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Date: December 27th, 2012
Reviewed by: Dana Bass
Date: 1/22/13
Approved by: Mark Rogers
Date: 1/22/13

NSRL Check-Off List

(NRO Run, from January 28th 2013 to February 8th 2013)

This check-off list, intended for routine operations at NSRL, is to be completed before the beginning of every run period. It is divided into two sections, the first of which is the LOTO items which must be applied before the second section items may be checked off.

1. Lock-Out Tag-Out Items

All LOTO items in this section are to be completed by the NSRL liaison physicist (or designee) before moving on to section 2. The LOTO may be removed after section 2 items are checked off.

1. _____(LPN): LOTO D6 Magnet Power Supply in "OFF" position

   Tag Number: _____
   Person: _____
   Date and time: _____

2. _____(LPN): LOTO Beam-Plug in Stub-Tunnel in "OFF" position

   Tag Number: _____
   Person: _____
   Date and time: _____

OR:

3. _____(LPN): LOTO TTB
   Device: _____
   Tag Number: _____
   Person: _____
   Date and time: _____

   Key Box: TTB/LTB
   Tag Number: 7462
   Person: A.Rusek
   Date and time: Sep. 7th 2012, 11:00

4. _____(LPN): LOTO LTB
   Device: _____
   Tag Number: _____
   Person: _____
   Date and time: _____

   Key Box: TTB/LTB
   Tag Number: 7462
   Person: A.Rusek
   Date and time: Sep. 7th 2012, 11:00

5. _____(LPN): LOTO ETB
   Device: _____
   Tag Number: _____
   Person: _____
   Date and time: _____

   Key Box: LTB
   Tag Number: 7461
   Person: A.Rusek
   Date and time: Sep. 7th 2012, 11:00

OR:

6. _____(LPN): LOTO Booster Main Magnet Power Supply
   Device: _____
   Tag Number: _____
   Person: _____
   Date and time: _____

   Key Box: _____
   Tag Number: _____
   Person: _____
   Date and time: _____

If the key is locked in a key box in the terminal room (#222)

2. Check-Off Items

Radiation Control Division Items:

*rcd.1*_____(RCD) Service tunnel outer entrance-door (BGE2) posted:

"Radioactive Material Area
Controlled Area
TLD Required for Entry
Activation Check"

*rcd.2*_____(RCD) Automatic doors to target room posted:

"Radioactive Material Area
Controlled Area
TLD Required for Entry
Activation Check"

*rcd.3*_____(RCD) Gates and fence defining the berm enclosure posted:

"Controlled Area"

*rcd.4*_____(RCD) Quarterly and monthly monitor TLDs are in place.

Access Control Group Items *(J.Reich or Designee)*:

*acg.1*_____(ACG) Interlock functional checks complete.

*acg.2*_____(ACG) changes to prevent continuous CA gate releases have been added (as necessary) and tested. (this item approved to be completed for the NSRL-12C run)

*acg.3*_____(ACG) The D6 back-leg winding power supply current limited to 100A.

*acg.4*_____(ACG) Operator-less access system functional checks complete.

*acg.5*_____(ACG) Chipmunk interlocks tested with chipmunks in place.

*acg.6*_____(ACG) All bypasses or temporary jumpers in the interlocks have been reviewed with the RSC.

*acg.7*_____(ACG) All NSRL critical devices have orange tags (D6, RD1/RD2, Beam Plug).

Instrumantation Group Items *(R.Atkins or Designee)*:

*acig.1*_____(ACIG) All NSRL chipmunks operational and in calibration period:

- _____NM130 (on the berm)
- _____NM131 (target room labyrinth)
- _____NM132 (service entrance labyrinth)

*acig.2*_____(ACIG) Trip levels on chipmunks set to:

- _____NM130 at 2.5 mrem/hour
- _____NM131 at 2.5 mrem/hour
- _____NM132 at 2.5 mrem/hour

NSRL Liaison Physicist Items *(A.Rusek or Designee)*:

*lpn.1*_____(LPN) All NSRL chipmunks in correct locations:

- _____NM130 (on the berm)
- _____NM131 (target room labyrinth)
- _____NM132 (service entrance labyrinth)

*lpn.2*_____(LPN) 302 Ion Chamber in place.

*lpn.3*_____(LPN) No obstructions in the upstream end of the target rail.

*lpn.4*_____(LPN) Beam cutoff accomplished by RF and extraction bump (no beam dumped on the RD1/RD2 20° bend magnet).

*lpn.5*_____(LPN) Shielding and berm inspected.

On-Shift Operations Coordinator Items:

*oc.1*_____(OC) NSRL berm fenced area swept and secured.

*oc.2*_____(OC) The stub tunnel chipmunks (NM133, NM134) alarms turned off.

Readiness Sign-off Items:

*rs.1*_____(LPN) NSRL ready for operation.

*rs.2*_____(OC) All check-off items signed off.

The LOTO from Section 1 may now be removed.

- ACG – Access Control Group *(J.Reich or Designee)*
- CEE – Chief Electrical Engineer *(J.Sandberg or Designee)*
- CME – Chief Mechanical Engineer *(J.Tuozzolo or Designee)*
- ACIG – Accelerator components and Instrumentation Group *(R. Atkins or Designee)*
- LPN – NSRL Liaison Physicist *(A.Rusek or Designee)*
- LEN – NSRL Liaison Engineer *(C.Pearson or Designee)*
- MCRGL – Main Control Room Group Leader *(P.Ingrassia or Designee)*
- OC – On Shift Operations coordinator
- RCD – Radiation Control Division *(P.Bergh or Designee)*
- RSC – Radiation Safety Committee *(D.Beavis or Designee)*