



MASSACHUSETTS GENERAL HOSPITAL  
SAFETY OFFICE

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20 December 1996

Charles W. Hehl, Director  
Division of Nuclear Materials Safety  
U.S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA. 19406-1415

re: CAL No. 1-96-014  
License No. 20-03814-80  
Docket No. 030-01867

Dear Mr. Hehl,

On 26 November 1996 the NRC sent a confirmatory action letter to MGH management that requires improvements in radioisotope security. This correspondence is sent to meet the 20 December reporting requirement. We describe our actions and reviews as of this writing as well as our permanent plan for security improvement.

#### **Scope of Activities**

Our security review consisted of audits of all MGH radioisotope facilities. Results were reviewed by a small task group consisting of representatives of hospital management, research affairs, Police & Security, and Radiation Safety.

The audits involved both clinical and research uses of radioactive materials. Recommendations of the task group consist of both physical and administrative improvements.

#### **Results of Audits**

##### Clinical Uses

Clinical use of radioactive materials takes place only at the main MGH hospital facility and the Osteoporosis Institute. We did not observe security weaknesses in these areas and have no suggestions for improvements. All clinical areas are either a) fully staffed at all times, b) locked when unstaffed, or c) decom-missioned at the end of each work day.

DEC 26 1996

## Research Uses

Research activities are conducted at a number of facilities many of which are mixed use. We describe each separately.

### *Shriners Hospital*

Due to large scale construction and renovation projects there are currently no radioactives in use at the Shriners Hospital. The building will be ready for full occupancy in about one year. We will conduct our audit at that time and ensure that security measures are in place.

### *Shriners Kendall Square Research Building*

Entry during normal work hours is via a reception area staffed by two or more individuals. At all other times access is by card key only. Building security guards may admit staff who forget or misplace card keys. We see no security weaknesses with this facility.

### *The McLean Hospital*

Entrance to laboratory areas in the Mailman Research Center is similar to that for Shriners Kendall in all ways. There is a single laboratory in the Oaks Building. Entrance here is through doors equipped with conventional key locks. Doors are locked at all times when the laboratory is not staffed.

### *Charlestown Navy Yard Facility (Building 149)*

Weaknesses are noted in many areas of laboratory security. In general, if access to elevators is available, visitors have access to most areas of the building. The fire stairs present a similar problem. Our permanent plan should maintain easy access to non-laboratory areas (eg. 1st floor cafeteria and 2nd floor patient billing area) while limiting unauthorized access to laboratories.

### *Main Campus Warren 10*

Access to the Warren 10th floor Pediatric Surgery Laboratory is via fire stairs or elevator with no other means of security. Most areas of this large lab are not equipped with doors. This is a major weakness which needs to be addressed. There is also a good deal of traffic between the Pediatric Surgery area on Warren 11. This area houses offices as well as patient examination rooms. Allowances need to be made to allow easy but controlled access to the 10 th floor from the 11th.

All other laboratories in the Warren Building have doors that are equipped with conventional key locks.

#### *Main Campus Wellman Building*

Floors 2-5 contain varied radioisotope facilities with a good deal of stairwell use between floor. 1st floor front stairwell is usually open allowing access to upper floors. Back stairwell does not exit onto 1st floor. Exit is through basement animal facility which is under card key access 24 hours per day.

Floor 6 is an animal facility and is controlled via card key 24 hours per day including entry through stairwell. There is no radioactive usage.

Floor 7 is consists of a large mechanical room and wash room. There is no radioactive usage.

Floors 8-11 comprise the Molecular Biology Facility and core lab. Administrative offices are on the 9th floor level. There is a good deal of stairwell usage between floors. Plan should maintain integrity of the unit while limiting access to unauthorized individuals.

#### *Main Campus All Other Research Labs*

All other research labs are equipped with conventional key locks and are locked at all times when not staffed.

### **Results of Task Group Reviews - Proposals for Permanent Security Improvements**

#### Physical Improvements

#### *Main Campus Warren 10*

Institute 24 hours card key access at the elevator and stair well at the 10th floor. Install buzzer or similar system on 11th floor so that 10th floor staff can admit visitors, etc.

#### *Main Campus Wellman Building*

This mixed use building requires careful consideration.

Wellman 8 - 11 constitutes the Molecular Biology area and functions as a single unit. In order to maintain the integrity of the area we will direct all visitor to the 9th floor administrative offices via a sign in the elevator and/or the first floor lobby. Visitor review will be conducted in the administrative area prior to access. Elevator access to floors 8, 10, and 11 will be by card key 24 hours per day. The 7th floor stairwell gates will go onto 24 hours per day card key access. The 9th floor elevator stop will be via card key access only from 7 PM

until 8 AM on normal work days and 24 hours per day at all other times. A video camera will be installed at the 9th floor elevator lobby and will be operational 24 hours per day. Viewing monitor will be placed in the Security Office and in the Molecular Biology Administrative Office. (see ATT A)

Wellman 2-5 consists of varied laboratories. Entrance to labs on these floors will be by card key only with readers at either end of elevator lobbies. Entrance to front stairwell will be controlled by card key access at the first floor level. All card key systems will remain active 24 hours per day. (see ATT B)

Most of the card key readers in this section are already in place.

#### *Main Campus All Other Labs*

No physical changes recommended.

#### *Charlestown Navy Yard (Building 149)*

From the 3rd floor upwards install card key access systems at all lobby doors leading to laboratory areas. The second floor contains only two labs (Coyle & CIPR) and these will have individual card key locks. All card key systems will remain activated 24 hours per day. When lobby and individual card key locks are functional, elevator access will resume as normal, eg card key access 6 PM until 6 AM. (see ATT C for example)

About 70 % of required card key readers are now in place.

#### *Shriners Kendall Square Research Facility*

No physical changes recommended.

#### *The McLean Hospital*

No physical changes recommended.

#### *The Shriners Hospital*

Review pending as described in audit section.

#### Administrative Recommendations

The task group also formulated three administrative actions that will improve security.

1. Employees will be reminded to wear I.D. badges while in radio-isotope labs. This will be an easy effort in card key access

areas but will be more difficult in other laboratories. We recommend an escalated enforcement effort over a period of several months. This will be a combined effort of Radiation Safety and Police & Security. (see ATT D)

Improved I.D. usage should make un-authorized visitors more obvious to staff.

2. The Radiation Safety Office will more rigorously enforce the use of radioisotope utilization logs (or equivalent) in all laboratories. In January the RSO staff will check every lab to ensure that the logs are being kept correctly. Annual audits will also check this item closely.

Proper use of the logs will allow loss or theft of radioactive materials to be discovered quickly.

3. Police & Security conducts periodic checks of all laboratory areas during off hours and places "red tags" on any open doors when areas are unoccupied. This alerts the authorized user to the problem. Effective January 1st Police & Security will provide a list of applicable unlocked areas to the RSO on a weekly basis. In conjunction with the Radiation Safety Committee the RSO will institute corrective actions.

### Implementation

About 75 % of the card key readers are already in place and require activation only. We need an additional 25 % or approximately 50 readers to complete the perimeter security system described above. Due to the financial scope of this project we applied for emergency contingency funding. We expect this to be approved and available by mid-January. The entire system will be completed and functional by mid-February. The required audit and report to NRC could be completed by 24 February 1996

The red tag notification system to the RSO will become effective on 1 January 1997.

The requirement that I.D. badges be worn in laboratories will be implemented by posting additional signs on laboratory doors. (see attachment C for example). Distribution and posting will be completed by 15 January 1997.

Increased oversight of utilization log usage will begin on 1 January and will be completed by 15 January 1997.

## Notification of Users

We are a large operation. For this reason we have found electronic mail to be the most effective means to communicate with our users. These communications are followed by visits to individual labs or groups when indicated or requested. We will also describe all new security requirements in our Research Affairs Newsletter.

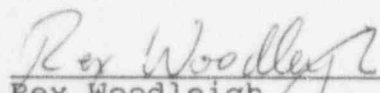
## Discussion

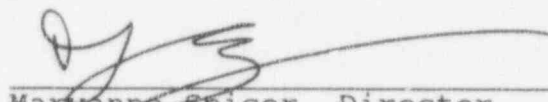
We believe that the proposals described above offer the best improvements for radioisotope security. The project will, however, take some time for completion.

We request that NRC consider an extension of the 24 January completion date for this project. During this period we will continue to apply applicable interim measures as described in our previous correspondence (letter of 5 December 1996). We would also submit any interim progress reports deemed appropriate by NRC including automatic notifications in the event that our timetable cannot be achieved and/or the physical improvements described above are not feasible in certain areas.

We can only hope that the Commission will be flexible with us in this effort. In our opinion, these proposals offer a more comprehensive and significant effort than could be accomplished in the short term.

Sincerely,

  
Rex Woodleigh  
MGH Radiation Safety Officer

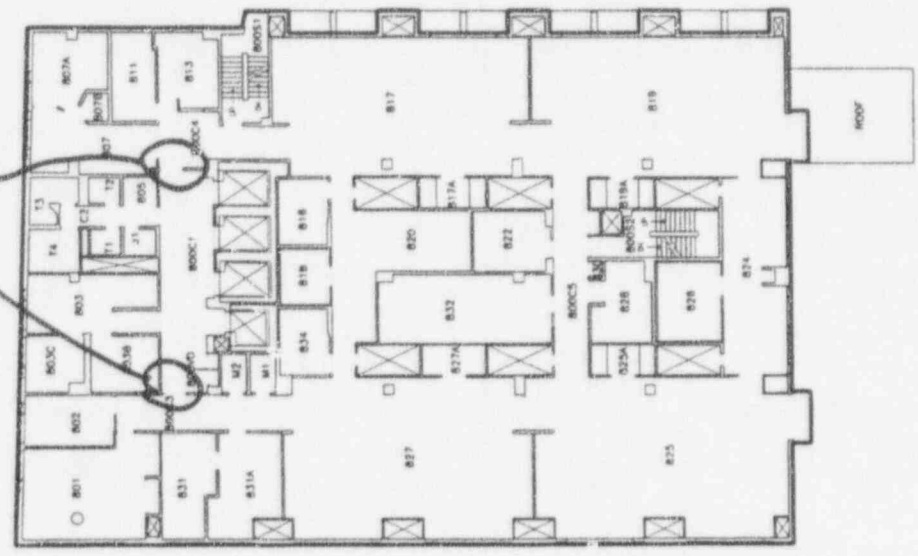
  
Maryanne Spicer, Director  
MGH Corporate Compliance

cc. Mohammed Shanbaky



ATT A

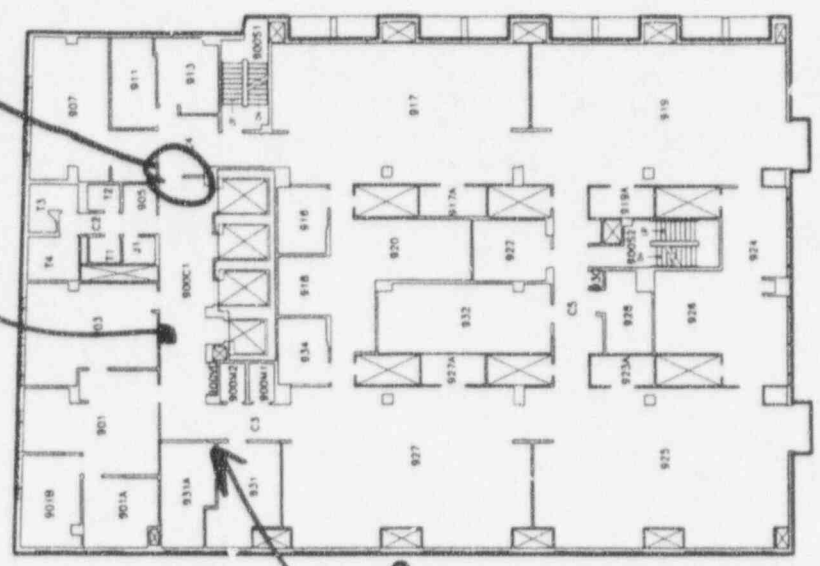
CARD KEY  
LOCKS



8 Elevation: 107.5 feet

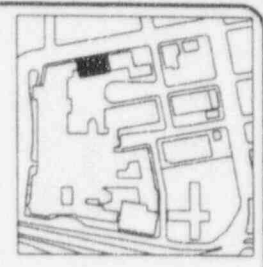
CAMERA

CARD KEY  
LOCK



OFFICES

9 Elevation: 118.1 feet



0 4 8 16 32 ft.  
One inch = 32 feet



Revised: October 95

Wellman 8, 9

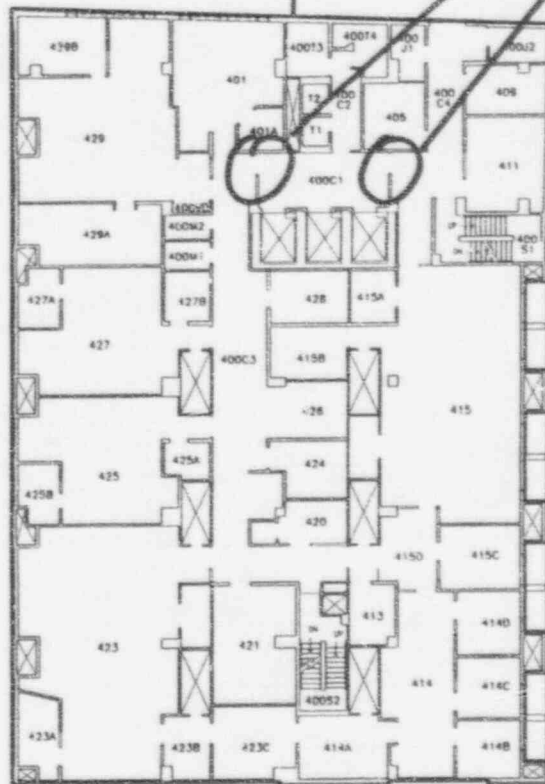
Massachusetts  
General  
Hospital

MGH

# ATT B

Edwards

CARD  
KEY  
LOCKS



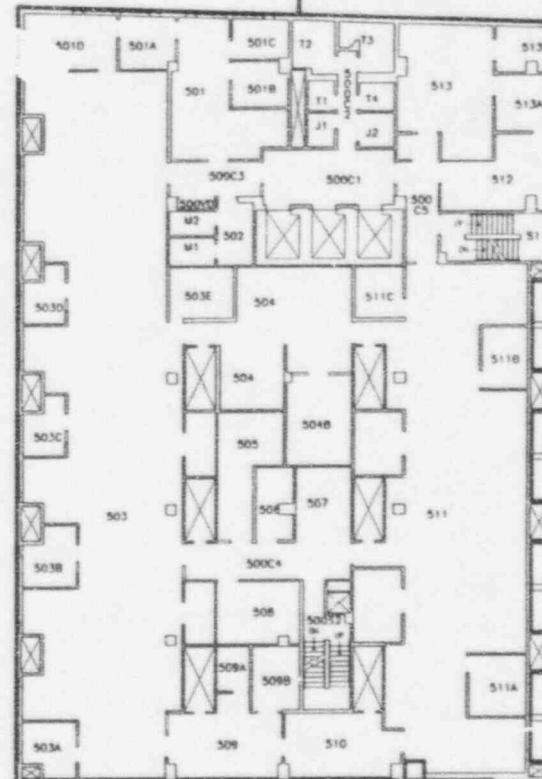
Bartlett Extension

Bartlett

4

Elevation: 57.8 feet

Edwards



Bartlett Extension

Bartlett

5

Elevation: 68.4 feet



**MGH**

Massachusetts  
General  
Hospital

**Wellman 4, 5**

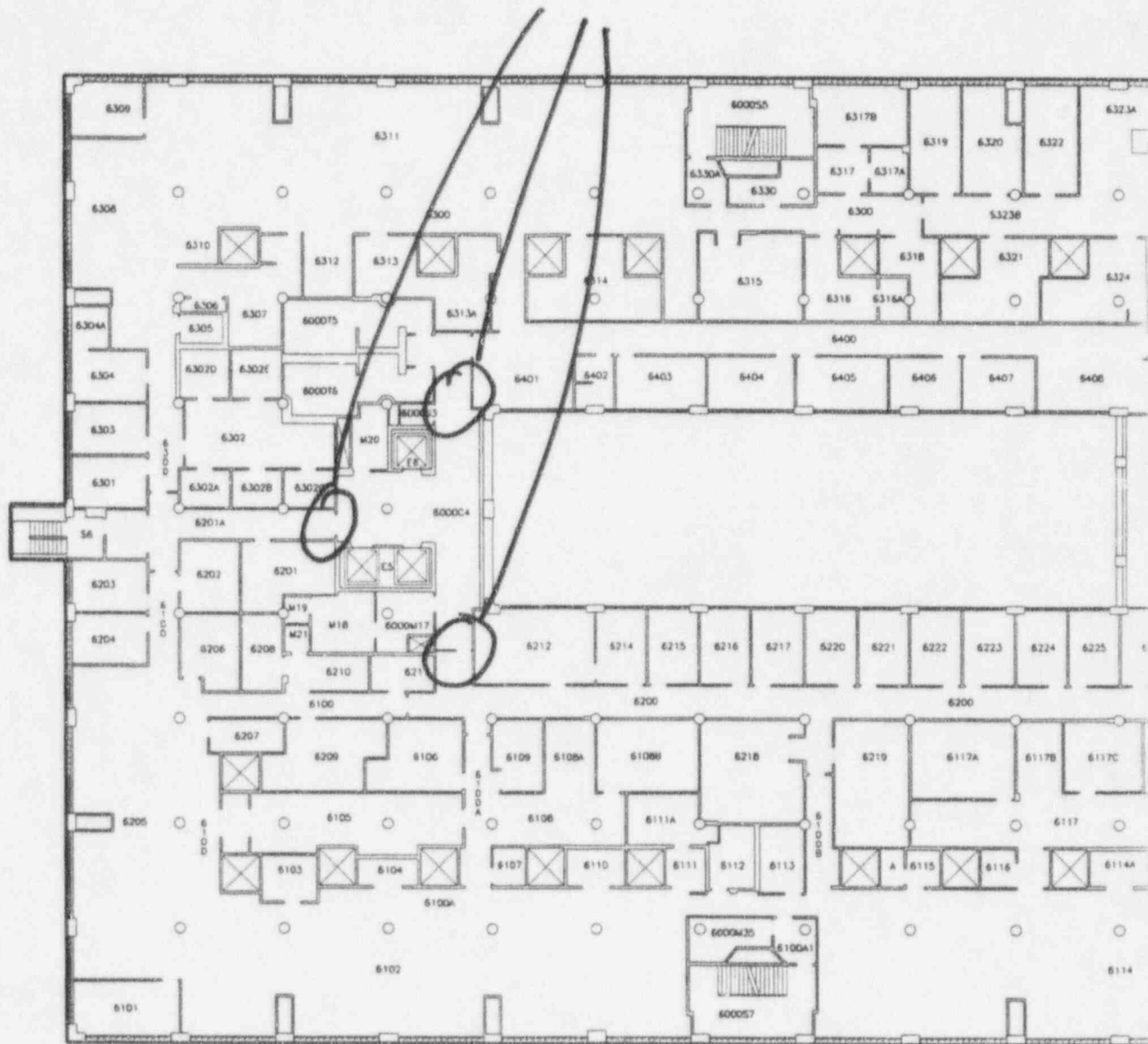
Revised: October 95



0 4 8 16 32 ft.  
One inch = 32 feet



## CARD KEY LOCKS



Authorized  
Personnel **ONLY**

**STOP**

For Entry Clearance, Contact:

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**ID Required**

MGH Security 6-2121  
CNY Security 6-5400

Authorized  
Personnel **ONLY**

**STOP**

For Entry Clearance, Contact:

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**ID Required**

MGH Security 6-2121  
CNY Security 6-5400