

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

84 JUN 12 A 9:00

June 4, 1984

U.S. Nuclear Regulatory Commission

Region II

ATTN: James P. O'Reilly, Regional Administrator

101 Marietta Street, NW, Suite 2900

Atlanta, Georgia 30303

Dear Mr. O'Reilly:

Enclosed is our response to R. C. Lewis' May 2, 1984 letter to H. G. Parris transmitting Inspection Report Nos. 50-259/84-12, -260/84-12, -296/84-12 regarding activities at our Browns Ferry Nuclear Plant which appeared to have been in violation of NRC regulations. We have enclosed our response to the Notice of Violation. On June 1, 1984, Ross Butcher of your staff and Mike Hellums of my staff discussed an extension to June 4, 1984 for submitting this response. If you have any questions, please call Jim Domer at FTS 858-2725.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*DS Kammer*

D. S. Kammer  
Nuclear Engineer

Enclosure

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RESPONSE - NRC INSPECTION REPORT NOS.  
50-259/84-12, 50-260/84-12, AND 50-296/84-12,  
RICHARD C. LEWIS'S LETTER TO H. G. PARRIS  
DATED MAY 2, 1984

Item 1 - (259,260,296/84-12-01)

10 CFR 30.41(c) requires that before transferring byproduct material to a specific licensee of an Agreement State, the licensee transferring the material shall verify that the transferee's license authorizes the receipt of the type, form, and quantity of byproduct material to be transferred.

Condition 29 of the State of South Carolina Radioactive Material License No. 097, issued to Chem-Nuclear Systems, Inc. states that wastes may not be received for disposal that contain free-standing water in excess of one-half of 1 percent (0.5%) waste volume.

Contrary to the above, a resin liner containing in excess of one-half of 1 percent volume of free-standing water was shipped by the licensee to the Chem-Nuclear Systems site on October 25, 1983.

This is a Severity Level IV Violation (Supplement V).

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation if Admitted

The Browns Ferry Nuclear Plant staff made an investigation into the cause of the excess water. Three possible causes were:

- a. Operating Instruction (OI) 77 for radwaste packaging was not specific in the sequencing for valving in dewatering filters which are located at different levels within a liner. Consequently, there was no assurance that the bottom filter element was always used last to ensure complete dewatering.
- b. OI-77 did not specify a minimum amount of time to dewater using only the bottom drain.
- c. Hoses and valves required for dewatering a liner were not all clearly identified.

These problems could have caused, or contributed to, the excessive water, but TVA could not conclusively identify the cause.

3. Corrective Steps Which Have Been Taken and the Results Achieved

To correct the deficiencies and prevent recurrence of excess water in the dewater resin liners, the following steps were taken:

- a. OI-77 was revised to specify the filter sequence to be used for resin liner dewatering.
- b. Based on several trials (using the revised procedure) a minimum time from two to six hours for dewatering, depending on the liner type and its contents, was incorporated into the procedure.
- c. Hoses and valves required for dewatering were clearly identified.
- d. Plant administrative procedures for radwaste were revised to include more management controls and to add a process control program to periodically verify the adequacy of the dewatering procedures.

4. Corrective Steps Which Will Be Taken To Avoid Further Violations

Drawings for the radwaste system are being reviewed and will be revised to reflect the actual "as-constructed" status. A new group within the plant organization is being established which will be dedicated entirely to the operation and control of the radwaste program.

5. Date When Full Compliance Was Achieved

Full compliance was achieved on November 25, 1983, when all actions described under item 3 were completed.

Item 2 - (259,260,296/84-12-02)

10 CFR 50.59(b) requires that the licensee shall maintain records of changes in the facility, to the extent that such changes constitute changes in the facility as described in the safety analysis report. These records shall include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

Contrary to the above, the licensee did not maintain a record of a change made to the solid radioactive waste system which connected the bead and Powdex resin systems, nor was a written safety evaluation prepared.

This is a Severity Level IV Violation (Supplement IV).

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.



2. Reasons for the Violation if Admitted

Both bead resin and powdered resin are handled by the Browns Ferry solid radwaste system. Final Safety Analysis Report (FSAR) Section 9.3.4.1 and radwaste system drawings describe the system. Powdered resin is accumulated and stored in 1850 cubic foot phase separator tanks. Expended bead resin is stored in a 245 cubic foot spent resin tank. The FSAR configuration provides for both powdered and bead resin to be sent to the radwaste packaging area. The FSAR does not address complete separation of resin types. The physical arrangement and sizing of the tanks in radwaste can cause incomplete filling of a shipping liner with bead or powdered resin. Packaging station design allows for finished filling of a liner with either type resin. Thus, layered mixtures of resin have always been permitted by the FSAR. In 1973 when unit 1 was being started up, the two radwaste subsystems were connected via a hose. This connection allowed bead resin to be stored in selected phase separators. This arrangement allowed for the most efficient use of radwaste liners. The connection was made through a flush connection on the line transferring bead resin from the spent resin tank to the packaging station. The hose could be run to only one phase separator at a time. A hose connection is shown in the FSAR which allows bead resin to be sent to any phase separator depending upon valve arrangement. Plant personnel chose not to use this design provision in order to gain more administrative control over which phase separators were used for bead resin storage. Plant personnel failed to realize that the physical difference of how the subsystems were connected required a 10 CFR 50.59 evaluation.

3. Corrective Steps Which Have Been Taken and the Results Achieved

On March 30, 1984, a 10 CFR 50.59 evaluation was performed on the hose used to connect the spent resin tank to the phase separators. There was no unreviewed safety question.

4. Corrective Steps Which Will Be Taken To Avoid Further Violations

None are required.

5. Date When Full Compliance Will Be Achieved

Full compliance was achieved on March 30, 1984.

Item 3 (259,260,296/84-12-03)

10 CFR 20.405(a) requires that each licensee shall make a report in writing within 30 days to the Commission of each exposure of an individual to radiation in excess of the applicable limits of 20.101.

10 CFR 20.408(b) requires that when an individual assigned to work in a licensee's facility but not employed by the licensee, completes the work assignment in the licensee's facility, the licensee shall furnish the Commission a report of the individual's exposure to the radiation incurred during the period of employment or work assignment in the licensee's facility.

10 CFR 20.409(b) requires that when a licensee is required pursuant to 20.405 or 20.408 to report to the Commission any exposure of an individual to radiation, the licensee shall also notify the individual. Such notice shall be transmitted at a time not later than the transmittal to the Commission, and shall comply with the provisions of 19.13(a) of this chapter.

Contrary to the above, the reporting requirements of 10 CFR 20.408 and 20.409(b) were not met in that,

- a. On November 15, 1983 the licensee reported to the Commission that an individual had received a whole body radiation exposure in the third quarter of 1983 in excess of the applicable 20.101 limit; however, the individual was not properly notified.
- b. Radiation exposure reports for individuals not employed by the licensee have not been sent to the Commission, nor to the individual upon completion of the individual's work assignment at the licensee's facility.

This is a Severity Level V violation (Supplement IV).

1. Admission or Denial of the Alleged Violation

TVA admits the violation occurred as stated.

2. Reasons for the Violation if Admitted

- a. The individual who received dose in excess of the applicable 20.101 limit was notified verbally as soon as the data were known. During each month in the affected quarter, TVA issued a statement to the individual containing the monthly dose; however, the cumulative dose was not included each month. The individual was also provided all the written information that was reported to NRC. This information was provided on November 18, 1983, three days after the report was sent to NRC. The letter did not contain the standard paragraph of 10 CFR 19.13(a) which was an oversight.
- b. Radiation dose reports to non-TVA workers have been provided to individuals and NRC on a monthly basis to ensure that these persons are informed fully of dose histories. TVA considered this practice as meeting the requirements of 10 CFR 20.408. NRC is concurrently

sent copies of these letters, and in the past they have been acceptable. TVA admits that the letters have not contained cumulative data as deemed necessary by NRC.

3. Corrective Steps Which Have Been Taken and the Results Achieved

- a. The individual who received dose in excess of the applicable 10 CFR 20.101 limit has received the information which was sent to NRC.
- b. TVA continues to issue monthly dose statements to non-TVA persons until a rigorous checkout program of these individuals completing their assignments is developed and implemented. These monthly dose statements will include cumulative dose histories beginning July 1, 1984.

4. Corrective Steps Which Will Be Taken To Avoid Further Violations

- a. Responsible individuals within TVA have been instructed to ensure that proper reporting requirements are met if an overexposure should occur.
- b. TVA will develop and implement a personnel checkout program to identify the exact time of a work assignment or visit for the majority of non-TVA workers or visitors. Special cases may require the continuation of monthly letters that contain cumulative dose histories. When this program is operational, termination letters will be issued for the exact monitoring period.

5. Date When Full Compliance Will Be Achieved

Full compliance will be achieved January 1, 1985, when the personnel checkout program is implemented.