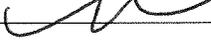
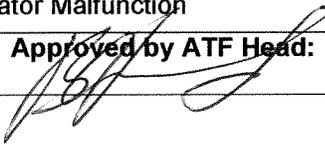
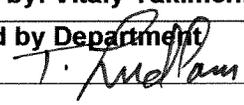


BROOKHAVEN NATIONAL LABORATORY PHYSICS DEPARTMENT	Number: PO-P-ATF-0005	Revision: 2.0
	Effective: 09/21/2009	Page 1 of 2
Subject: ATF Response to Modulator Malfunction		Prepared by: Vitaly Yakimenko
Reviewed by ESH Coordinator: 	Approved by ATF Head: 	Approved by Department Chair: 

ATF Response to Modulator Malfunction

Note: *The modulator PFN cabinets may be opened only by qualified persons trained in the hazards therein. Each capacitor in the cabinet can carry a potentially lethal amount of stored energy and an arc or fire could disconnect the automatic grounding equipment and prevent it from functioning.*

- 1) ATF modulators are monitored in the following ways:
 - a) The sound from the modulators is picked up by a microphone connected to the PA system.
 - b) Smoke detectors. Alarm panel is located within control room.
 - c) The RF wave forms inside the control room when ATF in operation.
 - d) Electron Beam when experiment is in operation.
 - e) A video monitoring system.
 - f) The modulator arc detection (under-voltage interlock).

- 2) Fire extinguishers and alarms are located throughout the ATF.

- 3) In the event of arcing in a modulator, all power to the modulators must be immediately removed by operating any of the "Modulator Electrical Emergency Stop" buttons located in the modulator area and in the control room. The following disconnects or stop buttons can also cut the power to the modulators:
 - a) Disconnect switches located near the modulator.
 - b) Emergency Stops buttons (red): These are located in the ATF control room, experimental hall and beam tunnel. They will also shut off ATF YAG laser system.

- 4) If modulator operation is stopped due to evidence of a malfunction other than arcing, a Qualified Modulator Operator must be called in to inspect and test the unit before high voltage is applied. The result of the inspection and test must be noted in the Control Room Log before the modulator is returned to service.
 - a) Trained ATF Modulator Operators must inspect the modulator enclosure for fire.
 - b) An ATF Qualified Modulator Operator list is posted on the modulator doors and in the ATF control room. These are the only persons authorized to work on the modulator.

- 5) If a modulator has been turned off due to evidence of malfunction, a person must remain at the modulators for at least ten minutes to verify that there is no smoldering fire or similar problem.
- 6) If there is evidence of a fire in the modulator (smoke, odor, or light), the following actions should be taken:
 - a) Press a Modulator Emergency Stop if not already done.
 - b) Make a call to the BNL Fire Department (ext. 2222 or 911) even if the fire alarms have already sounded.
- 7) If fire or smoke appears to be dangerous, evacuate building and initiate the Local Emergency Plan for the ATF.