ENTRY NO. 125

NAME OF MACHINE ..... Electron model relativistic ring cyc ..... DATE .... August 1978 ...
INSTITUTION ..... Joint Institute for Nuclear Research, Lab Nucl. Prob 1 .....
ADDRESS ..... JINR, Head Post Office, P.O. Box 79, Moscow - USSR .....
TEL ..... TELEX .....
IN CHARGE Pr. V.P. Dzhelepov .... REPORTED BY ... Pr. V.P. Dzhelepov .....

HISTORY AND STATUS

DESIGN, date ..... 1964 ... Model tests ... 1964-66 .....
ENG DESIGN, date ..... 1966-67 .....
CONSTRUCTION, date ..... 1967 .....
FIRST BEAM, date (or goal) .... 1967 .....
MAJOR ALTERATIONS ..... 1974, 1977 .....
.....
COST, ACCELERATOR .....
COST, FACILITY, total .....
FUNDED BY .....

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ..... 1 ..... ENGINEERS .... 2 .....
TECHNICIANS .... 2 ..... CRAFTS .... 2 .....
GRAD STUDENTS involved during year .....
OPERATED BY ..... Research staff or ..... Operators
OPERATION ..... 25 .. hr/wk. On target ..... hr/wk
TIME DISTR. in house ..... 100 . %, outside ..... %
BUDGET, op & dev .....
FUNDED BY .....

RESEARCH STAFF, not included above

USERS, in house ..... 14 ..... outside .....
GRAD STUDENTS involved during year .....
RESEARCH BUDGET, in house .....
FUNDED BY ..... JINR .....

MAGNET

POLE FACE, diameter (compact) .... 240 . cm, R-extraction .... 101 cm
R injection ..... cm
GAP, min ... 8 . cm, Field ..... kG
max ... 8 . cm, Field ..... kG } at .....
AVERAGE FIELD at R ext ..... kG Ampere turns
B max/<B> ..... 2.06 .....
NUMBER OF SECTORS { compact ... 8 ... / separated ..... } Spiral, max . 60 deg
SECTOR ANGLE (SSC) ..... deg
TRIMMING COILS .....
.....
CONDUCTOR, material and type .....
STORED ENERGY (cryogenic) ..... MJ
POWER: main coils . 80 . max kW: current stability . 10^{-4} .
trimming coils . 20 . max kW: current stability .....
WEIGHT: Fe ..... 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 ..... ; angle ..... 45 .... deg
BEAM APERTURE .. 2 ..... cm; DC Bias ..... kV
TUNED by, coarse . MS ..... fine .. VC, auto .....
RF ..... 39.5 .. to ..... MHz, stable ± .. $5 \cdot 10^{-6}$ .....
Orb F .. 39.5 ..... to ..... MHz
HARMONICS, RF/Orb F, used ..... 1 .....
DEE–Gnd, max ..... kV, min gap ..... cm
STABILITY, (pk-pk noise)/(pk RF volt) ..... $5 \cdot 10^{-2}$ .....
ENERGY GAIN, max ..... 2 ..... kV/turn
RF PHASE, stable to ± ..... 5 ..... deg
RF POWER input, max. ..... 40 ..... kW
FREQUENCY MODULATION, rate ..... /s
modulator, type .....
beam pulse, width .....

VACUUM SYSTEM

OPERATING PRESSURE ..... 1 μ ..... Torr or mbar
PUMPS, No, Type, Size .....
..... 9 diffusion pumps .....
.....

ION SOURCES

..... electron injector .. (6 keV) .....

INJECTION SYSTEM

.....

EXTRACTION SYSTEM

Closed orbit expansion .....

FACILITIES FOR RESEARCH

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

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	Achieved	CURRENT (pμA) Internal	External
.....	.....	.....	.....	.....
... e^-	.. 0.4 ...	.....	.1000 ...	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
SECONDARY			(part/s)	
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

BEAM PROPERTIES

MEASURED		CONDITIONS	
PULSE WIDTH	.20 . RF deg	.100	pμ A of .0.4 . MeV e^- ... 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 .....
Machine research 100% .....
.....

REFERENCES/NOTES

1)
2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.