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ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION V
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March 25, 1969

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Region V, Division of Compliance

INSPECTOR'S EVALUATION AS PER MM 900-15
DEPARTMENT OF THE AIR FORCE, MC CLELLAN AFB, CALIFORNIA
LICENSE NOS. 4-8699-1, -2, -3

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There appeared to be no health and safety problems associated with activities under the three licenses. The only item of noncompliance noted was failure to maintain records of leak tests as prescribed by license No. 4-8699-1. The scope of the three licensed programs is small; there appeared to be no change in the programs since the previous inspections. The Base Bioenvironmental Engineering Branch appears to have good control over the health and safety aspects of all licensed programs at the base. Although small in size (two people), the branch provides periodic surveillance of various groups holding AEC licenses with regard to following base health and safety procedures and makes recommendations to various licensees on licensing matters, waste disposal and recordkeeping.

The -2 and -3 licensees were given a Form AEC-591 showing no items of noncompliance at the conclusion of those inspections. The -1 licensee was given a Form AEC-591 showing one item of noncompliance, as described above.

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591 Notes
Metzger/msb
3/25/69

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Department of the Air Force
Sacramento Air Material Area
Standards Lab, Bldg. 458
McClellan AFB, Calif. 95652

Department of the Air Force
HQ, Sacramento Air Material Area
Civil Engineering Division
McClellan AFB, Calif. 95652

Dept. of the Air Force
Regional Environmental
Health Laboratory
McClellan AFB, Calif.

License No. 4-8699-1

License No. 4-8699-2

License No. 4-8699-3

General

1. On March 13, 1969, an announced reinspection was conducted of the three subject licenses at the above addresses. The -1 license authorizes the use of byproduct material for a radiac calibrator for calibration of instruments. The -2 license authorizes the use of byproduct material in remote area monitoring devices. The -3 license authorizes the use of tritium foils in gas chromatograph units for pesticide studies. The -1 license was last inspected on June 16, 1966, and the -2 and -3 licenses were last inspected on December 1, 1967. There were no representatives from the State of California present. The inspections of each license were conducted in the presence of representatives from the Bioenvironmental Engineering Branch of the base. No items of noncompliance were found with respect to the -2 and -3 licenses; one item of noncompliance was found for the -1 license; records of leak tests were not maintained as required by the license.

Persons Contacted and Organization

2. Major R. T. Maykoski and Mr. Raymond Theep were contacted at the Bioenvironmental Engineering Branch at McClellan AFB. Major Maykoski is Chief of the branch, which is under the base Medical Service, and Mr. Theep (a civilian) is his assistant and functions as the base Radiation Safety Officer. Major Maykoski stated that his group is basically involved with industrial hygiene with some training in health physics. He said he had taken a course and

received eight credits in health physics. The basic function of the Bioenvironmental Engineering Branch is to provide surveillance of the various licensees on the base, which includes making periodic audits of the individual licensed activities, issuing and collecting all film badges used on the base, and making recommendations to various licensees on matters of health and safety. Major Maykoski said that his primary function is to act as a consultant to the base Commander, who is over the Director of the base Medical Service Group. The major also said that they handle all problems involving waste disposal and all license applications and amendments must first be reviewed by his group prior to being sent to the Air Force Radioisotopes Committee at Wright-Patterson AFB. Both the major and Mr. Theep accompanied the inspector on each license inspection.

3. The organizational structure for the three licenses has not changed since previous inspections. At the facility working level for each license, personnel have not changed and their positions remain the same as described in previous inspection notes for those licenses. Persons contacted for the -1 license were Mr. D. Millard^u, Chief of the Standards Lab, and Mr. R. S. Randolph, who is a Calibrations Technician and appears on the -1 license as being authorized to perform leak tests on sealed sources under that license. Also met at the Calibration Facility were Mr. W. I. Ferro and Mr. J. H. Lynch, both holding the title of Inspector and users of the byproduct material in instrument calibration.
4. Mr. J. Gavaldon, Chief of the Metallurgy Lab at the Nondestructive Testing Facility, Building 368, was contacted for the -2 inspection. Mr. Gavaldon was acting for Mr. D. Helmick, Chief of the Material and Processing Lab Section.

Also contacted for the -2 license was Mr. R. Millard^w_A, Physicist and Laboratory Monitor, who acts as Safety Officer for the laboratory. Also contacted was Mr. Leland Wasser, Materials Specialist, who is the primary user of byproduct material under the -2 license and who is listed as Radiation Safety Officer for the license. Mr. Wasser reports to Mr. H. Paul, who is Chief of the Physical Testing Laboratory Unit.

5. Persons contacted under the -3 license were Mr. Philip Diamond, license named RSO, and Mr. Y. A. Nishioka, one of the users of the hydrogen foils in gas chromatography studies. Also contacted under the -3 license was Colonel S. S. Smith, who is the Administrative Officer and in charge of the Regional Environmental Health Laboratory.

Radiation Safety

6. Mr. Theep explained that he is the Radiation Safety Officer for the entire base and that each licensed activity has a local Radiation Safety Officer. For the -1 license, Mr. Randolph is the Radiation Safety Officer. He explained that Mr. Millard^w_A is the Radiation Safety Officer for the entire Material and Processing Laboratory Section under the -2 license, while Mr. Wasser is the RSO for the Nondestructive Testing Group who uses the sealed sources in area monitors. Mr. Philip Diamond is the Radiation Safety Officer under the -3 license. Mr. Theep said that, as Radiation Safety Officer, his functions cover a broad scope which includes auditing the various licensed activities, maintaining control of the film badge program, and other duties as described previously in this report. Each of the individual license RSOs stated that they are responsible for health and safety and maintaining some of the records required by regulation. In the case of the -1 and -2 licenses, Mr. Randolph

maintains leak test records for those activities, while records of film badge reports are maintained by the Bioenvironmental Health Group. In addition, records of receipt and transfer for the -2 license are kept by the Department of Transportation and the Civil Engineering Group.

Instruction of Personnel

7. Procedures are required by each of the licenses. According to Mr. Theep, all licensees are bound by the Air Force Base General Procedures No. 160-132, which deal with general precautions to be taken in handling radioactive materials and certain functions of the groups involved. In addition, there is a set of specific procedures for the cesium-137 calibrator which applies to the use of that isotope anywhere in the Department of the Air Force. In addition, there are specific procedures incorporated in the -2 and -3 license applications dealing with responsibilities of personnel and methods of operation. According to Messrs. Theep and Maykoski, their periodic surveillance of the various licensed activities includes checking on the licensees to determine if they are following the established procedures. According to Mr. Theep, personnel have been following the established procedures, and he cited only one instance where one person in the Calibration Facility was not wearing a film badge (discovered during one of Mr. Theep's routine audits). Major Maykoski said that his group can not perform as many audits as they would like to due to the small staff. However, he felt that any recommendations made by his group were taken seriously by the various licensees. It was noted during the course of the inspection that any suggestions made by the representatives of the Bioenvironmental Engineering Branch were well received (for example, Major Maykoski told each of the licensees to make copies of their leak check records and send them to his branch so that he

could maintain a central file on them; this came about as a result of certain leak test records which were found to be missing under the -1 license). It was also observed during the inspection of each license that the licensees had copies of the regulations and their license. It was also observed that the licensees did not have copies of the latest revisions to Part 20, to which Major Maykoski said he would send such revisions to them.

Procurement, Records of Receipt, Transfer and Export

8. Two hydrogen-3 foils of 250 mCi each were received on July 9, 1968, as observed on the licensee's invoice for the -3 license. There had been no transfers under this license. No receipts or transfers took place under the -1 license and four each Model 716A remote area Victoreen monitoring devices were sent out for repairs in January 1968 and received back on August 16, 1968. The chambers contained 3 uCi each of strontium-90. According to Mr. Leland Wasser, the remote area monitoring chambers were sent out for repairs because of xenon gas leaks. The records of receipt and transfer were not observed because they were maintained respectively by the Civil Engineering Unit and the Transportation Unit. Personnel in those departments had already left the base for the day. No other receipts, transfers or exports took place under the three licenses.

Inventory of Licensed Material

9. Records of inventory for the -1 license showed that they possessed 120 curies of cesium-137 as a sealed source. Records of inventory for the -2 license showed that the licensee possessed three hydrogen foils of 250 mCi each and one foil of 130 mCi, making a total of 880 mCi of hydrogen-3 as titanium

tritide. Material possessed under the -3 license was observed to be 12 uCi of strontium-90 contained in four chambers of 3 uCi each.

Use of Licensed Material

10. According to Messrs. Randolph and Mill^ward, the cesium-137 source is used in calibration of all Air Force Base radiation detection instruments. The licensee also possesses another 100-curie cesium-137 source under another Air Force Base license. The strontium-90 remote area monitoring chambers under the -3 license are used for monitoring occupied areas located outside of the Nondestructive Testing Cell. The hydrogen foils under the -3 license are used in pesticide studies and semiconductivity studies for carbon dioxide.

Facilities, Storage, Restricted Areas

11. In all cases, the facilities were found to be the same as described in the previous inspection notes for all licenses. The only exception was that the Environmental Health Laboratory had purchased one additional Varian Aerograph Model 682 gas chromatography unit and two new 250-curie hydrogen-3 foils. One detector cell and foil was observed to be stored in a drawer in the laboratory and was properly labelled as to isotope, quantity and date. All the areas visited were posted as reported in previous inspection notes; all Forms AEC-3 were posted as noted and new labels showing the changes in the telephone numbers were given to the licensees to be put on the Forms AEC-3.
12. Under the -1 license, the radiac range is considered to be the restricted area, with keys possessed only by Messrs. Mill^ward and Grandon. Access to the Nondestructive Testing area under the -2 license is restricted by personnel in that area, and procedures allow only Mr. Wasser to have access to the remote area monitoring chambers containing the strontium-90. The

Environmental Health Laboratory under the -3 license is kept locked at night, according to Mr. Diamond, and continuously occupied during regular working hours.

Instrumentation

13. In addition to the AN/PDR-27 and -18 instruments used in the radiac facility, the licensee uses Model IM179 and AU-0115 pocket-size dose rate meters with ranges of 0.2 to 200 r/hr. The licensee under the -2 license still possessed the Victoreen Model 592B radiation detection instrument with a range of 0-1 r/hr. Radiation detection instruments are not used under the -3 license for the hydrogen-3 foils. According to Messrs. Wasser (-2 license) and Millard^w (-1 license), instruments are calibrated on a 6-month frequency, and it was observed that the labels on each instrument showed the date when it was calibrated and when it was again due for calibration.

Surveys

14. Mr. Theep (Industrial Hygienist) makes some compliance type surveys for all base activities as well as Major Maykoski. The records maintained at the Industrial Hygiene Department at the Bioenvironmental Branch Office showed the results of their audits which showed facts of compliance with the base radiation protection procedures and included, in one instance, an audit on the -1 license of an employee in the radiac calibration facility not wearing a film badge. Radiation surveys for the radiac facility have been made and the results were included with the original license application. Mr. Diamond under the -3 license periodically measures the machine current in the gas chromatography unit to check for any hydrogen-3 loss that may have occurred. He said that to date he had discovered no losses

in the hydrogen-3.

Personnel Monitoring

15. Film badges are used by personnel under the -1 and -2 licenses and are changed on a monthly frequency. According to Major Maykoski, all film badges are turned in to the Industrial Hygiene Department at the end of each month. According to the major, an IBM card is maintained for each person at the base and sent along with the film badge to the Wright-Patterson AFB laboratory where they are analyzed and the results returned to McClellan AFB every three months. According to those present, the figures are taken from the IBM sheets and entered by hand on the Forms DD-1141, which are maintained in the personnel medical jackets at the Medical Dispensary on the base. An examination of the Forms DD-1141 for employees under the subject licenses revealed that the maximum dose received for the year 1966 by one employee was 145 mrem, for 1967 the maximum was 55 mrem, and the maximum for 1968 was observed to be 20 mrem. Most entries on the Forms DD-1141 showed "0" mrem.

Leak Tests

16. The four strontium-90 sources under the -2 license and the 120-curie cesium-137 source under the -1 license are required to be leak checked on a 6-month basis. Leak tests are performed by Mr. R. S. Randolph of the Standards Calibration Group for the -1 license and occasionally for the -2 license. The -2 license only required, by the application to the license, that a user make the leak test on the remote area monitoring chambers for strontium-90. Records for all leak tests were maintained by Mr. Randolph, and an examination of these showed that all four of the strontium-90 chambers had been leak checked just prior to transfer for repair on December 15, 1967, the results of which

showed less than 10 picocuries of removable contamination. The record also showed that the same sources were leak tested on March 5, 1969, for which results had not been returned as yet. The records for the tests performed on the cesium source under the -1 license were also examined. The records available showed that a test had been performed on November 10, 1968; October 26, 1967; and December 5, 1966, with the result of less than 50 picocuries of removable contamination for the source. Records for tests performed inbetween the periods noted above were not available for inspection. Mr. Randolph said the tests had been made but the leak test results from Wright-Patterson AFB had been misplaced. Major Maykoski then asked Messrs. Mill^ward and Randolph to hereafter make copies of all leak test results received and send them to the Bioenvironmental Branch so that that group could keep a separate file on leak test results.

Miscellaneous

17. During all inspections, the licensee representatives stated that they had had no incidents involving byproduct material. They also said that they had no contracts with the AEC.

Exit Interview

18. Exit interviews were held with each separate licensee at the conclusion of the respective inspections. Present during all of the exit interviews were Messrs. Maykoski and Theep. Present at the exit interview for the -1 license were Messrs. Mill^ward, Randolph, Lynch and Ferro. They were told that there were apparently no health and safety problems associated with their activities under the license, but that there was apparently one item of noncompliance - failure to maintain records of leak tests. Those present stated that

they had made the tests but had lost the records, and agreed with Major Maykoski that they would henceforth make copies of all records of leak tests and send them in to the Bioenvironmental Branch for a central record depository. Those present were given a Form AEC-591 showing the single item of noncompliance.

19. The exit interview for the -2 license was held in the presence of Messrs. Gavaldon, Mill^uard and Wasser. Those present were told that there appeared to be no items of noncompliance and no health and safety problems associated with their activities. They were told that, although records of receipt and transfer were maintained by the Civil Engineering and Transportation Groups respectively for the transfer of the strontium-90 chambers for repair, if this happened again it might not be a bad idea if they would make a little note in the logbook showing the dates of transfer and receipt. They were told that the inspector would not go to the other departments and look at these records of receipt and transfer since personnel had already left those departments for the day. Those present were given a Form AEC-591 showing no items of noncompliance.
20. Present at the exit interview for the -3 license was Mr. Philip Diamond. He was told that everything appeared to be in order and that there were no items of noncompliance observed. He was given a Form AEC-591 showing no items of noncompliance. Later, a final discussion was held with Messrs. Maykoski and Theep, who were told that they apparently had fair control of activities under the various base licenses.