ENTRY NO:FM03
Date: 4 Feb 2005 10:04:06
Machine Name: PHASOTRON
Institution: JOINT INSTITUTE for NUCLEAR RESEARCH(JINR)
DZHELEPOV LABORATORY of NUCLEAR PROBLEMS(DLNP)
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History
Designed by: DLNP team and EFREMOV Institute
Construction Dates: 1979-1985
First Beam Date: February 1985
Characteristic Beams
PROTONS 660MeV 3.2mcA(2*E13pps) 2kW
Transmission Efficiency (source to extracted beam)
Typical (%): InternalIon Source
Best (%):
Emittance
Emittance Definition:
Vertical (pi mm mrad):
Horizontal (pi mm mrad):
Longitudinal (dE/E[%] x RF[deg.]):
USES
Basic Research (%): 50%
Development (%): 7%
Therapy (%): 33%
Isotope Production (%):
Other Application (%):
Maintenance (%): 8%
Beam Tuning (%): 2%
Total Time (h/year): 2000h/year

TECHNICAL DATA
(a)Magnet
Type: H-type
Kb (MeV):
Kf (MeV):
Average Field (min./max. T): 1.19/1.63T
Number of Sectors: N=4
Hill Angular Width (deg.):
Spiral (deg.): 77deg
Pole Diameter (m): 6m
Injection Radius (m): InternalIon Source
Extraction Radius (m): 2.7m
Hill Gap (m): 0.3-0.2m
Valley Gap (m):
Trim Coils
Number:
Maximum Current (A-turns):
Harmonic Coils
Number:
Maximum Current (A-turns):
Main Coils
Number: 2
Total Ampere Turns:
Maximum Current (A): 4000A
Stored Energy (MJ):
Total Iron Weight (tons): 7000t
Total Coil Weight (tons): 165t
Power
Main Coils (total KW): 700kW
Trim Coils (total, maximum, KW):
Refrigerator (cryogenic, KW):

(b)RF
Acceleration
Frequency Range (MHz): FM 18.6-14.4MHz
Harmonic Modes: 1
Number of Dees: 1
Number of Cavities: 1
Dee Angular Width (deg.): 180deg
Voltage
At Injection (peak to ground, KV): 40kV
At Extraction (peak to ground, KV): 28kV
Peak (peak to ground, KV):
Line Power (max, KW):
Phase Stability (deg.):
Voltage Stability (%):

(c)Injection
Ion Source: Internal,PIG type
Source Bias Voltage (kV):
External Injection:
Buncher Type:
Injection Energy (MeV/n):
Component:
Injection Efficiency (%):
Injector:

(d)Extraction
Elements, Characteristic: Regenerative type with a current channel
Typical Efficiency (%): 50%
Best Efficiency (%): 60%

(e)Vacuum
Pumps: 5 diffusion pumps
Achieved Vacuum (Pa): 1*E(-6)mmHg

REFERENCES

EXPERIMENTAL FACILITIES
TRITON,DUBTO,muSR,FUMILON
6cabine hadron therapy complex

COMMENTS

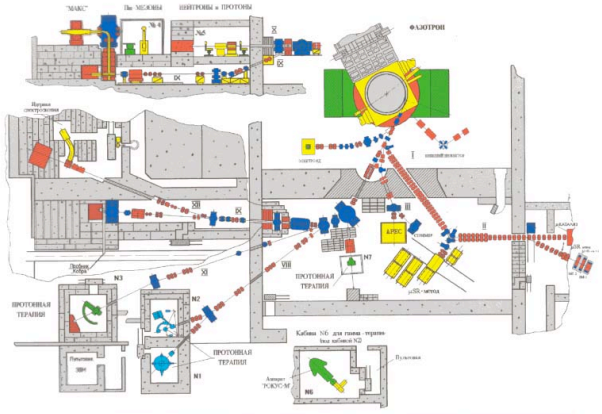

Рис.7 СХЕМА ФАЗОТРОНА ЛЯП ОИЯИ И ТРАКТОВ ЕГО ПУЧКОВ ПОСЛЕ ЗАВЕРШЕНИЯ НАМЕЧЕННЫХ ПЛАНОВ МОДЕРНИЗАЦИИ.