

DEC 14 1973

Docket Nos. 50-438
and 50-439

Tennessee Valley Authority
ATTN: Mr. James E. Watson
Manager of Power
818 Power Building
Chattanooga, Tennessee 37401

Gentlemen:

In order that we may continue our review of your application for a license to construct the Bellefonte Nuclear Plant, Units 1 and 2, we are providing Regulatory staff positions regarding pertinent safety matters. These positions are listed in Enclosure No. 1. We request that you state your intent regarding compliance with each of these positions and amend your application accordingly. We are prepared to meet with you to facilitate a complete understanding of these safety matters and the bases for our positions.

We have requested in Enclosure No. 2, additional information needed to clarify and amplify previously submitted information.

In order to maintain our licensing review schedule for those matters dealt with in the enclosures, we will need completely adequate responses by January 30, 1974, to all of these staff positions and requests for information.

Please inform us within 7 days after receipt of this letter of your confirmation of the schedule date or the date you will be able to meet. If you cannot meet our specified date or if your reply is not fully responsive to our request, it is highly likely that the overall schedule for completing the licensing review for the project will have to be extended. Since reassignment of the staff's efforts will require completion of the new assignment prior to returning to this project, the extension will most likely be greater than the delay in your response.

Please contact us if you have any questions regarding the staff positions or the information requested.

Sincerely,

Original Signed by
Albert Schwencer

LB

OFFICE ▶			A. Schwencer, Chief		
			Light Water Reactors Branch 2-3		
			Directorate of Licensing		
SURNAME ▶					
Enclosure and ccs:	See next page				
DATE ▶					

Enclosures:

1. Staff Positions
2. Request for Additional Information

ccs: Mr. R. H. Marquis
 General Counsel
 629 New Sprakle Building
 Knoxville, Tennessee 37902

Mr. William E. Garner, Esquire
 Route 4
 Scottsboro, Alabama 35768

Mr. Lyla A. Taylor
 3301 Helena, N. W.
 Huntsville, Alabama 35810

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SURNAME ▶	<i>DKS</i> DDavis:cib	<i>AS</i> ASchwencer				
DATE ▶	12/12/73	12/17/73				

ENCLOSURE NO. 1

POSITIONS REGARDING CONSTRUCTION PERMIT
TENNESSEE VALLEY AUTHORITY
BELLEFONTE NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 50-438 AND 50-439

2.0 SITE CHARACTERISTICS

- 2.56 In your response to Request 2.52, you deferred conducting the requested aircraft collision analysis until the consulting study on expansion of the Scottsboro airport is completed. It is the Regulatory staff's position that in addition to your commitment to evaluate aircraft collisions that may occur as a result of airport expansion or relocation recommended in the consulting study, you should perform an aircraft collision analysis based on the reasonably projected growth of the existing airport. The analysis of the existing airport should be supplied by January 30, 1974. Pending the staff's evaluation of your aircraft collision analyses (both for the existing airport and any proposed expansion), any construction permit for the Bellefonte plant will be so conditioned that no foreclosure of options to minimize the probability of aircraft collisions or to protect vital plant structures and equipment from aircraft collision will be allowed.

6.0 ENGINEERED SAFETY FEATURES

6.77 The response to Request 6.35 on engineered safety feature air cleaning systems raised several additional concerns. It is not sufficient to state that filter systems will comply with Regulatory Guide 1.52. A tabular listing of each position in the Regulatory Guide for each ESF filter system with an explanation of how the position will be met should be supplied. We have the following positions with regard to the specific exceptions taken:

- a. Position C.2.a. Our position is that demisters are required on ESF filtration systems unless it can be shown that all sources of water and steam (this includes potable water, sprinkler systems, hot water for kitchen sinks, rainy day, etc.) are not present in the entire ventilation zone, or that the water and steam sources are designed to seismic Category I criteria.

Our position is that heaters are required on ESF filtration systems unless it can be shown that humidity in the ventilation zone will be controlled by some other ESF system.

Our position is that final HEPA filters must be provided. There is no explanation given for the deletion of the final HEPA filters. The purpose of the final HEPA filters is to collect fines from the adsorber unit. The distribution of iodine on the adsorber will be non-uniform. Hence, even small amounts of activated carbon fines at the front of the adsorber bed can potentially release significant quantities of radioactive iodine. The final HEPA filter will collect most fines released.

- b. Position C.2.f. Our position is that for the maintenance and testing filter units should be limited to a flow of no more than 30,000 CFM (3 HEPA filters high by 10 wide). We know of no technical reason why it is "necessary" that filters be stacked five high. One benefit of a 30,000 CFM limit is that redundancy may be possible with two out of three smaller filter units than with one out of two larger units. Smaller units also reduce the radiation source term to be contended with when maintenance is required on systems that are used during normal operation.
- c. Position C.2.j. Our position is that the potential for removal of the filter train should not be precluded in the design. Large units might require some segmentation during removal, but this should be minimized. Our position is that ESF air cleaning systems should be made of all-steel housings. The use of concrete construction for filter housings is recommended against because of the difficulty of preventing significant bypass leakage.

- d. Position C.3.a. See a. above.
- e. Position C.3.e. Our position is that the installation provisions should apply. See b. above.
- f. Position C.3.f. See c. above. In order to seal the frame to the concrete sealants are generally required. The use of sealants is recommended against in position C.5.b. because of their susceptibility to radiation decomposition.
- g. Position C.3.h. This exception is acceptable.
- h. Position C.3.j. Our position is that water spray should be provided. It has been shown that water sprays will not extinguish an adsorber fire once it is started. However, the purpose of the water sprays is to inhibit an adsorber fire, i.e., to cool the adsorber before ignition begins. Water sprays are also a protection for preventing other than decay heat caused fires.

Reduced air flow for adsorber fire control should also be included in the design. Calculations justifying the flow rate chosen should be presented.

- i. Position C.4.c. This exception is acceptable.

9.0 AUXILIARY SYSTEMS

9.53 It is our position that, upon activation of the emergency ventilation system, no fresh air make-up should enter the control room until it has been confirmed that the outside concentrations of toxic or radioactive gases are low enough to allow introduction of such make-up. Selection of the best inlet should also be determined before manual introduction of make-up air. In this regard, Condition No. 2 on page 9.4-2 of your PSAR should be changed accordingly.

9.54 In regard to your response to Request 9.17, our position is that the control room is not adequately leak-tight. The control room should be sufficiently tight to limit infiltration while it is isolated and unpressurized. Leak tightness also determines the amount of make-up air required during periods of pressurization. Radiation or toxic gas exposure is directly related to this infiltration and make-up air. In this regard, provide responsive answer to Request 9.17. However, Item 3 of the Request should be modified as follows:

- (3) Assume an 1/8" water guage pressure differential across all leak paths to account for wind effects, stack effects, and barometric pressure variation.

ENCLOSURE NO. 2

REQUEST FOR ADDITIONAL INFORMATION
TENNESSEE VALLEY AUTHORITY
BELLEFONTE NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 50-438 AND 50-439

2.0 SITE CHARACTERISTICS

- 2.57 In response to Request 2.37, you proposed to modify the temperature difference measurement system and the time averaging technique for temperature and dewpoint measurements. Furthermore, you proposed to compare the accuracy of the present delta-T instrumentation and the modified instrumentation to that described in Regulatory Guide 1.23. In this regard, provide a detailed description of the proposed modifications to the meteorological instrumentation, including the time averaging technique, and a description of the comparison program you will undertake to determine compliance with Regulatory Guide 1.23.

12.0 RADIATION PROTECTION

12.13 In Section 12.2.4 and in the response to Request 12.4, the personnel airborne radioactivity monitoring systems, as well as ventilation layout considerations, are presented. Since each of the air monitors in Table 12.2-1 monitor several air spaces in the auxiliary building, it should be demonstrated that an indication of activity concentration at any particular monitor can be correlated with the air concentrations to which plant personnel are exposed at specific locations. To this end, for the auxiliary building, provide the location on a diagram or building layout drawing of the corresponding monitors listed in Table 12.2-1, indicating whether the monitor is sampling locally or from an exhaust ventilation system and provide the dilution air volume affecting the sampler. Indicate whether the Bellefonte facility will be provided with portable constant air monitors (CAM's) for monitoring specific locations, as necessary.

If sampling lines are used to accomplish the valving arrangement discussed on page 12.2-3, provide a discussion of sampling line losses similar to that in ANSI Standard N13.1, 1969, "Guide to Sampling Airborne Radioactive Material in Nuclear Facilities", Appendix B, "Particle Deposition in Sample Lines".

- 12.14 In the response to Request 12.4(b), it was indicated that information concerning estimated radiation exposures during in-service inspections had been gathered and was being evaluated. Provide either the results of this evaluation as it applies to the Bellefonte Nuclear Plant or indicate when the evaluation will be submitted.
- 12.15 The responses to Requests 11.6 and 11.7 refer to the TVA Handbook of Health Physics which provides detailed information on these requests. Provide the appropriate portions of this document for our review.