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Date: February 25<sup>th</sup>, 2015  
Reviewed by: *Jane Lewis*  
Date: *March 4, 2015*  
Approved by: *DRH*  
Date: *3/4/15*

**NSRL Check-Off List**  
(NASA/Others Run, from March 14<sup>th</sup> 2015 to July 2015)

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.

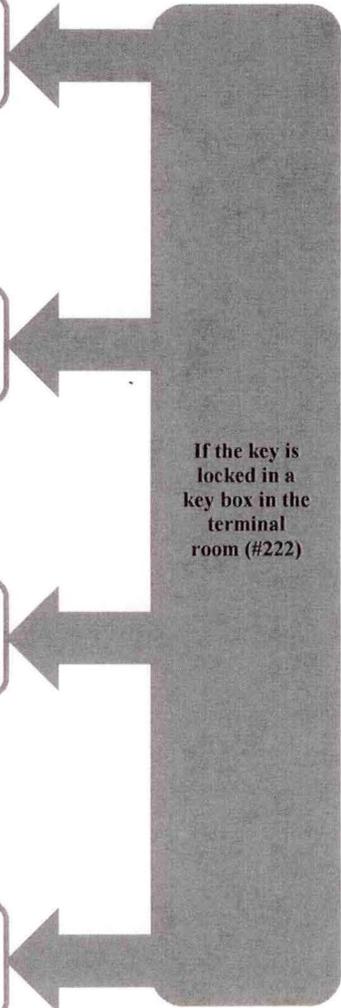
1. _____ (LPN): LOTO D6 Magnet Power Supply in "OFF" position
Tag Number: _____
Person: _____
Date and time: _____
2. _____ (LPN): LOTO Beam-Plug in Stub-Tunnel in "OFF" position
Tag Number: _____
Person: _____
Date and time: _____

**OR:**

3. _____ (LPN): LOTO TTB
Device: _____
Tag Number: _____
Person: _____
Date and time: _____
Key Box: _____
Tag Number: _____
Person: _____
Date and time: _____
4. _____ (LPN): LOTO LTB
Device: _____
Tag Number: _____
Person: _____
Date and time: _____
Key Box: _____
Tag Number: _____
Person: _____
Date and time: _____
5. _____ (LPN): LOTO ETB
Device: _____
Tag Number: _____
Person: _____
Date and time: _____
Key Box: _____
Tag Number: _____
Person: _____
Date and time: _____

**OR:**

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



## 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) The D6 back-leg winding power supply current limited to 100A.

*acg.3* \_\_\_\_\_ (ACG) Operator-less access system functional checks complete.

*acg.4* \_\_\_\_\_ (ACG) Chipmunk interlocks tested with chipmunks in place.

*acg.5* \_\_\_\_\_ (ACG) All bypasses or temporary jumpers in the interlocks have been reviewed with the RSC.

*acg.6* \_\_\_\_\_ (ACG) All NSRL critical devices have orange tags (D6, RD1/RD2, Beam Plug).

**Instrumentation Group Items (T.Curcio or Designee):**

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

- \_\_\_\_\_ NM130 (in the 958 attic)
- \_\_\_\_\_ NM131 (target room labyrinth)
- \_\_\_\_\_ NM132 (service entrance labyrinth)

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

- \_\_\_\_\_ NM130 interlock at 2.5 mr/hr and alarm at 1.0 mr/hr
- \_\_\_\_\_ NM131 interlock at 2.5 mr/hr and alarm at 1.0 mr/hr
- \_\_\_\_\_ NM132 interlock at 2.5 mr/hr and alarm at 1.0 mr/hr

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

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

- \_\_\_\_\_ NM130 (in the 958 attic)
- \_\_\_\_\_ 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.

**NSRL Liaison Engineer Items (C.Pearson or Designee):**

*len.1* \_\_\_\_\_ (LEN) All NSRL critical devices have orange tags in a position that will prevent inadvertent work (D6, RD1/RD2, Beam Plug).

*len.2* \_\_\_\_\_ (LEN) Shielding blocks in stub tunnel and service entrance in place.

*len.3* \_\_\_\_\_ (LEN) Shielding blocks in stub tunnel and service entrance in place

*len.4* \_\_\_\_\_ (LEN) Cap inspection is current

### **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 (*T.Curcio 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*)