U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 030-02278/94001(DRSS)

Docket No. 030-02278

License No. 24-00513-32 Category G(1) Priority 1

Licensee: The Curators of the University of Missouri
Columbia, Missouri

Inspection At: The University of Missouri
Columbia, Missouri Campus

Site Inspection Conducted: January 24 to 28, 1994

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Inspection Summary

Inspection during the period January 24 to 28, 1994
(Report No. 030-02278/93001(DRSS))

Areas Inspected: Routine, unannounced safety inspection to assess the overall adequacy of the university's NRC licensed operations involving its medical/academic broadscope program. The inspection of the broadscope licensed program included a review of: organization, management controls and staffing; qualifications, training and instruction to workers; radiation protection procedures; facilities and equipment; inventory, material control and accountability; internal audits and appraisals; receipt and transfer of material; external and internal exposure controls and monitoring; control of radioactive materials and contamination; corrective action on previous violations; and posting/labeling.
Results: Numerous apparent violations were identified in the implementation of the university's radiation safety program, and the licensee's ability to adequately train the laboratory staff, address known or suspected problems in a timely manner and implement 10 CFR 35 and, as required by License Condition, Regulatory Guide 10.8. The apparent violations of NRC regulatory requirements identified during the inspection include:

(1) failure to limit the delivery of ordered materials to that authorized by the committee (Section 10);

(2) failure to assure that food and drink for human use is not to be stored or prepared in radioisotope use or storage areas (Section 6);

(3) failure to maintain and make available for inspection a current record of accumulated inventory (Section 10);

(4) failure to survey areas subject to contamination after use (Section 7);

(5) failure to contact Environmental Health and Safety when minor spills resist normal efforts of decontamination and when contamination levels reach action levels (Section 7);

(6) failure to provide basic instruction and general information on radiation safety and responsibilities before the worker is involved with radioactive materials (Section 7);

(7) failure to review and approve all interim user authorizations issued by the RSO at the next Committee meeting (Section 10);

(8) failure to maintain on file for at least one year after the shipment, a complete documentation of tests and an engineering evaluation or comparative data for Specification 7A packages (Section 11);

(9) failure of the authorized users to monitor the external surfaces of a labeled package for radioactive contamination (Section 11);

(10) failure to properly prepare a shipping paper when transporting radioactive material (Section 11);

(11) failure to follow the transportation requirements when shipping radioactive materials as LSA (Low Specific Activity) (Section 11);

(12) failure to survey with a radiation detection survey instrument at least once each week I-131 radiopharmaceutical therapy waste storage area (Section 8);

(13) failure of the Radiation Safety Officer to sign quarterly ambient dose rate records of the brachytherapy source storage room (Section 8);

(14) failure to test for air flow on radioiodine storage hood on a semi-annual basis (Section 8);

(15) failure to monitor hands for contamination in a low-background area with a crystal probe or camera prior to leaving the area (Section 8);

(16) Failure to notify the RSO if contamination exceeds the trigger level (Section 8);

(17) failure to record actions taken following a survey that identifies excessive dose rates or contamination (Section 8);

(18) failure to record surveys of the patient following brachytherapy implantation (Section 8);

(19) failure of the RSO to review and initial records of survey results at least monthly and promptly in those cases in which action levels were exceeded (Section 8);

(20) failure of the Radiation Safety Officer to sign records of physical inventories of sealed and brachytherapy sources (Section 8);

(21) failure of the licensee to have leak test results in recorded in microcuries, contain an estimated activity of the sources, and be signed by the Radiation Safety Officer (Section 8);

(22) failure of the Radiation Safety Officer to sign records of annual dose calibrator accuracy and quarterly dose calibrator linearity tests (Section 8);

(23) failure of the licensee to record measured dose rates in mR/hr (Section 8);

(24) failure of the licensee to record contamination levels in dpm/100 cm^2 (Section 8).

The areas of concern identified during the inspection were:

(1) Individuals working in the laboratories, while they may have attended formal radiation safety training courses, are not able to implement the basics of radioactivity measurements and monitoring techniques (Section 6); and

(2) The licensee's audit (self assessment) program, while meeting the license conditions, is less than effective in making proper assessments of the laboratories (Section 7).

DETAILS

1. Persons Contacted

*Jackie Jones, Associate Vice Chancellor, University Administration
*John McCormick, Vice Provost for Research and Development and Dean of the Graduate School
*Jim Beckett, Director of Environmental Health and Safety (EHS)
*Phil Lee, Radiation Safety Officer (RSO), EHS
*Wynn Volkert, Chair, Radiation Safety Committee
*Thomas Niekamp, Administration, University Hospitals and Clinics (UHC)
*Amolak Singh, Chief Nuclear Medicine, UHC
*Edward Blaine, Director, Dalton Research Center
*K.W. Logan, Manager, Ellis Fischel Hospital
*Jamie Shotts, Health Physicist, Environmental Health and Safety
*Robert Theesfeld, Health Physicist, EHS
*David Spate, Health Physicist, EHS
*Kenneth Finley, Environmental Compliance Office, Business Services
*Jimmy Lattimer, Radiation Safety Committee, Veterinary Medicine
*Jeff Akers, Health Physicist, EHS
*Alan Watts, Environmental Health Technician, EHS
*David Dorth, Safety Coordinator, University Health Center
*Charles McKibben, Associate Director, Missouri University Research Reactor (MURR)
*James Schuh, Health Physicist, MURR
*John Ernst, Health Physicist, MURR
Perry Gustafson, Authorized User
Shenghuitto Hu, Research Associate
Silva Jurrison, Authorized User
Lisa Skelton, Senior Buyer, Procurement/Material Management
Jay Kunze, Authorized User
Hugh Thompson, Environmental Chemist
Dennis Birmingham, Necropsy Attendant

The inspectors also contacted other University of Missouri representatives including researchers and members of the Nuclear Medicine, Radiation Oncology and Nuclear Reactor Laboratory staffs.

* Denotes those persons present during the exit meeting held on January 28, 1994.

2. Inspection History and Purpose of Inspection

a. Inspection History

August 1991 Routine Inspection

A routine inspection of the licensed program (24-00513-32, broadscope and 24-00513-33, irradiator) was conducted August 12 through 16, 1991. Eight violations were identified under the

broadscope license and two under the irradiator. As a result of the inspection the NRC expressed concern regarding:

- the internal debate between the MURR facility and the Radiation Safety Officer (RSO) pertaining to control of radioactive material use and oversight,
- the non-harmonious relationship between the RSO and Environmental Health and Safety (EHS) office that was identified during the 1990 inspection,
- the failure to take corrective action on items identified during a 1989 internal audit that resulted in violations identified during this inspection,
- the failure of the EHS laboratory inspections/audits to identify violations identified during the 1989 internal audit,
- the effectiveness of procedures to control ordering and receipt and the lack of a comprehensive inventory.

NRC regional management arranged a meeting with the University of Missouri management in the Region III office as a result of this inspection. In addition the meeting provided an opportunity to discuss the license renewal and management controls and oversight of radiation safety at the Columbia campus.

January 1992 Special Inspection

On January 27, 1992, a special inspection was conducted by the NRC regarding transportation/package delivery issues. Two violations were identified, one was a repeat violation. The NRC expressed concern that materials were not delivered directly to authorized/responsible individuals at the laboratories and this lead to the violations.

November 1992 Routine Inspection

A routine inspection of the activities authorized under the University of Missouri medical broadscope license in Columbia, Missouri was conducted November 16 through December 4, 1992. The licensed activities reviewed during that inspection were the broadscope program (24-00513-32), use of a cobalt-60 teletherapy unit (24-00513-35), and the TRUMP-S project (SNM-247). The inspection identified four violations in the broadscope program and no violations against the teletherapy and TRUMP-S operations.

The violations identified were: (1) failure to restrict food for human consumption from radioactive material storage areas; (2) failure to properly store and mark radioactive waste containers; (3) failure to measure the dose rates in the contiguous restricted and unrestricted areas immediately following the administration of a radiopharmaceutical for therapy; and (4) failure to check each survey instrument for proper operation with the dedicated check source each day of use.

b. Purpose of Inspection

This routine inspection was conducted to assess the overall adequacy of the university's NRC-licensed activities authorized under the NRC byproduct material license (24-00513-32). The inspection focused on: (1) the radiation safety office's ability to oversee daily licensed activities and implement the reorganized and relicensed 10 CFR Part 33 broadscope program; (2) the University administration and Radiation Safety Committee involvement in program management and oversight; (3) the development and implementation of corrective measures to address previous problems; and (4) the medical diagnostic and therapeutic programs.

The inspectors reviewed the licensee's corrective actions for violations 2, 3 and 4 identified during the November 1992 inspection. It appears that the licensee has implemented the corrective actions described in the response to the Notice of Violation dated January 15, 1993. Violation number 1 was identified during this inspection as an apparent repeat violation (refer to Section 6). It appears that the licensee's corrective action was not adequate to assure compliance with that license requirement.

In addition to this broadscope license, the University of Missouri also possesses six other NRC licenses, including License No. 24-00513-39, authorizing use of byproduct materials under broadscope restriction at the Missouri University Research Reactor in Columbia. That licensed program (24-00513-39) was reviewed during this inspection, and is described in separate report.

3. Summary of Licensed Program

a. Program Summary

The University of Missouri (MU) license is a medical and academic broadscope licensee authorized under License No. 24-00513-32 to possess, in part: (1) radiopharmaceuticals, brachytherapy sources, and teletherapy sources in quantities as needed for medical diagnosis and therapy in human medicine; (2) radiopharmaceutical and brachytherapy sources in quantities authorized for medical diagnosis and therapy in the practice of Veterinary Medicine; (3) curie quantities of any byproduct

material (with atomic numbers 1 to 83) in any form for research and development (R & D) pursuant to 10 CFR 30.4 and student instruction; (4) millicurie (mCi) to curie (Ci) quantities of specifically listed sealed and unsealed byproduct materials for use in analytical instruments, gauging devices, and for instrument calibration, student instruction and research and development; and (5) natural uranium in sub critical assembly slugs.

Diagnostic nuclear medicine and therapeutic medical procedures are performed at the University Hospital and Clinics complex and the Ellis Fischel Cancer Center. The University Hospital and Clinics are located on the MU campus and the Ellis Fischel Cancer Center is located approximately 3 miles northwest of the main campus.

Research and development activities are conducted under the supervision of approximately 240 individuals (Approved Users) that have been approved by the Radiation Safety Committee. These research and development activities are conducted in approximately 600 laboratories located throughout the university campus, utilizing primarily millicurie quantities or less of licensed material for tagging and labeling experiments.

According to the licensee, human use research is only occasionally conducted and limited to the use of byproduct material for which the Food and Drug Administration (FDA) has accepted a Notice of Claimed Investigational Exemption for a New Drug (IND) or approved a New Drug Application (NDA). No studies were currently underway.

4. Organization, Management Controls and Staffing

The inspectors reviewed the licensee's organization and management controls for the radiation protection program, including the organizational structure, staffing, effectiveness of procedures and other management techniques used to implement the program.

a. Senior Management

Overall responsibility for the conduct of NRC-licensed activities at the University of Missouri, Columbia is vested in the University Chancellor's Office, who reports through the University President to the Curators of the University of Missouri.

The Associate Vice Chancellor for Administrative Services is the senior management representative directly involved in radiation safety program management and oversight. The Associate Vice Chancellor for Administrative Services reports to the Vice Chancellor for Administrative Services and is a management representative on the Radiation Safety Committee (RSC). The Radiation Safety Officer (RSO) reports through the Director of Environmental Health and Safety to the Associate Vice Chancellor for Administrative Services. The Radiation Safety Committee (RSC)

reports to the Chancellor through the Office of the Provost and specifically the Vice Provost for Research and Development and Dean of the Graduate School.

Direct program management and oversight for daily radiation safety activities is provided by the RSC and the Radiation Safety Officer (RSO). The RSC, RSO and radiation safety office staff are described in the subsections below.

b. Radiation Safety Committee (RSC)

The university has established a radiation safety committee as required by 10 CFR 33.13. The committee is required to approve all users and uses of licensed material and provide program direction and oversight through establishment of procedures and other administrative controls.

Prior to the latest license renewal, the university had two separate, autonomous, committees approving the users and uses of radioactive material. A local Columbia campus committee oversaw the Columbia campus RSO and the daily operations of the licensed activities at Columbia. The Central Radiation Safety Committee was responsible for the broadscope licensed activities throughout the University of Missouri system at several locations (Columbia, Kansas City, Rolla, St. Louis). The Central RSO was responsible but not delegated authority to effectively operate as the RSO at the Columbia campus.

In 1992, the university reorganized its broadscope license and covered the physical locations under separate broadscope licenses. The Columbia campus medical and research operations now operates under a separate broadscope license. The research reactor at Columbia was also issued a broadscope license (24-00513-39) for the activities occurring at the research reactor facility but not covered under the reactor license. Administration of the research reactor broadscope license is separate from the campus broadscope operations.

Presently, a single RSC oversees and approves all uses of NRC-licensed material at the Columbia campus under the medical and research license. The RSC has a Medical Use Subcommittee that oversees the medical authorizations and procedure reviews. This subcommittee consists of a quorum of the RSC members with an interest and expertise in the medical field.

Although the Medical Use Quorum (or subcommittee) continues to review requests for use of radioactive material in or on humans as did the former committee, ultimate approval of the proposed user or use is made by the RSC, upon recommendation of the quorum.

c. Radiation Safety Office

The RSO reports to the Director of Environmental Health and Safety. The RSO's staffing and budgeting is committed through the Environmental Health and Safety Office budgets. EHS has responsibility for Worker's Compensation, Hazardous Waste Management and Industrial Hygiene as well as the Radiation Safety Office. The radiation safety office is directly responsible, through the RSO, for governing the daily operations of the radiation protection program at the university. The primary responsibility of this office is to ensure proper development and implementation of the radiation protection program approved by the RSC. This requires development and deployment of various audit and control mechanisms.

Other responsibilities include but are not limited to the following:

- Provide consultation on radiation safety problems to authorized users and to others within the university community having a need for technical support. This would include staff assistance to the RSC and supervision of decontamination and recovery operations.

- Provide general surveillance over all activities involving radioactive material through periodic auditing, monitoring and performance of radiation surveys as directed by the RSC.

- Determine compliance with regulatory requirements and conditions of project approval (protocols) as specified by the RSC.

- Supervise all ordering, receipt, monitoring and delivery of all shipments of radioactive material arriving at the university. Also, oversee all intra-laboratory transfers of licensed material.

- Maintain licensed material inventory and an accountability system to ensure licensed possession limits are not exceeded and material is not lost.

- Communicate with the RSC and university management to keep them informed of program issues, developments and problems.

- Supervise and coordinate the radioactive waste disposal program.

The University of Missouri's radiation safety office currently consists of an RSO, four health physicists, one full time technician, one full time and three partially assigned administrative support persons, three part-time health physicist

technicians, two partially assigned waste technicians, a part time training and development coordinator and a part-time computer programmer analyst. License reorganization has resulted in staffing changes. The licensee is at full intended staffing as described in the license application.

The RSO is responsible for managing the daily activities of the Radiation Safety Program and communicating with licensee management, the RSC and radioactive material users. The inspection disclosed, that while the RSO staff is aware of several potential radiological problems, concerns and regulatory compliance issues, the RSO has not provided timely oversight to ensure compliance and proper task completion (refer to Sections 7 and 8).

5. Qualifications, Training and Instruction to Workers

The inspectors reviewed the qualifications and experience of selected RSO staff members, qualifications and training of several selected authorized supervisors (researchers), physician user qualifications and the program established for ancillary staff training. The findings are discussed below.

a. Radiation Safety Office Staff

The inspectors evaluated the qualifications and experience of new technical staff members and reviewed their responsibilities for the radiation safety program. No problems were noted. The staff appears to have an adequate variety of technical expertise and experience. Retraining and professional enhancement provided to the Radiation Safety staff was not reviewed during this inspection.

b. Authorized Supervisors (Non-Medical) and Radiation Workers

The Radiation Safety Committee authorizes individuals to order and use licensed material. These individuals are authorized users. The authorized users may have other individuals working with licensed material under their supervision called radiation workers. Some laboratories have laboratory supervisors, other than the authorized user, that provide supervision and direct daily activities.

The inspectors reviewed the training provided to nonhuman use authorized supervisors (lab researchers) and their radiation workers. Each authorized user is required to attend a two-hour radiation safety short course presented by the RSO's staff or one of three other radiation safety training programs. During the summer and early fall, the RSO issued a notice to all authorized users and radioactive material laboratory workers regarding the

Health Physics Information Meeting. The four hour training course was presented at several locations on campus and was attended by over 400 university personnel.

The RSO's staff, through the quarterly audits check laboratory workers training and assure that they attend one of the formal courses, with an emphasis on attending the weekly presentation of the short course. The short course includes a review of a radiation safety video tape and discussion of regulatory requirements including various generic radiation protection procedures and practices. Retraining by attending the course is required at least every three years, for authorized users. One of the inspectors was familiar with the video tape material presented. The inspectors observed a portion of the practical discussion section of the radiation safety short course and found its content to be well organized and presented.

Laboratory workers who use radioactive materials receive basic instruction and general information on radiation safety and responsibilities presented by the authorized users or supervisor or by the health physics staff as an introductory session before the worker is involved with radioactive material.

Authorized supervisors are responsible to provide training to laboratory workers specific to the radiation safety practices appropriate to the uses (protocols) in their lab.

While the majority of the laboratory staff comply with the licensee's programmatic requirements, the NRC is concerned that individuals working in the laboratories, while they may have attended formal radiation safety training courses, are not able to implement the basics of radioactivity measurements and monitoring techniques based on evaluation of worker performance during laboratory inspection by NRC staff. The Environmental Health and Safety staff conducts audits of most laboratories on a quarterly basis that include a review of the training for lab workers. The audits are "checklist" oriented and do not assess the performance skills of individual radioactive material users.

License Condition 30.A requires implementation of the application dated February 28, 1992, which states that the licensee will provide basic instruction and general information on radiation safety and responsibilities as presented by the authorized users or by their senior staff in an introductory session before the worker is involved with radioactive materials.

A worker assigned to 107 Dalton Hall, worked with radioactive materials, including carbon-14 and iodine-125, for at least two years before basic instruction and general information on radiation safety and responsibilities was given in February, 1993.

As of January 24, 1994, this individual in 107 Dalton Hall could not properly operate a portable survey instrument to identify a 15 mR/hr field around a beaker.

Further, one laboratory worker in M609 Health Science Center has been employed since September, 1993 and as of January 28, 1994, had not attended formal training offered by the RSO (the short course). Further, individuals in this laboratory were not able to properly demonstrate how to conduct area surveys of floors and could not identify areas of fixed contamination using their instrumentation after contamination was identified by NRC inspectors.

Another example of failure to adequately train personnel was observed when individuals involved in a spill in 219 Dalton Hall did not know they were required to notify the Environmental Health and Safety Office when spill contaminants became fixed or when surface contamination exceeded preset levels. The laboratory workers chose to partially clean a spill, confiscate personal clothing and allow the remaining materials to decay. Although the clean-up was partially accomplished by trained individuals, notification of the RSO was not accomplished and contamination remained in the laboratory.

A spill on December 18, 1993, in M609 Health Science Center was not reported. Again, the laboratory workers chose to partially clean the spill, confiscate personal clothing and allow the remaining materials to decay. Trained individuals did not notify the RSO as required. Failure to provide basic instruction and general information on radiation safety and responsibilities before the worker is involved with radioactive materials is an apparent violation of License Condition 30.A and the application.

c. Physician (Human Use) Users

Prior to reorganization of the license, as discussed in Section 4, the Central RSC reviewed and approved all physician users and medical uses. Currently, the medical use quorum reviews physician qualifications and proposed uses and forwards its recommendation to the RSC. The RSC ultimately determines if a physician user and use is approved. The RSC has not approved additional physicians to supervise the use of licensed material in or on humans since

the license renewal. The inspection staff reviewed two medical use authorizations of 10 authorized and found no deficiencies.

d. Ancillary Staff

The ancillary staff (custodial and maintenance) training program was briefly reviewed during this inspection. According to the licensee, ancillary personnel are provided 10 CFR 19.12 training by the ancillary supervisory staff. It is the responsibility of

the supervisory staff to train individual workers under their supervision. The licensee stated that this training program format has worked adequately, since no significant ancillary staff training problems have occurred.

One apparent violation of License Conditions and one Area of Concern was identified.

6. Radiation Protection Procedures

The licensee has developed a Radiation Safety Manual and a shorter Radiation Safety Handbook for the authorized users and individual laboratory workers which outlines various administrative and regulatory requirements, and radiation protection guidelines for radioactive material use at the university. The manual is distributed to all radioactive material laboratories.

The licensee has not developed Standard Operating Procedures (SOPs) for routine administrative and technical radiation safety office operations. Such procedures would be desirable to ensure tasks are completed properly and uniformly by the RSO's staff members. The procedure completion could then be tracked by the RSO and staff members to ensure timely completion.

License Condition 30.A requires implementation of the application dated February 28, 1992. Item 10.5 of the application, titled, Personnel Radiation Control, states, "The control of an internal exposure caused by the entry of radioactive material into the body requires the provision for the proper use of equipment, good housekeeping, and good personal habits. Typical rules for safe laboratory practice are to be followed and are specifically set forth in the Radiation Safety Manual." The Radiation Safety Manual section titled, Responsibilities of Authorized users of Radioactive Materials, states, "Eating, drinking, smoking and mouth pipetting are prohibited in all radioactive work areas. Food and drink for human use is not to be stored or prepared in radioisotope use or storage areas."

On January 25, 1994, an NRC inspector observed a laboratory employee in M506 Health Science Center eating popcorn prepared in the microwave located in the same room. The Environmental Health and Safety laboratory audit conducted on August 10, 1993, indicated they found an unlabeled plastic plate contaminated with radioactive material and producing a 2.0 mR/hr field on the same bench as the microwave. It is clearly evident that food and drink for human use is prepared in radioisotope use areas.

Food and drink were observed in a majority of the laboratories visited by the inspectors. Observation of food and drink in the laboratories posted "Radioactive Materials" was frequent. The apparent root cause of this problem is the fact that the licensee has not been consistent in defining and enforcing restricted area limitations. The licensee stated that they would take a more definitive stand on this matter in immediate

corrective action. Failure to restrict food and drink for human use in radioisotope use or storage areas is an apparent violation of License Condition 30.A and the application. This is an apparent repeat violation.

One apparent violation of License Conditions was identified.

7. Internal Audits and Appraisals

The inspectors reviewed the internal audit and appraisal program implemented by the licensee. This program is an important component giving the licensee the ability to self-identify and correct problems.

The licensee has developed a program for auditing its NRC-licensed activities. The RSO's laboratory audit and inspection program involves a schedule of lab visits based on laboratory category which in turn is based on isotope risk factors. A Health Physicist is assigned primary responsibility to audit the medical program for compliance. As a minimum, monthly site visits to medical sites are made by the Health Physicist.

This formal program of audits is used to monitor program and authorized user performance. The audits have identified poor performance on the part of specific authorized users. Documented problems and the corrective actions were reviewed by the inspectors in the audit files. An inspector confirmed the corrective actions taken as the result of one recent audit finding. In general the audits were found to be "checklist" oriented and not performance based. Observation of work performance and detailed interview of radiation workers regarding safety practices are not routinely conducted. This system has lead the licensee to assess the radiation safety program effectiveness on prescriptive compliance and has allowed the system to be less than effective in pursuing potential problems.

Additional inspector findings are presented below.

a. RSC Audit

The RSC is required to conduct an annual review of NRC-licensed broadscope activities to evaluate overall program implementation. This requirement became effective in July, 1993, with the renewal of the University's broadscope license. The first audit has not been conducted or required as of the date of the inspection.

b. Radiation Safety Officer Staff Audits

The RSO, through the staff, regularly conducts audits of laboratories using and/or storing radioactive materials. Audits are conducted in most labs on at least a quarterly basis, with the exception of its "Category I" labs which are audited monthly. The "Category I" labs are areas were the authorized user is using quantities of materials in a chemical or physical form that there

is presents a constant or nearly constant risk of exposure to personnel. The licensee did not identify any labs as Category I at the time of the inspection.

Audits consist of a visit to each lab to review the adequacy of equipment and posting, conduct dose rate surveys and wipe tests for removable contamination, review records of personnel training and receipt, use and disposal of licensed material. The audits do not include interview of workers, observation of lab practices and review of procedure adequacy.

The inspectors reviewed audit records, discussed the audit program with involved RSO staff and accompanied auditors during several lab audits. The RSO lab auditors are generally knowledgeable, thorough and conscientious in their efforts. No problems were noted with the ability of the auditors to follow the licensee's audit program. Authorized supervisors are promptly informed of problems found in their labs during the audits and corrective actions appear to be taken as necessary.

The NRC is concerned that the licensee's audit program, while meeting the license conditions, is less than effective in making proper assessments of the laboratory safety issues. The following items are examples of the audits failing as a tool of self identification and correction.

On September 10, 1993, Environmental Health and Safety conducted a laboratory audit that identified that a minor spill involving calcium-45 had occurred in 209 Dalton Hall sometime in July of 1993, and was not reported to Environmental Health and Safety. After analysis of the audit survey data, that included evidence of contamination, the Environmental Health and Safety Staff did not investigate further. The remaining contamination (60,000 DPM/100 cm^2 over a 2 ft^2 area) was identified by NRC inspectors on January 25, 1994.

On January 10, 1994, the Environmental Health and Safety Staff conducted an audit of 107 Dalton Hall. A plastic beaker containing radioactive waste material was identified by the staff measuring 0.8 mR/hr. The audit indicated that action was required on the part of the radioactive material user. The staff completed the audit without assuring that the laboratory staff took action to shield the beaker. On January 25, 1994, NRC inspectors identified the same beaker measuring 15 mR/hr.

The Environmental Health and Safety Staff conducted audits of M609 Health Science Center on December 30, 1993, and did not identify fixed contamination as the result of a spill of phosphorus-32 on December 18, 1993. On January 26, 1994, NRC inspectors identified fixed contamination, approximately 30,000 DPM/100 cm^2 over 2 ft^2.

Item 10.6 of the application states that all equipment used in the operation and all areas subject to contamination should be monitored before and after use, and an appropriate entry should be made in the user's log book to document the results of the survey. These surveys are the responsibility of the authorized user. The Radiation Safety Handbook available to all laboratories using licensed material reiterates this statement and further states that any uncertainty about what is required should be resolved by consultation with EHS. EHS Radiation Safety Staff is available to the laboratories to provide assistance in establishing the proper method of survey and procedures for recording the results.

10 CFR 20.201(b) requires the licensee to make surveys as may be necessary for the license to comply with the regulations and are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. The licensee did not make surveys to assure compliance with 10 CFR 20.105(b) which limits radiation levels in unrestricted areas.

Specifically, on December 18, 1993, the licensee did not survey the hallway and entrances of M609 Health Science Center to assure that phosphorus-32 from a spill that occurred that day did not leave the laboratory. Further, as of December 31, 1993, the licensee did not make surveys to assure compliance with that part of 10 CFR 20.101 that limits the radiation exposure to the skin of the whole body and hands, forearms, feet and ankles. On December 18, 1993, laboratory personnel from M609 Health Science Center did not survey hands, feet, and personal items prior to leaving the area following a spill of phosphorus to assure that 10 CFR 20.101 radiation exposure limits were not exceeded. The laboratory staff did not document the survey results of any area surveys following the spill on December 18, 1993, as the RSO staff did not identify any unusual items in the survey documents.

As discussed above, on January 26, 1994, NRC inspectors identified fixed contamination in room M609 Health Science Center, approximately 30,000 DPM/100 cm^2 over a 2 ft^2 area. The EHS staff were not aware of the spill incident prior to the inspection. Staff of the laboratory had confiscated shoes from individuals in the laboratory to hold them for decay. Interviews with laboratory staff indicated that they did not survey areas outside of the lab to estimate off site release of material. They also did not indicate that they surveyed hands, skin, forearms, lab clothing or personal clothing. The lab did not notify the RSO or EHS office of the spill. Failure to adequately survey room M609 Health Science Center is an apparent violation of 10 CFR 20.201(b).

License Condition 30.A requires implementation of the application dated February 28, 1992. That application requires the licensee, when minor spills resist all normal efforts of decontamination, to have laboratory personnel contact Environmental Health and Safety for assistance. In addition, when contamination levels reach

action levels of greater than 10,000 pCi/100 cm^2 (>22,000 dpm/100 cm^2) the laboratories are instructed to call Environmental Health and Safety.

In July, 1993, a spill occurred in 209 Dalton Hall. The laboratory staff identified the spill, confiscated contaminated shoes and removed most of the contamination. An area under a floor mat and in a bench top joint resisted all normal efforts of decontamination. Further, levels of removable contamination exceeded 10,000 pCi/100 cm^2 (>22,000 dpm/100 cm^2) as a result of the spill, yet Environmental Health and Safety was not contacted for assistance. On December 18, 1993, laboratory personnel from M609 Health Science Center did not report a spill of phosphorus-32 that resulted in shoes being contaminated and confiscated to allow for decay of the contamination. An area of at least 2 sq.ft. remained contaminated after the event and was identified during the inspection. Failure to report spills and contamination that is not readily removable is an apparent violation of License Condition 30.A and the application.

One area of concern was identified. Two apparent violations of regulatory requirements were identified.

8. Nuclear Medicine and Human Use Program

The University's routine medical program authorized under the broadscope license was reviewed during this inspection for compliance with 10 CFR Parts 19, 20, 35, Regulatory Guide 10.8 and license conditions. The routine aspects of the program reviewed included diagnostic nuclear medicine, radiopharmaceutical therapy, brachytherapy, Quality Management Program (QMP) implementation, internal personnel monitoring, radioactive material ordering and receiving, waste storage and disposal, and laboratory audits.

The licensee conducts nuclear medicine procedures, radiopharmaceutical therapy and brachytherapy at two facilities, Ellis Fischel Cancer Center and the University Hospital and Clinics. The University Hospitals and Clinics conduct a full diagnostic nuclear medicine program and limit radiopharmaceutical therapy to that allowed for outpatients. The Ellis Fischel Cancer Center conducts diagnostic nuclear medicine, a full radiopharmaceutical therapy program and brachytherapy. The Ellis Fischel Cancer Center performs an average of 5 brachytherapy procedures per month, mainly cesium-137 and iridium-192 seed implants. While the majority of radiopharmaceutical therapies are limited to less than 30 millicuries, they do conduct inpatient therapies as well.

Equipment such as dose calibrators and portable survey instruments as required by 10 CFR 35 appear to be adequate. The inspection revealed that the licensee failed to conduct the required six month hood velocity check as required in the University Hospital and Clinics nuclear medicine hot lab. License Condition No. 30.A requires implementation of the application dated February 28, 1992. Item 10.6 of the application

states that all fume hoods are tested for air flow by EHS on a semi-annual basis. The inspectors identified that as of January 25, 1994, the fume hood in the nuclear medicine hot lab at University Hospitals and Clinics had not been tested since December 1992. This hood is used to store iodine-131 for therapy uses in quantities exceeding 100 mCi. The EHS staff said this item normally should have been identified by the staff at a site visit. The inspectors noted other hoods at other locations without the appropriate sticker indicating a flow check within the last six months. Laboratory personnel stated that the tests were done on schedule but that the sticker was not updated. The inspectors did not identify any non-functioning hoods. Failure to test fume hoods on a semi-annual basis is an apparent violation of License Condition 30.A and the application.

a. Quality Management Program

The Quality Management Program for brachytherapy and sodium iodide iodine-125/131 administrations greater than 30 microcuries was inspected. The use of written directives and other prescriptive details of the program appeared adequate. One inspector observed a 10 mCi I-131 administration including the procedure for properly identifying the patient before the administration. One authorized user was interviewed. Each nuclear medicine facility receives pre-calibrated unit doses from a local radiopharmacy.

b. 10 CFR 35 and Regulatory Guide 10.8 Implementation

License Condition 30.A requires implementation of the application dated February 28, 1992, and the letter dated June 5, 1992. That application and letter require that the licensee follow the requirements of 10 CFR 35 and Regulatory Guide 10.8. The inspectors reviewed records required by 10 CFR 35 and Regulatory Guide 10.8 which revealed that dose calibrator daily constancy, quarterly linearity and annual accuracy tests, and portable instrument calibrations are performed as required and records were kept. However, exceptions are noted below.

10 CFR 35.50(e)(2)(3) requires the licensee to retain records of annual accuracy tests and quarterly linearity tests of dose calibrators for three years unless directed otherwise. The records of the annual accuracy test, in part, must include the signature of the Radiation Safety Officer. The records of the quarterly linearity tests, in part, must include the signature of the Radiation Safety Officer. The inspectors noted that as of January 24, 1994, the licensee's retained records of annual accuracy and quarterly linearity tests did not include the signature of the Radiation Safety Officer. The matter of review and signing dose calibrator records had been delegated to a health physicist on the RSO's staff. This was a carry over from authorized activities prior to renewal of the license. The records were complete in all other material respects and the results of the accuracy tests were within the required

specification according to the records. Failure to have the RSO sign accuracy test and linearity records is an apparent violation of 10 CFR 35.50(e)(2) and (3).

10 CFR 35.59(d) requires the licensee to retain records of leak test results for five years. The records, in part, must contain the identity of each source radionuclide and its estimated activity, the measured activity of each test sample expressed in microcuries, a description of the method used to measure each test sample, the date of the test, and the signature of the Radiation Safety Officer. As of January 24, 1994, a licensee's retained records of leak test results did not contain the results in microcuries, estimated activity, and the signature of the Radiation Safety Officer. The licensee recorded the results in a generic comment of less than 0.005 microcuries. The failure to include in leak test records the results in microcuries, the estimated activity, and the signature of the Radiation Safety Officer is an apparent violation of 10 CFR 35.59(d).

10 CFR 35.59(g) requires the licensee to retain records of quarterly physical inventories of sealed and brachytherapy sources for five years. The records, in part, must contain the signature of the Radiation Safety Officer. As of January 24, 1994, the licensee's retained records of physical inventories of sealed and brachytherapy sources did not contain the signature of the Radiation Safety Officer. This was a responsibility delegated to the Health Physics staff and the result of the licensee not being aware of the requirements and commitments of 10 CFR 35 and Regulatory Guide 10.8. Failure to have the RSO sign quarterly physical inventories of sealed and brachytherapy sources is an apparent violation of 10 CFR 35.59(g).

License Condition 30.A requires implementation of the application dated February 28, 1992, and letter dated June 5, 1992. That application and letter require compliance with Regulatory Guide 10.8 (Revision 2, August 1987). Appendix N, of Regulatory Guide 10.8 requires that the RSO will review and initial records of survey results at least monthly and also promptly in those cases in which action levels were exceeded. On September 17, 1993, a contamination survey indicated an activity of 4E+3 pCi/100 cm^2 and the RSO did not review and sign the record of the survey. The licensee had established a 100 pCi/100 cm^2 trigger level, so response was required. As of January 24, 1994, the RSO did not review and initial records of survey results at least monthly and also promptly in those cases in which action levels were exceeded. Survey records indicated that this requirement had not been performed. This was a responsibility delegated to the Health Physics staff and the result of the licensee not being aware of the requirements and commitments of Regulatory Guide 10.8. The Radiation Safety Officer's failure to review and initial records of survey results is an apparent violation of the License Condition No. 30.A and the application.

c. Nuclear Medicine and Brachytherapy Department Survey Programs

The inspectors reviewed the radiation survey programs implemented at Ellis Fischel Cancer Center and at University Hospital in both the departments of nuclear medicine and radiation oncology. The RSO staff conducts radiation surveys as part of its support of the nuclear medicine and brachytherapy programs. The RSO's health physics staff typically conducts radiopharmaceutical therapy and brachytherapy patient and patient room surveys upon room assignment and at the time of patient release. The RSO's staff also typically conducts brachytherapy source storage area surveys. Quarterly surveys of the brachytherapy source storage room were found to be conducted pursuant to 10 CFR 35.59. RSO review of these surveys had been delegated to the health physics staff. Daily surveys and weekly contamination surveys were performed at University Hospital. When apparent violations were identified by the inspectors, the RSO staff indicated that they had identified certain requirements were violations of license conditions or regulations but had not as of the date of the inspection attempted to correct the violated. In one instance, the RSO's staff was aware of a recurring violation continuing for more than 2 months prior to the inspection. These identified problems are described below.

10 CFR 35.70 (b) requires the licensee to survey with a radiation detection survey instrument at least once each week all areas where radiopharmaceuticals or radiopharmaceutical waste is stored. As of January 24, 1994, the licensee did not survey with a radiation detection survey instrument at least once each week inside a storage area located on the 7th floor of Ellis Fischel Cancer Center, an area where contaminated items are kept for decay-in-storage after use of I-131 radiopharmaceutical therapy. The licensee continued to monitor the area of radiopharmaceutical waste storage monthly as was required prior to license renewal. This was a result of licensee not being aware of the requirements and commitments of 10 CFR 35 and Regulatory Guide 10.8. Failure to perform weekly surveys of areas where radiopharmaceutical waste is an apparent violation of 10 CFR 35.70 (b).

10 CFR 35.59(i) requires the licensee to retain a record of each quarterly ambient dose rate measurement in all areas where brachytherapy sources are stored. The record, in part, must include the signature of the Radiation Safety Officer. As of January 24, 1994, the quarterly survey records did not contain the signature of the Radiation Safety Officer. This responsibility was delegated to the health physics staff and was the result of the licensee not being aware of the requirements and commitments of 10 CFR 35 and Regulatory Guide 10.8. Failure to have the RSO sign records of quarterly ambient dose rate measurement in all areas where brachytherapy sources are stored is an apparent violation of 10 CFR 35.59(i).

10 CFR 35.406(c) requires that immediately after implanting sources in a patient the licensee shall make a radiation survey of the patient and the area of use to confirm that no sources have been misplaced. The licensee shall make a record of each survey. As of January 24, 1994, brachytherapy survey records did not include a survey of the patient. The medical physics staff would survey the patient bedside and make a record of this measurement. In conducting this and other ambient area surveys surrounding the patient's room the staff thought they were in full compliance with the regulation. All other required brachytherapy surveys were conducted and properly recorded. This was a result of licensee not being aware of the requirements and commitments of 10 CFR 35 and Regulatory Guide 10.8. and taking appropriate action to implement the requirements in their program. Failure to make radiation surveys of patients immediately after implanting sources is an apparent violation of 10 CFR 35.406(c).

License Condition 30.A requires implementation of the application dated February 28, 1992, and letter dated June 5, 1992. That application and letter require compliance with Regulatory Guide 10.8 (Revision 2, August 1987). Item 3. of Appendix I of Regulatory Guide 10.8 requires, either after each procedure or before leaving the area, radioactive material users are to monitor your hands for contamination in a low-background area with a crystal probe or camera. As of January 24, 1994, the nuclear medicine staff at Ellis Fischel Cancer Center did not monitor their hands for contamination in a low-background area with a crystal probe or camera. The staff was not aware of the license requirement to conduct this survey. The licensee agreed to instruct the staff in this monitoring and require the staff to complete this monitoring. Failure to monitor hands for contamination in a low-background area with a crystal probe or camera is an apparent violation of License Condition No. 30. A and the application and letter.

License Condition 30.A requires implementation of the application dated February 28, 1992, and letter dated June 5, 1992. That application and letter require compliance with Regulatory Guide 10.8 (Revision 2, August 1987). Appendix N of Regulatory Guide 10.8 requires the licensee, when making record of daily ambient surveys, to record measured dose rates in mR/hr. Survey records at Ellis Fischel Cancer Center recorded the measured dose rates as less than a certain dose rate measurement. This was not a record of the measured dose rate. As of January 24, 1994, surveys were recorded as <0.1 mR/hr. The use of this method of record-keeping is acceptable when recording the lower limit of the instrument detection capability. The licensee's survey meter was capable of detecting 0.01 to 0.1 mR/hr. It is expected that the actual meter readings would be recorded. This can assist the RSO or other auditors in identifying changes in the expected dose rate during confirmatory audits. This was a result of licensee not being aware of the requirements of and commitments to Regulatory Guide

10.8. Failure to record measured dose rates in mR/hr is an apparent violation of License Condition No. 30.A and the application and letter.

License Condition 30.A requires implementation of the application dated February 28, 1992, and letter dated June 5, 1992. That application and letter require compliance with Regulatory Guide 10.8 (Revision 2, August 1987). Appendix N of Regulatory Guide 10.8 requires the licensee to record actions taken in the case of excessive dose rates or contamination and follow up survey information. On September 17, 1993, a contamination survey indicated an activity of 4E+3 pCi/100 cm^2 had no documentation of actions taken or follow up survey information. The licensee had established a 100 pCi/100 cm^2 trigger level. Discussions with the Nuclear Medicine Department staff indicated that corrective action was taken. The area was cleaned to background. We have discussed the fact that the RSO had delegated the record review to a qualified staff member. The RSO's staff was not aware of the requirement. Failure to record actions taken in the case of contamination above the trigger level and resulting follow up survey information is an apparent violation of License Condition No. 30.A and the application and letter.

License Condition 30.A requires implementation of the application dated February 28, 1992, and letter dated June 5, 1992. That application and letter require compliance with Regulatory Guide 10.8 (Revision 2, August 1987). Appendix N of Regulatory Guide 10.8 requires the licensee to record contamination levels in dpm/100 cm^2 10 CFR 35.70(h) requires the licensee to record the removable contamination in each area in disintegrations per minute per 100 square centimeters. As of January 24, 1994, records of contamination survey results were being recorded as picocuries/100 cm^2. This was a result of licensee not being aware of the requirements of and commitments to 10 CFR 35 and Regulatory Guide 10.8. Failure to record contamination levels in dpm/100 cm^2. is an apparent violation of License Condition No. 30.A and the application and letter.

10 CFR 35.70(g) requires the individual performing the required contamination survey to notify the RSO if contamination exceeds the trigger level. On September 17, 1993, a contamination survey indicated an activity of 4E+3 pCi/100 cm^2. The licensee had established a 100 pCi/100 cm^2 trigger level. The individual performing the required contamination survey did not notify the RSO of the event. The individual was not aware of the requirement and the RSO's audit staff was not aware of the requirement. Failure to notify the RSO if contamination exceeds the trigger level is an apparent violation of 10 CFR 35.70(g).

d. Other Aspects Of The Nuclear Medicine And Brachytherapy Programs

During the inspection of the brachytherapy program which included interviewing the medical physicist and the RSO technician, both individuals were unaware of the location of a record which lists the names of individuals permitted to handle brachytherapy sources as required by 10 CFR 35.406(1). The medical physicist indicated during the exit meeting that the list had been posted on the back of the door to the brachytherapy source storage room however, the inspectors did not review the list.

In response to the above apparent violations the licensee expressed their commitment to comply with 10 CFR 35 and Regulatory Guide 10.8. As the majority of these items of non-compliance are record keeping related, the licensee indicated that they intend to make corrections as necessary in the records.

Fourteen apparent violations of the Regulations and License Conditions were identified.

9. Veterinary Nuclear Medicine and Therapy

Large animal veterinary diagnostic nuclear medicine and feline thyroid therapies using radiopharmaceuticals are performed in Clydsdale Hall. Large animal procedures involving up to 150 mCi doses of Tc-99m are conducted routinely. The facility averages approximately two procedures per week. The inspectors reviewed the radiation safety aspects of the large animal procedure including animal isolation and associated care. Feline thyroid therapies involve the use of up to 18 mCi sodium iodide iodine-131. The dose administrations are supervised by three Associate Professors of Veterinary Radiology (licensed veterinarians). The assistant staff is variable as this work is conducted within the context of a teaching department. However, specific veterinary technicians are assigned to the feline isolation ward and this helps to limit the scope of personnel exposure.

Radiopharmaceuticals are received in unit doses from a local radiopharmacy directly at Clydsdale Hall by the veterinary staff. An inspection of the facility revealed proper caution signs were posted, appropriate survey meters are used and designated isolation quarters are provided for the animals administered radioactive material. The isolation wards are effective in limiting doses to members of the staff and public using the ALARA principle. Records of surveys and dose administration logs were available for inspection and reviewed. One radiology technologist who assists with large animal gamma scans and one authorized user were interviewed by the inspectors.

No apparent violations of NRC regulations were identified.

10. Inventory, Material Control/Accountability and Leak Testing

The inspectors reviewed the university's licensed material inventory and accountability system and selected aspects of its sealed source leak testing program. The findings are discussed below.

a. Research Program Material Inventory/Accountability

The university broad scope license authorizes possession of a vast array of isotopes, in relatively large quantities, for medical use/research and research and development purposes. As previously described in Section 3, radioactive material is used in nearly 600 labs located throughout the university campus. Due to the significant number of users and the multitude of areas using licensed material, it is necessary that the licensee develop and maintain a strong material inventory and accountability system. However, as described below, the licensee's inventory and accountability program continues to be very weak.

Applications submitted by researchers requesting radioactive material use and subsequently approved by the RSC specify inventory limits for each radioisotope. When a radioactive material purchase order is requested for a given laboratory, the RSO's staff approves or disapproves the request based on comparison with the authorized limit specified in the RSC application approval. Consequently, it is possible that a researcher could order quantities of long-lived licensed material at or near his approval limit and stockpile large quantities of material from year to year. The RSO does not require inventory accountability for orders of radioactive material at or near the user's approved maximum quantity to assure that the laboratory is not exceeding the RSC authorized limit. The practice of not limiting the amount of radioactive material that can be possessed by a researcher at any given time has the potential to contribute to inventory control problems, both at the laboratory and total license levels. The RSO is authorized by the RSC to provide interim approval for minor increases in quantities of isotopes subject to the approval of the RSC at the next quarterly meeting.

Radioactive material can be purchased by users on an as needed basis, or if authorized, on a blanket order for periodic regular deliveries. All packages are received at the Environmental Health and Safety Office (EHS) by the RSO's Staff. Blanket orders are received in the identical manner to allow tracking of incoming shipments.

Researchers wishing to procure radioactive materials must phone the EHS Radiation Safety and submit a Form 10 (Rev Mar 82) "Requisition On Purchasing", which is reviewed for authorized user, isotope and activity and hazardous material. If approved the form is stamped and signed by the reviewer and processed by Procurement/Material Management (P/MM). All requisition forms are

checked by the P/MM Senior Buyer or an alternate for chemical names and radiation quantity units. If either item exists and the form is not stamped by EHS, EHS is notified and the requisition is held until approval is obtained.

An inspector observed the receipt and delivery of the radioisotopes received at EHS, January 25, 1994. When the shipments were received at the Radiation Safety Office a composite dry smear was obtained from all boxes. The smear covered at least 100 square centimeters from each box, and was counted on two systems, a Packard liquid scintillation counter and a combination plastic and crystal (NaI) scintillation counter. A direct radiation measurement was made with a Ludlum thin end window portable survey meter at the surface and at 3 feet of each container.

EHS staff person compared the information on the shipping papers to the user phone-in log of orders (if the shipment is not on the list it is held until EHS can confirm the order is expected). The inspector observed several deliveries.

Although, during the inspection the receipt and delivery system described above functioned correctly, the inspection identified examples of failure to properly check the order or incoming package lists against the approved authorization limits.

The inspectors evaluated the current mechanisms and criteria utilized by the RSC to approve users and uses of licensed material. Committee membership and meeting minutes for 1993 to date of inspection were also reviewed by the inspectors. The current committee appears to have an active role in approving users and uses. However, the inspectors found multiple cases were the RSO temporarily authorized an increase in the allowable quantity of radioisotopes and then failed to bring this to the committee for approval at the next meeting.

The licensee, through License Condition 30.A and the application dated February 28, 1992, authorizes the Radiation Safety Committee to empower the RSO to issue interim amendments or changes to the authorizations of a non-significant nature. Any interim authorization issued by the RSO must be reviewed and approved at the next Committee meeting. On October 11, 1993, the RSO through a staff member, authorized an increase in the possession limit from 0.05 to 0.1 millicurie (mCi) of iodine-125 for a researcher. On December 8, 1993, the RSO authorized an increase in the possession limit from 1 to 2 mCi of phosphorus-32 for a researcher. The Radiation Safety Committee next met to conduct business on January 10, 1994, and did not review and approve the interim authorizations listed above. On August 13, 1993, the RSO authorized a new isotope (phosphorus-33) with a possession limit of 1 mCi for a researcher. This was reviewed, in a general way, by the RSC at the next meeting as they discussed the possibility

of issuing all phosphorus-32 and sulfur-35 users a blanket authorization for phosphorus-33. However, no action was taken with respect to this researcher and no blanket authorization was adopted at any subsequent meeting. Therefore, the interim authorization was not reviewed at the next RSC meeting. Failure to review all interim authorizations issued by the RSO at the next Committee meeting is an apparent violation of License Condition 30.A and the application.

In item 7 of the application dated February 28, 1992, the licensee states that the RSC will empower the RSO to issue interim authorization for up to one millicurie activities of any isotope excepting those in the highest toxicity group. On November 19, 1993, the EHS staff authorized a delivery of 10 mCi of sulfur-35 for a researcher approved for 5 mCi. On August 13, 1993, the EHS staff authorized a delivery of 2 mCi of phosphorus-32 for a researcher approved for 1 mCi. On October 14, 1993, the EHS staff authorized a delivery of 5 mCi of phosphorus-32 for a researcher approved for 1 mCi. On November 19, 1993, the EHS staff authorized a delivery of 10 mCi of sulfur-35 for a researcher approved for 5 mCi. On April 21, 1993, the EHS staff authorized a delivery of 5 mCi of hydrogen-3 for a researcher approved for 2 mCi.

The Committee had not approved an authorization for those possession levels of materials, the RSO had not approved an interim amendment increasing an existing Committee approved authorization for possession of those materials, and the RSO had not approved, and could not approve for greater than 1 milliCurie, a new interim authorization for the possession of those materials. In fact, the RSO was not aware of these authorized deliveries prior to the NRC inspector identification. Delivery and possession of materials without authorization is an apparent violation of License Condition 30.A and the application.

Packages are delivered by the RSO's staff to the laboratories. Each of the approximately 240 authorized supervisors is required to maintain radioactive material receipt, possession, use, and disposal inventory data. However, laboratory inventories are not normally evaluated in an effort to obtain cumulative institutional data for comparison with license possession limits. It is the opinion of the EHS staff that the total license limits have not been exceeded.

In order for the licensee to determine the cumulative institutional quantities of radioactive material possessed at any given time, each of the 250 users' inventories must be reviewed, as well as current receipt and use logs maintained by each to account for receipt and use. The RSO would need to tabulate by hand the waste inventory currently in the waste stream and subtract the amount disposed through the sewer, incineration and

transfer to waste brokers. This effort would be a significant manpower intensive and time consuming task. Therefore, the licensee does not tabulate the running inventory at this time.

The licensee's failure to develop a running inventory and accountability system that is capable of yielding cumulative institutional quantities of radioactive material possessed at any given time is a continuing program weakness.

License Condition 30.A requires implementation of the application dated February 28, 1992. In the license application dated February 28, 1992, the licensee is required to maintain and make available for inspection a current record of accumulated inventory. The licensee has been in the process of installing a computerized inventory tracking system since similar NRC inspection findings were identified in 1991. Efforts to make this system available to the RSO's staff have not been successful. Although some progress has been made since the last inspection and work continues to develop this program, the licensee has been unsuccessful in developing its computer based inventory system.

Failure to maintain and make available for inspection a current record of accumulated inventory is an apparent violation of License Condition 30.A and the application.

b. Sealed Source Program

The inventory of sealed sources is accomplished with a computer program which has been in use since September 1990. The program consists of five tables.

Table I lists all sealed sources (208) ever used at the University. Each source receives a unique identification number.

Table II lists all sealed sources (50) transferred or disposed of from the license.

Table III lists the sources (122) which require quarterly inventory and leak tests.

Table IV lists the separate users (24) of the sources.

Table V lists the sources (36) which receive an annual inventory and leak test.

The inspector chose 7 sources at random from Table III, specifically sources number 45, 65, 158, 160, 166, 186 and 187 and based on record reviews, found that the leak tests were done on time and all results were less than 0.005 μCi, that the authorized users were listed and the sources were accounted for.

A visit was made to the storage location for source number 45 (50 mCi Am-241/Be) in Conway Hall. The source was in storage in a locked and posted (Caution Radioactive Materials) chamber.

Three apparent violations of a license conditions were identified.

11. TRANSPORTATION

A. Authorized User Shipments

Environmental Health and Safety (EHS) personnel routinely ship radioactive materials. The licensee has a policy that all incoming radioactive materials are to be delivered directly to Environmental Health and Safety. The only exception is human or animal use radiopharmaceuticals which are delivered to the University Hospital and Clinics Material Management, Ellis Fischel Cancer Center or the Veterinary Animal Care Clinics, including Clydesdale Hall. The radioactive materials, upon receipt, are processed surveyed, wipe tested and checked for compliance with Department of Transportation (DOT) by EHS personnel and reshipped (distributed) to authorized users in laboratories throughout the campus.

During the inspection, records of past shipments to authorized users were examined. The inspectors reviewed: EHS procedures for processing incoming packages, shipping papers for distribution of the packages to the authorized users. They also interviewed selective authorized users and/or their designates to determine if incoming packages had been processed according to the requirements of 10 CFR 20.

These reviews indicated that in following EHS procedure, the licensee examined all packages for damage and monitored the external surfaces of all packages for radioactive contamination and radiation levels according to the requirements of 10 CFR 20. Procedures were also in place to ensure that the appropriate agencies would be notified if contamination and radiation levels exceeded the limits specified in 10 CFR 71.47. Through 10 CFR 71 the licensee is required to comply with the Department of Transportation regulations found in Title 49.

Once the packages are processed, EHS personnel complete a Radioisotope Receipt and Inventory Record (RRIR), Form EHS/RSO-6(1/93) Attachment A. The RRIR serves several functions: it provides a permanent record of the package's receipt, it is used by the authorized users as a running inventory log for isotope use and disposal and it serves as the shipping papers for the packages during transit to the end authorized user. The shipping papers and the form "Handling and Safety Precautions for This Shipment" - EHS/RSO 40(12/93), Attachment B, were affixed to each box.

During the review of the selected RRIRs from 1993 and 1994 the inspectors noted that the licensee had taken steps starting in December, 1993, to correct deficiencies found in the RRIR document so the form could be used as a shipping paper when delivering a package to the individual user labs. Prior to December, 1993, the following items had been missing from the RRIR to make it a proper shipping paper:

1. The emergency response telephone number (49 CFR 172.201 (d)).

2. The proper shipping name (49 CFR 172.202 (a)(1)).

3. The identification number (49 CFR 172.202 (a)(3)).

4. The type of packaging (49 CFR 172.202 (c)(2)).

Following identification of these deficiencies the licensee took immediate corrective action.

49 CFR 173.415 requires that the shipper of a Specification 7A package must maintain on file for at least one year after the shipment a complete documentation of tests and an engineering evaluation or comparative data showing that the construction methods, packaging design, and materials of construction comply with that specification. Shipping related documents indicated that licensee, on many multiple occasions since centralizing incoming package receipt at EHS prior to 1990, had used Specification 7A packages to ship Type A quantities of radioactive materials from EHS to the laboratories. However, the licensee failed to maintain, on file, a complete documentation of tests and an engineering evaluation or comparative data showing that the construction methods, packaging design, and materials of construction comply with that specification. Failure to maintain on file for at least one year after the shipment, a complete documentation of tests and an engineering evaluation or comparative data is an apparent violation of 10 CFR Part 71 and 49 CFR 173.415.

10 CFR 20.1906(b)(1) and (2) requires that the licensee monitor the external surfaces of a labeled package for radioactive contamination and radiation levels. The procedures for processing (surveying) incoming labeled packages in the laboratories varied widely among the authorized users interviewed. Less than 25% of the authorized users interviewed surveyed the incoming labeled packages for contamination levels. Only a small percentage of the users interviewed surveyed the exterior of the incoming packages upon receipt in the laboratory. A majority of the users surveyed the empty packaging prior to discarding it and this limits the potential for release of material to unrestricted areas.

Failure of the authorized users to monitor the external surfaces of a labeled package for radioactive contamination is an apparent violation of 10 CFR 20.1906(b)(1) and (2).

b. Radioactive Waste

Environmental Health and Safety personnel routinely collect solid and liquid radioactive waste at laboratories and medical facilities throughout the campus and transport the waste to one of the EHS controlled waste facilities; the EHS Storage Garage, the EHS Storage Barn or the EHS Resource Recovery Facility. The waste is typically low activity solids and liquids generated during research and/or medical applications. Most of the waste is typically stored in plastic bags (solids) and plastic bottles (liquids). However, the inspectors did observe liquid waste transported in liquid scintillation vials containing LSC cocktail transported in a large plastic bag.

The licensee provides each waste collector a form, University of Missouri - Columbia Radioactive Waste Record and Manifest, to be completed on site during waste collections. The document provides entries for: user name, inventory number, isotope identification, isotope activity waste volume, site location, and container and driver's compartment dose rates. The form provided a running inventory of the waste collected and, by default, served as the hazardous materials shipping paper while the waste was in transit.

Hazardous materials shipping papers must contain certain specified information specified as described in 49 CFR 172.200, 172.201, 172.202 and 172.203. 49 CFR 172.200(a) requires each person who offers a hazardous material for transportation to describe the hazardous material on the shipping paper in the manner required in the sub-part. Because the licensee representatives had not categorized the waste shipment within the context of Department of Transportation Regulations (DOT) the inspectors assumed that the licensee had shipped the radioactive waste as "Exclusive Use - LSA", the least restrictive method for transporting hazardous waste.

The inspectors reviewed the Columbia Radioactive Waste Record and Manifests for waste collections on January 13, 14, and 18, 1994 to determine if the manifests contained the required specific information as a shipping paper. The review indicated that while the manifests identified the isotopes contained in the waste and the activities of those isotopes as well as the dose rates in the drivers compartment and on the surfaces of the plastic bags it failed to contain:

1. A description of the hazardous materials (49 CFR 172.201).

2. An emergency response telephone number (49 CFR 172.201).

3. A proper shipping name for the hazardous materials (49 CFR 172.202).

4. The hazard class of the hazardous materials as prescribed in the Hazardous Materials Table (49 CFR 172.202).

5. The identification number of the hazardous materials as prescribed in the Hazardous Materials Table (49 CFR 172); and

6. The physical and chemical form of the hazardous materials (49 CFR 172.203).

If the licensee had chosen another form of transport other required items would have been missing from the manifest.

Failure to properly prepare a shipping paper when transporting radioactive material is an apparent violation of 10 CFR Part 71 and 49 CFR 172.200(a), 172.201, 172.202 and 172.203.

In addition to reviewing the manifests generated for the January waste shipments the inspectors observed on January 27, 1994, the loading and transport of waste collected at the Health Science Center. Subsequent interviews with other waste collectors indicated that the observations made during this shipment were typical of other waste collections and transfers. The waste collected included radioactive trash in plastic bags, a plastic bag full of vials containing contaminated liquid scintillation cocktail and liquid radioactive waste stored in plastic bottles. The inspectors observed the waste collector load the waste into a EHS vehicle and depart the facility. Because the waste manifest (shipping paper) failed to identify the hazard class of the transported waste the following observations were based on the assumption, again, that the waste was shipped "Exclusive Use - LSA", the least restrictive of the hazard classes available to the licensee.

1. The "Exclusive Use" vehicle was not placarded (49 CFR 173.425(b)(7) and 49 CFR 172 Sub-part F).

2. The waste was not placed in strong, tight packages (49 CFR 173.425(b)(1)).

3. The packages were not surveyed to ensure that the contamination levels or dose rates did not exceed 49 CFR 173.443 or 49 CFR 173.441 (49 CFR 173.443, 49 CFR 173.441 and 49 CFR 173.425(b)(3)).

4. The collector failed to survey the outer surfaces of the vehicle to ensure compliance with 49 CFR 173.442.

5. The collector failed to block and brace the packages prior to leaving the facility (49 CFR 177.834).

6. The license failed to provide the collector (driver) with specific instructions for maintenance of the "Exclusive Use" shipment (49 CFR 173.425(b)(9)).

7. The collector failed to mark the waste containers (strong tight packages) with "Radioactive - LSA" (49 CFR 173.425(b)(8)).

8. The collector (driver) failed to mark the packaging containing liquid hazardous materials with "THIS SIDE UP" or "THIS END UP" (40 CFR 172.312).

Failure to follow the transportation requirements when shipping radioactive materials as LSA (Low Specific Activity) is an apparent violation of 10 CFR Part 71 and 49 CFR Parts 172, 173, and 177.

Four apparent violations were identified.

12. Sub-critical Assembly

An inspector visited the sub-critical assembly in the Engineering Complex East Room W005 on January 26, 1994. The assembly consists of 1285 natural uranium slugs, on loan from DOE since June 6, 1959, which in total weigh 5493.38 lbs (2500 kilograms). The slugs were in a fuel rod matrix in a cylindrical metal container from which the water moderator had been drained. The assembly had been moved to the Engineering Complex from the Sinclair Farm Storage Building on January 4, 1993. It was used once in June, 1993, (previous use was October 1989) for student experiments in room 0035. The student experiment lasted about 1 hour. The students personnel monitor (TLD) results were recorded as minimal. The lifetime exposures for the two principal authorized users were 20 and 440 millirem (whole body) and 20 and 100 millirem (ring badge). The training records showed the students received initial training on September 17, 1992, and retraining on September 16, 1993.

Radiation survey records for the last 12 months show the assembly has been surveyed each quarter by EHS Radiation Safety Staff and three times by the users. The September 30, 1993, survey detected 4 mR/h gamma and 3 mRem/h neutrons at the top of the assembly. Radiation measurements made by the inspector showed 1.5 mR/h gamma on the top of the assembly and 2 to 3 mR/h along the sides at 18 inches from the floor. The instrument used was a Ludlum Model 3, serial #106217 (NRC #045631) last calibrated on September 30, 1993. A nearby neutron "howitzer" read 4.5 mR/h gamma at contact. According to the user, the "howitzer" contained a 5 curie plutonium-Beryllium start up source. The device was

not labeled with a "Caution Radioactive Materials" (CRM) sign. The EHS Health Physicist immediately affixed an appropriately marked CRM sign while the inspector observed.

No apparent violations were identified.

13. Waste Incineration

The license operates two incinerators where radioactively contaminated waste is burned. Both were visited during this inspection. The Animal Science Incinerator, operated by ten persons, processes mostly hospital waste, about 1.5 tons per week. The facility operates 5 days a week with one 8 hour shift per day. The radioactive waste in plastic bags is mostly paper, gloves, plastic ware, scintillation vials and some glassware. This material is burned separately from normal waste as a "rad-burn". The rad-burn material consists of exempt (<0.05 pCi of H-3 or C-14 per gram) animal tissue or scintillation fluid or dry materials that has been stored for decay for a minimum of 10 half-lives or is in low enough activity to meet air release concentrations in Part 20, Appendix B, Table 2. There is usually one rad-burn each second week consisting of approximately 500 lbs of waste. The waste is surveyed as it is weighed, just before loading into the incinerator, by a AC operated Ludlum Model 177 rate meter (last calibrated May 24, 1993) with a thin window probe affixed to the scale at mid container level. The rate meter has an audible response which is clearly heard by the operator doing the weighing. Any significant sound in excess of background causes the operator to stop the process and to notify the Radiation Safety Office. The waste is placed into a below floor hopper and feed by hydraulic ram into the incinerator in batch loads of 20 lbs per minute. The John Zink Model A-35 incinerator operates at a secondary temperature >1800°F with a 99.9+% combustion efficiency which results in no particulate exhaust, only gases and water vapor.

A rad-burn generates about one 55 gallon drum of ash which is collected by incinerator personnel using a full face mask respirator and disposable coveralls. A 10 gram sample is taken from each drum for radioactivity and isotopic analysis and the drum is sealed and placed in storage at the Sinclair Farm pending a decision on whether the ash should be considered radioactive waste. The drum is not typically labeled to indicate the potential for the presence of radioactive material.

To ensure the stack exhaust meets release limits, the activity per rad-burn is controlled so that they do not exceed one half of the specific activity limits of 10 CFR Part 20. The inspector collected smear samples, one each, of the incinerator feed bin and the ash pit. Also collected was a surface soil sample 200 meters northeast from the incinerator. The incinerator was last independently audited by a contractor, Ramcom Corporation, on October 1 and 3, 1991. No deficiencies were noted by the contractor.

The other incinerator is the Veterinary Diagnostic Incinerator used for animal carcasses and cage bedding material disposal. This facility is used only once a year or so for disposal of radioactively contaminated waste. The last use was February 23 and 24, 1993, when 280 kilograms of dog, rat, rabbit and hamster containing about 2.7 mCi of H-3, Sn-113, Sc-46, Sr-85, Cr-51, Ce-141, and Se-75 were incinerated generating about 50 kilograms of ash.

No apparent violations were identified.

14. Exit Meeting

On January 28, 1994, the inspectors held a meeting with licensee personnel and discussed the preliminary findings with those licensee personnel denoted in Section 1. During the exit meeting, the NRC representatives summarized the scope and findings of the inspection and characterized the overall inspection results. Region III management representatives expressed concern regarding the licensee's apparent failure to effectively implement and manage several areas of its licensed program.

Attachments:

(A) Radioisotope Receipt and Inventory Record (RRIR), Form EHS/RSO 6-(1/93).

(B) Handling and Safety Precautions for This Shipment" -EHS/RSO 40-(12/93).

University Of Missouri
Radiation Safety Office

Handling and Safety Precautions for This Shipment

AUTHORIZED USER: **DATE:**

INVENTORY NUMBER: **ISOTOPE:** **ACTIVITY:**

Detailed procedures and instructions for opening, handling, storage and inventory records required are contained in the Radiation Safety Manual, Appendix A, and in Chapter 5 of the Manual or Handbook.

In addition, you are reminded of the checked recommendations and/or requirements below:

☐ This shipment contains greater than one millicurie of a high energy beta or gamma emitting isotope. Personnel handling the stock activity are reminded that film and ring badges are required for directly handling these stock activities in an unshielded configuration.

☐ This shipment contains 5 millicuries or greater activities of a high energy beta or gamma emitting isotope. Personnel handling the stock activity are required to use film and ring badges.

☐ This shipment contains an activity which requires a bioassay of the person handling or using the stock activity:

$\geq$1 millicurie of iodine-125, or iodine-131 in an uncontained form.

$\geq$10 millicuries of tritium in an uncontained form.

The person handling the stock material is required to contact the Radiation Safety Office as soon as possible after handling the material to schedule a bioassay procedure within the week.

☐ This shipment contains an activity, $\geq$1 millicurie of gamma or medium to high energy beta emitters which requires that a documentated area survey be recorded on the day that the material is used.

☐ This shipment contains an activity, $\geq$10 millicuries of material which requires that an area and contamination survey be documentated on the day that the material is used.

☐ _____

_____

UNIVERSITY OF MISSOURI-COLUMBIA
RADIOISOTOPE RECEIPT AND INVENTORY RECORD

User: _____ Auth.# _____ Location _____

Inventory #	P.O. #	Isotope	Activity	Vendor

Time/Date Received:	Time/Date Monitored:	Courier:	Label:
3 ft. mrem/h: thin end window	Contact mrem/h: Lidium C	Contamination: _____ pCi	Processed By:

Delivery Location: Col. b 12/22/93 By: _____ Time/Date _____

This package contains radioactive materials which shall be controlled and secured against unauthorized use. Questions regarding this shipment should be directed to the authorized user or to Radiation Safety, Environmental Health & Safety 882-7221.

Received By: _____ Date: _____

Package Opened By: _____ Location: _____ Date: _____

Use			Transfer and Waste Disposition (μCi) *					
				Waste Record μCi			Transfers	
Date	Activity Removed	Activity Balance	Date	Liquid	Solid	Vials	μCi	User

Radioactive Material, N.O.S., 7, UN2982, T.I.___, Emergency Telephone #882-7221, ERG Guide 63

Radioactive Material, Low Specific Activity, N.O.S., 7, UN2912, T.I.___, Emergency Telephone # 882-7221, ERG Guide 62

*Activity corrected for decay: ☐ Yes ☐ No

Radioactive Material, excepted Package-Limited Quantity of Material, 7, UN2910, T.I.___, Emergency Telephone # 882-7221, ERG Guide 61

EHS/RSO 6 - (1/93)

Two-Year Trial Program for Conducting Open Enforcement Conferences; Policy Statement

AGENCY: Nuclear Regulatory Commission.

ACTION: Policy statement.

SUMMARY: The Nuclear Regulatory Commission (NRC) is issuing this policy statement on the implementation of a two-year trial program to allow selected enforcement conferences to be open to attendance by all members of the general public. This policy statement describes the two-year trial program and informs the public of how to get information on upcoming open enforcement conferences.

DATES: This trial program is effective on July 10, 1992, while comments on the program are being received. Submit comments on or before the completion of the trial program scheduled for July 11, 1992. Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

ADDRESSES: Send comments to: The Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555. ATTN: Docketing and Service Branch.

Hand deliver comments to: One White Flint North, 11555 Rockville Pike, Rockville, MD between 7:45 a.m. to 4:15 p.m., Federal workdays.

Copies of comments may be examined at the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC

FOR FURTHER INFORMATION CONTACT: James Lieberman, Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555 (301–504–2741).

SUPPLEMENTARY INFORMATION:

Background

The NRC's current policy on enforcement conferences is addressed in Section V of the latest revision to the "General Statement of Policy and Procedure for Enforcement Actions," (Enforcement Policy) 10 CFR part 2, appendix C that was published on February 18, 1992 (57 FR 5791). The Enforcement Policy states that, "enforcement conferences will not normally be open to the public." However, the Commission has decided to implement a trial program to determine whether to maintain the current policy with regard to enforcement conferences or to adopt a new policy that would allow most enforcement conferences to be open to attendance by all members of the public.

Policy Statement

Position

The NRC is implementing a two-year trial program to allow public observation of selected enforcement conferences. The NRC will monitor the program and determine whether to establish a permanent policy for conducting open enforcement conferences based on an assessment of the following criteria:

(1) Whether the fact that the conference was open impacted the NRC's ability to conduct a meaningful conference and/or implement the NRC's enforcement program;

(2) Whether the open conference impacted the licensee's participation in the conference;

(3) Whether the NRC expended a significant amount of resources in making the conference public; and

(4) The extent of public interest in opening the enforcement conference

I. Criteria For Selecting Open Enforcement Conferences

Enforcement conferences will not be open to the public if the enforcement action being contemplated—

(1) Would be taken against an individual, or if the action, though not taken against an individual, turns on whether an individual has committed wrongdoing;

(2) Involves significant personnel failures where the NRC has requested that the individual(s) involved be present at the conference;

(3) Is based on the findings of an NRC Office of Investigations (OI) report; or

(4) Involves safeguards information, Privacy Act information, or other information which could be considered proprietary.

Enforcement conferences involving medical misadministrations or overexposures will be open assuming the conference can be conducted without disclosing the exposed individual's name. In addition, enforcement conferences will not be open to the public if the conference will be conducted by telephone or the conference will be conducted at a relatively small licensee's facility. Finally, with the approval of the Executive Director for Operations, enforcement conferences will not be open to the public in special cases where good cause has been shown after balancing the benefit of public observation against the potential impact on the agency's enforcement action in a particular case.

The NRC will strive to conduct open enforcement conferences during the two-year trial program in accordance with the following three goals:

(1) Approximately 25 percent of all eligible enforcement conferences conducted by the NRC will be open for public observation;

(2) At least one open enforcement conference will be conducted in each of the regional offices; and

(3) Open enforcement conferences will be conducted with a variety of the types of licensees.

To avoid potential bias in the selection process and to attempt to meet the three goals stated above, every fourth eligible enforcement conference involving one of three categories of licensees will normally be open to the public during the trial program. However, in cases where there is an ongoing adjudicatory proceeding with one or more intervenors, enforcement conferences involving issues related to the subject matter of the ongoing adjudication may also be opened. For the purposes of this trial program, the three categories of licensees will be commercial operating reactors, hospitals, and other licensees, which will consist of the remaining types of licensees.

II. Announcing Open Enforcement Conferences

As soon as it is determined that an enforcement conference will be open to public observation, the NRC will orally notify the licensee that the enforcement conference will be open to public observation as part of the agency's trial program and send the licensee a copy of this Federal Register notice that outlines the program. Licensees will be asked to estimate the number of participants it will bring to the enforcement conference so that the NRC can schedule an appropriately sized conference room. The NRC will also notify appropriate State liaison officers that an enforcement conference has been scheduled and that it is open to public observation.

The NRC intends to announce open enforcement conferences to the public normally at least 10 working days in advance of the enforcement conference through the following mechanisms:

(1) Notices posted in the Public Document Room;

(2) Toll-free telephone message; and

(3) Toll-free electronic bulletin board messages.

Pending establishment of the toll-free message systems, the public may call (301) 492–4752 to obtain a recording of upcoming open enforcement conferences. The NRC will issue another Federal Register notice after the toll-free message systems are established.

To assist the NRC in making appropriate arrangements to support public observation of enforcement conferences, individuals interested in attending a particular enforcement conference should notify the individual identified in the meeting notice announcing the open enforcement conference no later than five business days prior to the enforcement conference.

III. Conduct of Open Enforcement Conferences

In accordance with current practice, enforcement conferences will continue to normally be held at the NRC regional offices. Members of the public will be allowed access to the NRC regional offices to attend open enforcement conferences in accordance with the "Standard Operating Procedures For Providing Security Support For NRC Hearings And Meetings" published November 1, 1991 (56 FR 56251). These procedures provide that visitors may be subject to personnel screening, that signs, banners, posters, etc., not larger than 18" be permitted, and that disruptive persons may be removed.

Each regional office will continue to conduct the enforcement conference proceedings in accordance with regional practice. The enforcement conference will continue to be a meeting between the NRC and the licensee. While the enforcement conference is open for public observation, it is not open for public participation.

Persons attending open enforcement conferences are reminded that (1) the apparent violations discussed at open enforcement conferences are subject to further review and may be subject to change prior to any resulting enforcement action and (2) the statements of views or expressions of opinion made by NRC employees at open enforcement conferences or the lack thereof, are not intended to represent final determinations or beliefs.

In addition to providing comments on the agency's trial program in accordance with the guidance in this notice, persons attending open enforcement conferences will be provided an opportunity to submit written comments anonymously to the regional office. These comments will subsequently be forwarded to the Director of the Office of Enforcement for review and consideration.

Dated at Rockville, MD, this 7th day of July 1992.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,

Secretary of the Commission.

[FR Doc. 92–16233 Filed 7–9–92; 8:45 a.m.]

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Corrections

Federal Register

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Friday, July 17, 1992

NUCLEAR REGULATORY COMMISSION

Two-Year Trial Program for Conducting Open Enforcement Conferences; Policy Statement

Correction

In notice document 92-16233 beginning on page 30762 in the issue of Friday, July, 10, 1992, on page 30762, in the second column, under DATES, beginning in the fifth line, "July 11, 1992" should read "July 11, 1994".

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