BROOKHAVEN NATIONAL LABORATORY PHYSICS DEPARTMENT	Number: PO-P-ATF-0010 Effective: 08/31/2009	Revision: 4 Page 1 of 2
Subject: ATF Klystron/Modulator Preventive Maintenance Procedure		Prepared by: Marc Montemagno
Reviewed by ESH Coordinator:	Approved by ATF Head:	Approved by Department Chair:
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ATF Klystron/Modulator
Preventive Maintenance Procedure

Required interval = 6 months

1. Work to be performed by authorized technicians only. Proper personal protection equipment (PPE) must be used. This consists of safety glasses with side shields, leather gloves, long-sleeved natural fiber shirt and natural fiber pants.

2. Red-tag and Lock-out AC power in accordance with the BNL SBMS subject area for LOTO.

3. Verify lights are out on high voltage power supply then press start button to verify supply is not on.

4. Using attached bonded grounding stick, shunt all high voltage points to ground. This includes supply points and capacitor terminals.

5. Hang grounding sticks on both sides of capacitors.

6. Check for any loose connections, including screw terminals. Retighten as necessary.

7. Check the oil plug holes for leaks and ensure that they are snug without using excessive force.

8. Make visual inspections of all capacitors for swelling, cracks, bubbles or oil leaks. Replace units as necessary.

9. Log serial number and service date of old capacitor removed from service in capacitor log book. Capacitors must be disposed through waste management.

10. Log serial number and date of *new* capacitor placed in service in capacitor log book. Mark date placed in service on capacitor with a permanent marker.

11. Vacuum or wipe all components to remove dust and debris.

12. Remove all tools and materials from modulator before closing door. No items may be stored within modulator PFN cabinet.

13. Remove grounding stick. Secure cabinet. Remove LOTO. Restore unit power for normal operations.

14. Record all findings on the modulator inspection checklist and submit it to the ATF operations coordinator.

ATF modulator inspection checklist

Date: _____ Operator: _____

System: ☐ Gun modulator ☐ Linac Modulator ☐ Other _____

Procedure	✓	Problems/comments
1. Check for loose connections		
2. Check oil plug holes (snug, no leaks)		
3. Visual inspection for swelling, cracks, bubbles, leaks		
4. Vacuum/wipe as needed		
5. Checklist completion recorded in ATF operator logbook		

☐ Check here if any capacitors need replacement, and proceed below:

☐ Date stamp on bad capacitor(s) _____

☐ Describe problem(s) found with bad capacitor(s) _____

_____

_____

☐ ATF operations coordinator notified & info recorded in capacitor logbook.