

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

June 20, 1980

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Serial Number 544  
NO/RMT/sjl  
Docket Nos. 50-230  
50-281  
License Nos. DPR-32  
DPR-37

Dear Mr. O'Reilly:

We have reviewed your letter of May 28, 1980 in reference to the inspection conducted at Barnwell, South Carolina on April 22 and 23, 1980 and reported in IE Inspection Report No. EA-80-28. Our responses to the specific infraction are attached.

We have determined that no proprietary information is contained in the report. Accordingly, the Virginia Electric and Power Company has no objection to this inspection report being made a matter of public disclosure.

Very truly yours,

**ORIGINAL SIGNED BY  
B. R. SYLVIA**

B. R. Sylvia  
Manager - Nuclear Operations  
and Maintenance

Attachment

cc: Mr. Steven A. Varga  
NRC Office of Nuclear Reactor Regulation  
Operating Reactors Branch No. 1  
Division of Licensing  
Washington, D. C. 20555

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RESPONSE TO NOTICE OF VIOLATION LISTED IN I.E. INSPECTION  
REPORT NO. 50-280 & 50-281 EA-80-28

NRC COMMENT:

- A. 10 CFR 71.5 prohibits delivery of licensed material to a carrier for transport unless the licensee complies with applicable regulation of the Department of Transportation in 49 CFR Parts 170-189. 49 CFR 173.393 (j) (2) requires that radiation levels not exceed 200 millirem per hour at any point on the external surface of the vehicle used to transport packages of radioactive material.

Contrary to the above, packages of licensed radioactive waste material from the Surry facility were shipped to Barnwell, South Carolina, with resulting radiation levels on the external surface of the vehicle of 270 to 300 millirem per hour. The licensee had delivered these packages to the carrier for transport on April 14, 1980.

This is a Severity Level II item of noncompliance (Civil Penalty-\$4000).

RESPONSE:

1. The violation is correct as stated.
2. The above violation was caused by personnel error in performing thorough radiation surveys.
3. Corrective steps which have been taken and the results achieved:

As a result of the above violation, the shipment of radioactive waste from Surry Power Station was terminated as an immediate action. This action was taken to assure that no further radioactive waste shipment related noncompliances occurred and to allow time for the implementation of corrective steps to avoid further items of non-compliance in this area. In addition, disciplinary action was imposed on the personnel involved in the radiation survey. As a result of these corrective actions, no further immediate actions in this area were required.

4. Corrective steps taken to avoid further noncompliance.

As a result of the above violation, the following corrective steps have been taken to avoid further noncompliance:

- a. A strengthened rad-waste monitoring program has been implemented. This program consists of several radioactive waste monitoring points from the area of generation to loading for transport and disposal. All items or packages are surveyed for external radiation and labeled with appropriate dose rate information.
  - b. The radioactive waste section of the Health Physics Department was completely restaffed and all new rad-waste personnel have completed a formal rad-waste training course.
  - c. Health Physics Procedure number HP-3.9.4, "Packaging and Shipment of Solid Radioactive Waste", was revised to include the following:
    - 1) A more thorough listing of rad-waste handling and shipment rules, regulations, and disposal site acceptance criteria.
    - 2) Surveys of each rad-waste package to include a minimum of six documented contact readings per package.
    - 3) Surveys of each package to include the conspicuous marking of the location of the highest contact radiation reading identified on the package surface.
    - 4) Separate surveys of each package and the loaded transport vehicle to be performed by two H. P. Technicians and a comparison of the two survey maps performed by the Assistant H. P. Supervisor to provide redundancy and assure accuracy.
    - 5) A trained Quality Control Inspector will witness rad-waste transport vehicle loading and shipment operations.
5. Date when full compliance will be achieved.

Full compliance was achieved on May 12, 1980.

4. Corrective steps taken to avoid further noncompliance.

As a result of the above violation, the following corrective steps have been taken to avoid further noncompliance:

- a. A strengthened rad-waste monitoring program has been implemented. This program consists of several radioactive waste monitoring points from the area of generation to loading for transport and disposal. All items or packages are surveyed for external radiation and labeled with appropriate dose rate information.
  - b. The radioactive waste section of the Health Physics Department was completely restaffed and all new rad-waste personnel have completed a formal rad-waste training course.
  - c. Health Physics Procedure number HP-3.9.4, "Packaging and Shipment of Solid Radioactive Waste", was revised to include the following:
    - 1) A more thorough listing of rad-waste handling and shipment rules, regulations, and disposal site acceptance criteria.
    - 2) Surveys of each rad-waste package to include a minimum of six documented contact readings per package.
    - 3) Surveys of each package to include the conspicuous marking of the location of the highest contact radiation reading identified on the package surface.
    - 4) Separate surveys of each package and the loaded transport vehicle to be performed by two H. P. Technicians and a comparison of the two survey maps performed by the Assistant H. P. Supervisor to provide redundancy and assure accuracy.
    - 5) A trained Quality Control Inspector will witness rad-waste transport vehicle loading and shipment operations.
5. Date when full compliance will be achieved.

Full compliance was achieved on May 12, 1980.

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NRC COMMENT:

- B. 10 CFR 71.5 prohibits delivery of licensed material to a carrier for transport unless the licensee complies with applicable regulation of the Department of Transportation in 49 CFR Parts 170-189. 49 CFR 173.393 (n) (9) required a shipper to insure, by examination or appropriate test, that external radiation levels of the packages to be shipped are within allowable limits.

Contrary to the above, the radiation surveys performed prior to the delivery of a shipment of radioactive waste to a carrier for transport on April 14, 1980 were inadequate. These surveys failed to identify radiation levels on the packages shipped.

This is a Severity Level II item of noncompliance (Civil Penalty-\$4000).

RESPONSE:

1. The violation is correct as stated.
2. The above violation was caused by personnel error in performing thorough radiation surveys.
3. Corrective steps which have been taken and the results achieved:

As a result of the above violation, the shipment of radioactive waste from Surry Power Station was terminated as an immediate action. This action was taken to assure that no further radioactive waste shipment related noncompliances occurred and to allow time for the implementation of corrective steps to avoid further items of non-compliance in this area. In addition, disciplinary action was imposed on the personnel involved in the radiation survey. As a result of these corrective actions, no further immediate actions in this area were required.

4. Corrective steps taken to avoid further noncompliance.

As a result of the above violation, the following corrective steps have been taken to avoid further noncompliance:

- a. A strengthened rad-waste monitoring program has been implemented. This program consists of several radioactive waste monitoring points from the area of generation to loading for transport and disposal. All items or packages are surveyed for external radiation and labeled with appropriate dose rate information.
  - b. The radioactive waste section of the Health Physics Department was completely restaffed and all new rad-waste personnel have completed a formal rad-waste training course.
  - c. Health Physics Procedure number HP-3.9.4, "Packaging and Shipment of Solid Radioactive Waste", was revised to include the following:
    - 1) A more thorough listing of rad-waste handling and shipment rules, regulations, and disposal site acceptance criteria.
    - 2) Surveys of each rad-waste package to include a minimum of six documented contact readings per package.
    - 3) Surveys of each package to include the conspicuous marking of the location of the highest contact radiation reading identified on the package surface.
    - 4) Separate surveys of each package and the loaded transport vehicle to be performed by two H. P. Technicians and a comparison of the two survey maps performed by the Assistant H. P. Supervisor to provide redundancy and assure accuracy.
    - 5) A trained Quality Control Inspector will witness rad-waste transport vehicle loading and shipment operations.
5. Date when full compliance will be achieved.

Full compliance was achieved on May 12, 1980.

4. Corrective steps taken to avoid further noncompliance.

As a result of the above violation, the following corrective steps have been taken to avoid further noncompliance:

- a. A strengthened rad-waste monitoring program has been implemented. This program consists of several radioactive waste monitoring points from the area of generation to loading for transport and disposal. All items or packages are surveyed for external radiation and labeled with appropriate dose rate information.
- b. The radioactive waste section of the Health Physics Department was completely restaffed and all new rad-waste personnel have completed a formal rad-waste training course.
- c. Health Physics Procedure number HP-3.9.4, "Packaging and Shipment of Solid Radioactive Waste", was revised to include the following:
  - 1) A more thorough listing of rad-waste handling and shipment rules, regulations, and disposal site acceptance criteria.
  - 2) Surveys of each rad-waste package to include a minimum of six documented contact readings per package.
  - 3) Surveys of each package to include the conspicuous marking of the location of the highest contact radiation reading identified on the package surface.
  - 4) Separate surveys of each package and the loaded transport vehicle to be performed by two H. P. Technicians and a comparison of the two survey maps performed by the Assistant H. P. Supervisor to provide redundancy and assure accuracy.
  - 5) A trained Quality Control Inspector will witness rad-waste transport vehicle loading and shipment operations.

5. Date when full compliance will be achieved.

Full compliance was achieved on May 12, 1980.