



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA ST., N.W., SUITE 3100  
 ATLANTA, GEORGIA 30303

December 17, 1982

Report No. 50-259/82-39, 50-260/82-39, 50-296/82-39

Licensee: Tennessee Valley Authority  
 500A Chestnut Street  
 Chattanooga, TN 37401

Facility Name: Browns Ferry Nuclear Plant

Docket Nos. 50-259, 50-260, 50-296

License Nos. DPR-33, DPR-52, DPR-68

Inspection at Browns Ferry Nuclear Plant near Athens, Alabama

Inspector: *T. R. Collins* 10/29/82  
 T. R. Collins Date Signed

Approved by: *K. P. Barr* 10/29/82  
 K. P. Barr, Section Chief Date Signed  
 Technical Inspection Branch  
 Division of Engineering and Technical Programs

SUMMARY

Inspection on October 25 - 26, 1982

Areas Inspected

This special, unannounced inspection involved eight inspector-hours on site in the area of shipment of radioactive materials.

Results

Of the one area inspected, one apparent violation was found.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*G. T. Jones, Plant Manager
- A. W. Sorrell, Health Physics Supervisor
- E. M. Cargill, Assistant Health Physics Supervisor
- B. Tomlison, Engineering Supervisor
- J. Rawlston, Health Physics Shift Supervisor

#### NRC Resident Inspector

J. Paulk

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on October 25, 1982, with those persons indicated in paragraph 1 above.

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Shipment of Radioactive Material

- a. On September 16, 1982, the licensee delivered a radioactive waste shipment for transport (TVA Shipment No. 1886) to U.S. Ecology, Richland, Washington, for burial. Upon arrival on September 21, 1982, at the commercial low level waste disposal site, an inspection revealed that the closure devices on eight 55-gallon drums (strong, tight containers) were damaged (cracked).

The State of Washington, Department of Social and Health Services, documented the apparent violation of Department of Transportation regulations in a letter to Tennessee Valley Authority (TVA), Browns Ferry Nuclear Plant (BFNP) dated September 28, 1982. Because of the nature of violation found in this shipment, state authorization to continue using the Richland, Washington, commercial low-level waste burial site by BFNP was not suspended. However, BFNP responded to the State of Washington, Radiation Control Program - their corrective actions to preclude future occurrences of defective closure devices. These corrective actions were as follows:

1. All future shipments shall employ a locking washer and nut on each drum bolt.
2. Each drum shall be verified as having the lock-washer and nut prior to loading the drum for shipment.
3. Compliance with this procedure shall be incorporated into the plant's quality assurance program for surveillance and monitoring.
4. All future shipments shall utilize a drum loading pattern which does not stress the drum closing ring or its lugs during transport.

After review, the inspector concluded these corrective actions appeared to be adequate and should preclude discrepancies of this nature from recurring.

- B. On October 13, 1982, the licensee delivered a radioactive waste shipment for transport (TVA Shipment No. 1914) to U. S. Ecology, Richland, Washington for burial. Upon arrival on October 20, 1982, at the commercial low level waste disposal site, an inspection revealed that one 55-gallon drum No. D-82-2187 had two puncture holes in the drum immediately under the middle support ring. The larger of the two holes was about 1.5 inches by 0.25 inches. The smaller hole was about 0.75 inches by 0.25 inches. A long scratch (about eight inches) led up to the smaller hole and continued past the hole for about 2.5 inches. The holes appeared to have been made by a forklift. Also, two drums No. D-82-3375 and D-82-3448 appeared to be leaking a white substance (adsorbent) from the lid and drum seal surface. Upon further investigation it was found that the drum lids could be pressed at the closing ring and metal to metal contact could be established between the lid and drum sealing surface. However, for drum No. D-82-3448, the contact was for about one quarter of the lid circumference and for drum No. D-82-3375 the contact was for about one third of the drum circumference. In addition, two drums, D-82-3432 and D-82-3404, when struck or tilted, diatomaceous earth would fall from under the drum closing ring. It was determined that the diatomaceous earth was coming from under the closing ring and from the lid to drum lip interface. The probable cause for the leakage was the drum gasket (seal) falling away from the lid during the lid placement.

The Plant Manager stated that on October 21, 1982, BFNP was notified by the State of Washington, Department of Social and Health Services, by telephone, of the apparent violations of Department of Transportation (DOT) shipping regulations of TVA Shipment No. 1914. Because of the nature of the violations found in this shipment, state authorization to use the Richland, Washington, commercial low-level waste burial site by

BFNP was suspended for seven days. At this time corrective actions to preclude future occurrences by BFNP in response to the State of Washington, Department of Social and Health Services has not been instituted.

10 CFR 71.54 requires a licensee to ascertain, prior to each use of a package for shipment of licensed material, that the packaging has not been significantly damaged and that the closure of the package and any sealing gaskets are free from defects.

In two instances, the licensee did not meet these requirements. On September 16, 1982, the licensee failed to ascertain that the closure devices of eight 55-gallon drums were free from defects. These drums contained Low Specific Activity waste (TVA Shipment No. 1886). On October 13, 1982, the licensee failed to ascertain that the sealing gaskets on four 55-gallon drums were free from defects and that another 55-gallon drum had not been significantly damaged (apparently it had been pierced by fork-lift blades). The October 13 shipment was also Low Specific Activity waste (TVA Shipment No. 1914).

This is a Violation (259/82-39-01, 260/82-39-01, and 296/82-39-01).

On October 25, 1982, the licensee held a meeting to discuss the cause of the one drum with two puncture holes and the four drums with improperly installed gaskets in TVA Radioactive Waste Shipment No. 1914. The licensee concluded that the two puncture holes in the one drum were probably caused by a forklift while loading the drum for shipment. However, no conclusion was reached in the determination of the cause of the improperly installed gaskets (seals) on the other four drums in question. The following corrective actions will be instituted to preclude future occurrences of this type:

1. The forklift grabbing mechanism will be inspected and all sharp points will be ground off to eliminate the possibility of puncturing drums during loading.
2. All rubber gaskets (seals) will be glued into the lid sealing surface to preclude future occurrences.
3. All packages readied for shipment presently stored onsite will be reinspected prior to shipment.

The inspector concluded that the licensees corrective actions appeared to be adequate and should preclude discrepancies of this nature from recurring.

## 6. Enforcement Conference

## a. Attendees

## Licensee Employees

H. L. Abercrombie, Assistant Manager, Nuclear Production  
G. T. Jones, Plant Superintendent  
D. S. Kammer, Nuclear Engineering, Nuclear Licensing Staff  
W. C. Thomison, Engineering Section Supervisor  
J. W. Hutton, Chief, Reactor Engineering Branch

## U.S. Nuclear Regulatory Commission, Region II

J. A. Olshinski, Director, Division of Engineering and  
Technical Programs (DETP)  
D. M. Verrelli, Chief, Project Branch 1, Division of Project and  
Resident Programs (DPRP)  
A. F. Gibson, Chief, Technical Inspection Branch, DETP  
F. S. Cantrell, Chief, Project Branch 1B, DPRP  
J. M. Puckett, Enforcement Staff  
G. Paulk, Resident Inspector, Browns Ferry  
K. Barr, Chief, Facilities Radiation Protection Section, DETP  
T. Collins, Radiation Specialist, DETP  
P. M. Bemis, Technical Assistant, DETP

- b. NRC Region II representatives discussed the apparent violations of Radioactive Material Shipments with licensee management representatives on November 5, 1982. Licensee management acknowledged the NRC's concerns and stated their corrective action should preclude any future occurrence. The corrective actions will be reviewed during future inspections.