



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

November 3, 1982

Report Nos. 50-259/82-26, 50-260/82-26, and 50-296/82-26

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

Facility Name: Browns Ferry Nuclear Plant

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

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

Inspection at Browns Ferry site near Decatur, AL

Inspector:

T. R. Collins

9/14/82  
Date Signed

Approved by:

K. P. Barr  
K. P. Barr, Section Chief  
Technical Inspection Branch  
Division of Engineering and Technical Programs

9/14/82  
Date Signed

#### SUMMARY

Inspection on August 25, 1982

#### Areas Inspected

This special unannounced inspection involved six inspector-hours on site in the area of shipment of radioactive material.

#### Results

In the one area inspected, two apparent violations were found.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*G. T. Jones, Plant Superintendent
- \*A. W. Sorrell, Health Physics Supervisor
- E. Cargill, Assistant Health Physics Supervisor
- J. Rawlston, Health Physics Shift Supervisor
- \*W. C. Thomlison, Engineering Supervisor

Other licensee employees contacted included one technician, two operators, and two office personnel.

#### NRC Resident Inspector

G. Paulk

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on August 25, 1982, with those persons indicated in paragraph 1 above. The inspector discussed his findings with licensee management regarding two radwaste shipments with apparent 10 CFR 71 and Department of Transportation 49 CFR violations. Plant management acknowledged the inspector's concerns.

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Shipments of Radioactive Material

- a. On July 20, 1982, the licensee delivered a radioactive waste shipment for transport (TVA Shipment No. 1840) to U.S. Ecology, Richland, Washington, for burial. Upon arrival on July 28, 1982, at the commercial low-level waste disposal site, an inspection revealed that eight wooden boxes (strong, tight containers), Nos. B-82-109, 110, 111, 114, 116, 120, 121, and 130 were not properly marked or labelled with the proper identification, "Radioactive LSA", as required by 49 CFR 173.392(c)(8). This is a violation (259/82-26-01, 260/82-26-01, and 50-296/82-26-01).

The State of Washington, Department of Social and Health Services, documented the apparent violations of Department of Transportation regulations in a letter to Tennessee Valley Authority (TVA), Browns Ferry Nuclear Plant (BFNP). 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 Browns Ferry Nuclear Plant was suspended indefinitely. Upon receipt of notification of the burial authorization suspension, BFNP responded to the State of Washington, Radiation Control Program with their corrective actions to preclude future occurrences of improper labeling of radioactive material containers as required by 49 CFR 173.392(c)(8). These corrective actions were as follows:

- 1) All adhesive labels placed on wooden boxes will be stapled to ensure they will not come off during handling, storage, or shipment.
- 2) All shipping trailers that have been stored onsite awaiting shipment will be off loaded and all packages reinspected to ensure the packages are adequately marked.
- 3) Audits of the shipments of radioactive material as required by quality assurance (QA) surveillance program will be performed on a more frequent basis to ensure full compliance with all plant procedures and state and federal regulations.

After review, the inspector concluded these corrective actions were implemented on July 27, 1982, and should preclude discrepancies of this nature from recurring.

- b. On August 17, 1982, the licensee delivered a radioactive waste shipment for transport (TVA Shipment No. 1862) to U.S. Ecology, Richland, Washington for burial. While stopped in route in the state of Missouri, the truck driver noticed liquid leaking from the bottom of the shipping trailer. As required by emergency procedures provided to accompany the shipment, and the training provided by TVA the truck driver responded by halting the shipment and properly barricading and posting the vehicle and promptly notified TVA.

Following notification, the licensee contacted the State of Missouri, Radiological Health Department and requested they respond to this incident and perform radiological surveys to determine any radiological hazards.

The State of Missouri, Radiological Health Department radiation surveys revealed that no radiation hazards existed from the liquid substance leaking from the shipping trailer. The licensee requested the radioactive waste shipment return to Browns Ferry Nuclear Plant (BFNP), Athens, Alabama for further evaluation.

On August 21, 1982, the shipment of radioactive material in question arrived at BFNP. After receipt of the shipment, it was determined that one 55-gallon drum with radiation levels of 20 mR/hr at contact and containing an estimated 909 millicuries of activity was leaking (Drum No. D-82-2590). External radiation and contamination surveys conducted by the licensee of the shipping trailer were less than allowable limits as required by Department of Transportation (DOT) 49 CFR. Further investigation revealed that the liquid leaking from drum No. D-82-2590 was an acidic solution. This solution corroded holes in the drum by chemical reaction of the acid on the metal drum. Breach of package integrity, use of improper shipping containers, and failure to perform an adequate examination or appropriate test to ensure the package is proper for the contents to be shipped prior to shipment represent violations of 10 CFR 71.5(a), 49 CFR 173.24(a)(2), (c)(5), and Technical Specification 6.3.A.7. This is a violation (259/82-26-02, 260/82-26-02, and 296/82-26-02).

The licensee immediately reported this event to the RII office.

On August 23, 1982, the licensee held a meeting to investigate and determine the root cause of the one leaking drum in TVA Radioactive Waste Shipment No. 1862. The licensee determined the root cause of the problem to be their inability to control what was placed in drums and boxes readied for shipment and the lack of accountability of personnel responsible for packaging the drums and boxes. The licensee stated that the following corrective actions will be instituted to preclude future occurrences of this type:

- 1) Any individual packing a drum or box will be required to sign-off a certification tag certifying the package contents.
- 2) All individuals packing drums or boxes for shipment will be trained in shipping requirements.
- 3) Chemical Engineering evaluation of any item other than paper, plastic, wood, metal, or sand will be performed prior to shipment.
- 4) A Chemical Engineer has been assigned responsibility over implementation of the radwaste control program.
- 5) Quality Assurance has been instructed to place the implementation of these corrective actions into their surveillance program.
- 6) A hold was placed on all drums and boxes presently stored in the plant pending evaluation of each container by chemical contents.

The inspector concluded that the licensee's corrective action was prompt and the program appeared to preclude reoccurrence. The inspector stated to licensee management that the effectiveness of this program will be reviewed upon future inspections.

6. Enforcement Conference

a. Persons Contacted

Licensee Employees

H. Abercrombie, Assistant Production Manager  
G. T. Jones, Plant Superintendent  
J. R. Bynum, Assistant Plant Superintendent  
J. A. Domer, Nuclear Licensing

U.S. Nuclear Regulatory Commission, Region II

D. M. Verrelli, Chief, Reactor Projects Branch 1  
F. S. Cantrell, Chief, Reactor Projects Section 1B  
K. P. Barr, Chief, Facilities Radiation Protection Section  
J. W. Chase, BFNP Senior Resident Inspector  
T. R. Collins, Radiation Specialist

- b. Region II, NRC representatives discussed the apparent violations of Radioactive Material Shipments with licensee management representatives on September 8, 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.