

GENERAL ELECTRIC

NUCLEAR ENERGY
PRODUCTS DIVISION

WILMINGTON MANUFACTURING
DEPARTMENT

CASTLE HAYNE ROAD • P. O. BOX 780 • WILMINGTON, N. C. 28401 • (919) 343-5000

April 9, 1980

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission, RII
101 Marietta Street, NW - Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

References: (1) NRC Inspection Report RII:PWS, 70-1113/80-3, 3/4/80
(2) NRC License SNM-1097, Docket #70-1113

Thank you for your letter referenced above which reported the results of the inspection of our fuel fabrication plant by Mr. P. W. Steele of your office on February 11-12, 1980.

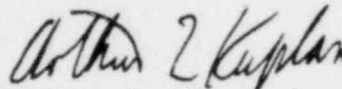
Pertaining to the three items of apparent noncompliance with NRC requirements in your letter, the replies to these items are given in the attachment to this letter.

We appreciate your inspector's comments and suggestions related to our employee safety and environmental protection programs. These comments and suggestions are helpful to us in our constant efforts to improve these programs, ensure the continued health and safety of plant personnel, and ensure our compliance with NRC regulations and license conditions. We also welcome further discussion with your staff on the items in your letter and in our related reply, if necessary, for further clarification of these items.

Your inspection report referred to above does not contain information which we believe to be proprietary.

Very truly yours,

GENERAL ELECTRIC COMPANY



Arthur L. Kaplan, Manager
Licensing & Compliance Audits
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Attachment

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The information given below refers to the three items in Appendix A, "Notice of Violation," in the NRC Inspection Report RII:PWS, 70-1113/80-3, dated March 4, 1980. The corrective actions detailed below have already been implemented or will be implemented by the dates shown.

A. As required by 10 CFR 70.58(h), "A system of storage and internal handling controls shall be established, maintained, and followed to provide current knowledge of the identity, quantity, and location of all special nuclear material contained within a plant in discrete items and containers.

Contrary to the above, during the period January 24-28, 1980, the licensee failed to have current knowledge of the location of three cylinders containing enriched uranium hexafluoride.

This is an infraction.

Reference is made to our incident report sent to you on February 15, 1980.

The following interim actions were immediately taken upon discovery that the three cylinders had been inadvertently shipped offsite, to recover the trailer with the three cylinders and to prevent recurrence of such an incident pending the completion of the resulting investigation.

1) Location of the Cylinders

The location and condition of the trailer were verified with Allied Chemical Corporation as soon as the Allied plant opened at 8:00 AM CST on Monday morning, January 28, 1980.

We were informed that Allied had not yet removed the full cylinders from their overpacks and, in fact, that the Goodyear Atomic Corporation (GAT) seals on the outside of the overpacks were still intact.

2) Arranging for Prompt Return of Cylinders

At the time that the location of the cylinders was verified, the prompt return of the trailer to WMD was arranged. Allied was requested to contact the driver of the vehicle that hauled the trailer there and to instruct him to leave as soon as possible for WMD to return the trailer.

Before the driver left Allied, he placarded his vehicle correctly with the DOT required RADIOACTIVE and CORROSIVE placards.

3) Informing WMD Management

Between 9:00 AM and 2:00 PM on Monday, January 28, 1980, various levels of WMD management were informed about the incident, as each one could be located and contacted.

4) Correct Shipping Papers for Truck Driver

At 4:30 PM on Monday, January 28, 1980, the truck driver hauling the returning trailer was contacted in Lebanon, Tennessee, twenty-five miles east of Nashville, Tennessee. He was directed to proceed directly to the nearest Tri-State's terminal located at Goodlettsville, Tennessee, fifteen miles north of Nashville.

At 11:00 PM on the same day, the traffic specialist from GE-WMD arrived at Goodlettsville and provided the truck driver with the proper shipping papers for his load.

5) Correct Labels & Marking, Integrity of Seals on Overpacks

At the same time that he delivered the correct shipping papers to the truck driver as noted above, the traffic specialist affixed the proper labels (RADIOACTIVE, CORROSIVE) and markings (URANIUM HEXAFLUORIDE - FISSILE) to the external surfaces of the three overpacks containing the full UF₆ cylinders. He also assured that Goodyear Atomic (GAT) seals on the three overpacks were intact. The numbers on these seals were verified by calling Goodyear the next morning.

6) Implementation of Interim Procedure

An interim procedure was implemented on Tuesday morning, 1/29/80, to assure that a trailer being dispatched as empty from the plant is really empty prior to its dispatch.

The procedure (issued as a letter by management to the appropriate personnel involved in preparation of the empty trailer for shipment) calls for the same overchecks on an empty trailer as those

which would be used for a trailer being dispatched with full cylinders or with empty cylinders (heels) to assure that the outgoing trailer contents are correct. This interim procedure will be followed until final corrective actions are implemented.

In addition, we implemented the weighing of each empty cylinder trailer leaving the plant site using our recently installed truck scales, as a final overcheck until permanent corrective actions can be implemented.

7) Investigation

On Thursday, January 31, 1980, a management team was formally constituted to investigate the causes for the incident and to determine what final corrective actions should be taken to prevent recurrence.

The management team completed its formal investigation of the incident on Friday, February 8, 1980. The investigation consisted of the following elements:

- Interviews with personnel involved in the incident.
- Review of events related to the incident.
- Review of shipping/receiving practices related to UF₆ cylinders.
- Determination of causes for the incident.
- Determination of corrective actions required to prevent recurrence of this type of incident.

As a result of the investigation, the causes for the incident were established to be as follows:

1) System

The system for shipment of trailers with empty overpacks differed from that used for trailers with loaded overpacks (i.e., full cylinders or heels).

For a trailer being shipped out as loaded, there are positive checks in the system at each stage of preparation for shipment to assure that the right cylinders are in the overpacks on a specific trailer prior to the shipment.

For a trailer being shipped out as empty, there was no such positive check that the overpacks on this trailer were in fact empty prior to the shipment.

2) Communications

Communications between the different organizations responsible for various phases of preparing for the shipment of empty UF₆

cylinder trailer, were in many cases verbal (i.e., which trailer would be shipped at what time, when the trailer would be ready for shipment, etc.).

3) Instructions

There were no written instructions provided to shipping or production control personnel concerning the shipment of empty UF₆ cylinder trailers.

In considering these causes for the incident and as a result of the interviews with personnel, review of events related to the incident, and review of the shipping/receiving practices related to UF₆ cylinders, the following corrective actions were determined as required to prevent recurrence of this type of incident and were implemented.

1) Items Related to Shipping Empty Trailers

The preparatory steps related to the shipping of empty overpacks (i.e., empty UF₆ cylinder trailers) were changed to coincide with those for shipping full cylinders or heels.

A "traveler" which, in fact, will be a modified cylinder weigh sheet, will accompany the paperwork for these shipments. No steps in the shipping activity will be without proper execution of this traveler for the previous step, thus providing verification at each step on the activity that the previous steps have been accomplished correctly.

This corrective action was implemented on February 1, 1980, before the next trailer shipment was made.

2) Procedures

In order to implement these activities, the following procedures were revised:

- P/P 90-1 Receiving & Shipping of Radioactive Materials
- P/P 90-5 Shipping Notices
- PROD 80.05 Receiving/Shipping UF₆ Cylinders
- QCII 2.7.1.2 Inspection of the Protective Packaging of UF₆ Cylinders

The production control personnel were provided with their instructions in the revised versions of P/P 90-1 and P/P 90-5.

In addition, a new fuel shipping procedure was prepared to provide appropriate instructions to shipping personnel.

Existing procedures were revised and required new procedures were prepared. These procedures were all implemented by February 18, 1980.

In addition, the following long-term corrective actions and their completion dates, are planned to assure that a similar incident would not occur in connection with the other shipping packages we use for transporting enriched uranium materials.

- Review of all radioactive material shipping and receiving
 - Review of practices, procedures, and instructions 5/2/80
 - Identification of weaknesses 5/2/80
 - Upgrading of practices 6/9/80
 - Revision/issuance of procedures or instructions 6/9/80
- Addition of special internal audit
 - Completion of audit plan 4/10/80
 - Conduct of first audit 5/9/80

B. As required by 10 CFR 71.5(a), "No licensee shall ... deliver any licensed material to a carrier for transport, unless the licensee complies with the applicable requirements for the regulations appropriate to the mode of transport, of the Department of Transportation in 49 CFR Parts 170-189."

49 CFR 172.202(a) and 49 CFR 172.203(d) provide requirements for shipping papers and information to be contained thereon for shipments of radioactive material. As required by 49 CFR 172.403, packages containing radioactive material for shipment will be labeled. 49 CFR 172.506 requires that the shipper provide identifying placards which will be affixed to hazardous material transported by the motor carrier.

Contrary to the above, on January 24, 1980, the licensee delivered for transport three cylinders of enriched uranium hexafluoride without properly describing the material in shipping papers, without properly labeling the cylinder overpacks and without providing the carrier with required placards.

This is a Severity Level III noncompliance.

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Reference is made to our incident report sent to you on February 15, 1980, and to our response to Item A above.

Three of the problems identified during the investigation of this incident were:

1) System

The system for shipment of trailers with empty overpacks differed from that used for trailers with loaded overpacks (i.e., full cylinders or heels).

For a trailer being shipped out as loaded, there are positive checks in the system at each stage of preparation for shipment to assure that the right cylinders are in the overpacks on a specific trailer prior to the shipment.

For a trailer being shipped out as empty, there was no such positive check that the overpacks on this trailer were in fact empty prior to the shipment.

2) Communications

Communications between the different organizations responsible for various phases of preparing for the shipment of empty UF₆ cylinder trailers, were in many cases verbal (i.e., which trailer would be shipped at what time, when the trailer would be ready for shipment, etc.).

3) Instructions

There were no written instructions provided to shipping or production control personnel concerning the shipment of empty UF₆ cylinder trailers.

In particular, we determined that shipping papers for trailers with empty overpacks could be prepared and issued, cylinder overpacks could be labelled as empty, and "empty" placards (or their equivalent) could be affixed to the trailer without positive, documented checks that the overpacks were indeed empty.

The corrective actions (already implemented) described for Item A above, were designed to assure that shipping papers cannot be prepared and issued, overpacks cannot be labelled as "empty," and the truck placard cannot indicate that the overpacks are empty, without the positive verification on the traveler sheet accompanying the paperwork for these shipments that the overpacks on the trailer to be shipped out empty are in fact empty. This traveler sheet is generated by the shop support personnel who have physically verified the empty condition of these overpacks.

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In addition, long-term corrective actions and their completion dates, are planned as described in Item A above to assure that a similar incident would not occur in connection with the other shipping packages we use for transporting enriched uranium materials.

C. As required by 10 CFR 20.205(b)(1), "Each licensee, upon receipt of a package of radioactive material, shall monitor the external surfaces of the package for radioactive contamination caused by leakage of the radioactive contents ... The monitoring shall be performed ... no later than three hours after the package is received at the licensee's facility if received during the normal working hours ..."

Contrary to the above, the licensee failed to monitor the external surfaces of packages containing radioactive material (cylinder overpacks) on trailer number 340217 received on January 23, 1980 prior to the subsequent shipment offsite of that trailer on January 24, 1980.

This is an infraction.

Radiation protection personnel are responsible for monitoring the external surfaces of packages containing radioactive materials upon their receipt. On February 12, 1980, the radiation protection supervisor wrote a memorandum to all radiation protection personnel containing detailed instructions for performing the required monitoring for the cylinder overpacks and for recording the results of these surveys.

The Nuclear Safety Instruction (NSI O-17.0) on the subject of shipment and receipt of radioactive materials covers the requirement to monitor the external surfaces of packages containing radioactive materials upon their receipt. This instruction was modified on March 27, 1980, to specifically emphasize the monitoring of cylinder overpacks upon receipt.

A. L. Kaplan
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