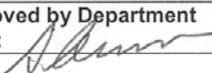


BROOKHAVEN NATIONAL LABORATORY		Number: PO-P-ATF-0013	Revision: 1
PHYSICS DEPARTMENT		Effective: 08/12/2004	Page 1 of 4
Subject: ATF Modulator Test Procedure		Prepared by: Vitaly Yakimenko	
Reviewed by ES&H Coordinator: 	Approved by ATF Head: 	Approved by Department Chair: 	

ATF Modulator Test Procedure

Date _____ Start Time _____ Reason for test _____

Testers _____

This test procedure should be performed at the same interval as the ATF radiation interlock system tests, not to exceed one year. Inform the control room operator prior to starting the test. At least two "qualified" BNL employees are required to conduct these procedures, one of whom is qualified as an "ATF *modulator* operator" and one other from the interlock group or ES&H.

Note: There are components of the modulator system that may be air cooled and may need to be shut down in an orderly manner to avoid damage.

1.0 Gun Modulator (#1).

	√	Comments
Ensure that Gun Modulator (#1) 480V breaker is OFF		
Open RK201 door, ground PFN via grounding stick (leave in place).		
Open RK204 door, remove trigger BNC from arc detector circuit.		
Turn on 480V breaker, reset interlock R1A&B.		
Reset arc interlock (leave key in RESET position).		
Listen for HV relay turn ON.		
Confirm Maxwell HV unit is ON (red light) but HV is OFF.		
Confirm panel meters read zero.		
Open RK201 door. Confirm Maxwell HV unit drops out.		
Close door.		
Open RK204 door. Confirm Maxwell HV unit drops out.		
Close door.		
Turn on HV on Maxwell unit. Confirm modulator pulsing.		
Turn arc interlock key to RUN position. Confirm modulator stops pulsing and Maxwell HV unit drops out.		
Turn arc interlock key to RESET position. Confirm Maxwell HV unit turns on but HV remains off (no pulsing heard).		
Turn arc interlock key to RUN position. Remove key.		
Turn off 480V breaker.		
Open RK201 door, ground PFN via grounding stick (leave in place).		
Open RK204 door, restore trigger BNC to arc detector circuit.		
Remove ground stick and secure both doors.		

2.0 Linac Modulator (#2).

	√	Comments
Remove trigger BNC from <i>external</i> arc detector circuit box.		
Turn on main breaker, reset interlock R1A&B.		
Reset arc interlock on RK205B front panel (leave key in RESET position). Listen for HV relay turn ON.		
Confirm Maxwell HV supply is ON (red light) and turn HV ON. Confirm modulator pulsing sound.		
Open RK205A door. Confirm voltage drops to zero on Maxwell HV panel meters (unit stays on). Close door.		
Turn on Maxwell HV. Confirm modulator pulsing sound.		
Open RK205B <i>rear</i> door. Confirm voltage drops to zero on Maxwell HV panel meters (unit stays on). Close door.		
Confirm arc detector circuit <i>external</i> box in "bypass" mode. Confirm arc interlock key on front panel in RESET position. Turn HV ON, confirm modulator pulsing.		
Turn arc interlock key to RUN position. Confirm Maxwell HV unit remains on but HV drops out (no pulsing heard).		
Restore trigger BNC to <i>external</i> arc detector circuit box.		

3.0 Turn on both modulators.

Both modulator high voltage power supplies are on. ____ ____

Two Reservoir power supplies are on. ____ ____

Two Heater power supplies are on. ____ ____

Two Thyatron grid dividers are on. ____ ____

4.0 Press the Modulator Electrical Emergency Stop button located in the control room.

Two modulator high voltage power supplies turn off. ____ ____

Two Reservoir power supplies turn off. ____ ____

Two Heater power supplies turn off. ____ ____

Two Thyatron grid dividers turn off. ____ ____

The Emergency Stop indicator located on the junction box behind the linac modulator is on. _____

5.0 Pull out the Modulator Electrical Emergency Stop button located in the control room.

The Emergency Stop indicator stays on. _____

Two modulator high voltage power supplies remain off. _____

Two Reservoir power supplies remain off. _____

Two Heater power supplies remain off. _____

Two Thyatron grid dividers remain off. _____

6.0 Press the Emergency Stop Reset button on the junction box.

The Emergency Stop indicator goes out. _____

7.0 Press the Modulator Electrical Emergency Stop button at each of the other locations one at a time and observe that the Emergency Stop indicator comes on. Pull out each button and observe that the indicator does not reset without pressing the Emergency Stop Reset button.

Under east stairs _____

East mezzanine door _____

Inside mezzanine _____

North mezzanine door _____

NOTE: The following devices are listed in the ATF "Response to Modulator Malfunction" procedure.

8.0 Confirm that both battery-operated smoke detectors (one above each modulator) are working properly by pressing the "test" buttons. Replace batteries as needed.

Modulator #1 smoke detector OK _____

Modulator #2 smoke detector OK _____

9.0 Confirm that the video image of both modulators is properly displayed in the control room. Adjust camera as needed.

Video image in control room OK _____

10.0 Confirm that the PA microphone, located behind modulator #2, is connected and working. Adjust the input level on the PA amplifier in the control room as needed.

Microphone OK _____

Inform the control room operator that the test is complete and log it in the operations log.

Completion Time _____

Signatures & life numbers:

ATF modulator operator _____

Other _____ Title _____

Other _____ Title _____