

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 30-15160/82-02(DETP)

Docket No. 30-15160

License No. 34-11912-03

Category F

Priority VI

Licensee: Wright State University
7751 Colonel Glenn Highway
Dayton, OH 45435

Inspection At: Bob Hipple Laboratory for Cancer Research
3525 Southern Boulevard
Kettering, OH

and

Wright State University
7751 Colonel Glenn Highway
Dayton, OH

Inspection Conducted: August 18-19 and September 30, 1982

Inspector: *S.R. Lasuk*
S. R. Lasuk

10/8/82

Approved By: *D.J. Sreniawski*
D. J. Sreniawski, Chief
Materials Radiation Protection
Section 2

10/13/82

Inspection Summary

Inspection on August 18-19 and September 30, 1982 (Report
No. 30-15160/82-02(DETP))

Areas Inspected: Special, unannounced, safety inspection of the licensee's organization; materials and facilities; training and instructions to workers; and radiological protection procedures to determine whether or not certain allegations could be substantiated. The inspection involved nine inspector-hours onsite and 2.5 inspector-hours offsite.

Results: Of the four areas inspected, no items of noncompliance were identified in three areas; one apparent item of noncompliance (failure to follow procedures to evaluate the training received by a user of licensed material as required by License Condition No. 20 - Section 11) was identified in one area.

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DETAILS

1. Persons Contacted

Martin J. Murphy, Jr., Ph.D., Director, Bob Hipple Laboratory for Cancer Research
Tomoe Shimizu, M.D., Bob Hipple Laboratory
Matt O'Connell, Summer Scholar, Bob Hipple Laboratory
David S. Atwater, Assistant Vice President for Facilities and General Service, Wright State University
Jarrell R. Hagan, Director of Safety, Wright State University and Interim University Radiation Safety Officer
Bruce T. Austin, Ph.D., Health Physics Consultant for the University (former University R.S.O.)
John Waggoner, Radiation Safety Technologist, Wright State University
H. E. Meyer, Manager, Health Physics Operations, Mound Facility in Miamisburg, Ohio
Adrian V. Rake, Ph.D., Chairman, University Radiation Safety Committee (Telephone contact on September 30, 1982)

2. Receipt of Information

Region III received a telephone call on July 7, 1982 from an individual who reported that (1) people are drinking coffee in Lab 226 (a laboratory approved for the use of radioactive materials) at the Bob Hipple Laboratory for Cancer Research and, (2) volunteers are working with iron-59 (Fe-59) at that laboratory but have not been trained to work with the isotope. The last time that the allegor observed the above practices was in mid-June 1982; however, a volunteer, who works under a Dr. Shimizu, told him the practices are still going on. He also stated that in mid-June 1982, John Waggoner delivered an isotope and the volunteer left the lab to avoid detection as a user.

The caller provided the names of two individuals, one was a former volunteer at the Hipple Laboratory and the other is a current employee; he said he believes these two individuals would be willing to talk to the NRC regarding these practices.

The allegor was told that Region III would be able to look into this matter sometime in August or early September.

This unannounced special inspection by Region III in Dayton and Kettering, Ohio, on August 18-19, 1982 was conducted primarily to determine whether or not the allegations could be substantiated.

3. Licensed Program

NRC Materials License No. 34-11912-03 is an academic, Category F, Priority VI license which was issued on April 17, 1979. The latest amendment (No. 06) was issued on July 16, 1982. Materials authorized under this license includes the following byproduct material in any

chemical and/or physical form for animal studies plus research and development as defined in Section 30.4(q), 10 CFR Part 30: 20 millicuries (mCi) of each byproduct material with Atomic Nos. 3-83 for a total of 5 curies (Ci); 10 Ci H-3; 500 mCi C-14, P-32, and I-125 each; 300 mCi Cu-64; 200 mCi Ni-63; 100 mCi S-35, and Cr-51 each; 50 mCi I-131, and 11 milligrams of Cf-252 as sealed sources. This license also authorizes 1.1 Ci of Cs-137 in a sealed source for an instrument calibrator and a 150 mCi Cs-137 sealed source for storage only.

Authorized places of use include Wright State University at 7751 Colonel Glenn Highway in Dayton, Cox Heart Institute at 3825 Southern Boulevard in Kettering, and other facilities in Dayton, Yellow Springs, Celina, and Piqua, all in Ohio. The Hipple Laboratory is located within the Cox Heart Institute building.

4. Inspection History

The activities conducted under this license were initially inspected on February 16, 17 and 19, 1982. The following item of noncompliance resulted from that inspection. An individual was observed drinking from a cup in a laboratory (Lab 226 at the Hipple Laboratory) approved for the use of radioactive materials.

The licensee has three other NRC licensed programs which were also inspected at that time; no violations were identified for those programs.

5. Organization

John R. Beljan, M.D., Provost and Senior Vice President
Adrian V. Rake, Ph.D., Chairman, University Radiation Safety Committee

Drs. Beljan and Rake were on vacation during the onsite portion of this inspection.

Other individuals and their positions are shown in Section 1 of this report.

No apparent items of noncompliance were identified.

6. Materials and Facilities

Licensed material for Hipple Laboratory activities is located either in Lab 226 (usage Laboratory) or Lab 135 (counting laboratory), according to Dr. Murphy. He stated that there is never more than 500 μ Ci of Fe-59 at any one time in Lab 226 and not more than 20 μ Ci of Fe-59 is used per experiment. Also, about 10 μ Ci of H-3 is in Lab 226 at this time.

Dr. Shimizu said she currently uses only Fe-59 in her experiments, approximately 20 μ Ci per day.

According to Mr. O'Connell, his first "hands-on" experiment with licensed material was on July 5, 1982. His Daybook (experimental logbook) showed 20 μCi of Fe-59 Cl_3 was used in the experiment.

No apparent items of noncompliance were identified.

7. Training and Instructions to Workers

Since one of the allegations involved inadequate training of volunteer (non-paid) workers, the training of one such individual, who is the only volunteer currently involved in radioisotope work, was pursued during this inspection. Mr. Matt O'Connell, who is considered a Summer Scholar at the Hipple Laboratory, graduated from Miami University in Oxford, Ohio, where he majored in Chemistry. He will be entering medical school at Wright State University later this year.

Mr. O'Connell began working at the Hipple Laboratory in June 1981. He departed on August 24, 1981, returned during the 1981-82 Christmas holiday period and, his current stay began on May 24, 1982. The inspector was told that prior to July 5, 1981, Mr. O'Connell's involvement in experiments with radioisotopes has been as an observer. On July 1 and 2, 1982, Mr. O'Connell and another volunteer participated in a Mound Facility (Miamisburg, Ohio), Health Physics refresher/training program concerning the radiological safety aspects of handling nuclear materials. This training program included a written test on the information presented and Mr. O'Connell scored 92%. A copy of the training program contents was unavailable during the inspection.

No apparent items of noncompliance were identified.

8. Radiological Protection Procedures

The licensee's radiation protection program is described in their Wright State University Radiation Safety Guide dated 1978 which is referenced in License Condition No. 20. The licensee is committed to the requirements in the Guide, in certain applications and letters and, those specified in license conditions.

The Guide and referenced letter dated March 5, 1981, states that an Authorized User (e.g., Dr. Murphy) is a University employee who is fully affiliated with an academic department and has been authorized by the Radiation Safety Committee to use radiation and supervise the use of radiation by others. He is responsible for insuring that individual user responsibilities are discharged by those using radioactive materials under his direction.

An Individual User is defined, in Section 1.4 of the Guide, as "a member of the University community who uses radioactive material or a radiation producing device under the direction of an authorized user. An individual user is fundamentally involved in safety in the use of radiation and must demonstrate minimum competence in accordance with criteria in Appendix G of this guide."

Under Individual User responsibilities, it states in Item 1.4(1), "Do not smoke, eat, drink or apply cosmetics in a laboratory approved for the use of radioactive materials."

From personal observation on August 18, 1982 and interviews with four individuals, including the two named by the allegor, the inspector was unable to substantiate the allegation regarding consumption of liquids in Lab 226.

Appendix G is the "Criteria for Evaluation of Individual User Applicants." It states, "As a matter of policy, an individual user of radioactive material or a radiation producing device must have successfully completed training in the safe use of radiation and work under the supervision of a qualified authorized user as designated by the University Radiation Safety Committee.

As a minimum, it is expected that an individual user will have successfully completed BCH 743, Radioisotope Principles (which is described in this Appendix), or an equivalent course. The adequacy of an equivalent course or informal training and self-study may be demonstrated, at the discretion of the Committee, by successful completion of the final examination of BCH 743. The Committee may require successful completion of BCH 743 as a remedial measure or as condition for continued approval."

Although Dr. Murphy considered the two-day training program at the Mound Facility as adequate for the needs of the Hipple Laboratory, he did not know whether or not the Committee considered it an "equivalent course." Since the chairman and other members of the Committee were on vacation, the inspector was unable to get this matter resolved at this time.

In discussions with Dr. Austin and Messrs. Hagan and Waggoner, there was some question as to whether Mr. O'Connell fits the Individual User or student category (the University permits students to use isotopes under the supervision of an Authorized User). The Radiation Safety Office received no information for the Committee's consideration regarding Mr. O'Connell's training and experience with radioisotopes (which is part of the University's procedure for qualifying someone as an Individual User).

See Section 11 for the item of noncompliance.

9. Allegor Interview

The inspector met with the allegor during the afternoon of August 18, 1982 to review his allegations, to obtain any additional information he may wish to divulge, and to discuss the conversation held with one of the two individuals he named during the July 7, 1982 telephone call to Region III.

The allegor offered the following additional information:

- a. When he began working with Fe-59 and H-3 at the Hipple Laboratory in 1981, an application was submitted requesting a film badge for him. However, this request was denied about three weeks later because he had not taken the BCH 743 course and therefore, he was removed from work involving radioisotopes.
- b. The volunteer working under Dr. Schimizu is Matt O'Connell.
- c. Users maintain a "Daybook" which contains a description of experiments conducted on specific dates. He did not know if individuals involved in the experiments are named in the book; however, he thought that Mr. O'Connell may have been asked to start keeping such a book for his work.

The alleged was told that the individual he identified as a current employee of the Hipple Laboratory in his July telephone call did not confirm his two allegations when contacted by the inspector earlier this day. In response, the alleged said the employee evidently does not wish to get involved in this matter.

Subsequent to this meeting with the alleged, the inspector contacted the second individual, the former volunteer, who also was unable to confirm the two allegations. This individual worked at the Hipple Laboratory for about three months in 1982 but only in Lab 227.

10. Exit Interview

The inspector met with Messrs. Atwater and Hagan during the afternoon of August 19, 1982. Mr. Atwater, who represents the University Administration on the Radiation Safety Committee, was informed that the allegation regarding drinking coffee in Lab 226 could not be substantiated but the matter of Mr. O'Connell's eligibility to use radioisotopes is still unresolved. He was told that we are awaiting the arrival on campus of Dr. Austin to see if he could shed some light on this matter. Mr. Hagan was to inform Mr. Atwater of any new findings that may result from our meeting with Dr. Austin.

Mr. Atwater will inform Dr. Beljan of the purpose and findings of this special inspection when the latter returns from his vacation on August 30, 1982. Subsequent Region III correspondence regarding the results of the inspection shall be sent to the attention of Dr. Beljan.

11. Inspection Followup Request

Region III contacted Dr. Austin on August 23, 1982 to request a written response from the University Radiation Safety Committee regarding their evaluation of Mr. O'Connell's training and the status/training of other individuals who work in Authorized Users' Laboratories. He was told this information would be needed to adequately evaluate the inspection findings. Dr. Austin agreed to forward this request to the Committee but asked that it be put in writing. Region III's written request, dated August 24, 1982, is attached to this report.

The licensee's response to the above request was received on September 30, 1982; it was dated September 27, 1982 and signed by Dr. Adrian V. Rake. The letter states that, (1) the Committee does not think the training received at the Mound Facility on July 1-2, 1982 was adequate for Mr. O'Connell's type of activities and (2) Mr. O'Connell was not a student according to the Wright State definition so he should have obtained an Individual User approval prior to using licensed material. Therefore, this is a violation of the licensee's Radiation Safety Guide procedures and therefore, an item of noncompliance with License Condition No. 20. The licensee's September 27, 1982 letter is attached to this report.

One apparent item of noncompliance was identified.

Attachments:

1. Ltr dtd 8/24/82
2. Ltr dtd 9/27/82

AUG 24 1982

Wright State University
ATTN: Dr. Bruce Austin
Safety Department
7751 Colonel Glenn Highway
Dayton, OH 45435

License No. 34-11912-03

Dear Dr. Austin:

This is to confirm the telephone conversation between you and Mr. S. R. Lasuk, of this office, on August 23, 1982, during which you agreed to inform the WBU Radiation Safety Committee that Region III requires a written response to the following questions:

1. Does the Committee consider Mr. Matt O'Connell's training adequate for the work he has been doing with isotopes since July 5, 1982?
2. If any individual is working with isotopes in an Authorized User's laboratory, but the individual is not designated as an Individual User, what is his category (status) and how does the Committee verify his training?

The above information is needed in order to adequately evaluate the findings of the special inspection conducted by Mr. Lasuk at the Hipple Laboratory and Wright State University last week.

Thank you for your assistance in this matter.

Sincerely,

D. J. Sreniawski

D. J. Sreniawski, Chief
Materials Radiation Protection
Section 2

pdr 824831 4294

OFFICE	RIII <i>pl</i>	RIII <i>DJS</i>				
SURNAME	Lasuk/cw	Sreniawski				
DATE	8/24/82	8/24/82				