

UNITED STATES GOVERNMENT

Memorandum

TO : Eber R. Price, Director
Division of State & Licensee Relations, HQ

THRU : Donald I. Walker, Director

FROM : Glen D. Brown, Senior Radiation Specialist
Region IV, Division of Compliance, Denver

DATE: October 9, 1967

SUBJECT: SECOND REVIEW MEETING WITH NEBRASKA DEPARTMENT OF HEALTH,
LINCOLN, NEBRASKA - SEPTEMBER 26-27, 1967

The second review meeting with personnel of the Division of Radiological Health, Nebraska Department of Health, was held in Lincoln, Nebraska, on September 26-27, 1967. Nebraska personnel present during the meeting were Heinz G. Wilms, Director, Division of Radiological Health, and the two members of his staff, Dr. Orlean N. Johnson, USPHS assignee, and H. E. Simmons, Radiological Health Specialist I. In addition, Dr. Jerry Jacobsen, Director, Radiological Health, Region 6, USPHS, was present as a guest of the Nebraska personnel. The AEC was represented by James R. Mason and Bernard H. Weiss, Division of State & Licensee Relations, and Glen D. Brown, Division of Compliance, Denver.

Maurice Frazer, M. D., chairman of the Registration and Licensure Committee, was contacted by the AEC representatives at his office on September 26, 1967, to answer any questions Dr. Frazer might have covering medical uses. E. A. Rogers, M. D., Director of Health, State Department of Health, Nebraska, was not available for the summary discussion.

Only those items relating to inspection and enforcement activities are covered in this memorandum.

Personnel and Training

A laboratory technician is no longer assigned to the Division of Radiological Health. Laboratory work is now performed by Wilms, Johnson, or Simmons. Johnson's tour of duty has been extended until July 1968. Wilms reported that funds are not available to replace Johnson after the above date. Wilms felt that the agreement material program would be in good shape by then and the work load would be reduced. No additional training of personnel has occurred since the previous review meeting.

Inspection and Enforcement

Wilms reported that 25 inspections of agreement material licenses have been made since the last review meeting. Wilms, Simmons, and Johnson perform the inspections as well as the licensing. All inspections are announced. The staff plans to inspect each licensee every year. Wilms stated that at present no license inspections are overdue. The inspection reports that were reviewed by this writer indicated that the scope of the inspections was commensurate



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with the hazards involved. Independent measurements were taken as the situation indicated and the Department has sufficient portable instrumentation to measure different types of radiation. An average of 3.5 man days per month are used on inspection of agreement material licenses. About three hours are used to conduct an inspection of a radiographer, one hour for a doctor, two hours for a medical institution, and 12 hours for a university.

The content of the inspection reports reviewed showed that information to definitely establish items of noncompliance was very brief. For example, a statement would be made that a container was not labeled without providing information to show that labeling was required. In many instances, citations were made for not posting Form NRH-3, "Notice to Employees," where it was apparent the Nebraska regulations did not require posting. Wilms said he was aware of this but felt that all licensees should post the notice.

Wilms said that the inspector usually discusses the results of the inspection with a corporate member for industrial licensees. In the case of medical, or academic institutions, the highest contact is generally a department head.

Two types of written enforcement notices are used. Form NRH-10, similar to Form AEC-591, is used for minor items. According to Wilms, a letter, signed by the Director of Radiological Health, is used for more serious problems. During a review of licensee files, one instance was noted where the letter was written and signed by Simmons. No formal review of inspection reports by Wilms was indicated. The writer suggested to Wilms that the enforcement letter might be more effective if it was sent out under his signature and title even if, on occasion someone else might have to sign for him. The letters are addressed to the highest person contacted during the inspection. No significant problems requiring enforcement action have occurred, according to Wilms. Wilms stated that Nebraska personnel routinely provide advice to licensees.

A synopsis of the inspections that were reviewed by the writer are attached.

Incidents and Investigations

Wilms stated that no incidents or investigations have occurred since the last review meeting.

AEC Compliance Activities

The Nebraska personnel were informed of the reorganization that has occurred in Compliance Headquarters and field offices and that the enforcement function of the AEC regulatory program was now in the Division of Compliance.

Several incidents involving AEC licensees were briefly discussed along with significant enforcement action wherein suspension or cease and desist orders were issued. It was pointed out that, in almost each instance involving exposures from sealed sources, the failure to make required surveys was the cause.

A summary of the cases discussed is attached.

Emergency Procedures

Wilms stated that they have made no progress beyond that reported at the prior review meeting.

Conclusions

There was no evidence of incompatibility on the part of the Nebraska agreement material program to adequately protect health and safety. Several items employed by the AEC that could be suggested to Nebraska to strengthen the administration and effectiveness of their program are as follows:

1. Routinely contact the top management available following an inspection and address all enforcement correspondence to the corporate head.
2. Send all enforcement correspondence under the signature of the Director of Radiological Health.
3. Provide more specific information in inspection reports to substantiate items of noncompliance.

Although there is no apparent problem at present, failure to obtain a replacement for Johnson could significantly alter the inspection situation after July 1968.

Attachments:

1. Synopsis of Nebraska Inspections
2. Summary of AEC Compliance Items

cc: R. H. Engelken, CO:HQ, w/attachments

Synopsis of Nebraska Inspection Reports

Reviewed on September 27, 1967

George J. Haslam, M. D.
Memorial Hospital
715 South Jefferson
North Platte, Nebraska

License No. 26-7298-1

Subject license was inspected on September 12, 1967 by Heinz Wilms. The license authorizes small amounts of iodine and other isotopes for diagnostic use only. Inspection included review of receipt, surveys, disposal, etc. The only item of noncompliance noted was failure to post Form NRH-3 "Notice to Employees." The report did not establish that the licensee had a controlled area and, therefore, a requirement that the form be posted.

Creighton Memorial and St. Joseph's Hospital
Radioisotope Service
Department of Radiology
2305 So. 10th Street
Omaha, Nebraska

License No. 26-6544-2
License No. 26-2263-2

The subject licensee was inspected on July 19, 1967 and a clear Form NRH-10 was issued. Licenses cover ^{60}Co teletherapy unit and isotope program. Inspection was adequate in depth and covered those items normally covered in an AEC inspection. Inspection results were not discussed with hospital administrator.

D C Testing Company
Omaha, Nebraska

License No. 1-6-1

The subject licensee was inspected on August 3, 1967 by Wilms and a clear Form NRH-10 was issued. The license authorizes possession and use of 1000 μc ^{210}Po Static Master sealed source for an antistatic device. Although the license is issued to D C Testing, they are actively used by the owner and are not distributed. Records of receipt, transfer and leak testing were reviewed.

University of Omaha
Omaha, Nebraska

License No. SNM-921

The subject licensee was inspected on July 13, 1967 by Wilms. A Form NRH-10 was issued with items of noncompliance involving labeling of a 0.03 μc ^{239}Pu calibration source and survey record. The inspection notes indicated failure to make surveys. Wilms stated to the writer that the survey in the report was failure of the licensee to test source to see if any of the plated plutonium was flaking off.

Kelly, Dowell and Others, Drs.
Omaha, Nebraska

License No. 26-6544-1

The subject licensee was inspected on July 19, 1967 by Simmons. The license authorizes a ^{60}Co teletherapy unit. The inspection was thorough and covered

Items such as instructions, leak tests, interlock tests, personnel monitoring, posting and labeling, and surveys. An independent survey was made by the inspector which disclosed a small beam of radiation of about 15 mr/hr around the door and present in an uncontrolled area.

A letter, prepared and signed by Simmons was sent to the licensee on August 7, 1967 listing the following items of noncompliance and requesting a reply as to corrective action.

1. License Condition 17.C. - Failure to monitor records of interlock tests. ?
2. Analyze radiation surveys and excessive levels of radiation in uncontrolled area.
3. Failure to post door of telephone equipment room as required.

The licensee's response was received on September 1, 1967 and acknowledged as adequate by Simmons on September 18, 1967.

Compliance Items Discussed at
Nebraska Review Meeting September 26-27, 1967

1. Exposure to Radiographer

Estimated whole body exposure of 8 rems and hand exposure of 30-40 rems to hands was incurred when radiographer failed to retract a 150-curie ^{60}Co source and failed to conduct an adequate survey.

2. Exposure to Radiographer

Radiographer sustained dose of 2 rems whole body and hand exposure of 750 rems when he handled a 47-curie ^{60}Co source which had not been returned to the shielded position. An adequate survey was not conducted. Erythema, swelling and blistering of the left hand occurred.

3. Exposure to Radiographer

A 15-curie ^{192}Ir source became detached during performance of field radiography. Whole body exposure of 6.1 rems and extremity dose of 170-200 rems incurred through failure to make an adequate survey.

4. Hand Exposures from Encapsulation of ^{90}Sr

Two employees apparently received significant beta skin doses during 1962 which resulted in acute radio-dermatitis. The employees originally complained of sensitive finger tips and an investigation by the licensee at the time indicated that the employees could not have received excessive radiation exposure. An investigation by CO in 1967 disclosed that the condition resulted from beta radiation in excess of 1,000 rads. Skin grafts of the individuals may be necessary.

5. Exposure to Radiographer

During use of a specially-designed 450-curie ^{60}Co radiographic device, the source separated from the cable. Film badge showed a dose of 10 rems. Survey was made with an instrument with dead batteries. Subsequent survey against another source disclosed that instrument was inoperable and above condition was discovered by radiographer during resurvey with another instrument.

6. Exposure to 700-curie ^{60}Co Source

During use of a specially-designed exposure device containing a 700-curie ^{60}Co source, the source became lodged in the transfer tube. The employee's survey instrument indicated a dose rate of 30 R/hr and source tube was cut and placed into a hot cell. Actually, the survey instrument used was inaccurate as the dose rate was 500 R/hr. The employee received a whole body dose of 14 rems and extremity hand dose of 72 rems.

7. Exposure to Radiographer and Others

A radiographer inadvertently removed a 50-curie ^{192}Ir source from the shielded position while attempting to replace a cable. Survey was inadequate to show that source was unshielded. Projector was subsequently loaded on truck and returned to another state, involving thirteen hours in transit. Exposed condition was noted upon return to home base when building gamma alarm sounded. Exposure to radiographer during work at original site was about 49 rems whole body. Investigation disclosed that driver (the radiographer's assistant) was partially protected by the fact that the source was lodged between cover and lead football, therefore affording considerable shielding. Exposure estimate to driver (not wearing personnel monitoring device) was between 20 and 250 rems, with a most probable dose estimate of 24 rems. Medical tests support the latter dose estimate since no illness was incurred and blood tests are within normal limits.

8. Tritium Problems

Experience in evaluating bioassay data from exposures to titanium tritide was discussed. It was pointed out that there is essentially no data available at present for excretion rates of insoluble forms of tritium.

Significant Enforcement Action

The following cases were discussed.

Suspension of License - A license was suspended when an inspection disclosed that the licensee was using conventional laundry facilities instead of special facilities that he had described in the application for processing contaminated clothing. The conditions were corrected and the suspension was lifted.

Cease and Desist Orders - A cease and desist order was issued to a radiographic licensee for falsification of records. A cease and desist order was issued to a uranium mill licensee to stop use of unauthorized liquid waste retention systems.

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