ENTRY NO. 55

NAME OF MACHINE: C - 200 DATE: APRIL 25, 1984

INSTITUTION: HEAVY ION LABORATORY AT THE WARSAW UNIVERSITY

ADDRESS: 02-097 WARSZAWA, UL. BANACHA 4, POLAND

TEL: 235 - 280 TELEX: 815548 UW PHY PL

IN CHARGE: B. Sikora REPORTED BY: C. Weychert, P. Gmaj
C. Weychert

HISTORY AND STATUS

DESIGN, date: 1978 Model tests:

ENG DESIGN, date:

CONSTRUCTION, date:

FIRST BEAM, date (or goal): 1988*

MAJOR ALTERATIONS:

COST, ACCELERATOR:

COST, FACILITY, total:

FUNDED BY:

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS: 4 ENGINEERS: 8

TECHNICIANS: 9 CRAFTS: 5

GRAD STUDENTS involved during year:

OPERATED BY: Research staff or: Operators

OPERATION: hr/wk. On target: hr./wk

TIME DISTR. in house: % 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:

MAGNET

POLE FACE, diameter (compact) 200 cm, R extraction 90 cm

R injection: cm

GAP, min 2.54 cm, Field 27 kG
min 15. cm, Field 17 kG at 525 000 Ampere turns

AVERAGE FIELD at R ext: 21.4 kG

B max/ < B >: 1.26

NUMBER OF SECTORS: compact 4; separated: Spiral, max 0. deg

SECTOR ANGLE (SSC): 42 deg

TRIMMING COILS: 20 circular
8 harmonic

CONDUCTOR, material and type: Cu, 24x24 mm², hole Ø16

STORED ENERGY (cryogenic): MJ

POWER: main coils 325 max, kW; current stability 10^{-4}
trimming coils 30 max, kW; current stability 4×10^{-4}

WEIGHT: Fe 220 tons; coils 20 tons

COOLING system: demineralized water

ION ENERGY (bending limit) E/A = 180 q^2/a^2 MEV/amu
(focusing limit) E/A = 48 q/a MeV/amu

ACCELERATION SYSTEM

DEES, number 2 angle 45 deg

BEAM APERTURE 2.4 cm; DC Bias: kV

TUNED by, coarse panel fine trimmer 10^{-7}

RF 12.3 to 21.4 mHz, stable ±: 10^{-}

Orb F 4. to 21.4 mHz

HARMONICS, RF/Orb F, used 2, 3, 1

DEE—Gnd, max 75 kV, min gap 2.4 cm

STABILITY, (pk-pk noise)/(pk RF volt): 10^{-3}

ENERGY GAIN, max 270 kV/turn

RF PHASE, stable to ±: 1 deg

RF POWEP input, max: 2x 120 kW

FREQUENCY MODULATION, rate: /s

modulator, type:

beam pulse, width:

VACUUM SYSTEM

OPERATING PRESSURE: 1×10^{-6} Torr or mbar

PUMPS, No, Type, Size: 4 oil dif. pumps
1900 l/s each, liquid nitrogen traps

ION SOURCES

hot cathode Penning type

INJECTION SYSTEM

EXTRACTION SYSTEM

stripping + electrost. defl.

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed 30 m²; movable 1300 m²

TARGET STATIONS 7 in 6 rooms

STATIONS served at same time, max 1

MAG SPECTROGRAPH, type:

COMPUTER model:

OTHER FACILITIES: energy monochromatization by 2 x 120 deg magnets

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	Achieved	CURRENT (pμA) Internal	External
$^{2}H^{+}$	30		100	
$^{12}C^{+3}$				
$^{40}Ar^{+8}$	120		10	
	280		1	
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	pμ A of MeV
	rad	

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS: SOLID STATES PHYSICS:

BIOMEDICAL APPLICAT: ISOTOPE PRODUCTIONS:

REFERENCES/NOTES

1)

2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.

* construction stopped 1981 - 1983,
construction resumed 1984