Physics Department Minor Incidents Log

Incident No.	2003-05	Date:	4/23/03
Reportable	No		
Status	ES&H Committee Final Report		
Groups Involved:	ATF		
Lead Investigator:	Ilan Ben-Zvi, Karl Kusche		

Description: A radiation-controlled gate ("attic hatch") in the Experimental Hall was not properly resecured prior to electron beam operations in that area. This hatch allows access into the "attic" formed above the hall by the concrete slabs in place for the ceiling. The concrete alone does not provide adequate radiation protection when beam is on in the hall. Thus, the attic hatch is required to be secured prior to beam operations in the hall.

On Saturday 4/12/03 about 1100hrs, an ATF electrical engineer obtained the "Radiation Security" key #37 from the Control Room key box, and opened the attic hatch just inside the ATF Experimental Hall (EH) in order to install an experimenter's cable which was needed for an upcoming experiment. The engineer did not sign out the key in the key logbook as required. Upon completion of the task, he returned the key to the key box in the control room but failed to re-secure the hatch.

On Tuesday 4/15/03 about 1145hrs after electron beam operations had commenced in the EH, the engineer recalled that the hatch had not been resecured. He proceeded to do so upon hearing that the EH radiation security had been turned off and the EH was now open (~1400hrs). The on-shift linac operator was not aware of the above condition until after the hatch was resecured since the engineer used a second set of keys to access the key box.

Upon further investigation, it was found that the on-shift linac operator during both Monday 4/14/03 and Tuesday 4/15/03 checked off the line items for "attic hatch secure" on the Checklist for Operation at High Energy in Bldg 820 Experimental Area. The engineer reported that the hatch was still fully open when he went into the EH to re-secure it, which implies that the linac operator did not visually inspect the position of the hatch.

Root Cause:	(Personnel Error – Failure to follow established procedures) Failure to re-secure the attic hatch after completion of tasks.
Contributing Causes:	 (Personnel Error – Failure to follow established procedures) 1. On-shift linac operator did not visually inspect attic hatch prior to operations in EH; 2. Key activity was not properly recorded in the key log; 3. Attic hatch position is not electronically monitored by radiation security system.
Corrective Actions:	 (ATF Group) 1. Hatch has been resecured; 2. A warning sign concerning the use of the key logbook has been placed on the key box; 3. A safety briefing was held for ATF personnel, including all linac operators, to discuss the incident and reinforce the importance of following procedures for security keys and logbooks; 4. Radiation security keys are segregated from other keys in the key box, making it easier for an operator to identify any missing keys; 5. A study of what needs to be changed in procedures will take place, including the possibility of further segregating radiation security keys, having operators account for all keys prior to operations, and installing electronic switches on the attic hatch.
Corrective Actions:	 Department Group Safety Coordinators (GSC) will be informed and there will be discussion of this incident at the next GSC meeting, Group Leaders will be briefed, and the Department will be informed of the incident at the next Department Meeting. Memo sent to all ATF Personnel to keep all electrical items at least two inches off floor or in appropriate containment.

Lessons Learned:

Personnel may benefit from annual renewal of operator training to reinforce procedures;
 Administrative and/or key control of radiation security may need to be supplemented by electrical monitoring, since existing controls allowed faulty procedure to go unnoticed.

The above incident has been investigated and requires no further action.

S. Aronson, Department Chair

Date

S. M. Shapiro, ES&H Committee Chair Date