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August 20, 1976

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Docket No. 50-142

V. N. Rizzolo, Chief
Safeguards Branch
U. S. Nuclear Regulatory Commission
Region 5
Suite 202, Walnut Creek Plaza
1990 N. California Blvd.
Walnut Creek, Calif. 94596

Dear Mr. Rizzolo:

Due to the sensitive nature of the contents of this letter, we request that this document be withheld from public disclosure pursuant to Section 2.790 of 10 CFR Part 2. This letter concerns the special, unannounced, physical security inspection of the UCLA Training Reactor Facility by Mr. M. D. Schuster, Region 5 on July 29 and 30, 1976.

The Security Plan for this facility is in the process of being revised to incorporate all previously approved changes and new modifications. Included in these new modifications will be ways to reduce weaknesses and vulnerabilities found during the inspection. The Security Plan will be submitted by September 30, 1976.

During a key inventory taken August 8, 1975, it was determined by the Laboratory Security Officer that one C-level key was lost and one B-level key was duplicated.

Contrary to our Security Plan, the lost C-level key is not regarded as a security-related key in the sense of 10 CFR 73. This will be reflected as a modification in the new Security Plan.

The duplicated key, a B-level type, was duplicated by the UCLA Police Department. We are in agreement with them in the need to have keys available in each patrol car to expediate their arrival at the Nuclear Energy Laboratory in case of emergency. On August 16, 1976, the Police Department was verbally informed of the violation and another key inventory was made by the Laboratory Security Officer. At that time, six more duplicated keys were found and were hence marked by the Laboratory Security Officer. As a result, the Police Department assured the Laboratory Security Officer that no more duplicated keys will be necessary and if a need arises for more duplication, they will do it only with prior approval from the Director of the Nuclear Energy Laboratory.

[redacted]

[redacted]

The steps, which have been or will be taken to correct the violation, the results achieved and steps which will be taken to avoid furtner violations, have been stated. The date when full compliance will be achieved is September 30, 1970.

Sincerely,

Ivan Catton, Director
Nuclear Energy Laboratory

IC/CEA/vl

cc: R.R. O'Neill, Dean, School of Engineering and Applied Science
R.A. Westmann, Associate Dean, School of Engineering and Applied Science
H.V. Brown, Campus Safety Officer, UCLA
C.E. Ashbaugh, Laboratory Security Officer, Nuclear Energy Laboratory

[redacted]

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
SUITE 202, WALNUT CREEK PLAZA
1990 N. CALIFORNIA BOULEVARD
WALNUT CREEK, CALIFORNIA 94596

Encl. 3

OCT 19 1977

Docket No. 50-142

The Regents of the University of California
School of Engineering
Los Angeles, California 90024

Attention: Russel O'Neil, Dean of Engineering

Gentlemen:

Subject: NRC Inspection of Nuclear Energy Laboratory

This letter refers to the inspection of your activities authorized under NRC License No. R-71 conducted by Messrs. W. P. Mortensen and R. Blackman on September 21-22, 1977. It also refers to the discussion of our inspection findings held by the inspectors with Mr. I. Catton and members of his staff on September 22, 1977.

The inspection included examination of activities related to physical protection against industrial sabotage and against theft of special nuclear material in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 73, "Physical Protection of Plants and Materials," your Security Plan, and license conditions pertaining to physical protection as described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and records, interviews with facility personnel and observations by the inspectors.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. The items of noncompliance are categorized into the level as described in our correspondence to you dated December 31, 1974.

This notice is sent to you pursuant to the provisions of Section 2.201, of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office,

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within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved.

During this inspection it was also found that one of your activities appeared to deviate from the generally accepted practices in the industry as set forth in the Notice of Deviation, enclosed herewith as Appendix B. In your reply please include your comments concerning this item, a description of any steps that have been or will be taken to prevent recurrence, and the date all corrective actions or preventive measures were or will be completed.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security procedures are exempt from disclosure; therefore, Appendices A and B to this letter, the inspection report, and your response to the items listed in the appendices will not be placed in the Public Document Room and will receive limited distribution.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

LeRoy R. Norderhaug, Acting Chief
Safeguards Branch

Enclosures:
1. Appendix A - Notice of Violation
2. Appendix B - Notice of Deviation
3. Inspection Report No. 50-142/77-02

[redacted]

APPENDIX B

University of California at Los Angeles
School of Engineering
Los Angeles, California 90024

Docket 50-142
License No. R-71

NOTICE OF DEVIATION

Based on the results of an NRC inspection conducted during the period September 21-22, 1977, it appears that one of your activities deviated from generally accepted practices in the industry as indicated in the following notice.

1. Regulatory Guide 5.12 states in part "Key locks...on doors or gates to material access areas in protected and vital area perimeters and for access to vital equipment should provide a high degree of resistance to opening by force or tamper techniques. "

   U.S.N.R.C. Office of Inspection and Enforcement Circular 77-04 states in part "Door locks must be of substantial construction that their neutralization or circumvention by common burglary techniques is precluded."

   Contrary to the above, the inspector demonstrated on September 21, 1977 to the licensee that a reactor high bay door, could be opened using a shove knife technique. The door thereby weakened the security provided by the substantial barrier wall.

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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-142/77-02

Docket No. 50-142 License No. R-71 Safeguards Group 11

Licensee: The Regents of the University of California
School of Engineering
Los Angeles, California 90024

Facility Name: Nuclear Engergy Laboratory

Inspection at: University of California at Los Angeles

Inspection conducted: September 21-22, 1977

Inspectors: Wayne P. Mortensen 10/19/77
W. P. Mortensen, Physical Protection Inspector Date Signed

Date Signed

Date Signed

Approved by: L. R. Wordernaug 10/19/77
L. R. Wordernaug, Acting Chief, Safeguards Branch Date Signed

Summary:

Unannounced Inspection on September 21-22, 1977 (Report No. 50-142/77-02
Areas Inspected: Followup on previously identified items of noncompliance, essential equipment, security areas, security systems, organization, access control, surveillance and procedures. The inspection was started during regular working hours and involved 8 hours onsite by one NRC inspector. The inspector was accompanied by a representative of The Office of Inspection and Enforcement, Headquarters, U.S.N.R.C., who conducted a program review.

Results: Of the eight areas inspected, two items of noncompliance were identified in two areas. The areas of noncompliance were security systems (para. 5) and surveillance (para. 8). One deviation was identified in paragraph 5.

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DETAILS

1. Persons Contacted

*Dr. Ivan Catton, Director, Nuclear Energy Laboratory
Dr. Neil C. Ostrander, Manager, Nuclear Energy Laboratory
*Mr. "Chuck" Ashbaugh, Security Officer, Nuclear Energy Laboratory
Lt. Jim Kuhen, UCLA Police Department
Mr. Bud Ennis, Supervising Locksmith UCLA
Mr. Phil Arnold, Electrician, UCLA

*denotes those attending exit interview

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (142/76-01): Failure to take corrective action when keys to security locks were lost and duplicated without authorization. The inspector found that written procedures now exist and approved key control practices are being followed to insure key system integrity.

3. Essential Equipment

The licensee has designated the reactor controls, the reactor and the cooling system as essential equipment.

No items of noncompliance or deviations were identified.

4. Security Areas

The inspector examined the security barriers as they existed September 21, 1977 and found them to be as described in the licensee's security plan dated January 20, 1977 as revised May 13, 1977 and August 24, 1977.

No items of noncompliance or deviations were identified.

5. Security Systems

A. The inspector tested the dead locking feature of the Russwin Mortise latches installed on doors providing access to and within the Nuclear Energy Laboratory. In several of the locks it was noted the dead locking feature failed to operate. The inspector demonstrated to licensee staff that the door from classroom 20 into the reactor high bay, keyed to operate from "[illegible] lev. key, could be opened using a small screwdriver as a shove knife.

[redacted]

Regulatory Guide 5.12 and The Office of Inspection and Enforcement Circular 77-04 indicate the accepted industrial practice of maintaining locking devices so that their circumvention by common burglary techniques is precluded.

These findings represent a deviation.

B. The licensee has installed a Kidde Model KD 3 Ultrasonic Intrusion Alarm. Through interview of the licensee's employees and direct observation, the inspector determined that the telephone lines transmitting signals from the alarm system in the Nuclear Energy Laboratory to the UCLA Police Department passed through regular telephone junction boxes and frames. In the junction boxes and frames, the alarm lines are identified by red rubber caps on the termi als. The inspector also observed that junction boxes through which the alarm system lines traveled were not equipped with tamper indicating devices. Neither line supervision nor "fail-safe" alarm circuitry is incorporated to detect tampering or a break in the line.

The licensee's approved security plan states "The alarm system registers a security violation. A signal is sent along an isolated tamper proof telephone line to the 24 hour manned Honeywell Alarm Receiver W340 B.D. located at the UCLA Police Station."

These findings represent an item of noncompliance.

6. Organization

The inspector reviewed the licensee's security organization and the relationship with local law enforcement authorities on September 22, 1977, and found it to be as described in the security plan.

No items of noncompliance or deviations were identified.

7. Access Control

The inspector examined key control procedures and personnel access to the security areas.

No items of noncompliance or deviations were identified.

8. Surveillance

The licensee's approved security plan (part II, paragraph C2) states "That during non-working hours, the lock and key system and the alarm system provide the surveillance of security areas." Part I, paragraph B of the security plan states "Security Areas

require A level access or higher. These areas, the reactor room (1000) and the radio active storage room (within room 1540), are identified in figures 6 through 8."

The inspector tested the licensee's alarm system by having the licensee place the alarm system in a secure mode and establishing direct radio communication with the UCLA Police Alarm Station. The police alarm station was instructed to report incoming alarms for this test immediately. The inspector then entered the reactor high bay (room 1000), a security area. The inspector walked continuously within the reactor room both upstairs and downstairs around the reactor without detection by the intrusion detector system. After approximately nine minutes while the inspector was touching the alarm control panel within the security area, the system indicated an alarm. Through interview of licensee staff, the inspector determined the alarm sensitivity had been decreased because of false alarms caused by wind drafts. The licensee increased the sensitivity of the alarm system and it was retested in the same manner by the inspector. With the increased sensitivity, the alarm system indicated intrusion by the inspector on the third step within the security area.

These findings represent an item of noncompliance.

9. Procedures

The inspector reviewed the licensee's procedures for response to detected unauthorized intrusions, security violations by authorized personnel, bomb threats, acts of civil disorder, security program review and key control.

No items of noncompliance or deviations were identified.

10. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on September 22, 1977. The inspector summerized the scope and findings of the inspection. The licensee representatives made the following remarks in response to certain of the items discussed by the inspector:

Stated the discription of the alarm system transmission wires had been given to them by their installation personnel and they would check into it. (paragraph 5)

Acknowledged the problems with the dead latching feature of their locks and stating their locksmiths have been instructed to alleviate the problem. (paragraph 5)

Stated they would adjust the alarm system to a performance standard and inform NRC of that standard, and/or procedures to assure a constant effective level of sensitivity in the security intrusion alarm system. (paragraph 8)

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WALNUT CREEK, CALIFORNIA 94596

DEC 2 8 1977

Docket Nos. 70-223
50-142

University of California
Los Angeles, California 90024

Attention: Dr. Harold V. Brown
Environmental Health and Safety Officer

Gentlemen:

Subject: NRC Inspection

This refers to the inspection conducted by Messrs. G. Hamada and A. Wieder of this office on December 5 and 6, 1977 of activities authorized under NRC License Nos. SNM-974 and R-71. It also refers to the discussion of our inspection findings with members of your staff at the conclusion of the inspection.

The areas examined during the inspection included your program for controlling and accounting for special nuclear material pursuant to applicable provisions of Part 70, Title 10, Code of Federal Regulations, and specific requirements of NRC License Nos. SNM-974 and R-71. Within these areas, the inspection consisted of selective examinations of procedures and records, interviews with campus personnel and observations by the inspectors.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials are exempt from disclosure; therefore, the inspection report will not be placed in the Public Document Room and will receive limited distribution.

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Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely.

L. R. Norderhaug, Chief
Safeguards Branch

Enclosure:
IE Inspection Report Nos.
70-223/77-02 and 50-142/77-03
(IE-V-208)

cc: Professor Ivan Catton
Director, Nuclear Engineering Laboratory, UCLA

[redacted]

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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 70-223/77-02 (IE-V-208)
50-142/77-03

Docket No. 70-223
50-142 License No. SNM-974
R-71 Safeguards Group 2

Licensee: University of California, Los Angeles

Los Angeles, California 90024

Facility Name:

Inspection at:

Inspection conducted: December 5 - 6, 1977

Inspectors: [signature]
G. Hamada, Chemist/Statistician — 12/23/77 Date Signed

[signature]
A. Wieder, Safeguards Auditor — 12/23/77 Date Signed

Approved by: [signature]
L. R. Norderhaug, Chief, Safeguards Branch — 12/23/77 Date Signed

Summary:

Inspection on December 5-6, 1977 (Report No. 70-223/77-02 and 50-142/77-03 (IE-V-208))

Areas Inspected: The licensee was inspected for compliance with applicable sections of the regulations which cover material control and accounting requirements. These included Facility Organization and Operation, Measurement and Controls, Storage and Internal Control, Inventory, and Records and Reports. The inspection involved 16 inspector-hours onsite by two NRC inspectors.

Results: No items of noncompliance or deviation were identified in any of the areas inspected.

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DETAILS

1. Persons Contacted

*J. Evraets, Radiological Safety Officer, EHS
*J. Hornor, Health Physicist
C. E. Ashbaugh, III, Physical Security Officer
A. Zane, Reactor Supervisor

*Denotes attendance at the exit interview.

2. Facility Organization and Operation

The facility was inspected for general compliance with facility organization criteria addressed in the approved license application statement. The inspection also included a review of authorized possession limits and authorized uses of Special Nuclear Material.

No items of noncompliance were identified.

3. Measurement and Controls

The inspection consisted of a review of nuclear material depletion and production data and the reporting of these data in the Material Status Reports.

No items of noncompliance were identified.

4. Storage and Internal Control

Inventory records maintained for in-reactor and storage were reviewed.

No items of noncompliance were identified.

5. Inventory

An inventory of stored fresh fuel plates and scrap by serial number and weight was conducted. Spent fuel elements were piece counted and the core content was accepted on the basis of a fuel bundle location chart. Plutonium-Berylium sources were identified by serial number.

No items of noncompliance were identified.

[redacted]

[redacted]

6. Records and Reports

The licensee's nuclear material control and accounting records, reports and other documentation applicable to the period May 21, 1975 through September 30, 1977 were reviewed for compliance with the records and reports requirements of the regulations.

No items of noncompliance were identified.

7. Exit Interview

The inspection findings were discussed with representatives of the facility management.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
SUITE 202, WALNUT CREEK PLAZA
1990 N. CALIFORNIA BOULEVARD
WALNUT CREEK, CALIFORNIA 94596

DEC 18 1978

Docket No. 50-142

The Regents of the University of California
School of Engineering
Los Angeles, California 90024

Attention: Russell O'Neil
Dean of Engineering

Gentlemen:

This letter refers to the inspection of your activities authorized under NRC License No. R-71 conducted by Mr. W. P. Mortensen of this office on October 30-31, 1978. It also refers to the discussion of our inspection findings held by the inspector with Mr. N. Ostrander and members of his staff on October 31, 1978.

The inspection included examination of activities related to physical protection against industrial sabotage and against theft of special nuclear material in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 73, "Physical Protection of Plants and Materials," your Security Plan, and license conditions pertaining to physical protection as described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and records, interviews with facility personnel and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were identified.

During this inspection it was found that certain of your activities appeared to deviate from your internal security procedures, and/or commitments you made to this office in your letter dated December 21, 1977, as set forth in the Notice of Deviation, enclosed herewith as Appendix A. Please reply within twenty (20) days of your receipt of

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this notice and comment concerning these items. Include a description of any steps that have been or will be taken to prevent recurrence, and the date all corrective actions or preventive measures were or will be completed.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials are exempt from disclosure; therefore, the enclosure to this letter, the inspection report, and your response to the items listed in the enclosure to this letter will not be placed in the Public Document Room and will receive limited distribution.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

L. R. Norderhaug, Chief
Safeguards Branch

Enclosures:
1. Appendix A - Notice of Deviation
2. IE Inspection Report No. 50-142/78-03 (IE-V-264)

APPENDIX A

The Regents of the University of California
School of Engineering
Los Angeles, California

Docket No. 50-142
License No. R-71

Notice of Deviation

Based on the results of the NRC inspection conducted on October 30-31, 1978, it appears that certain of your activities appeared to deviate from your internal security procedures or your commitment contained in your letter to Region V, USNRC, dated December 21, 1977, as indicated below.

1. The licensee stated in their letter to Region V, USNRC, dated December 21, 1977, Paragraph A.2, "An alarm sensitivity procedure is currently being formulated and will go into effect prior to January 20, 1978."

   The inspector determined through interview of licensee personnel on October 31, 1978, that the licensee has not yet prepared or implemented an alarm sensitivity procedure.

2. The licensee stated in their letter to Region V, USNRC, dated December 21, 1977, Paragraph B.1, "In addition, to ensure that all doors/latching mechanisms are in proper working order in the future, a monthly check on all doors will be made by the NEL Security Officer with any discrepancies taken care of immediately."

   Contrary to the above, the inspector determined through testing of the doors to the reactor high bay security area that the dead locking feature on two doors failed to operate. The inspector reviewed records in the NEL showing that the maintenance on the malfunctioning locks had been requested in February, May and July 1978. At the time of the inspection, the locks had not yet been repaired.

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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-142/78-03 (IE-V-264)

Docket No. 50-142 License No. R-71 Safeguards Group 2

Licensee: University of California at Los Angeles
Los Angeles, California

Facility Name: UCLA Research Reactor

Inspection at: UCLA Campus (Argonaut - 100KW)

Inspection Conducted: October 30-31, 1978

Inspectors: [signature] 12/18/78
W. P. Mortensen, Physical Protection Inspector Date Signed

Date Signed

Approved By: [signature] 12/18/78
L. R. Norderhaug, Chief, Safeguards Branch Date Signed

Summary:

Inspection on October 30-31, 1978 (Report No. 50-142/78-03)

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings; licensee's approved security plan; protection of SNM; security organization; access control; alarm systems; keys, locks and combinations; communciations system; surveillance; procedures; security program review; and protection against radiological sabotage. The inspection involved 12 inspector-hours onsite by one inspector.

Results: Of the 11 areas inspected, no items of noncompliance or deviations were identified in 9 areas; two deviations were identified in two areas (Paragraphs 6 and 7).

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DETAILS

1. Persons Contacted

Dr. Ivan Catton, Director, Nuclear Energy Laboratory
*Dr. Neil C. Ostrander, Manager, Nuclear Energy Laboratory
*Mr. "Chuck" Ashbaugh, Security Officer, Nuclear Energy Laboratory
Dr. Harold V. Brown, Environmental Health and Safety Officer
Dr. John Everetts, Radiological Safety Officer
Lt. G. J. Ares, UCLA Police Department
Mr. Phil Arnold, Electrician, UCLA

*Denotes those attending exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (50-142/77-02): Lack of tampersafing on some alarm lines. The inspector determined all alarm line junction boxes are now equipped with micro switches to detect tampering.

(Open) Noncompliance (50-142/77-02): Alarm sensitivity inadquate. The licensee stated in their letter of response to the previous inspection findings from Dr. Catton to Mr. Norderhaug, dated December 20, 1977, that, "An alarm sensitivity procedure is currently being formulated and will go into effect prior to January 20, 1978. The inspector determined that an alarm sensitivity procedure has not yet been prepared, and the alarm sensitivity although improved over the findings of the previous inspection, will still not detect an intruder prior to the intruder reaching the reactor (approximately fifteen feet).

(Open) Deviation (50-142/77-02): Vulnerability of reactor high bay locking mechanisms. The inspector determined through observation and testing of the locking devices that astricals and cylinder guard rings have been installed on all reactor high bay doors. It was noted by the inspector that the dead locking feature of two high bay door locks failed to operate. Records maintained by the Nuclear Energy Laboratory show that this malfunction was determined and reported to University maintenance for repair in February 1978 subsequent requests for repair were also made in May and July 1978. The locks are not yet repaired.

3. Security Plan

The Security Plan for the UCLA Training Reactor Facility now consists of documents submitted by UCLA letters dated June 20, 1975, July 15, 1975, October 21, 1975, and April 1, 1976, excluding Appendix B to the letter dated April 1, 1976 (Appendix B

[redacted]

contains background information which is not part of the security plan), May 26, 1976, June 9, 1976, and August 3, 1975. The foregoing documents are identified and approved as the licensee's security plan in a letter from NRR dated September 13, 1976.

The licensee has submitted to licensing, a new security plan dated January 20, 1977, and three amendments to the January 1977 security plan have also been submitted. The inspector determined that NRR has not yet approved in writing the new security plan or amendments.

The licensee has designated the reactor and the cooling system as essential equipment in their approved security plan. All fuel storage areas and the reactor high bay are designated and controlled as security areas. The reactor control room is under lesser security controls, and is the subject of a current dialogue between the licensee and NRR.

The radioactive storage room is described in the approved security plan as, "located below ground level so that all outside walls are backed by earth fill. The inside walls are two-foot-thick concrete block, and the two steel mesh doors provide the only access to the area. The inner door, #1, is backed by a steel plate and has two locks. One of the locks is keyed to "A" level, the Master level, and the other lock is a Sargent and Greenleaf combination padlock No. 8077A, which meets the specifications outlined in AEC Regulatory Guide 5.12. The outer door #2 is keyed to "A" level."

The inspector found the following conditions during a visual inspection of the radioactive storage room on October 31, 1978.

a. The wall of the storage room adjacent to the stairwell is two foot thick from ground level to about eight feet. Above eight feet to the ceiling (estimated as sixteen feet by the inspector), it is approximately four inches thick standard plaster wall. The adjacent stairwell is protected by an ultrasonic intrusion alarm system.

b. A two foot high by three foot wide area above the inner door into the radioactive storage room is constructed of an expanded metal grill covered with 1/2 inch pressed board with a total thickness of the wall slightly over a 1/2" thick.

The interior walls are to be redescribed in Amendment No. 4 to the licensee's security plan to be submitted to NRC November 30, 1978.

[redacted]

c. The inner door into the radioactive storage room is a standard hollow metal door secured with a six pin tumbler, master keyed lockset and a standard duty hasp with a Sargent and Greenleaf combination padlock #8077A.

4. Protection of SNM

The inspector determined through interview of licensee employees that the licensee presently has in its possession 9.0 kg of Special Nuclear Material in the form of 93% enriched uranium (fuel plates, fuel scraps and uranyl nitrate) and two 32 gm Pu - Be neutron sources. The U-235 is located as follows: 3.6 kgs U-235 is in the reactor and 0.7 kg is in the radioactive storage pits, and 4.7 kgs is nonirradiated fuel stored in the radioactive storage room. The .7 kg of irradiated fuel in the storage pits is not self-protecting as defined by 10 CFR 73.6(b). The total non-exempt SNM presently located at the Nuclear Energy Laboratory is 5.4 kg.

On September 6, 1978, the licensee requested by letter to the Department of Energy (DOE), Washington, D.C., permission to ship the irradiated fuel plates (.7 kg) to the DOE reprocessing plant in Idaho. DOE is presently reviewing their request.

The licensee has not been asked by NRR (licensing) to provide the security stipulated in 10 CFR 73.50 or 10 CFR 73.60, nor is the licensee presently providing that level of security.

No items of noncompliance or deviations were identified.

5. Access Control

The inspector examined the licensee's procedures and hardware used to control access to the Nuclear Energy Laboratory. The licensee is controlling access as indicated by the approved security plan except that the licensee has ten "A" level keys instead of seven as indicated in the approved security plan. NRR was notified by licensee letter dated March 10, 1978, that the number of "A" level keys had been increased to "no more than ten."

The licensee's new security plan, amendment three, submitted to NRR on March 10, 1978, Paragraph 1,A, states that the reactor control room "becomes an 'A' level area (but non-alarmed) during non-working hours." The inspector determined this has not

[redacted]

yet been implemented. The reactor control room is currently keyed for "B" level access both during working and non-working hours. The new security plan has not been approved in writing by NRR.

6. Alarm Systems

The licensee has installed a Kidde Model KD3 Ultrasonic Intrusion alarm system with sensors located in the reactor high bay, radioactive storage room and the stairwell adjacent to the radioactive storage room. The doors on the first and second floor of the stairwell are equipped with balanced magnetic switches. The double doors from the reactor high bay first floor to an alley outside the Engineering Building are secured with a self contained local alarm/dead bolt panic lock. The doors also have magnetic switches (not balanced) tied into the alarm system and annunciating at the campus police dispatchers office.

The inspector tested the licensee's alarm system in the reactor high-bay by having the licensee place the alarm system in a secure mode and establishing direct radio communication with the UCLA Police Alarm Station. The police alarm station was instructed to report incoming alarms for this test immediately. The inspector then entered the reactor high bay (room 1000), a security area. On the first test, the inspector entered the high bay on the second floor, at the control room door, and walked (downstairs) to the first floor before the alarm activated. During the second test, the inspector entered at the second floor, control room door walked to the top of the reactor, walked to the crane electrical power box on the opposite side of the high-bay, and was on the second floor catwalk opposite the control room before an intrusion was signaled.

During the previous physical security inspection (50-142/77-02), conducted September 21-22, 1977, the licensee was cited when the inspector walked continuously within the reactor highbay both upstairs and downstairs without detection for nine minutes. The licensee stated in their letter to Region V, dated December 21, 1977, in response to that citation:

"The reactor high bay sensitivity problem (too many false alarms) was in the process of being solved at the time of the inspection. On September 22, 1977, during the Security Inspection, the alarm sensitivity was raised to a level such that the intrusion by the inspector was indicated on his third step into the security area. An alarm sensitivity procedure is currently being formulated and will go into effect prior to January 20, 1978."

Although the licensee corrected the sensitivity during the previous inspection, the licensee subsequently reduced the sensitivity because of a reoccurrence of false alarms. The inspector also determined through interview of licensee employees on October 31, 1978, that the licensee has not yet prepared or implemented an alarm sensitivity procedure as committed to in their letter to Region V, dated December 21, 1977.

During an examination of the alarm system, the inspector noted that the licensee has installed the alarm system so that an intruder would walk across the ultrasonic beam (least sensitive) rather than into/away from the beam (most sensitive).

The sensitivity of the alarm system as determined through testing by the inspector during the current inspection is improved over the previous inspection, however, the licensee has not yet taken action to insure the sensitivity of the alarm system will promptly and accurately detect an intruder in the reactor high bay. The finding by the inspector that the licensee has not prepared a procedure, nor placed it in effect prior to January 20, 1978, represents a deviation.

7. Keys, Locks and Combinations

The inspector examined keys, locks and combinations and related equipment used to control access to security areas. The licensee is using astricals and cylinder rings on all entry doors into the reactor high bay. Within the reactor high bay, the controls for the overhead crane (necessary to gain access to the reactor core or fuel in storage pits) was secured with a Sargent and Greenleaf combination padlock #8077A.

The licensee is controlling the issue of keys to the Nuclear Energy Laboratory, and maintains records of key issue: An annual inventory of security keys is conducted by the NEL Security Officer. During the last inventory of keys, the Security Officer determined that a University employee had misplaced his "B" level NEL access key on March 15, 1978. On October 5, 1978, the licensee's security committee reviewed the question of the misplaced "B" level key

[redacted]

and determined that a rekeying was not necessary. This action is consistent with the licensee's procedure "NEL Lock and Key System Guidelines," dated December 10, 1978.

The licensee in response to the previous inspection (50-142/77-02) by letter to Region V, dated December 21, 1977, stated, in part, in Paragraph B.1:

"Also, all latching mechanisms will be fixed by January 20, 1978, at which time a semi-annual complete lock check and preventative maintenance program will be initiated by the key shop. In addition, in order to ensure that all doors/latching mechanisms are in proper working order in the future, a monthly check on all doors will be made by the NEL Security Officer with any discrepancies taken care of immediately. This will begin after January 20, 1978."

The inspector determined by testing on October 31, 1978, that the dead locking feature of the reactor high-bay doors, that two of the doors did not deadlock when the doors were closed. The licensee (NEL) provided documentation that they had discovered the lock malfunction in February 1978 and had notified the University's Maintenance Department that the locks needed repair in February 1978, May 1978 and July 1978 and the locks have not yet been repaired.

The finding by the inspector that the licensee has not ensured that all doors/latching mechanisms are in proper working order, represents a deviation from the licensee's commitment to Region V.

8. Communications

The inspector examined the licensee's facilities for internal communication and communication with the cognizant local law enforcement agency.

No items of noncompliance or deviations were identified.

9. Surveillance

The inspector examined the licensee's practices and procedures for surveillance of security areas both during working hours and after normal working hours. The licensee's new security plan does not state what surveillance is provided during working hours, however, it states surveillance during non-working hours is provided by a security alarm annunciating at the UCLA Police Department.

[redacted]

The inspector determined through interview of licensee employees that surveillance of the fuel stored in the radioactive storage room is provided by the ultrasonic alarm system located in the room, and that the alarm only is put into access mode upon entry of an authorized individual into the room.

The reactor high-bay is placed in access mode each work day morning, and then returned to secure mode each evening. The placing of the high-bay alarm into access mode each work day is procedural and is not based on anticipated or scheduled activity within the high-bay security area. The normal work day assurance of integrity of the reactor high-bay security area is provided by the locked doors into the high-bay, and student and staff activities within the Nuclear Energy Laboratory.

No items of noncompliance or deviations were identified.

10. Procedures

The inspector determined the licensee has procedures for reacting to unauthorized intrusions into security areas, bomb threats and acts of civil disorder. The licensee has no procedures for security violations by authorized individuals.

No items of noncompliance or deviations were identified.

11. Security Program Review

The inspector examined the licensee's program for review of the NEL security activities and procedures.

No items of noncompliance or deviations were identified.

12. Protection Against Radiological Sabotage

The licensee's approved security plan describes controls on access to the reactor core, and except as noted elsewhere in this report the licensee has provided the controls committed to in the approved security plan. The licensee has not been asked by NRR to search persons prior to entry into security areas, nor is the licensee performing searches of personnel or packages prior to entry in security areas.

No items of noncompliance or deviations were identified.

[redacted]

13. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on October 31, 1978. The inspector summarized the scope and findings of the inspection. The licensee made no commitments as to corrective action proposed or planned for the deviations identified by the inspector.

[redacted]

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1990 N. CALIFORNIA BOULEVARD
SUITE 202, WALNUT CREEK PLAZA
WALNUT CREEK, CALIFORNIA 94596

Safeguards
Encl. 5

OCT 10 1979

Docket No. 50-142

University of California, Los Angeles
School of Engineering
Los Angeles, California 90024

Attention: Russell O'Neil
Dean of Engineering

Gentlemen:

Subject: NRC Inspection

This letter refers to the inspection of your activities authorized under NRC License No. R-71 conducted by Messrs. E. J. Power and L. W. Ivey of this office on September 24-25, 1979. It also refers to the discussion of our inspection findings held by the inspectors with Dr. I. Catton and Mr. C. Ashbaugh on September 25, 1979.

The inspection included examination of activities related to physical protection against industrial sabotage and against theft of special nuclear material in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 73, "Physical Protection of Plants and Materials," your security plan, and license conditions pertaining to physical protection as described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and records, interviews with facility personnel and observations by the inspectors.

Within the scope of this inspection, no items of noncompliance were obser

In accordance with Section 2.790(d) of the NRC "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of the findings of your safeguards and security measures are exempt from public disclosure; therefore, the enclosed inspection report will not be placed in the Public Document Room.

~~8302280172~~ (pp)

F/10

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

/s/ LeRoy R. Norderhaug, Chief
Safeguards Branch

Enclosure:
IE Inspection Report
No. 50-142/79-03 (IE-V-340)

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region V

Report No. 50-142/79-03 (IE-V-340)

Docket No. 50-142 License No. R-71 Safeguards Group ___

Licensee: University of California, Los Angeles
Los Angeles, California 90024

Facility Name: Nuclear Energy Laboratory

Inspection at: UCLA campus at Los Angeles, California

Inspection Conducted: September 24-25, 1979

Date of Last Physical Security Inspection Visit: October 30-31, 1978

Type of Inspection: Unannounced Physical Security

Inspectors:

E. J. Power, Physical Security Inspector — Oct 17 1979
Date Signed

L. W. Ivey, Physical Security Inspector — Oct 17 1979
Date Signed

Approved by:

L. R. Norderhaug, Chief, Safeguards Branch — Oct 18 1979
Date Signed

Inspection Summary:

Areas Inspected: Security Plan; Protection of SNM; Security Organization; Access Control; Alarm Systems; Keys, Locks and Combinations; Communications; Surveillance; Procedures; Security Program Review; and Protection Against Radiological Sabotage.

The inspection involved 16 inspector hours onsite by two NRC Inspectors.

Results: No items of noncompliance were identified.

~~8306220124~~ (5pp)

[redacted]

DETAILS

1. Persons Contacted

*Dr. I. Catton, Director, Nuclear Energy Laboratory
*Mr. C. Ashbaugh, Security Officer, Nuclear Energy Laboratory
Lt. J. Ares, UCLA Police Department
Sgt. W. Hansen, UCLA Police Department
Mr. P. Arnold, Electrician, UCLA

*Denotes those attending exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (50-142/77-02): Alarm sensitivity inadequate. Several performance tests of the ultrasonic alarm system were conducted by the inspectors, and were found acceptable.

(Closed) Deviation (50-142/77-02): Vulnerability of reactor high bay locking mechanisms. The inspectors determined through observation that the Nuclear Energy Laboratory had installed astragals on the laboratory doors to which they committed in a letter from Dr. Catton to Mr. Norderhaug, Region V, NRC, which was dated January 18, 1979.

3. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on September 25, 1979. The inspectors summarized the scope and findings of the inspection.

4. MC 81405B - Security Plan

No items of noncompliance were noted. The inspection results were attained through:

a. An onsite review of the physical security plan for the Nuclear Energy Laboratory at UCLA which was dated January 20, 1977 with four amendments.

b. A walk-through tour observing the activities, operations and facilities of the laboratory which included the reactor and the reactor coolant system which were designated as essential equipment.

c. Observation and confirmation that the designated security areas within the laboratory as specified in their security plan were: the reactor room, also called the reactor high bay (Room 1000); the radioactive storage room (within Room 1540); and the control room (Room 2001) during non-working hours at the university.

[redacted]

The inspectors did not identify any measures which were different from those specified in their plan; the measures to which the licensee was committed were found to be adequate; there was no decrease in the effectiveness of their plan; and there were no additional findings which were considered a weakness in their security systems.

5. MC 81410B - Protection of SNM

No items of noncompliance were noted. The NEL has in its possession approximately 8.3 kgs of SNM in the form of 93% enriched U-235. The SNM was secured in accordance with their physical security plan in the following locations:

a. There were approximately 3.6 kgs of SNM in the reactor core.

b. There were 4.6 kgs of non-irradiated SNM secured in the radioactive storage room.

c. There were 0.7 kgs of irradiated SNM contained in the fuel storage pits in the reactor bay.

As indicated in the last security inspection report in 1978, the licensee has continued its coordination with the Department of Energy to effect the transfer of 0.7 kgs of irradiated fuel, and has kept NRR advised of these developments. Under the licensee's current plans, the irradiated fuel is scheduled to be transferred from the facility during December 1979.

6. MC 81415B - Security Organization

No items of noncompliance were noted. The inspectors determined that the licensee's security organization is as described in their physical security plan. Through interviews and review of procedures, it was determined that the Director of the laboratory was responsible for the implementation and enforcement of the security plan with the security functions performed by the appointed Security Officer.

The security force for the laboratory is provided by the UCLA Police Department which was visited by the inspectors. The UCLA PD is composed of 57 sworn peace officers who operate on three shifts to provide coverage of the campus to include the Nuclear Energy Laboratory. These officers are individually armed with a minimum of a .38 caliber weapon and, when dispatched, they maintain communications with the police dispatcher and other officers with portable two-way radios or vehicle radios. In their routine duties, the UCLA PD conducts daily, periodic, random patrols of the exterior of the facility. Response time from the UCLA PD to the laboratory is three to five minutes. The campus police have arrangements for assistance if needed with other local law enforcement agencies, e.g., Los Angeles Police Department (LAPD). The annual requalification of the UCLA PD is scheduled to begin on or about October 1, 1979 and will include representatives of the LAPD. This annual requalification (or orientation) will be one to three hours in duration and cover radiation hazards, security alarms, tour of the physical layout, discussion of responses to alarms, etc.

[redacted]

7. MC 81420B - Access Control

No items of noncompliance were noted. The results of the inspection were attained through:

a. A review of the licensee's procedures used to control access to the Nuclear Energy Laboratory.

b. Observation of the ingress and egress of the staff, employees, students, and visitors to the facility during the period of the inspection.

c. Observation that access controls have been implemented as described in the security plan to control personnel and vehicle access to the essential equipment, security areas, and the facility, and these means are adequate.

d. Interviews and review of procedures that visitors are identified, authorized for access, and escorted at the facility.

e. A review of the visitor's register.

f. Interviews of personnel and observation that individuals having access to the unirradiated SNM are visually searched upon departing from the SNM storage room, and the procedure is considered adequate.

8. MC 81425B - Alarm Systems

No items of noncompliance were noted. The inspectors determined through interviews and observation that intrusion alarm devices (i.e., ultrasonic, magnetic door switches, and tamper) are installed, maintained, tested and operated in accordance with their physical security plan. The inspectors, in the company of the Security Officer and an alarm electrician, witnessed testing of several of these alarms.

Subsequently, during a visit to the UCLA campus police department during the inspection, the inspectors confirmed by observation and interview that the Nuclear Energy Laboratory alarm system terminates with an audio-visual display in a continuously manned dispatcher room of the police, and written procedures are available for police response and actions upon receipt of an alarm.

9. MC 81430B - Keys, Locks and Combinations

No items of noncompliance were identified. The procedures for keys, locks and combinations were reviewed and are in conformance with the physical security plan. The annual physical inventory of all keys was in the process of being accomplished at the time of the inspection, but had not been completed. A random check of the locking hardware on the doors was accomplished and found to be adequate.

[redacted]

[redacted]

10. MC 81435B - Communications

No items of noncompliance were identified. The Nuclear Energy Laboratory utilizes the commercial telephone system for communication on and off the campus which is the primary means of contact with the campus police department. The UCLA police department operates its own radio network on a 24-hour basis with radio equipped automobiles and portable radios carried by the individual police officers.

11. MC 81440B - Surveillance

No items of noncompliance were identified. The inspectors determined that the surveillance of SNM, essential equipment, security areas, physical barriers, and avenues of approach to security areas have been implemented as stated in their physical security plan.

12. MC 81445B - Procedures

No items of noncompliance were identified. Through interviews and review of records, it was determined that Nuclear Energy Laboratory had procedures regarding unauthorized intrusions, security violations, bomb threats, and acts of civil disorder.

13. MC 81450B - Security Program Review

No items of noncompliance were identified. The last change, Amendment No. 4 to the security plan was submitted to NRR by letter dated November 30, 1978; however, it was determined through interview with the Security Officer that review of the plan is a continual process with notes maintained in the Security Log which was reviewed. The licensee was presently in the process of evaluating their plan in view of the upgrading of security requirements for non-power reactors per 10 CFR 73.47.

14. MC 81455 B - Protection Against Radiological Sabotage

No items of noncompliance were identified. Protection against sabotage is of concern to the licensee and is primarily effected by the security consciousness of the laboratory personnel and adherence to established procedures and policies.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1990 N. CALIFORNIA BOULEVARD
SUITE 202, WALNUT CREEK PLAZA
WALNUT CREEK, CALIFORNIA 94596

13

Docket Nos. ~~70-223~~ 50-142

FEB 2 3 1980

[redacted]

University of California
Los Angeles, California 90024

Attention: Dr. Harold V. Brown
Environmental Health & Safety Officer

Gentlemen:

Subject: NRC Inspection

This refers to the inspection conducted by Messrs. G. Hamada and A. Wieder of this office on February 11 and 12, 1980 of activities authorized under NRC License Nos. SNM-974 and R-71. It also refers to the discussion of our inspection findings with members of your staff at the conclusion of the inspection.

The areas examined during the inspection included your program for controlling and accounting for special nuclear material pursuant to applicable provisions of Part 70, Title 10, Code of Federal Regulations, and specific requirements of NRC License Nos. SNM-974 and R-71. Within these areas, the inspection consisted of selective examinations of procedures and records, interviews with campus personnel and observations by the inspectors.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials are exempt from disclosure; therefore, the inspection report will not be placed in the Public Document Room and will receive limited distribution.

[redacted]

~~8403190026 (2pp)~~

F/11 [redacted]

[redacted]

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely,

L. R. Norderhaug, Chief
Safeguards Branch

Enclosure:
IE Inspection Report Nos.
70-223/80-01 & 50-142/80-01
(IE-V-369)

cc w/enc:
Professor Ivan Catton
Director, Nuclear Engineering Laboratory
UCLA

[redacted]

[redacted]

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region V

Report No. 70-223/80-01
50-142/80-01 (IE-V-369)

Docket No. 70-223 & 50-142 License No. SNM-974 & R-71 Safeguards Group 2

Licensee: University of California, Los Angeles

Los Angeles, California 90024

Facility Name:

Inspection at:

Inspection Conducted: February 11-12, 1980

Date of Last Material Control and Accounting Inspection Visit: December 5-6, 1977

Type of Inspection: Material Control and Accounting

Inspectors: G. Yamada, Chemist/Statistician — 2/25/80 Date Signed

K. Wieder, Auditor — 2/25/80 Date Signed

Date Signed

Approved by: L. R. Norderhaug, Chief, Safeguards Branch — 2/25/80 Date Signed

Inspection Summary:

Areas Inspected: The licensee was inspected for compliance with applicable sections of the regulations. The inspection involved 18 inspector-hours onsite by two NRC inspectors.

Results: No items of noncompliance were identified in the areas inspected.

~~8302220130 (3pp)~~

[redacted]

Rpt. No. 50-68
Copy 1 of 2 copies

REPORT DETAILS

1. Persons Contacted

[redacted]

*C. E. Ashbaugh, III, Physical Security Officer
*Dr. I. Catton, Director, N.E.L.
*J. Evraets, Radiological Safety Officer
*J. Hornor, Health Physicist
*N. Ostrander, Manager, N.E.L.
*Dr. W. Wegst, Director, Office of Research & Occupational Safety
A. Zane, Reactor Supervisor

*Denotes attendance at the exit interview.

2. Licensee Action on Previous Inspection Findings

There were no items of noncompliance noted on the previous inspection. (Report 77-02, 77-03)

3. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on February 12, 1980. The inspectors summarized the scope and findings of the inspection. Several items of interest were brought to the attention of the licensee. It was pointed out that it would be desirable to have a more detailed written procedure for taking a physical inventory of all special nuclear material (SNM) possessed by the licensee. With respect to the spent fuel bundles that are expected to be shipped for reprocessing, it was suggested that the licensee formally request the reprocessor to obtain and submit to the licensee a listing of the plate serial numbers comprising each bundle. This would help to resolve a longstanding uncertainty concerning the identity of fuel plates associated with fuel bundles. While the total number of plates have been accounted for, the exact location of a given plate has remained unclear for 5 fuel bundles ever since a mixup occurred some 5-6 years ago.

4. Storage and Internal Control

Records maintained for in-reactor and storage were reviewed.

No items of noncompliance were identified.

5. Inventory

An inventory of stored fresh fuel bundles, by serial number, and scrap, by weight, was conducted. Spent fuel elements were identified by piece count at specific locations in the storage pits. The core content was

[redacted]

[redacted]

accepted on the basis of a fuel bundle location chart. Plutonium-Berylium sources were identified by serial number. Except for a small amount of burnup, the total SNM inventory has not changed since the last inspection.

The cumulative burnup to January 1, 1980 is approximately 21.4 gms. U-235. A conservative estimate of Pu-239 production to January 1, 1980 is 0.013 gms, a nonreportable quantity.

No items of noncompliance were identified.

6. Records and Reports

The licensee's special nuclear material accounting records, reports and other documentation applicable to the period December, 1977 through February 11, 1980 were reviewed for compliance with the records and reports requirements of the regulations.

No items of noncompliance were identified.

[redacted]

Encl. 8

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CALIFORNIA 94596

JUL 20 1983

Docket Nos. 70-223
50-142

University of California at Los Angeles
405 Hilgard Avenue
Los Angeles, California 90024

Attention: Dr. Russell O'Neil
Dean, School of Engineering

Gentlemen:

Subject: NRC Inspection Report Modification

This refers to a modification of an inspection report that was issued July 8, 1983 from this office. This inspection was conducted by Mr. Gilbert B. Nelson of this office on June 28, 1983, of activities authorized under NRC License Nos. SNM-974 and R-71. The modification is enclosed.

Should you have any questions concerning this modification, we would be glad to discuss them with you.

Sincerely,

LeRoy R. Norderhaug, Chief
Safeguards and Emergency Preparedness
Branch

Enclosure:
Modification of Inspection Report
Nos. 50-142/83-02
70-223/83-01 (IE-V-577)

cc w/enclosure:
Professor Ivan Catton
Director, Nuclear Energy Laboratory
UCLA
Ms. Colleen P. Woodhead, ELD
Mr. Edward S. Christenbury, ELD

~~8307260442 830720 PDR~~

F/12

Table I summarizes the physical inventory at UCLA

TABLE I

SSNM Physical Inventory UCLA as of June 28, 1980

License	U-235 g	Pu g
R-71	4921.13	32
SNM-974	0	32
1335-70	0	32

Applying the exemption embodied in 10 CFR §73.67(b)(1)(ii), the 4921.13 g U-235 in NEL is an amount defined to be "special nuclear material of moderate strategic significance", under 10 CFR § 73.2(x)(1).

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CALIFORNIA 94596

JUL 3 1983

Docket Nos. 70-223
50-142

University of California at Los Angeles
405 Hilgard Avenue
Los Angeles, California 90024

Attention: Dr. Russell O'Neil
Dean, School of Engineering

Gentlemen:

Subject: NRC Inspection

This refers to the inspection conducted by Mr. G. B. Nelson of this office on June 28, 1983, of activities authorized under NRC License Nos. SNM-974 and R-71. It also refers to the discussion of his inspection findings with members of your staff at the conclusion of the inspection.

The areas examined during the inspection included your program for controlling and accounting for special nuclear material pursuant to applicable provisions of Part 70, Title 10, Code of Federal Regulations, and specific requirements of NRC License Nos. SNM-974 and R-71. Within these areas, the inspection consisted of the taking a physical inventory of SSNM at UCLA and observations by the inspector.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1).

~~8307260531 (2pp)~~

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely,

L. R. Norderhaug, Chief
Safeguards and Emergency Preparedness
Branch

Enclosure:
Inspection Report
Nos. 50-142/83-02
70-223/83-01 (IE-V-577)

cc w/enclosure:
Professor Ivan Catton
Director, Nuclear Engineering Laboratory
UCLA
Ms. Colleen P. Woodhead, ELD
Mr. Edward S. Christenbury, ELD

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report Nos. 50-142/83-02 (IE-V-577)
70-223/83-01 (IE-V-577)

Docket Nos. 50-142 License Nos. R-71
70-223 SNM-974 Safeguards Group II

Licensee: University of California at Los Angeles
405 Hilgard Avenue
Los Angeles, California 90024

Facility Name: Nuclear Energy Laboratory

Inspection at: UCLA

Inspection Conducted: June 28, 1983

Date of Last Material Control and Accounting Inspection: February 11-12, 1980

Type of Inspection: Special

Inspectors: G B Nelson 7-8-83
G. B. Nelson, Chemist Date Signed

Approved By: LeRoy R. Norderhaug 7/8/83
LeRoy R. Norderhaug, Chief Date Signed
Safeguards and Emergency Preparedness Branch

Inspection Summary:

Areas Inspected: Special inspection to physically inventory SSNM at UCLA. The inspection involved five inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance were identified.

~~8307260598 (3pp)~~

REPORT DETAILS

1. Persons Contacted

*Dr. I. Catton, Director, NEL
*C. E. Ashbaugh, Security Officer
*J. E. McLaughlin, Radiation Safety Officer
*A. Zane, Reactor Supervisor
N. Ostrander, Manager, NEL
*J. J. Orr, Reactor Health Physicist

*Denotes those attending exit interview.

2. Licensee Action on Previous Inspection Findings

Not applicable.

3. Exit Interview

The results of the inspection were presented to licensee personnel.

4. MC-85102B Material Control and Accounting (Reactor)

Conducted a special inspection to physically inventory the SSNM at the Nuclear Energy Laboratory (NEL) and other locations of the University of California, Los Angeles.

The fresh fuel in the storage vault was physically inventoried by piece count of the nine assemblies and verification of serial number identifications and location to records. The total weight of U-235 in this stratum is 1389.96 grams using the fuel fabricator's data.

The Argonaut Reactor core inventory was accepted by reference to source documents. Core loading records indicate that the reactor contains 3531.17 g of U-235. Total U-235 in NEL is 4921.13 grams, under License R-71.

There is a Pu-Be neutron source in NEL that nominally contains 32g of Pu. This item was inventoried by serial number identification and detection of a neutron flux by a neutron source counter. The serial number is M-730. This source is used with subcritical assemblies for instructional purposes, and is possessed under License R-71.

The second Pu-Be neutron source is stored in the Cs-137 calibration source building. The source was inventoried by serial number verification, M-908, and detection of a neutron flux. It is nominally contains 32g Pu and is possessed under SNM-974 license.

The third Pu-Be neutron source possessed under state licensee, 1335-70 is stored in the Van de Graaff generator cage in Knudsen Hall under the custody of the Department of Physics. This item was inventoried by serial number verification and neutron flux detection. The serial number is M-395, and contains a nominal 32g of Pu.

Table I summarizes the physical inventory at UCLA.

TABLE I

SSNM Physical Inventory UCLA as of June 28, 1980

License	U-235 g	Pu g
R-71	4921.13	32
SNM-974	0	32
1335-70 CA State	0	32

Utilizing the formula in 10 CFR 73.60, the amount of SSNM is calculated to be (4921.13 g U-255) + 2.5(32 g Pu) = 5001.13 g for NEL. If the radioactive decay corrections for the plutonium isotopes(1) present in the Pu-Be neutron source are applied the total is 5000.57 g of SSNM. The remaining Pu-Be sources, possessed under licenses SNM-974 and CA State 1335-70, are stored at noncontiguous sites with respect to NEL and each other, and are therefore exempt under 10 CFR § 73.67(b)(1)(ii).

(1) Letter to R. Reyes, UCLA August 3, 1982, from M. E. Anderson Monsanto, Mound Facility tabulating isotopic populations on 1-1-60.