VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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May 19, 1981

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 No. 299
NO/RMT:ms
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Dear Mr. O'Reilly:

We have reviewed your letter of May 5, 1981 in reference to the inspection conducted at the Barnwell disposal site on March 12, 1981 and reported in IE Inspection Report Nos. 50-280/81-10 and 50-281/81-10. Our response to the specific infraction is attached.

We have determined that no proprietary information is contained in the reports. Accordingly, the Virginia Electric and Power Company has no objection to these inspection reports being made a matter of public disclosure. The information contained in the attached pages is true and accurate to the best of my knowledge and belief.

Very truly yours,

B. R. Sylvia
Manager - Nuclear
Operations and Maintenance

Attachment

City of Richmond
Commonwealth of Virginia
Acknowledged before me this 19th day of May, 1981

Anne C. Morse
Notary Public

My Commission expires: 2-26, 1985

SEAL

cc: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing

8106120319

RESPONSE TO NOTICE OF VIOLATION
APPENDIX A OF IE REPORTS
50-280/81-10 and 50-281/81-10

NRC COMMENT:

10 CFR 71.5(b) requires that "the licensee comply with the applicable requirements of ...49 CFR Parts 170 - 189." 49 CFR 173.392(c)(1) requires that "Materials must be packaged in strong, tight packages so that there will be no leakage of radioactive material under conditions normally incident to transportation."

Contrary to the above, on March 12, 1981, one dumpster in this shipment delivered to the Chem-Nuclear burial site at Barnwell, South Carolina was not a strong, tight package in that there were punctures in the front and bottom of the container.

This is a Severity Level III Violation (Supplement V.C.1).

RESPONSE:

(1) Admission or denial of the alleged violation:

The violation is correct as stated.

(2) The reasons for the violation if admitted:

Vepco has reviewed and responded to this matter directly with the Bureau of Radiological Health of the South Carolina Department of Health and Environmental Control. An investigation was conducted at the time of notification of the incident. This investigation, which included visual inspection of the damaged container at the Barnwell site by Vepco radwaste personnel and interviews with all Health Physics personnel at Surry Power Station involved with handling and shipment of the container, revealed the probable cause of the damage and identified those corrective measures needed to preclude further violation of this regulation.

We believe the container in question (box No. 81-277) was damaged (punctured) prior to filling and compacting. The small punctures discovered on the bottom and lower, front side of the container were most probably caused by a heavy, sharp-edged object thrown into the box while still empty. The box was later filled with bags of contaminated trash, compacted, sealed and moved to a storage area as normal. On March 11, 1981, box No. 81-277 and nine (9) identical boxes were loaded for shipment to Barnwell. During truck loading, each box is surveyed, twice, to ensure compliance with applicable radiation exposure rate criteria. These surveys encompass scans of the entire container surface area, including sides, top and bottom. Normally, the performance of the surveys would provide ample opportunity to visually detect any physical damage to the sides or top of the box; for safety reasons, however, the radiation survey of the box bottom is performed utilizing an instrument with an

extendable probe. In this way, the bottom survey can be completed without requiring an individual to walk under a box being supported only by a forklift. In the case of box No. 81-277, the punctures were located nearest the bottom edge facing the forklift during the survey and loading operation, and thus went undetected.

(3) The corrective steps which have been taken and the results achieved:

Based on the above findings and assumptions, several corrective measures and procedural modifications were immediately initiated to (a) minimize the potential for container damage, and (b) eliminate the shipment of containers whose integrity has been breached due to damage or defects. These measures and procedural modifications include:

(a) A revision to the procedure utilized for operation of the box compactor.

Procedure HP-SGRP-12 (included as Attachment A to this letter) was modified to provide additional precautions to the operators. Steps 3.6 and 3.7 of the procedure now require the operator to perform a visual inspection of the box prior to compacting to ensure that no objects have been placed in the box which have or could cause damage. The operator is also cautioned to avoid placing large, solid (non-compactible) items into the container which could puncture it during compaction or during transportation due to movement. A final visual inspection of the box, after compacting and sealing, is provided in Step 4.11 of the procedure to ensure no damage has occurred.

(b) A revision to the procedure established for packaging and shipment of radioactive waste.

The Health Physics procedure was modified to provide increased surveillance of containers, including visual inspections, during preparation and truck loading operations. Precautions were added to require a visual inspection of each container, prior to loading, by a Quality Control inspector and an Assistant Health Physics Supervisor. This visual inspection is to be performed expressly for detection of holes or other damage to the container. Additionally, the container survey maps which accompany the shipment to Barnwell have been revised to note and verify the performance of the required visual inspection.

(c) Additional measures to protect the containers during handling and storage and to improve the inspection process, including:

(i) Whenever possible, reinforcement of the box bottom is performed by utilizing contaminated plywood which must be disposed of. The plywood sheet is cut to size and placed in the bottom of the box to protect it, especially in cases where the box is used for packaging solid, non-compactible items.

(ii) When packaging miscellaneous solid objects, such as contaminated pipe, sheet metal, metal plate, etc., these objects, if practicable, are placed between layers of compactible waste to cushion and immobilize them in the container.

(iii) During the radiation surveys performed prior to truck loading, the boxes are raised high enough by a forklift to allow visual inspection of the box bottom without walking under it. The construction of a special inspection stand to allow the boxes to be safely supported while performing radiation survey and visual inspections of the underside is also being investigated.

(d) Increased awareness of radwaste personnel regarding the importance of container integrity.

All radwaste personnel have been instructed to increase their surveillance and to be attentive during all container handling operations to the physical condition of each container. Any signs of physical damage or defects, such as dents, irregular seams, rust spots, etc., are to be closely scrutinized and immediately brought to the attention of supervisory personnel if repairs are deemed necessary.

(4) Corrective steps which will be taken to avoid further violations:

We are confident that the above described corrective measures are responsive and adequate to ensure future compliance in this area, and we will strive for continued improvement in the procedures and controls already implemented.

(5) The date when full compliance will be achieved:

Full compliance was achieved on April 8, 1981.