

Physics Department Incidents Log

Incident No. 2005 - 02 **Date of Report:** 5/6/2005
Reportable/Classification: Not ORPS Reportable as per Categorizer (R. Karol) **Date of Incident:** 4/24/05
Status Draft ES&C Committee Report
Groups Involved: Omega
Lead Investigator: Thomas Muller

Description: The power to the hot plates (that are part of the detergent/water cleansing system for the ATLAS Cooling Plates) in Building 832 was not manually disconnected on Friday evening (April 22), which is the normal procedure. This oversight caused the heaters to re-activate for 6 hours each day (Sat. and Sunday), since they were connected to 24 hour continuous timers that were set for 6 hours of heating operation each day. The power to the circulation pumps had been correctly turned off, however. By the second un-planned heating cycle, which was on Sunday the 24th, the detergent solution had all boiled off, and the lower part of the Tygon tubing began to melt and smoke inside the stainless steel containers. This set-off the smoke alarm system in Building 832, and the response by the BNL Fire Dept. personnel resulted in the power being turned off, the building being aired out with fans, and the Building Manager for 832 being called at home. It was mutually agreed that the BNL weekend personnel had completely mitigated the situation, and that the building was safe to leave unattended for the remainder of the weekend.

Root Cause: Design Error - The initial design relied on personnel to remove the power to the heaters whenever they were not to be used. A fail-safe design would not have relied on operator intervention to remove power.

Contributing Causes: Human Error - Personnel did not turn off the power to the heaters for the weekend.

Corrective Actions (Group): New timers were purchased and installed that require manual setting daily, for each cycle. They have a maximum of 15 hour cycle time which is set for only 6 hours.

Corrective Actions (Department): Group Safety Coordinators (GSCs) will be informed and there will be discussion of this incident at the next GSC meeting, Group Leaders and the Department will be informed of the incident at the next Department Meeting. The ES&H Coordinators will review coffee makers and any other devices with heaters to see if timers should be added to prevent the possibility of a problem.

Lessons Learned: Systems that are designed that depend on personnel to eliminate some hazard may ultimately fail when unanticipated conditions arise. Fail-safe designs eliminate the added risk associated with reliance on an external action to eliminate a hazard.

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

S. Dawson, Department Chair

Date

S. M. Shapiro, ES&H Committee Chair

Date