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Reviewed by: _____ (RSCR)
Date: 2/16/07
Approved by: _____
(C-A Dept. Chair)
Date: 2/16/07

LINAC RADIATION SECURITY CHECK-OFF LIST

The Linac Tank 1 rf high voltage power supply is to be disabled using the lock-out key switch until the items below are completed. (The RFQ power supply or the ion source extractor power supply may be used as alternatives for high intensity lockout). Record date/time, person responsible for the lockout, and the tag number below.

_____ (Date/Time) _____ (LP)

_____ (Tag #) _____ (Date/Time Tag Removed)

____ (ACG) Functional check of Linac/HEBT interlocks completed.

____ (LP) Beam stops: LEBT BS-1, LEBT BS-2, HEBT NZ304, HEBT NZ307, LTB #1, LTB #2 in place and functioning.

____ (LP) Gates inspected:

a. Tank I gate
b. HEBT plug door/sliding gate
c. AGS-HEBT gate
d. Tank 9 gate
e. HEBT gate
f. BLIP tunnel gate
g.REF tunnel

____ (RCD) Signs in place at Gates:

a. Tank I gate
b. HEBT plug door/sliding gate
c. AGS-HEBT gate
d. Tank 9 gate
e. HEBT gate
f. BLIP tunnel gate
g.REF tunnel

____ (LP) Chipmunks in place:

a. BLIP Pump House (2)
b. Linac lower equipment bay:
    - Tank 4/5 alcove
    - Tank 6 low energy transmission line penetration
    - Tank 6/7 intertank vacuum penetration
    - Tank 8/9 intertank vacuum penetration
    - Cable tray downstream of Tank 9
    - Tank 1 gate

____ (ACG) Functional checkout of chipmunks complete:

a. BLIP Pump House (NM061 & NM065)
b. Linac lower equipment bay:
    - Tank 4/5 alcove (NM063)
    - Tank 6 low energy transmission line penetration
    - Tank 6/7 intertank vacuum penetration
    - Tank 8/9 intertank vacuum penetration
    - Cable tray downstream of Tank 9 (NM062)
    - Tank 1 gate (NM068)

____ (ACG) Following chipmunks tied in to security system, interlocking LEBT BS-1 & BS-2, and tested:

1. BLIP pump house chipmunks (NM061 &NM065)
2. Tank 4/5 alcove chipmunk (NM063)
3. Tank 1 gate (NM068)

____ (MCRH) "Temporary procedure to access AGS during proton (HEBT) operation at linac" in place.

____ (WG) Check that the BLIP transport water pump house gate is locked.

____ (RCD) BLIP pump house posted as a High Radiation Area.

____ (RCD) Area around the BLIP pump house posted as a Radiation Area.

____ (WG) Checklist for entry into the BLIP pumphouse posted on the pumphouse entrance.

____ (LP) Check shielding of Linac Lower Equipment Bay.

____ (LP) Check shielding of AGS-Linac interface

____ (LP) Check shielding of TTB-Linac interface.

____ (LP) Check shielding of TTB-Booster interface.

____ (LP) Check shielding of Linac-Booster interface.

____ (LP) Check shielding of BLIP tunnel-REF tunnel interface.

____ (LP) BLIP locked off or BLIP Radiation Security Check-Off List completed.

____ (BP) Booster Check-Off List completed or any two (2) of the following locked out:

LTB #1 Beam stop, LTB #2 Beam stop, DH1 power supply, DH2-5 power supply (see Booster Check-Off List).

____ (LP) HEBT beam stops NZ 304, NZ 307 permanently in the beam, and red-tagged by a LP radiation security red tag.

___ (LP) The Linac has been reviewed for compliance with the Operational Safety Limits as given in OPM 2.5.

____ (LP) Linac ready for beam.

When the above items are completed, the Linac may be unlocked for operation.

Following establishment of 200 MeV beam, the following should be completed before routine operation begins:

____ (RCD) Tank 1 gate / LEBT area surveyed and properly posted.

____ (MCR) List completion verified by on duty operations coordinator.

ACG	C-A Access Controls Group
BLP	Liaison Physicist for BLIP
BP	Liaison Physicist for the Booster
RCD	Radiation Controls Division
LP	Liaison Physicist for the Linac
MCRH	Head of Main Control Room
RSCR	Radiation Safety Committee Representative
WG	Water Group

Linac Chipmunks

NMON	Location	Security Trip	Dose Limit
61	946 Lin-Bster Beam Stop 1	50mR	10mR
62	Trench U/S Linac Plug	--	20mR
63	Tank 4/5 Alcove	20mR	16mR
65	946 Lin-Bster Beam Stop 2	50mR	10mR
68	Linac Tank 1	20mR	16mR