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DEC 23 1983

Docket Nos. 50-424/425

MEMORANDUM FOR: Elinore G. Adensam, Chief  
Licensing Branch No. 1, DL

FROM: William P. Gammill, Chief  
Meteorology and Effluent Treatment Branch, DSI

SUBJECT: METB QUESTIONS FOR VOLTLE, UNIT NOS. 1 AND 2, FINAL SAFETY  
ANALYSIS REPORT

PLANT NAME: Voltle Electric Generating Plant, Unit Nos. 1 and 2  
LICENSING STAGE: DL  
DOCKET NUMBER(S): 50-424/425  
RESPONSIBLE BRANCH: LR44  
PROJECT MANAGER: M. Miller  
REQUESTED COMPLETION DATE: January 31, 1984  
DESCRIPTION OF RESPONSE: 0

We have reviewed Sections 6.5.1, 10.4.2, 10.4.3, 15.7.3 and Chapter 11 of the Voltle FSAP, and find that we need additional information to complete our evaluation. A list of questions is enclosed.

If there are questions concerning this information, please contact the review engineer, C. Nichols (x27634).

ORIGINAL DRAWN BY:  
William P. Gammill

William P. Gammill, Chief  
Meteorology and Effluent Treatment Branch  
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Enclosure:  
METB Questions

cc: R. Mattson  
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M. Miller  
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METB QUESTIONS FOR VOGTLE, UNIT NOS. 1 AND 2  
Docket Nos. 50-424/425

460.01  
(6.5.1)

Standard Review Plan 6.5.1, ESF Atmosphere Cleanup Systems, provides that relevant requirements of the Commission's regulations are met by using the regulatory positions contained in Regulatory Guide 1.52 as it relates to the design, testing and maintenance of ESF atmosphere cleanup system air filtration and adsorption units. Regulatory Guide 1.52, Revision 2, March 1978, provides regulatory positions for which additional information should be provided for justification of giving full or partial credit to ESF atmosphere cleanup filters for mitigating accident doses in accordance with the Guide. In general, for regulatory positions where full conformance is not demonstrated, justification should be provided. Further, specific information should be given as described below:

Position 2.g - ESF atmosphere cleanup systems should be instrumented to signal, alarm, and record pertinent pressure drops and flow rates in the control room. (Standard Review Plan Section 6.5.1 states that the design of instrumentation for the ESF atmosphere cleanup system should conform to the guidelines of Regulatory Guide 1.52 and to the recommendations of ANSI N509. Minimum instrumentation, read out, recording, and alarm provision for ESF atmosphere cleanup systems are given in Table 6.5.1-1 of this SRP section.)

Table 6.5.1-2 of the FSAR provides information on the ESF filter system instrumentation sensor locations and response types and locations. Non-conformities with Table 6.5.1-1 of the SRP are as follows:

- (1) no local indication is provided of unit inlet or outlet flow;
- (2) no local high alarm signal is provided of the pressure drop across the prefilter (demister in the Vogtle design);
- (3) no local status indication is provided for the electric heater;
- (4) no local indication, high alarm, and low alarm signals are provided and no high alarm, low alarm, and trip-alarm signals are provided in the control room for a temperature sensor located between the heater and the first HEPA filter;
- (5) no local high alarm signal is provided and no recorded indication is provided in the control room of the pressure drop across the first HEPA filter;
- (6) no local two-stage high alarm signal is provided for a temperature sensor located between the adsorber and the second HEPA filter;
- (7) no local high alarm signal is provided for the pressure drop across the second HEPA filter; and

- (8) no hand switch is provided at the control room for the deluge valves and no local hand switch and status indication is provided for the deluge valves.

Table 6.5.1-2 of the FSAR does provide, however, certain instrumentation which exceed the minimum instrumentation provided in Table 6.5.1-1 of the SRP, e.g., indication and high alarm are provided in the control room of the moisture content in the space between the heater and the first HEPA filter.

Provide a description of equipment to be included in the design to fully conform to Table 6.5.1-1 of the SRP or provide justification for each nonconformity. Explain how the moisture sensing, indicating, and alarm instrumentation, along with other design features, ensure that the relative humidity is adequately controlled to assure that the ESF filter systems perform their safety functions. Explain how the ESF filter system instrumentation and other design features ensure that the second HEPA filter adequately removes, at all times during system operation, charcoal particles that may be dislodged from the adsorber bed and present in the air stream, and that may contain adsorbed radioactive materials.

Position 3.k - The design of the adsorber should consider possible autoignition from radioactivity-induced heating of

the adsorbent. Acceptable designs include low-flow air bleed system, cooling coils, water sprays, or other cooling mechanisms. Any cooling mechanism should satisfy the single-failure criterion. A low-flow air bleed system should satisfy the single-failure criterion for providing low-humidity cooling air flow.

The FSAR states that the anticipated charcoal bed loading for the design basis accident is not sufficient to raise the bed temperature to the desorption and adsorbent automatic ignition range, and that a water spray system is provided to prevent excessive heating, if required.

Provide justification that a cooling mechanism is not needed and is not relied on for cooling for each ESF filter system using assumptions and analyses, or demonstrate how the cooling mechanism for each ESF filter system satisfies the single-failure criterion.

460.02  
(10.4.2,  
10.4.3)

Standard Review Plans 10.4.2, "Main Condenser Evacuation System," and 10.4.3, "Turbine Gland Sealing System," provide that the relevant requirements of the Commission's regulations are met by using the regulatory positions contained in Regulatory Guide 1.26, as it relates to the equipment quality group classifications of these systems, and in Regulatory

Guides 1.33 and 1.123, as they relate to the quality assurance programs for the system's components. Regulatory Guide 1.26 describes a quality classification system related to specified national standards for determining acceptable quality standards for components.

The FSAR states that the main condenser evacuation system piping is designed to ANSI B31.1. Provide the Quality Group for each system. Provide the quality standards for the components in each system in accordance with Table 1 of Regulatory Guide 1.26. Justify any nonconformity with Table 1 quality standards. The FSAR contains no information regarding the conformance of quality assurance programs for these system's components to the regulatory positions of Regulatory Guides 1.33 and 1.123. Provide this information and justify any nonconformity.

460.03  
(11.2)

Standard Review Plan 11.2, "Liquid Waste Management Systems," provides that relevant requirements of the Commission's regulations are met by using the regulatory positions contained in Regulatory Guide 1.143, as it relates to the design of outdoor tanks containing radioactive materials in liquids to prevent uncontrolled releases of radioactive materials due to spillage.

The FSAR states that outdoor tank dikes have a capacity of 5 percent of tank volume for Category 1 tanks and 10 percent of tank volume for Category 2 tanks. Provide a description of equipment and facilities to be included in the design to fully conform to Regulatory Guide 1.143 or provide justification for the design described above.

460.04  
(11.3)

Standard Review Plan (SRP) 11.3, "Gaseous Waste Management Systems," provides that relevant requirements of the Commission's regulations are met by using the regulatory positions contained in Regulatory Guide 1.140, as it relates to the design, testing and maintenance of normal ventilation exhaust systems.

The FSAR states that the Vogtle Electric Generating Plant design conforms to the regulatory positions of Regulatory Guide 1.140, with certain exceptions.

Provide a description of equipment to be included in the design to fully conform to the regulatory positions of Regulatory Guide 1.140, or provide justification for the exceptions, as follows. Provide justification for the exceptions taken with respect to the turbine building condenser vacuum exhaust and steam packing exhaust filtration systems and with respect

to the off-gas filters in the volume reduction system. Provide justification specific to each of the four parts of Regulatory Position C.5.

460.05  
(11.4)

SRP 11.4, "Solid Waste Processing Systems," refers to Branch Technical Position ETSB 11-3, which provides that, where compressed gases are used for transfer of resins, tanks should be vented directly to the plant ventilation exhaust system.

The FSAR provides that the solid waste management system has been designed to meet the design criteria of Branch Technical Position ETSB 11-3 with the exception that the spent resin transfer tanks in the transfer building are vented directly into the tank room through the process overflow. Exhaust ventilation from the tank room is directed to the auxiliary building ventilation system upstream of the filtration units.

Provide a description of equipment to be included to vent the transfer tanks directly to a plant ventilation exhaust system which includes HEPA filters as a minimum, or provide justification for venting the transfer tanks directly into the tank room.

460.06  
(11.5)

SRP 11.5, "Process and Effluent Radiological Monitoring Instrumentation and Sampling Systems," provides, as specific criteria necessary to meet the relevant requirements of the Commission's



regulations, that provisions should be made for the instrumented monitoring or sampling and analysis (including administrative and procedural control) of radioactive waste process streams and all normal and potential radiological effluent pathways and for the instrumented monitoring or sampling and analysis of identified gaseous and liquid paths in the event of postulated accident releases. The design of systems should meet the provisions of NUREG-0737 (Item II.F.1, Attachments 1 and 2), Regulatory Guide 1.97 (Position C and Table 2), Regulatory Guide 1.21 (Position C), Regulatory Guide 4.15 (Position C), Tables 1 and 2 of SRP 11.5, and Appendix 11.5-A of SRP 11.5.

NUREG-0737 (Item II.F.1, Attachment 1) provides, in Table II.F.1, that all potential accident release paths shall be monitored. The PWR secondary containment exhaust air, PWR steam safety valve discharge, and PWR atmospheric steam dump valve discharge are identified in this table. Similarly, Item II.F.1, Attachment 2, provides, in Table II.F.1-2, that the capability is required to collect and analyze or measure representative samples of radioactive iodines and particulates in plant gaseous effluents during and following an accident. This requirement does not apply to PWR secondary main steam safety valve and dump valve discharge lines.

Regulatory Guide 1.97, Table 2 for PWRs, provides that noble gases and vent flow rate variables are required to be monitored for the condenser air removal system exhaust (unless discharge is through a common plant vent), for common plant vents discharging condenser air removal system exhaust, and for all other identified release points (unless monitored at vents). Particulates and halogens are required to be monitored (sampling with onsite analysis capability) at all identified plant release points (except steam generator safety relief valves or atmospheric steam dump valves and condenser air removal system exhaust).

The only accident-range gaseous effluent monitoring equipment and sampling and analysis capability described in the FSAR pertain to the plant vents and the discharges from the condenser air ejector header and steam exhauster.

Provide additional information, if applicable, on this equipment and capability and flow rate monitoring equipment with reference to all other potential gaseous accident release paths, including the radwaste building ventilation exhaust and safety valve and atmospheric dump valve discharges, or provide justification for not providing the equipment and capability in accordance

with NUREG-0737 and Regulatory Guide 1.97. Provide information on equipment for monitoring flow rates for all potential accident release pathways.

The final design description of all accident-range noble gas effluent monitors and iodine and particulate samplers should be provided in accordance with the documentation requirements of NUREG-0737. Provide this final design information or provide a commitment to provide it no later than four months prior to issuance of a fuel-loading license.

Regulatory Guide 1.21 (Position C) provides that all major and potentially significant paths for release of radioactive material during normal reactor operation should be monitored; and that measurements of effluent volume, rates of release, and specific radionuclides should be made, insofar as is practicable, at the point(s) which would provide data that are the most representative of effluent releases to the plant environs.

The FSAR provides no information on monitoring normal gaseous releases for the condenser air ejector exhaust header and steam exhauster for gaseous, iodine, and particulate activity. Provide the information on this equipment or provide justification for not providing the equipment in accordance with Regulatory Guide 1.21.

The FSAR provides no information on equipment for monitoring liquid and gaseous normal release flow rates. Provide this information for each release pathway. Provide information on means for measuring flow rates through iodine and particulate samplers.

Regulatory Guide 4.15 addresses quality assurance for radiological effluent monitoring. No information is provided in the FSAR on this subject. Describe conformance to each of the nine regulatory positions of Regulatory Guide 4.15, justifying any nonconformance.

Tables 1 and 2 of SRP 11.5 contain provisions for automatic control features for monitoring gaseous and liquid effluent streams. Table 1 provides for automatic control features for monitors of noble gases in effluents from waste gas holdup systems. Table 2 provides for automatic control features for component cooling water system monitors and continuous sampling of effluents from each process system, except from batch liquid radwaste systems.

NUREG-0472, "Standard Radiological Effluent Technical Specifications for PWRs," clarifies these requirements of SRP 11.5 by providing that alarm and automatic termination of release are required for noble gas activity monitors for effluents from

waste gas holdup systems and an alarm is required for radiation monitors for liquid effluents from component cooling water systems (or for service water systems in lieu of component cooling water systems).

The FSAR provides no information regarding the automatic control features and equipment for sampling and analysis described above. Provide information on this equipment, or provide justification for not providing the equipment in accordance with Tables 1 and 2 of SRP 11.5 and with NUREG-0472.

Appendix 11.5-A of SRP 11.5 provides in Table 1, design and quality assurance criteria for radiological effluent monitors providing a signal for the actuation of a system used to reduce releases of radioactive materials. Describe criteria employed, justifying any nonconformances with Appendix 11.5-A of SRP 11.5.

460.07  
(NUREG-  
0737,  
Item  
III.3.1.1)

NUREG-0737 provides that applicants implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as-low-as-practical levels. It is also provided that applicants submit specified information on the proposed program no later than four months prior to issuance of a fuel-loading license. Provide this information or provide a commitment to submit it as required by NUREG-0737.