

AUG 3 1 1988

Official

Tennessee Valley Authority
ATTN: Mr. S. A. White
Senior Vice President,
Nuclear Power
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Gentlemen:

SUBJECT: NRC INSPECTION REPORT NOS. 50-327/87-56 AND 50-328/87-56

Thank you for your responses of November 6, 1987, and May 13, 1988, to our Notice of Violation, issued on October 12, 1987, concerning activities conducted at your Sequoyah facility.

After careful consideration of the bases of your denial of Violation B, we have determined, for the reasons presented in the enclosure to this letter, that the violation occurred as stated in the Notice of Violation. You should note that the NRC agrees with the goal of the change implemented, that of reducing radioactive materials in your effluents. However, we did note that the process followed in making the change did not include a review under 10 CFR 50.59, as was required, since the change resulted in an operation different from that described in the Final Safety Analysis Report (FSAR). Therefore, in accordance with 10 CFR 2.201(a), please submit to this office within 30 days of the date of this letter, a written statement describing steps which have been taken to correct the violation and the results achieved, corrective steps which will be utilized to avoid further violations, and the date when full compliance will be achieved. Additionally, you should consider taking action to revise Section 11.2 of your FSAR to eliminate any contradictory statements in this area.

The responses directed by this are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

We appreciate your cooperation in this matter.

Sincerely,

Steven D. Richardson, Director
TVA Projects Division
Office of Special Projects

Enclosure: (See page 2)

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Enclosure:
Evaluations and Conclusions

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ENCLOSURE

Evaluations and Conclusions

Restatement of Violation

10 CFR 50.59 states that the holder of a license authorizing operation of a utilization facility may make changes in the facility as described in the safety analysis report, without prior Commission approval, unless this proposed change involves a change in the Technical Specifications incorporated in the license or an unreviewed safety question. The licensee should maintain records of changes in the facility which shall include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

Final Safety Analysis Report (FSAR), Chapter 11.2 states that the laundry and hot shower drain tank is normally sampled and discharged as an effluent, with the provision for processing the liquid through the condensate demineralizer waste evaporator (CDWE) if the sample result was above the discharge limit.

Contrary to the above, in May 1987, the licensee failed to perform an adequate safety evaluation for a change in the laundry and hot shower waste water process which directed all the waste water to the CDWE causing an increase in the volume and concentration of contaminants into the CDWE.

Licensee Comment

Although FSAR Sections 11.2.3.1 and 11.2.4 allow for direct release from the laundry and hot shower tanks if sample results are below acceptable limits, they do not preclude additional processing to further reduce radioactive liquid effluents to the environment nor does the FSAR limit the volume or concentration of contaminants placed in the CDWE. Moreover, the language in these paragraphs should be considered within the overall context of the FSAR Chapter 11.2, "Liquid Waste Systems." For example, FSAR Subsection 11.2.1, "Design Objectives," states in part, "The Liquid Waste Processing System is designed to receive, segregate, process, recycle and discharge liquid wastes." The system design considers potential personnel exposure and assures that quantities of radioactivity released to the environment are as low as practicable.

NRC Response

FSAR Section 11.2 goes much further than merely allowing direct discharge from the laundry and hot shower tanks if sample results are below acceptable limits. FSAR Section 11.2.3.1 and 11.2.4 both state that the water is processed only if the activity concentration is too high for direct discharge. FSAR Section 11.2.4 states that normally no treatment is required for removal of radioactivity. While not precluding additional processing, the FSAR clearly indicates that such processing only occurs if the activity concentration in the tanks is above discharge limits, otherwise it is directly discharged.

Therefore, processing would only be infrequently required. In May 1987, the licensee changed the process so that all of the waste would be processed through the CDWE prior to being sampled for release. This was a change from how the licensee had handled this waste up to that time and was a change from the FSAR description of the disposition of this waste. The NRC does not disagree with the goal of the change, to reduce concentrations of radioactive material in effluents. The process followed by the licensee in making the change did not include a review of the change under 10 CFR 50.59, as was required since the change resulted in operation different from that described in the FSAR. 10 CFR 50.59(a)(2)(ii) states that a proposed change, test, or experiment shall be deemed to involve an unreviewed safety question if a possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report may be created. Since the licensee's change to processing the laundry waste stream continuously resulted in the overflow of waste solidification liners and subsequent exposure of personnel, a malfunction of a different type than any evaluated previously, then this change involved an unreviewed safety question and should have been evaluated by the licensee. FSAR Section 11.2.1 does state that the design of the liquid waste processing system considers potential personnel exposures. The effect of processing the laundry waste was inconsistent with this design objective in that when the licensee attempted to solidify the CDWE bottoms containing high concentrations of laundry detergents, the liner content overflowed due to chemical reaction with the solidification agent. The overflow then hardened and personnel had to chip away the excess material, which measured up to 3 R/hour, so that the lid could be placed on the liner. The change to the routine method of processing the laundry waste should have received a review under 10 CFR 50.59, and if found appropriate, the change could then have been implemented.

Licensee Comment

TVA feels that it was, and still is, our responsibility to keep levels of radioactive materials in effluents to unrestricted areas as low as reasonably achievable. The administrative change to process the laundry and hot shower drain tanks through the CDWE before sampling is not inconsistent with the FSAR provision of the laundry and hot shower drains as discussed above, and TVA does not agree that this decision constitutes a change to the facility or procedures as described in the FSAR. Thus, TVA believes a 10 CFR 50.59 safety evaluation is not required.

NRC Response

The NRC agrees that licensees should make efforts to reduce the activity in their effluents; however, applicable requirements have to be followed when changes are made. The licensee acknowledges that they made a change to their process. The licensee's statement that the change was not inconsistent with the FSAR is valid when considering the overall goal of reducing waste in effluents. Nevertheless, the FSAR clearly states that the waste stream is not normally processed, and the change caused all of the waste to be processed through the CDWE. This change was a significant change to a system described in the FSAR, and the adverse chemical reaction which occurred during waste

solidification resulted in unnecessary radiation dose to radwaste operators. This staff position is consistent with the guidance provided to the licensee in IE Circular No. 80-18: 10 CFR 50.59, Safety Evaluations for Changes to Radioactive Waste Treatment Systems which states that for any change in a facility radioactive waste system as described in the FSAR, a safety evaluation is required in accordance with 10 CFR 50.59.

NRC Conclusion

For the above reasons, the NRC staff concludes that the violation occurred as stated.