

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 30-14669/82-02(DETP)

Docket No. 03014669

License No. 34-18214-01

Priority VI

Category E1C

Licensee: Overhoff and Associates, Inc.
5757 Mariemont Avenue
Cincinnati, OH 45208

Inspection Locations and Dates: The Mead Corp., Chillicothe, OH, March 11, 1982
Overhoff and Associates, Inc., Cincinnati, OH, March 12, 1982
Phone contact with M.W. Overhoff, March 23, 1982

Inspector: *Wayne J. Slawinski*
Wayne J. Slawinski

6-7-82

Accompanied By: *D. J. Sreniawski*
D. J. Sreniawski
B. S. Mallett
B. S. Mallett, Chief
Materials Licensing Section
Region III

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

6/7/82

Inspection Summary

Inspection on March 11-12 and 23, 1982 (Report No. 03014669/82-02(DETP))

Areas Inspected: Special, announced reinspection of activities related to distribution and transfer of sources under License No. 34-18214-01 and followup on NRC Confirmation of Action Letter dated January 28, 1982. The inspection included a review of the licensed program, organization, inspection history, distribution/transfer of material, and confirmatory measurements. It involved ten hours onsite by the inspector, the Materials Radiation Protection Section Chief, and the Regional Materials Licensing Section Chief.

Results: Of the four areas inspected, one repetitive item of noncompliance was identified against License No. 34-18214-01: License Condition No. 16 and 10 CFR 30.41(a) - unauthorized distribution and transfer(s) of licensed materials (Paragraph 4).

DETAILS

Persons Contacted

Mario W. Overhoff, D.Sc., President, Overhoff & Associates, Inc.
Wyman Rutledge, Ph.D., Co-Corporate Radiation Safety Officer, Mead Corporation

Glendon Brown, Ph.D., Director, Pulp and Paper Technology, Mead Corporation

*Douglas Marcero, Co-Corporate Radiation Safety Officer, Mead Corporation

*Telephone contact only.

1. Licensed Program

NRC Byproduct Material License No. 34-18214-01 is an industrial type EIC, Priority VI license issued December 1, 1978. It authorizes the possession of any byproduct material listed in Section 33.100, Schedule A, Column II of 10 CFR Part 33 in addition to specific types of sealed sources of strontium-90, krypton-85 and americium-241 for research and development as defined in Section 30.4(q), 10 CFR Part 30.

Current licensed activities primarily involve development of industrial gauges for eventual manufacture and distribution to general licensees. Thus far, the program is very limited, resulting in the production of two transmission and one backscatter nuclear gauge. The transmission gauge utilizes interchangeable sources of krypton-85 and/or strontium-90. The backscatter gauge utilizes strontium-90. Currently, 10-20 mCi of Kr-85/Sr-90 are used in the transmission gauges and 100 mCi of Sr-90 in the backscatter gauges.

No violations were identified during the March 11-12, and 23, 1982, inspections in the licensed program involving development of industrial gauges.

2. Organization

The president of Overhoff and Associates, Inc., is Mario Overhoff, D.Sc. Mrs. I. Overhoff is Vice President and responsible for administrative matters. The consulting physicist and radiation safety officer is Kenneth Fritz, Radiation Safety Officer at the University of Cincinnati. Mr. Jon Tebbs is the Engineering Assistant to M. Overhoff. The entire program consists of Mr. and Mrs. Overhoff and 5-6 electronic technicians. Sealed source handling is performed only by Mario Overhoff and Jon Tebbs.

No violations were identified.

3. Inspection History and Background Information

Nuclear gauge development activities were initiated approximately July 1981, when Amendment No. 1 was issued to the licensee. Amendment No. 1

authorized the possession of millicurie quantities of specific sealed sources of strontium-90, krypton-85 and americium-241. This possession was authorized for research and development of nuclear gauges for use in industry as thickness and density measuring devices. Prior to this Amendment, the research and development program authorized under the initial license issued in December 1978 was relatively inactive.

The initial inspection of Overhoff and Associates, Inc. was performed on January 19, 1982, and included all aspects of the licensed program from license issuance in late 1978 to date. That inspection resulted in four violations and the subsequent issuance of an NRC Confirmation of Action Letter. Two of the four violations cited related to unauthorized activities not defined as research and development in Section 30.4(q) of 10 CFR Part 30. Specifically, the licensee distributed their manufactured gauges, containing licensed byproduct material, contrary to License Condition No. 16 which prohibits such distribution. Also, service operations were performed on gauges containing licensed material that were manufactured by other companies, a practice not authorized by the license. An NRC Confirmation of Action letter, issued as a result of these activities, confirmed a commitment by the licensee to cease such activities. The results of the January 19, 1982, inspection are documented in Attachments 1A and 1B to this report.

The licensee responded to the Confirmation of Action letter dated January 28, 1982, and to the Notice of Violation dated February 10, 1982, with a letter dated February 17 and two letters dated February 19, 1982. See Attachments 2A, 2B, and 2C to this report.

The recipient of Overhoff-manufactured gauges is Mead Corporation in Chillicothe, Ohio. Mead Corporation purchased Overhoff and Associates gauges after being told by the licensee that Mead Corporation did not need a specific NRC license or amendment to their existing license to possess such gauges. Mead Corporation currently holds NRC Byproduct Material License No. 34-06188-07, issued July 6, 1979, authorizing possession of specific gauges and sources for various industrial uses. (Overhoff manufactured gauges are not authorized on Mead Corporation's license).

The gauges were handled at Mead Corporation by an experienced individual. Actual use was limited due to gauge operational problems. Strontium-90 sealed source leak tests were last performed in August-November 1981; results were negative. Therefore, there appears to be no significant safety hazard resulting from the unauthorized possession by Mead. The Commission was informed by Mead representatives during phone conversations on March 2 and 3, 1982 of additional Overhoff and Associates gauge/source transfers, including strontium-90 as well as krypton-85 sources. Possible repetitive unauthorized transfers by Overhoff and Associates, subsequent to the issuance of the Confirmation of Action letter, were the basis for an inspection at Mead Corporation in Chillicothe, Ohio on March 11, 1982, and a reinspection at Overhoff and Associates, Inc., in Cincinnati, Ohio on March 12, 1982.

A March 11, 1982, inspection at Mead Corporation included a review of activities conducted under Byproduct Material License No. 34-06188-07, in addition to a review of receipt/transfer activities between Overhoff and Mead Corporation. The findings of that inspection are documented in a letter dated March 26, 1982, with an accompanying Notice of Violation. See Attachment 3 to this report.

4. Distribution/Transfer of Material

At the conclusion of the January 19, 1982, inspection at Overhoff and Associates, the licensee was informed that License No. 34-18214-01 specifically prohibits the distribution of licensed material. On January 22, 1982, the licensee again distributed a gauge - one containing a nominal 100 millicuries of strontium-90. The licensee assured the NRC during a telephone conversation on January 27, 1982, and in letters dated February 17 and 19, 1982, that they had ceased distribution of gauges. Further, the February 17 letter stated that all gauges had been returned to the licensee's office and would remain there until an appropriate license was issued by the NRC. However, based on records maintained by Mead Corporation, on February 18, 1982, the licensee made an unauthorized transfer of two gauges containing licensable quantities of krypton-85 and strontium-90. On February 20, 1982, one gauge containing a licensable quantity of strontium-90 was also transferred.

A chronology of events between Overhoff and Associates, Mead Corporation, and the NRC Region III Office of Inspection and Enforcement is outlined in Attachment 4 to this report.

The January 22, 1982, gauge distribution is a repeat violation of Condition No. 16 of License No. 34-18214-01. Also, the transfers performed on February 18 and 20, 1982, are violations of 10 CFR 30.41(a). Each of the original distributions and each of the subsequent transfers also placed Mead Corporation in violation of NRC requirements.

One violation was identified.

5. Confirmatory Measurements

During the March 11, 1982, inspection at Mead Corporation, the inspector noted that Mead possessed an Overhoff manufactured source holder containing 15 millicuries of strontium-90. The source holder has an electronically operated shutter and was locked in a cabinet in a limited access area. The shutter was closed and the electronic components were detached.

The inspector made independent measurements on the one Overhoff source remaining at Mead, using an Eberline E-520, NRC #009568, last calibrated on January 6, 1982. The radiation level at the surface of the Overhoff and Associates source holder containing 15 mCi Sr-90 was at background levels.

No violations were identified.

Exit Interview

On March 12, 1982, an exit interview was held at the conclusion of the inspection with Mario Overhoff, D.Sc. The violations noted during our January 19, 1982, inspection were reviewed along with the licensee's response letters to D.J. Sreniawski, dated February 19, 1982.

The inspector again told Dr. Overhoff that licensed material cannot be distributed to general licensees unless such distribution is authorized in a specific NRC license. Dr. Overhoff was told that the licensee's conditional response to the previous Notice of Violation is not acceptable. The materials licensing process was explained and information required to certify gauges and obtain a distribution license was discussed.

Dr. Bruce Mallett of the Region III Materials Licensing Section reviewed the NRC position on repair of gauges. It was stressed that service of gauges containing licensed material must be specifically authorized in a license. This includes repair of electronic and gross mechanical portions. The information required to obtain a license for such operations was reviewed with the licensee. The NRC's position on repetitive violations and the enforcement options available was discussed.

Enforcement Conference

An enforcement conference was held in the Region III office on April 2, 1982. The meeting was attended by Dr. M.W. Overhoff of Overhoff and Associates, Inc. and Messrs. C. E. Norelius, G. W. Roy, R. F. Warnick, D. J. Sreniawski, and W. J. Slawinski of the Region III staff. During the meeting, the NRC enforcement policy was reviewed, including the basis for proposing escalated enforcement actions. The chronology of gauge/source distributions and transfers was reviewed.

Dr. Overhoff questioned the accuracy of Mead Corporation's log entries, but was unable to produce records to the contrary. Dr. Overhoff stated that all Overhoff manufactured gauges and sources have been returned to his office in Cincinnati. This was confirmed in a telephone conversation with Wyman Rutledge of Mead Corporation on April 29, 1982.

Attachments:

- 1A - NRC ltr dtd 1/28/82
- 1B - NRC ltr dtd 2/11/82
- 2A - Overhoff ltr dtd 2/17/82
- 2B - Overhoff ltr dtd 2/19/82
- 2C - Overhoff ltr dtd 2/19/82
(2nd ltr)
- 3 - NRC ltr to Mead Corp. dtd
3/26/82
- 4 - Chron. of Overhoff source/
transfers



CONFIRMATION OF ACTION LETTER
UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

ATTACHMENT 1A

JAN 28 1982

Overhoff and Associates, Inc.
ATTN: M. W. Overhoff, Ph.D.
5757 Mariemont Avenue
Cincinnati, OH 45208

License No. 34-18214-01


Gentlemen:

This refers to the telephone conversation between Messrs. D. J. Sreniawski and W. J. Siwinski of my staff and you on January 27, 1981, regarding the distribution of industrial gauges manufactured by Overhoff and Associates, Inc. and your possession and repair of nuclear gauges manufactured by companies other than Overhoff and Associates.

Based on that conversation, it is our understanding that you have ceased distribution of Overhoff and Associates, Inc. gauges as of January 27, 1982, and that you will not resume distribution of such gauges until you are issued a license to do so by the NRC. In addition, it is our understanding that you will not receive or repair gauges containing licensed material until your license is amended to authorize such possession and repair.

If our understanding of the above is not correct, please contact this office by telephone immediately.

Sincerely,


James G. Keppler
Regional Administrator

cc: DMB/Document Control Desk (RIDS)

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CONFIRMATION OF ACTION LETTER

FEB 11 1982

Overhoff and Associates, Inc.
ATTN: M. W. Overhoff Ph.D.
President
5757 Mariemont Avenue
Cincinnati, OH 45208

License No. 34-18214-01

Gentlemen:

This refers to the special safety inspection conducted by Mr. W. J. Slawinski of this office on January 19, 1982, of activities authorized by NRC Byproduct Material License No. 34-18214-01 and to the discussion of our findings with you at the conclusion of the inspection and subsequent phone conversations with you on January 27, 1982.

The inspection was an examination of activities conducted under your license as they relate to radiation safety and to compliance with the Commission's rules and regulations and with the conditions of your license. The inspection consisted of a selective examination of procedures and representative records, observations, independent measurements, and interviews with personnel.

During this inspection, certain of your activities appeared to be in non-compliance with NRC requirements, as specified in the enclosed Appendix. A written response, submitted under oath or affirmation, is required.

A Confirmation of Action Letter dated January 28, 1982 was sent directing you to cease distribution of Overhoff and Associates, Inc. industrial gauges until you are issued a license to do so by the NRC. Additionally, you cannot repair or possess gauges manufactured by other companies containing licensed materials, until such time as you are authorized by a specific amendment to your NRC license. It is our understanding, based on the telephone conversation of January 27, 1982 between you and Messrs. D. J. Sreniawski and W. J. Slawinski, that you have ceased such operations.

The responses directed by this letter (and the accompanying Notice) are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

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Orverhoff and Associates, Inc.

- 2 -

FEB 11 1982

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. J. Sreniawski". The signature is written in a cursive style with a large initial "D" and "J".

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

Enclosure: Appendix,
Notice of Violation

cc w/encl:
DMB/Document Control Desk

Appendix

NOTICE OF VIOLATION

Overhoff and Associates, Inc.

License No. 34-18214-01

As a result of the inspection conducted on January 19, 1982, and in accordance with the Interim Enforcement Policy, 45 FR 66754 (October 7, 1980), the following violations were identified:

1. License Condition No. 16 states that your license does not authorize the commercial distribution of licensed material.

Contrary to this requirement, you distributed licensed material in 1981. Specifically, two Overhoff and Associates, Inc. industrial gauges containing 20 millicuries of krypton-85 were distributed to The Mead Corporation in Chillicothe, Ohio.

This is a Severity Level V violation (Supplement VII).

2. License Conditions 9A-F state that byproduct, source, and/or special nuclear material possessed under your license be used only for research and development as defined in Section 30.4(q), 10 CFR Part 30.

Contrary to this requirement, licensed material has been possessed and used for purposes other than research and development. Specifically, industrial gauges, containing licensed material and manufactured by companies other than Overhoff and Associates, have been rebuilt and repaired. Also, on the day of the inspection, the inspector noted an industrial gauge in your lab for repairs, Landis and Gyr MODEL EQG, reported to contain licensable quantities of Kr-85.

This is a Severity Level V violation (Supplement VII).

3. License Condition No. 17 requires that licensed material be possessed and used in accordance with statements, representation, and procedures contained in applications dated July 5, 1978 and October 27, 1978.

Item No. 10 of application dated July 5, 1978, lists radiation detection instruments which are available at your facility.

Contrary to the above, on the day of the inspection, the survey instruments listed in your license, other than your tritium monitors, were not available.

This is a Severity Level V violation (Supplement VII).

4. License Condition No. 17 requires that licensed material be possessed and used in accordance with statements, representations, and procedures contained in applications dated July 5, 1978 and October 27, 1978.

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Your radiation safety manual, Sections II A and B, submitted as part of your July 5, 1978 application, state that storage areas will be well-marked with, "Caution Radioactive Materials" signs, and radioactive solutions that emit gases should be kept in an approved hood which has adequate ventilation.

Contrary to these requirements, on the day of the inspection, a cabinet in your lab was used for storage of liquid and gas H-3 and was not posted as required. Specifically, the cabinet housed a cylinder containing a nominal 240 microcuries of H-3 gas and 6 vials of tritiated water (9 microcuries/vial). Also, cylinders of H-3 and Kr-85 gas containing nominally 0.99 millicuries and 103 microcuries respectively, were not stored in a ventilated hood.

This is a Severity Level V violation (Supplement VII).

Pursuant to the provisions of 10 CFR 2.201, you are required to submit to this office within thirty days of the date of this Notice a written statement or explanation in reply, including for each item of noncompliance: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further noncompliance; and (3) the date when full compliance will be achieved. Under the authority of Section 182 of the Atomic Energy Act of 1954, as amended, this response shall be submitted under oath or affirmation. Consideration may be given to extending your response time for good cause shown.

2/10/82
Date

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