

ENTRY NO. C50 Date July 2, 1992
Name of Machine Kurchatov Institute of Atomic Energy
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In Charge: Reported by: V. E. Jarosh

HISTORY

MILESTONE DATES:
Design date 1971-73 Model Tests 1973-74
Construction date 1976 First Beam 1976
DESIGN/CONSTRUCTION BY:
in house other
COST: Accelerator Facility
FUNDED BY:

STATUS

STAFF: Machine
Scientists Engineers
Technicians Students
Research (in house/external)
Scientists / Engineers /
Technicians / Students /
BUDGET: Machine Funded by
Research Funded by
TIME DISTRIBUTION:
Basic Research (in house/external) % / %
Applied Program (in house/external) % / %
Development % Maintenance %

MAGNET

POLE PARAMETERS:
Diameter 150 cm R_{extract} 67.5 cm R_{inject} cm
HILL PARAMETERS: Gap (min) 20 cm B_{max} 2.1 T
(θ AT) Gap (max) cm B_{min} T
VALLEY PARAMETERS: Gap (min) 34 cm B_{max} 1.5 T
(θ AT) Gap (max) cm B_{min} T
AVERAGE FIELD: $\langle B \rangle_{\min}$ T $\langle B \rangle_{\max}$ T
NUMBER OF SECTORS: compact/separated 3 /
sector angle deg. spiral (max) 50 deg.
FIELD TRIMMING: Trim Coils
Harmonic Coils 3 pairs
Other concentric, 8 pairs
CURRENT: Main Coils Amps Stability
Trim Coils Amps Stability
Stored Energy (cryogenic) MJ
WEIGHT: Iron 300 tons Conductor 70 tons
ION ENERGY: Bending Limit E/A = q^2/A^2 MeV/u
Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM

FUNDAMENTAL ACCELERATION:
Description: dees number 2, angle 180 deg.
No. of Gaps/turn dE/dn(max) MeV/q
Voltage(max) MV Harmonic f_{rf}/f_{ion}
Freq 6 to 20 MHz Power in(max) 10-3 MW
Stability: Phase Voltage
OTHER CAVITIES (Flattopping or otherwise):
Description:
Region of Influence: R_{min} cm R_{max} cm
No. of Gaps/turn dE/dn(max) MeV/q
Voltage(max) MV Harmonic f_{rf}/f_{ion}
Freq MHz Power in(max) MW
Stability: Phase Voltage

VACUUM SYSTEM

OPERATING PRESSURE: 10⁻⁵ torr
PUMPS: No. and type

ION SOURCE(S)

Type	Intensity (mA)	$\epsilon_n = \beta\gamma\epsilon$ (mm mrad)	Ion Species
(a) Penning type			
(b)			
(c)			
(d)			

INJECTION SYSTEM

Efficiency %

EXTRACTION SYSTEM

Electrostatic defl., mag. chan. Efficiency %

CHARACTERISTIC BEAMS

Accelerated Ions	E/A (MeV/u)	Current (part μ A)	
		Internal	External
(a) D ^{6d}			30
(b) Li ^{14c}			7.5-1.5
(c) C ¹⁴ⁿ			7.5
(d)			3

Secondary Particles	E (MeV)	part/sec
(a)		
(b)		
(c)		

EXTRACTED BEAM PROPERTIES:

For μ A of MeV/u ions
 $\Delta E/E$ % $\Delta \phi$ ° of
 $\epsilon_n = \beta\gamma\epsilon$ x 20 mm mrad z 30 mm mrad

FACILITIES FOR RESEARCH

SHIELDED AREA: Fixed m² Moveable m²

Target Stations: No. Served At Same Time:

MAGNETIC SPECTROMETERS:

OTHER FACILITIES:

REFERENCES/NOTES

- (a) Vanikav, N. I., et al., IEEE Trans. on Nucl.
(b) Sci., v. NS-26 (1979), 1996.

PLAN VIEW OF FACILITY, COMMENTS