm, Field ...17..... kG
min ..14.. cm, Field ...10.6..... kG } at 136 X 10^6 Ampere turns

AVERAGE FIELD at R ext ..... kG

B max/ < B > .....

NUMBER OF SECTORS { compact ....4..... / separated ..... } Spiral, max ..34deg

SECTOR ANGLE (SSC) ..... deg

TRIMMING COILS .....

.....

CONDUCTOR, material and type .....

STORED ENERGY (cryogenic) ..... MJ

POWER: main coils ..... max, kW; current stability .....

trimming coils ..... max, kW; current stability .....

WEIGHT: Fe ...28..... tons; coils ..... tons

COOLING system ..WATER.....

ION ENERGY (bending limit) E/A = ...q^2/a^2 MEV/amu

(focusing limit) E/A = ... q/a MeV/amu

ACCELERATION SYSTEM

DEES, number .....2..... deg

BEAM APERTURE ..... cm; DC Bias ....1..... kV

TUNED by, coarse .....Yes..... fine .....Yes.....

RF .....20..... to .....62..... mHz, stable ± .....1...10^6

Orb F ....6..... to .....20.....mHz

HARMONICS, RF/Orb F, used .....2,3.....

DEE—Gnd, max ..... kV, min gap .....2..... cm

STABILITY, (pk-pk noise)/(pk RF volt) ....0.001.....

ENERGY GAIN, max ..... kV/turn

RF PHASE, stable to ± ....0.1..... deg

RF POWEP input, max ...20..... kW

FREQUENCY MODULATION, rate ..... /s

modulator, type .....

beam pulse, width .....

VACUUM SYSTEM

OPERATING PRESSURE ..... Torr or mbar

PUMPS, No, Type, Size .....

.....

.....

ION SOURCES

....Levingston.....

INJECTION SYSTEM

.....

EXTRACTION SYSTEM

.....Electrostatic Deflector.....

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed ..... m^2; movable ..... m^2

TARGET STATIONS ...3..... in ..2 room.....

STATIONS served at same time, max ...1.....

MAG SPECTROGRAPH, type .....

COMPUTER model .....

OTHER FACILITIES .....

.....Isotopes Production.....

.....

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	Achieved	CURRENT (pμA) Internal	External
p	24		200	70
d	14.5		400	70
^{3}He	29		100	50
^{4}He	33		100	50
SECONDARY		(part/s)		

BEAM PROPERTIES

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

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS ..... SOLID STATES PHYSICS.....

BIOMEDICAL APPLICAT..... ISOTOPE PRODUCTIONS .100%.

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REFERENCES/NOTES

1)

2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.