ENTRY NO. C43 **Date** December 5, 1995

Name of Machine C-30

Institution Soltan Institute for Nuclear Studies
Address 05-400 Otwock, Swierk, POLAND
Tel 02-779-9639/8138 Telex 813244 ibjot sw pl Fax 02-779-3481 E-MAIL p10sura@cx1.cyf.gov.pl
In Charge: J Wojtkowska Reported by: J Sura, E Plawski plawski@cx1.cyf.gov.pl

HISTORY

MILESTONE DATES:
Design 1983 Model Tests 1983
Construction 1987 First Beam 07/02/1989
DESIGN / CONSTRUCTION BY:
in house ... other ...
COST: Accelerator ... Facility ...
FUNDED BY: Polish Atomic Agency

STATUS

STAFF: Machine
Scientists 2 Engineers 1
Technicians 2 Students ...
Research (in house/external)
Scientists 2 / ... Engineers ... / ...
Technicians ... / ... Students ... / ...
BUDGET: Machine ... Funded by ...
Research ... Funded by ...
TIME DISTRIBUTION:
Basic Research (in house/external) 50 % / ... %
Applied Program (in house/external) 30 % / ... %
Maintenance 10 % Development 10 %

MAGNET

POLE PARAMETERS:
Diameter 105 cm $R_{extract}$ 45 cm R_{inject} ... cm
HILL PARAMETERS: Gap (min) 2 cm B_{max} 2.25 T
(@ ... AT) Gap (max) ... cm B_{min} ... T
VALLEY PARAMETERS: Gap (min) ... cm B_{max} ... T
(@ ... AT) Gap (max) 10 cm B_{min} 1.25 T
AVERAGE FIELD: $<B>_{min}$ ... T $<B>_{max}$ 1.8 T
NUMBER OF SECTORS: compact/separated 4 / ...
sector angle 45 deg. spiral (max) ... deg.
FIELD TRIMMING: Trim Coils none
Harmonic Coils none
Other none
CURRENT: Main Coils 350 Amps Stability 10^{-1}
Trim Coils ... Amps Stability ...
Stored Energy (cryogenic) ... MJ
WEIGHT: Iron 38 tons Conductor 1.38 tons
ION ENERGY: Bending Limit E/A = 31 q^2/A^2 MeV/u
Focusing Limit E/A = 50 q/A MeV/u

ACCELERATION SYSTEM

FUNDAMENTAL ACCELERATION:
Description: 2 dees in valleys coupled in center
No. of Gaps/turn 4 dE/dn(max) 0.141 MeV/q
Voltage (max) 0.05 MV Harmonic f_{rf}/f_{ion} 2
Freq 52.78 MHz Power in(max) 0.03 MW
Stability: Phase ... Voltage 10^{-3}
OTHER CAVITIES (Flattopping or otherwise):
Description: none
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: 2.10^{-6} Torr
PUMPS: (No. and type) 2 x 2000 l/s oil diff.

ION SOURCE(S)

	Type	Intensity (mA)	@ $\varepsilon_n = \beta\gamma\varepsilon$ (π mm mrad)	Ion Species
(a)	PIG internal	0.5	...	protons
(b)	PIG internal	0.1	...	H^-
(c)	Multicusp external in development			H^-
(d)	...	...	...	...

INJECTION SYSTEM

axial in development ... Efficiency ... %

EXTRACTION SYSTEM

stripping ... Efficiency 100 %

CHARACTERISTIC BEAMS

	Accelerated Ions	E/A (MeV/u)	Current (part μA) Internal	External
(a)	protons	30	150	-
(b)	$H^- \rightarrow p$	30	5	5
(c)	...	...	...	...
(d)	...	...	...	...

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

EXTRACTED BEAM PROPERTIES:
For ... μA of ... MeV/u ... ions
$\Delta E/E$ ... % $\Delta\phi$ ... °rf
$\varepsilon_n = \beta\gamma\varepsilon$ x ... π mm mrad z ... π mm mrad

FACILITIES FOR RESEARCH

SHIELDED AREA: Fixed: 2 x 60 m^2 Moveable ... m^2
Target Stations: 2 No. Served At Same Time: ...
MAGNETIC SPECTROMETERS: ...
OTHER FACILITIES: 1m dia scattering chamber

REFERENCES/NOTES

(a) J Sura et al,, IPJ, Warszawa (1983)
(b) IEEE Trans.Nucl.Sci., Vol.NS-32,5 (1985)
(c) 11-th Cycl.Conf., Tokyo, 76-79 (1986)

PLAN VIEW OF FACILITY, COMMENTS