

STAFF 3/12/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS COMPANY)

(Virgil C. Summer Nuclear Station,)
Unit 1))

Docket No. 50-395

NRC STAFF SUPPLEMENTAL PROPOSED FINDINGS OF FACT
AND CONCLUSIONS OF LAW ON EMERGENCY PLANNING ISSUES

The NRC Staff, in accordance with 10 CFR §2.754 and the Licensing Board's directive of January 20, 1982, proposes the following supplemental findings of fact and conclusions of law on emergency planning issues. These findings are in addition to those already proposed by the Staff on November 13, 1981.

I. INTRODUCTION

1. Evidentiary hearings on contention 8^{1/} (emergency planning) were held on June 29-30, July 1-2, 15-17 and September 22-24, 1981. Thirty-nine witnesses were heard and fourteen exhibits were admitted into evidence during those hearing sessions.

2. The record on contention 8 was originally closed on September 24, 1981. Each of the parties submitted proposed findings pursuant to the schedule established by the Licensing Board. The Intervenor's

1/ That contention states that the Applicant has made inadequate preparations for the implementation of [its] emergency plan in those areas where the assistance and cooperation of state and local agencies are required.

DESIGNATED ORIGINAL

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proposed findings contained references to extra-record information. In the face of objections to consideration of this extra-record information by the other parties, the Intervenor moved (on December 8, 1981) to reopen the record on contention 8 to offer additional evidence. By Memorandum and Order, dated January 5, 1982, this Board granted Intervenor's motion, in part. Specifically, the Board permitted the Intervenor to adduce evidence concerning the alleged inability of the Richland County Sheriff to alert and notify residents within the 10 mile plume exposure pathway emergency planning zone (EPZ) of an emergency in a timely manner should the planned system of fixed accoustical sirens be inoperable. In addition, the Board requested testimony regarding the likelihood of siren system failure in the event of a plant emergency and regarding the cost and efficacy of an electronic siren system. The reopened hearing on contention 8 was held on January 20, 1982.

II. BACKGROUND

3. The Commission's regulations provide, in material part, that means to provide early notification of a radiological emergency to the populace within the plume exposure EPZ be established. 10 CFR §50.47(b)(5). In this regard, it is the responsibility of the Applicant to demonstrate that the state and local officials have established administrative and physical means for alerting and providing prompt instruction to the public within the plume exposure EPZ. 10 CFR Part 50, Appendix E, § IVD(3). The design objective for prompt alerting systems is to have the capability to essentially complete the initial notification of the public within the plume exposure EPZ within about 15 minutes of a decision to alert the public. Id.

4. Responsibility for activation of the public notification system rests with the appropriate state and local authorities. 10 CFR Part 50, Appendix E, § IVD(3). The use of this notification capability will range from immediate notification of the public (within 15 minutes of the declaration of an emergency) to listen to predesignated radio and television stations to "the more likely events" where there is substantial time available for the state and local officials to make a judgment whether or not to activate the public notification system. Id.; 45 FR 55402, 55407 (August 19, 1980) (statement of consideration).

5. The Commission's emergency planning regulations provide that the sixteen planning standards prescribed therein are addressed by specific criteria in NUREG-0654/FEMA-REP-1 (NUREG-0654).^{2/} 10 CFR § 50.47(b), n.1. With regard to the planning standard at issue here (10 CFR § 50.47(b)(5)), NUREG-0654 provides that the primary means for alerting the public may be any combination of fixed, mobile or electronic tone generators which will convey the alerting signal with sufficient timeliness and intensity to permit completion of notification by broadcast media in a timely manner. NUREG-0654, Appendix 3 at 3-2.

6. The prescribed acceptance criteria for the public alert system, an acoustic alerting system or otherwise, is set forth in NUREG-0654, Appendix 3 at 3-3. At a minimum, the initial notification system must assure direct coverage of essentially 100% of the population within 5 miles of the site. Id. Special arrangements must be made to assure

^{2/} Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Rev. 1 (1980) (now Rev. 2 to Reg. Guide 1.101).

100% coverage within 45 minutes of those in the plume exposure EPZ who did not receive the initial notification. NUREG-0654, Appendix 3 at 3-3. Acceptable criteria for the design, implementation and testing of the siren alert system are also set forth in NUREG-0654, Appendix 3, at 3-7 through 3-13.

7. At the time the Intervenor's motion to reopen the record on Contention 8 was filed, the evidence demonstrated that the Applicant has installed an extensive acoustic siren alert system throughout the plume exposure EPZ. Residents have been or will be advised that, upon hearing the sirens, they are to listen to their radios or televisions for emergency instructions over the emergency broadcast system. See, e.g., NRC Safety Evaluation Report (SER), Supplement 2 (May 1980) at A-6; Tr. 2014, 2130, 2161-62; see also Beale, Tr. 6059. At the same time, there was testimony concerning the availability and efficacy of a back-up alert system, consisting essentially of the use of vehicular sirens. The Intervenor's motion to reopen the record was accompanied by a document from the Sheriff of Richland County which appeared to contradict earlier Applicant testimony (Beale, Tr. 4511) to the effect that the back-up system could complete the initial public notification in approximately 60 minutes. Although a back-up alerting system is not specifically required by applicable Commission regulation, the Board deemed it desirable to elicit further testimony regarding the back-up public alert system and the reliability of the existing siren system, in general. See Memorandum and Order, dated January 5, 1982.

III. MATTER IN CONTROVERSY

A. Primary Public Alert System

8. The Applicant's chief emergency planning officer, Mr. Kenneth Beale, explained that the Applicant had installed, and was in the final stages of testing, an early warning system consisting of 104 electrical sirens stationed throughout the plume exposure pathway EPZ. Tr. 6059. This system was discussed at considerable length during the initial emergency planning hearing session. See, e.g., Beale testimony at 23, fol. Tr. 3002; SER supplement 2 at A-5; Kevern testimony at 11, fol. Tr. 3281.

9. Mr. James H. Young, Jr., Group Manager of Systems Operations and Planning for the Applicant, testified concerning the reliability of the siren alert system. Mr. Young explained the electric service to the siren alert system and the effect a loss of power generation in the Summer area would have on operation of the siren system. Testimony of James H. Young, Jr., fol. Tr. 6097; 6093. Mr. Young testified that it takes less than two tenths of a megawatt to power all 104 sirens. Tr. 6099. They are served by four different utilities on fourteen different electrical distribution circuits. Young testimony at 1. He described the service record on those circuits as generally good, averaging roughly three outages per year. Id.

10. The Summer siren alert system is fed from a substation that ties into the Applicant's 115 KV transmission system at the Summer plant. Id. at 3; Tr. 6094. The Parr distribution system is the source to the majority of the sirens and is supplied by two 115 KV lines from the Columbia area. Id. Therefore, any electrical outage at the Summer plant,

due to an accident or otherwise, would not adversely affect the distribution circuits that supply service to the sirens. Id. at 3-4; Tr. 6095. Because of adequate installed reserves available on adjacent systems, even the loss of power from both Summer and the Fairfield Pumped Storage facility will not have a significant impact on the Applicant's ability to supply power to the siren locations. Id. at 4; Tr. 6095.

11. The NRC Staff presented no direct testimony at the reopened session. Nonetheless, as relevant to the present issue, Staff witness Brian Grimes, Director of the NRC Division of Emergency Preparedness, had earlier testified that there is an extremely low probability of the failure of the fixed siren alert system coincident with an emergency necessitating its activation. Tr. 6418. His testimony was uncontroverted.

12. With regard to the comparative cost of an electrical versus an electronic siren system, Mr. Beale testified that the latter system cost approximately \$200,000 more installed than the former system. Beale testimony at 5, fol. Tr. 6061; Tr. 6058. The cost differential per siren was approximately \$2,000. Id. The electronic sirens would be powered by the 115 Kv transmission system although if this source of power were lost, the sirens could operate on batteries for 30 minutes. Beale, Tr. 6123, Tr. 6125-26. In light of the evidence demonstrating the low likelihood of failure of the electrical siren system in the event of an emergency, the record does not warrant replacement of the installed system with a considerably more expensive (and not necessarily more efficient) electronic system.

13. From the uncontroverted evidence, then, we find adequate assurance that the source of power for the installed acoustical siren system for the Summer plume exposure EPZ will be reliable, and that the installed siren system will properly serve as the primary prompt alerting system required by the Commission's emergency planning regulations.

B. "Back-up" Public Alert System

14. The Intervenor called Sheriff Powell of Richland County to explain his position on the ability of his department to participate in the back-up public alert system. Sheriff Powell testified that his department was responsible for assisting the state and local authorities in responding to a radiological emergency at the Summer facility. Tr. 6025. In the event it became necessary, his office, with the assistance, as necessary, of the Columbia Police and Fire Departments, would be responsible for notifying residents of that portion of Richland County which lies within the plume exposure EPZ that an emergency existed. Tr. 6025, 6037. There are approximately 700-900 residents living in this area. Tr. 6025.

15. His department has 178 sworn deputies (Tr. 6044) and 65 vehicles equipped with sirens (Tr. 6047). Sheriff Powell estimated that his office could easily alert the public within 60 minutes through the sounding of police car sirens. Tr. 6027, 6030, 6038. The vehicles would drive within 500 feet of every house in the affected area. Tr. 6038. While recognizing that his responsibility under the local county emergency plan is limited to alerting residents through the use of sirens on emergency vehicles (Tr. 6042), Sheriff Powell is of the opinion that

it is necessary to personally notify all persons of an emergency situation (Tr. 6039). Sheriff Powell understood that "alerting" the public (through siren sounding) was distinguishable from "notifying" the public (through some form of instructions) in the context of an emergency situation (Tr. 6049-50). He intended to undertake the latter function, through door-to-door physical notification, which he estimated could take 6-10 hours to complete. Tr. 6026, 6030.

16. The Applicant presented written supplemental testimony from Kenneth E. Beale (fol. Tr. 6061) regarding Sheriff Powell's position. The Applicant also presented the additional oral testimony of George R. Wise (state emergency planning official) and Hugh K. Boyd (Richland County emergency planning official) (Tr. 6054-6091). Several documents^{3/} offered by Applicant were received in evidence.

17. Mr. Beale explained that the use of vehicular sirens as a method of public alert is not being relied on. Tr. 6054. He testified that his previous estimate that it would take approximately 60 minutes for local emergency vehicles to get into location and sound their sirens was consistent with Sheriff Powell's testimony on the subject. Beale testimony at 2. He pointed out that there were other organizations and volunteers to assist in siren sounding, if necessary, and referenced the January 8 memorandum from Hugh Boyd and January 12 memorandum from George Wise to that effect. Id. at 3.

^{3/} Memorandum from H. Boyd to K. Beale, dated January 8, 1982 (Applicant's Exhibit 46) and Memorandum from G. Wise to K. Beale, dated January 12, 1982 (Applicant's Exhibit 47) (Tr. 6061).

18. Mr. Boyd appeared at the hearing to introduce his January 8 memorandum to Mr. Beale (Applicant's Exhibit 46) and answer related questions. Mr. Boyd testified that the Ballantine Volunteer Fire Department, Columbia Police Department, Columbia Amateur Radio Club, and the Sheriff's volunteer Trained Organization Patrol were available to assist the Richland County Sheriff's Office, if necessary, to alert and notify county residents in the plume exposure EPZ. Applicant's Ex. 46; Tr. 6062.

19. Mr. Wise appeared at the hearing to introduce his January 12 memorandum to Mr. Beale (Applicant's Exhibit 47) and answer related questions. Mr. Wise testified that his office stood ready to assist Richland County with public alert and notification efforts upon request. This included assistance from the State Wildlife Office, State Highway Patrol, and State Law Enforcement Division. If deemed necessary, and authorized by the Governor, National Guard troops could be mobilized. Applicant's Ex. 47; Tr. 6065-67, 6078.

20. Both Mr. Boyd (Tr. 6069) and Mr. Wise (Tr. 6070, 73) emphasized that the purpose of the siren was to alert people to turn on their radio or television or to contact a neighbor for emergency instructions.

21. In light of the above, and the record compiled earlier in the proceeding, the Board finds that the Applicant's siren alert system constitutes an adequate and reliable means of providing early notice of an emergency to the populace within the plume exposure EPZ. Further, although not required by the Commission's regulations, an adequate back-up means of public alert, through the systematic use of vehicular sirens, exists in the unlikely event the fixed siren alert system is

inoperative or unuseable. There is no evidentiary basis for finding that, in the event of need, the backup provisions for public alerting would not accomplish public alerting promptly as planned. This Board's original findings of fact relative to contention 8 remain unaltered.

IV. CONCLUSIONS OF LAW

Based upon the entire evidentiary record of this proceeding, and upon the foregoing Findings of Fact, the Board concludes, as relevant to contention 8, that the Applicant has established adequate means to provide early notification to the populace within the plume exposure EPZ pursuant to 10 CFR §50.47(b)(5) through the installation of a fixed siren alerting system and companion emergency broadcast system. This Board's original overall conclusion relative to contention 8 remains unaltered.

Respectfully submitted,



Steven C. Goldberg
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 12th day of March, 1982

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF SUPPLEMENTAL PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON EMERGENCY PLANNING ISSUES" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, by deposit in the Nuclear Regulatory Commission's internal mail system, this 12th day of March, 1982:

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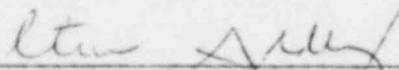
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