ENTRY NO. 67

NAME OF MACHINE: C-30

INSTITUTION: Institute of Nuclear Studies, Świerk

ADDRESS: Świerk, 05-400 OTWOCK, Poland,

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IN CHARGE: J.SURA REPORTED BY: J.SURA

HISTORY AND STATUS

DESIGN, date: 1983 Model tests: 1983

ENG DESIGN, date: 1984

CONSTRUCTION, date: 1985-1987

FIRST BEAM, date (or goal): goal 1987

MAJOR ALTERATIONS

COST, ACCELERATOR

COST, FACILITY, total

FUNDED BY

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ENGINEERS

TECHNICIANS CRAFTS

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): 105 cm, R-extraction: 45 cm

R injection cm

GAP, min 2 cm, Field 22,5 kG

max 10 cm, Field 12,5 kG at 164000/D -/ Ampere turns

AVERAGE FIELD at R ext 18 kG

B max/<B> 1,25

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

SECTOR ANGLE (SSC) 45 deg

TRIMMING COILS none

CONDUCTOR, material and type: copper Ø 12x2

STORED ENERGY (cryogenic) MJ

POWER: main coils 60 max kW: current stability 10^{-4}

trimming coils max kW: current stability

WEIGHT: Fe 38 tons: coils 1.38 tons

COOLING system: deionized water

ION ENERGY (Bending limit) E/A = 31 q^2/A^2 MeV/amu

(Focusing limit) E/A = 50 q/A MeV/amu

ACCELERATION SYSTEM

DEES, number 2 angle 45 deg

BEAM APERTURE 2 cm; DC Bias - kV

TUNED by, coarse fixed fine 1MHz trimmer

RF 53 to 54 MHz, stable ± 10^{-6}

Orb F to MHz

HARMONICS, RF/Orb F, used 2 /H/ 4/D/

DEE–Gnd, max 50 kV, min gap 10^{-1} cm

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

ENERGY GAIN, max 141 /H/ 200/D/ kV/turn

RF PHASE, stable to ± dees brigded deg

RF POWER input, max. 40 kW

FREQUENCY MODULATION, rate CW /s

modulator, type

beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 10^{-6} Torr or mbar

PUMPS, No, Type, Size oil diffusion 2x2000 l/s

ION SOURCES

cold cathode PIG, goal-external source

INJECTION SYSTEM

axial

EXTRACTION SYSTEM

stripping

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed 2x60 m^2; movable m^2

TARGET STATIONS 1 in 1 rooms

STATIONS served at same time, max 1

MAG SPECTROGRAPH, type

COMPUTER model

OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	Achieved	CURRENT (pμA) Internal	External
p	30		50	50
d	16		50	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. ISOTOPE PRODUCTIONS 100%

REFERENCES/NOTES

1) J.Sura et. al., IPJ 1982,Warszawa,/1983/.

2) IEEE Trans. Nucl. Sci., Vol. NS-32,5/1985/.

PLAN VIEW OF FACILITY, COMMENTS, ETC.