ENTRY No. 13

NAME OF MACHINE ... Y-20 ... DATE ...
INSTITUTION ... Institute of Atomic Energy ...
ADDRESS ... Box 275, Beijing, PRC ...
TEL ..868221... TELEX ...
IN CHARGE ... REPORTED BY ...

HISTORY AND STATUS

DESIGN, date ... Model tests ...
ENG DESIGN, date ...
CONSTRUCTION, date ... October 1, 1958 ...
FIRST BEAM, date (or goal) ...
MAJOR ALTERATIONS ...
...
COST, ACCELERATOR ... 6 million yuan ...
COST, FACILITY, total ... 10 million yuan ...
FUNDED BY ...

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ... ENGINEERS ...
TECHNICIANS ... CRAFTS ...
GRAD STUDENTS involved during year ...
OPERATED BY ... Research staff or ... Operators
OPERATION ... 120 ... hr/wk, On target ... 100 ... hr/wk
TIME DISTR. in house ... 100 ... %, 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) 120 cm, R extraction 52.5 cm
R injection ... cm
GAP, min ... 148 ... cm, Field ... 15.95 .. kG
max ... 218 ... cm, Field ... 13.05 .. kG } at 286944 ... Ampere turns
AVERAGE FIELD at R ext ... 14.50 .. kG
B max/ <B> ...
NUMBER OF SECTORS { compact ... / separated ... } Spiral, max 45 deg
SECTOR ANGLE (SSC) ... deg
TRIMMING COILS ... 7 coils ...
...
CONDUCTOR, material and type ... Cu ...
STORED ENERGY (cryogenic) ... MJ
POWER : main coils 130 .. max, kW ; current stability 2x10-4
trimming coils ... max, kW ; current stability 1x10-3
WEIGHT : Fe 120 ... tons ; coils ... 15 ... tons
COOLING system ... water ...
ION ENERGY (bending limit) E/A = ... q^2/a^2 MeV/amu
(focusing limit) E/A = ... q^2/a^2 MeV/amu

ACCELERATION SYSTEM

DEES, number ... 2 ... ; angle ... 180 ... deg
BEAM APERTURE .35 ... cm ; DC Bias ... kV
TUNED by, coarse ... fine ...
RF ... 5.9 ... to .. 19.3 ... mHz, stable ± .. 2x10-6
Orb F .6 ... to .. 17.2 ... mHz
HARMONICS, RF/Orb F, used ... 1st ...
DEE - Gnd, max 70 ... kV, min gap ... 26.5 ... cm
STABILITY, (pk-pk noise)/(pk RF volt) ... 1x10-3 ...
ENERGY GAIN, max ... 200 ... kV/turn
RF PHASE, stable to ± .. 1 ... deg
RF POWER input, max 120 ... kW
FREQUENCY MODULATION, rate ... 300 ... /s
modulator, type .. outside modulator ...
beam pulse, width 2<3 ms ...

VACUUM SYSTEM

OPERATING PRESSURE ... 1 x 10-5 ... Torr or mbar
PUMPS, No, Type, Size ...
...
...

ION SOURCES

... PIG type ...

INJECTION SYSTEM

...

EXTRACTION SYSTEM

... Electrostatic deflector ...

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed ... 150 ... m² ; movable ... m²
TARGET STATIONS ... 3 ... in ... 2 ... rooms
STATIONS served at same time, max ... 1 ...
MAG SPECTROGRAPH, type ...
COMPUTER model ...
OTHER FACILITIES ...
...
...

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	ENERGY (MeV) Achieved	CURRENT (pμA) Internal	CURRENT (pμA) External
P	3-20	6-15	200	60
D	3-15	4.5-15	200	60
Alpha	6-30	9-30	10	3
SECONDARY			(part/s)	

BEAM PROPERTIES

MEASURED	CONDITIONS
PULSE WIDTH .6 .. RF deg	.. 1 ... pμ A of .12 MeV P.. ions
PHASE EXC, max ... RF deg	..... pμ A of .... MeV ... ions
EXTRACT eff .0.7.. %	..... pμ A of .... MeV ... ions
RESOL ΔE/E ..... %	..... pμ A of .... MeV ... ions
EMITTANCE	
(π mm. mrad) { ... axial / .... rad }	..... pμA of ..... MeV ... ions

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS .90% SOLID STATES PHYSICS ....
BIOMEDICAL APPLICAT. .... ISOTOPE PRODUCTIONS ....
...
...

REFERENCES/NOTES

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS