

#### 1.4 SECURITY AREAS (A-LEVEL)

The Security Areas (SA), deemed vital areas, are permanently established areas which are under the lock and key control of the Nuclear Energy Laboratory. Access to those areas is controlled and affords the isolation of material, equipment, and personnel within.

Security areas require A-level access or higher. These areas, the reactor high bay (room 1000), the radioactive storage room (within room 1540), and the control room (room 2001) during non-university working hours, are identified in Figures 4, 5 and 6. Also identified are the various alarm system components and their approximate locations. Security areas are protected by an intrusion alarm system (except the control room), hence permit limited access, and present well defined physical boundaries to both innocent and overt intruder.

The radioactive storage room is located below ground level so that the outside walls are backed by earth fill. The inside walls are two-foot-thick concrete block with the exception of the inner door to the room and the area above eight feet on the south side of the room (see Figure 6). These areas are covered with steel mesh and either 3/8 inch particle board or plaster. The stairwell beyond the south wall is alarmed and tied to the same circuit as the radioactive storage room. Two steel doors provide the only access to the room. The inner door, #1, is a double-plated door and has two locks. One of the locks is keyed to "A+" level, and the other lock is a Sargent and Greenleaf combination padlock No. 8077A, which meets the specifications outlined in the NRC Regulatory Guide 5.12. The steel mesh outer door, #2, is keyed to "A" level. The fuel plates and fuel scraps are stored in an Insulated Record Safe, Model T-20, Serial No. 48727, made by Herring-Hall-Marvin Safe Company. It is secured to the north concrete wall and floor by 1 x 1 x 1/8 inch angle iron. A separate key and combination are required to open it. One fuel bundle with attached thermocouples is stored in an eight-foot-long, 6 inch diameter steel schedule 40 pipe with a steel lid hinged and locked with a Sargent and Greenleaf combination padlock. The pipe is welded to the north concrete wall. All the bolts securing the safe and schedule 40 pipe are welded to the angle iron to prevent easy removal. The two PU-BE neutron sources are kept in steel drums filled with paraffin, chained to the east wall, and secured with the same type of Sargent and Greenleaf padlocks. The uranyl nitrate (250 gms) is stored in padlocked steel lockers at the south end of the room.

For the purpose of radiological control and personnel safety, the subcritical facility in room 1540 requires A-level access. On occasion, encapsulated neutron sources may be left in the

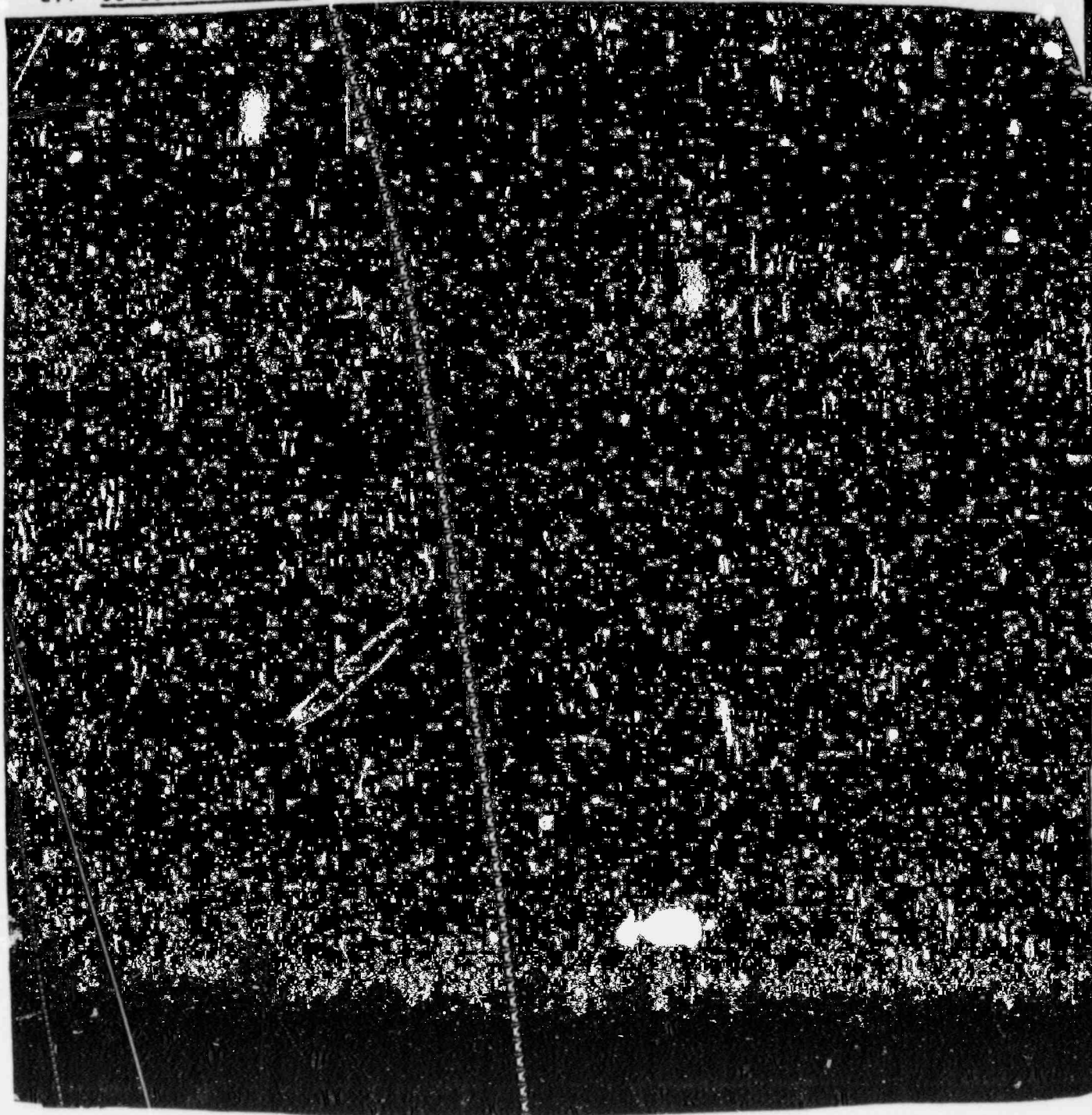
subcritical facility or the reactor high bay (Room 1000) for class demonstration purposes or for instrument calibrations. The subcritical facility houses two natural uranium subcritical assemblies (graphite and heavy water), and a Kaman 1001-A neutron generator. Permissive entry by A-level access provides a prudent means of radiological control, but the security implications are regarded as negligible.

The fuel storage pits in the reactor high bay contain a 4 curie Co-60 radioisotope source. Other radioactive materials may be stored within these pits as demanded by special circumstances. The storage pits are composed of cylindrical holes, 6.5 feet deep, set into the concrete floor. The cylinders are secured with a 4 foot long, 10 inch diameter, 380 pound steel lined concrete plug. The plug can be removed with a special handling device and the reactor room crane. The concrete plug handling device and the crane are both secured with a Sargent and Greenleaf padlock.

The remainder of the enriched uranium is kept in the reactor. Due to the power history of the reactor and the inaccessibility of the fuel, that fuel is currently regarded as exempt. In order to safely remove the fuel from the reactor, it would take several hours time, the use of the 10 ton crane which is locked out in two areas (the reactor high bay which is alarmed and the transformer vault), the use of the handling cask and shielding. At this time, it is felt that the fuel would read greater than 100 Rem/hour at one meter at the nearest accessible surface. Figure 3 describes the reactor high bay and the reactor without the extra shielding, casks and rabbit equipment above the top concrete shield.

2.0 DETECTION DEVICES OR PROCEDURES

2.1 DETECTION DEVICES



\* see Chapter 6

## 2.2 SURVEILLANCE OF VITAL AREAS

### 2.2.1 WORKING HOURS

There are two separate alarm systems and each alarm system can only be activated or deactivated by specified individuals.

Two individuals appointed by the Director of the Laboratory are authorized to deactivate the alarm system of the radioactive storage room. Their names and an entry code are on file with the UCLA Police Department. Legal entry can only be effected between the hours of 0800 and 1700 on University working days. The normal sequence of events for entry into the radioactive storage room is for one of the above two individuals to call the police, wait for recognition, state his name, his intent, and the entry code. Upon recognition, he estimates the probable duration of the entry. Upon entry, he deactivates the alarm at the master control, and at least one of the four authorized (3.42) individuals will maintain surveillance during entire period that the alarm is deactivated. Upon departure, he reactivates the alarm, secures the door, calls the police department, gives his name, states that the area is secured, and asks for confirmation of the alarm system reactivation and condition of non-alarm. This alarm system is rarely deactivated, so normally, surveillance of this area is accomplished by the working personnel, the lock and key system and the alarm system. Backing up these systems are the UCLA Police Department and local law enforcement agencies.

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All A-level personnel are authorized to deactivate the alarm system of the reactor high bay. Their names are on file with the UCLA Police Department. Legal entry can be affected at any time but is normally done between the hours of 0700 and 1800 on University working days.

In order to ensure that the Reactor High Bay alarm and the Reactor Control Room are secured properly during non-working hours, a sign-up procedure has been established. A clipboard hangs next to the control room electric strike key control master unit and states the following. He who unlocks the control room and/or deactivates the Reactor High Bay must initial appropriate column. He then assumes the responsibility for lock and/or reactivation.

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### 2.2.2 NON-WORKING HOURS

During non-working hours, the lock and key system and the alarm system provide the surveillance of the security areas. In addition, there are on-site inspections (physical checks) randomly every four hours on a 24 hour basis. The on-site inspection includes a check on the outer doors of the facility and, at the officer's discretion, entrance and patrol of the controlled access areas. Local law enforcement agencies back up these systems.



### 2.3 TEST

The intrusion alarm detection system is automatically tested for proper operation upon entry into the reactor high bay to deactivate the alarm upon notification to the police department, or at least once a week. The same applies to the radioactive storage room except due to its infrequent entry, this test will be performed at least on a quarterly basis.

A walk test and calibration shall be performed on the intrusion alarm detection systems quarterly by the Laboratory Security Officer and one other A-level staff employee or reactor operator.

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## 5.0 COMMUNICATIONS

The facility has a commercial telephone link with the campus police. The campus police maintain 2-way radio communications between security officers on patrol and headquarters with fixed radio units in the patrol cars and portable radio units carried by the security officers. The Police Department has direct telephone and radio communications with the Los Angeles City Police Department. All communications systems are available 24 hours each day. The communications systems are of commercial grade.

In the event of a security violation detected by the intrusion alarm system, the following communication system is used. The alarm system registers a security violation. A signal is sent along a private telephone line to the 24 hour manned Honeywell Alarm Receiver (W8480B-D) located at the UCLA Police Station. At the station there is a recorder which prints out the status on each and every alarm. The status categories are normal, alarm short and alarm open. Alarm open means tampering with the system and alarm short either means tampering or high radiation. If either occurs, the appropriate action is to assume that an intrusion is signalled.

An officer or civilian representative (dispatcher) on duty then calls the patrol units on a two-way radio to proceed to the NEL and investigate the problem. (If the officers are not in their car, they still have direct voice contact since they carry portable radios.) After an investigation, the police within the NEL will call the dispatcher who may then telephone the laboratory personnel listed in order on the Reactor Emergency Procedure List until one is contacted. The contacted individual then proceeds to the laboratory to assist and to advise the police on the situation.

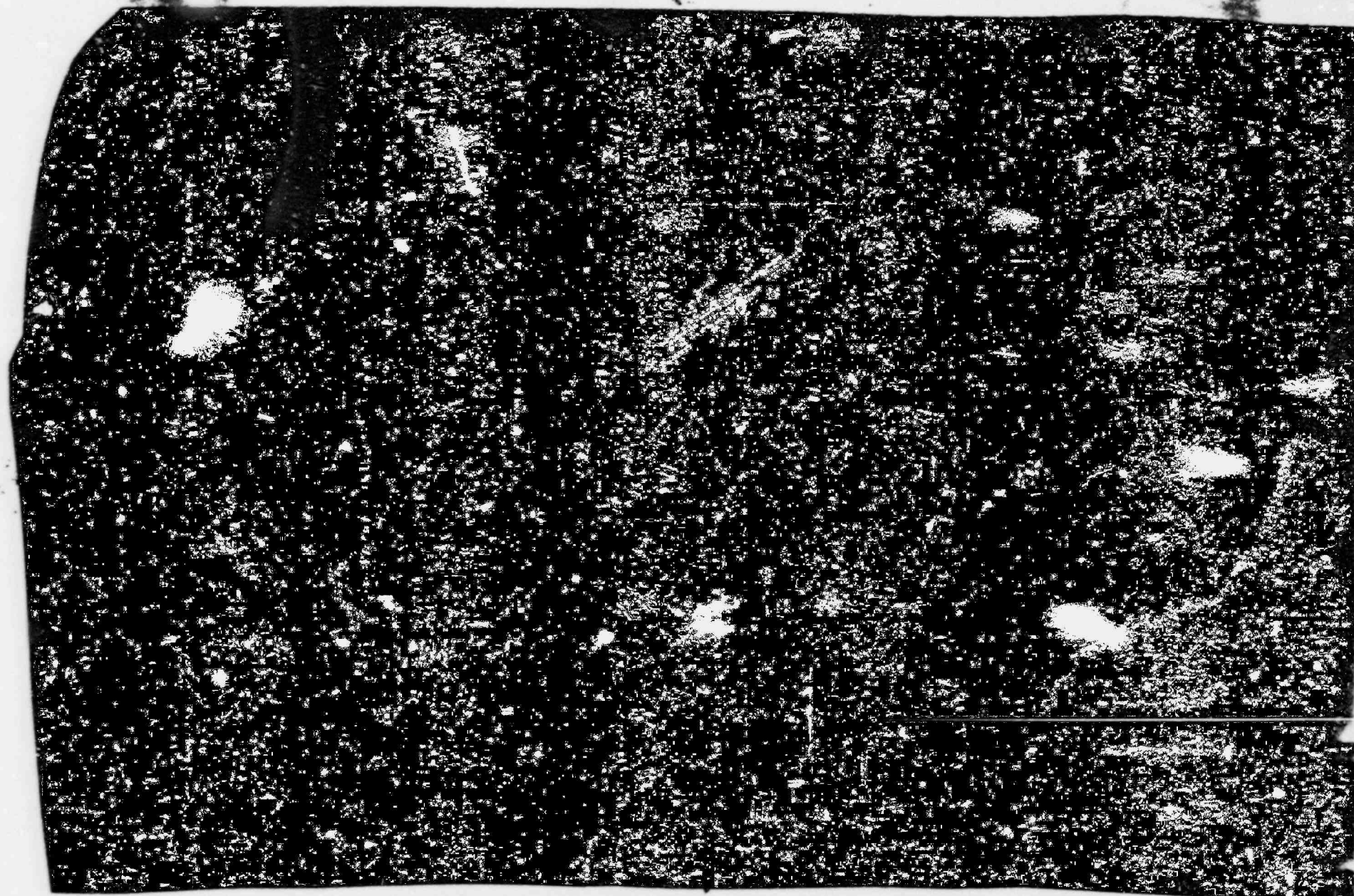
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**NUCLEAR ENERGY LABORATORY - 1ST FLOOR (GROUND LEVEL)**

Figure 4



NUCLEAR ENERGY LABORATORY - 2ND FLOOR

Figure 5

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Figure 6 - Radioactive Storage Room (and surrounding area)

Table 2

ALARM EQUIPMENT LIST

A-9

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UNIVERSITY OF CALIFORNIA, LOS ANGELES

UCLA

BERKELEY - DAVIS - IRVINE - LOS ANGELES - RIVERSIDE - SAN DIEGO - SAN FRANCISCO



SANTA BARBARA - SANTA CRUZ

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10 August 1982

Mr. Hal Bernard, Acting Branch Chief  
Standardization and Special Projects Branch  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C.

Docket 50-142

Dear Mr. Bernard:

Due to recent events, UCLA's Physical Security Plan must be amended. Enclosed are six copies of five pages of Amendment #5 - August 1982. We hope that this meets with your approval.

Sincerely,

Charles E. Ashbaugh  
Security Officer  
Nuclear Energy Laboratory

Reviewed and Approved:

Walter F. Wegst, Director  
Research & Occupational Safety

CEA/jb

enc: 6 copies - Amendment #5, pages 1-4, 1-5, A/4, A/5, A/8

cc: (with Amendments) J. Barber, Chief - Campus Community Safety, UCLA  
L. Norderhaug - Safeguards, Region V, USNRC  
W. Wegst, Director - Research & Occupational Safety

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NUCLEAR ENERGY LABORATORY

IVAN CATTON, DIRECTOR

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