

January 14, 1985

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USNRC

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

SECRETARY
OF THE BOARD

In the Matter of)
)
CAROLINA POWER & LIGHT COMPANY)
and NORTH CAROLINA EASTERN)
MUNICIPAL POWER AGENCY)
)
(Shearon Harris Nuclear Power)
Plant))

Docket No. 50-400 OL

APPLICANTS' MOTION FOR SUMMARY
DISPOSITION OF EDDLEMAN 213 AND MOTION
TO TOLL PARTIES' RESPONSE TIMES

Carolina Power & Light Company and North Carolina Eastern Municipal Power Agency ("Applicants") hereby move the Atomic Safety and Licensing Board ("Board"), pursuant to 10 C.F.R. § 2.749, for summary disposition in Applicants' favor of Eddleman Contention 213. As discussed herein, there is no genuine issue as to any fact material to Eddleman Contention 213, and Applicants are entitled to a decision in their favor on Eddleman Contention 213 as a matter of law.

This motion is supported by:

1. "Applicants' Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard on Eddleman 213";
2. "Affidavit of M. Reada Bassiouni on Eddleman 213" ("Bassiouni Affidavit");
3. "Affidavit of Robert G. Black, Jr. on Eddleman 213" ("Black Affidavit");

4. Report documenting the analysis of the warning system design for alerting of boaters, waterskiers and swimmers on Harris Lake (forthcoming); and

5. "Applicants' Memorandum of Law In Support of Motions For Summary Disposition of Emergency Planning Contentions," (filed October 8, 1984).

I. PROCEDURAL BACKGROUND

Eddleman Contention 213 was initially advanced in "Wells Eddleman's Contentions on the Emergency Plan (Second Set)" (April 12, 1984). Eddleman 213 was admitted as a contention in this proceeding in the Board's "Memorandum and Order (Further Rulings on Admissibility of Offsite Emergency Planning Contentions Submitted By Intervenor Eddleman)" (June 14, 1984), at 14-15. As admitted by the Board, Eddleman 213 contends:

The boater notification plan (part 5, p. 15) does not include the Harris Lake, does not guarantee sufficient boats or personnel to conduct warnings, and in particular makes no provisions for boat or traffic accidents during evacuation of potentially thousands of boaters from the lake. This violates 10 C.F.R. 50.47(a)(1) which requires appropriate protective measures. Such measures should include limiting the number of boaters on the lake when the Harris reactor is critical or whenever fuel handling operations are in progress at Harris. Logically, adverse consequences to boaters can be reduced by reducing the number of boaters. The same logic applies even more to swimmers and water-skiers who will be harder to get out.

Applicants have served one set of interrogatories and request for production of documents on Mr. Eddleman on the subject of Eddleman 213. See "Applicants' Emergency Planning

Interrogatories and Request For Production of Documents To Intervenor Wells Eddleman (First Set)" (August 9, 1984), at 19-20. "Wells Eddleman's Response to Applicants' 8-09-84 Emergency Planning Interrogatories" was filed September 7, 1984. Mr. Eddleman has served two sets of interrogatories on Applicants on the subject of Eddleman 213. See "Wells Eddleman's General Interrogatories to Applicants Carolina Power & Light, et al. (9th Set)" (June 29, 1984), at 10; and "Wells Eddleman's General Interrogatories to Applicants Carolina Power & Light, et al. (10th Set)" (August 9, 1984), at 13. "Applicants' Response to Wells Eddleman's General Interrogatories to Applicants (Ninth Set)" was filed on July 25, 1984; and "Applicants' Response to Wells Eddleman's General Interrogatories (Tenth Set)" was filed on September 7, 1984. Mr. Eddleman has served two sets of interrogatories on the NRC Staff/FEMA on the subject of Eddleman 213. See "Wells Eddleman's Interrogatories to NRC Staff and FEMA (4th Set)" (June 29, 1984), at 5; and "Wells Eddleman's Interrogatories to NRC Staff and FEMA (5th Set)" (August 9, 1984), at 8. "FEMA Staff Response to Interrogatories Propounded By Intervenor Wells Eddleman" and "FEMA Staff Response to Interrogatories Propounded By Intervenor Wells Eddleman" were filed on August 14, 1984 and September 18, 1984, respectively. The NRC Staff/FEMA did not file any discovery requests on Eddleman 213. The last date for filing discovery on the contention was August 9, 1984. Discovery on this contention is, therefore, complete.

Eddleman Contention 213 is classified as an emergency planning contention to be addressed in the hearings scheduled to commence June 18, 1985. Written direct testimony on the contention is scheduled to be filed June 3, 1985. Further, the Board and the parties have established January 14, 1985 as the last day for filing summary disposition motions on this contention. Thus, the instant motion is timely, and Eddleman Contention 213 is ripe for summary disposition.

II. GOVERNING LEGAL STANDARDS

A. Summary Disposition

"Applicants' Memorandum of Law In Support of Motions For Summary Disposition of Emergency Planning Contentions," filed October 8, 1984, is fully applicable to this Motion and is incorporated by reference herein.

B. Substantive Law

The Commission's emergency planning regulations, at 10 C.F.R. § 50.47(b)(5), require, in relevant part, that:

* * * means to provide early notification * * * to the populace within the plume exposure pathway Emergency Planning Zone have been established.

See also 10 C.F.R. Part 50, Appendix E, § IV.D.3. As noted in footnote 1 to 10 C.F.R. § 50.47, this standard is further addressed by NUREG-0654/FEMA-REP-1, "Criteria For Preparation

and Evaluation of Radiological Emergency Response Plans and Preparedness In Support of Nuclear Power Plants" (Rev. 1, November 1980).

NUREG-0654 Criterion E.6 provides, in relevant part:

Each organization shall establish * * * physical means, and the time required for notifying * * * the public within the plume exposure pathway Emergency Planning Zone. (See Appendix 3.)

Appendix 3 to NUREG-0654 sets forth the regulatory acceptance criteria for emergency public Alert and Notification Systems ("ANS"). These criteria establish, in relevant part, that the ANS as designed must provide:

- a) Capability for providing * * * an alert signal * * * to the population on an area wide basis throughout the 10 mile EPZ, within 15 minutes.
- b) The initial notification system will assure direct coverage of essentially 100% of the population within 5 miles of the site.
- c) Special arrangements will be made to assure 100% coverage within 45 minutes of the population who may not have received the initial notification within the entire plume exposure EPZ.

NUREG-0654, at 3-3. However, these criteria are qualified:

The design objective for the system shall be to meet the acceptance criteria of section B of this Appendix [quoted immediately above]. This design objective does not, however, constitute a guarantee that early notification can be provided for everyone with 100% assurance or that the system when tested under actual field conditions will meet the design objective in all cases.

NUREG-0654, at 3-1 (emphasis supplied).

NUREG-0654 establishes numerical design criteria for fixed siren systems, which are discussed in greater detail in FEMA-43, "Standard Guide For The Evaluation of Alert and Notification Systems For Nuclear Power Plants" (September 1983).^{1/} These guidance documents provide that an applicant may -- at its option -- either (a) design its siren system adopting certain population density-dependent assumptions specified in the guidance documents regarding average daytime ambient sound levels, or (b) design its system based on its actual measurements of average daytime ambient sound levels. See NUREG-0654, at 3-10 to 3-12; FEMA-43, at E-6 to E-8. FEMA-43 states unequivocally:

The NUREG-0654/FEMA-REP-1 criteria, as quoted earlier, are satisfied when * * * for those geographical areas to be covered by fixed sirens, either (a) the expected siren sound level generally exceeds 70 dBC where the population density exceeds 2,000 persons per square mile and 60 dBC in other inhabited areas, or (b) the expected siren sound level generally exceeds the average measured daytime ambient sound levels by 10 dB.

^{1/} As FEMA-43 recognizes, applicants are permitted to employ any of a number of means to alert the public. "The means of alert is at the option of the licensee." FEMA-43, at E-3.

FEMA-43, at E-7 to E-8.

The numerical criteria specified in NUREG-0654 and FEMA-43 are based on the regulatory agencies' studies which established that "50 db(a) is a conservative estimate of the average day time ambient in areas with population below 2000 persons/per square mile." See NUREG-0654, at 3-10. The NRC/FEMA guidance contemplates that "10 db above average daytime ambient background should be a target level for the design of an adequate siren system." See NUREG-0654, at 3-8. (The 50 db ambient plus the 10 db differential produces the 60 db criteria for areas of population density under 2000 persons per square mile.) As explained in NUREG-0654:

The 10 db dissonant differential is a conservative use of the 9 db differential which is discussed in FEMA document CPG-1-17 ["Outdoor Warning Systems Guide" (March 1980)]. Research has shown that a person is capable of being alerted by such a differential above or below the background ambient in the case of a predominantly narrow band 300 to 800 Hz emitted by large sirens.

NUREG-0654, at 3-9 (emphasis in the original).

Finally, "the siren system must be enhanced by other alerting methods" only "[w]here the estimated siren sound level does not generally meet the specified level based either on population density or a 10 dB differential between the measured average ambient sound and estimated siren sound level."

FEMA-43, at E-8.

The regulatory guidance acknowledges that methods other than fixed siren systems -- for example, mobile alerting -- may be "the most cost-effective method for alerting individuals in small populated areas, such as parks, where seasonal and diurnal variations in the population make a fixed siren system less cost effective." FEMA-43, at E-17. Further, FEMA and the NRC recognize the unique problems posed in notification of the public in recreation areas. Indeed, the regulatory guidance contemplates the need in some cases for "special requirements exceptions (e.g., for extended water areas with transient boats or remote hiking trails) * * * ." NUREG-0654, at 3-3. See also FEMA-43, at E-5 (referring to need for "special requirements or exceptions" for, inter alia, recreation areas). Finally, the regulatory guidance notes that some special means of notification for recreation areas may not be implementable in inclement weather, but points out that -- as a practical matter -- "such areas are less likely to be used in bad weather." Accordingly, "[t]hese areas should be reached on a best effort basis." NUREG-0654, at 3-16.

III. ARGUMENT

Applying the Commission's summary disposition standards to the facts of this case, it is clear that the instant motion for summary disposition of Eddleman 213 should be granted. As discussed above, federal guidance indicates that a siren system

may be designed so that the siren sound level either provides 60/70 dBC acoustic alert coverage (depending on the population density of the area) or provides 10 dBC above the average outdoor daytime ambient sound level. The existing siren system is designed to provide the required 60 and 70 dBC public alert coverage for most inhabited areas within the EPZ. Further, based on an ambient background noise survey conducted in accordance with the procedures prescribed in FEMA-43, the average measured outdoor daytime ambient sound level for regions outside the 60 dBC coverage was conservatively established as 40 dB. Because the entire Harris EPZ is covered by a 50 dBC siren contour, all areas outside the 60 dBC contours meet the NRC/FEMA 10 dB above ambient criterion. Thus, the existing siren system design complies with the NUREG-0654/FEMA-43 guidelines (and the applicable federal regulations) for alerting the public within the Harris EPZ. See "Affidavit of M. Reada Bassiouni on Eddleman 57-C-3" (November 2, 1984), ¶¶ 6-8. Nevertheless, people boating on Harris Lake will likely perceive more than a 60 dB background noise level; thus, a 70 dBC or higher signal would be needed to alert such boaters. Bassiouni Affidavit on Eddleman 213 (hereinafter "Bassiouni Affidavit"), ¶ 3.

The fixed siren system will be the primary means of alerting persons on Harris Lake. Black Affidavit, ¶ 4. Carolina Power & Light Company is in the process of contracting

with ATI to analyze and evaluate the methods of alerting swimmers, boaters, and waterskiers on Harris Lake. As a result of this study, ATI will prepare a report which documents the analysis of the warning system design for alerting of Harris Lake swimmers, boaters, and waterskiers, to ensure that the siren signal is distinguishable above the projected ambient noise levels aboard a boat. Black Affidavit, ¶ 5; Bassiouni Affidavit, ¶ 2.

ATI has developed a computer model to evaluate and estimate acoustic environments based upon several noise sources. Through the ATI model, the acoustic environment will be determined for swimmers, boaters, and waterskiers on Harris Lake. The parameters modeled by the computer to simulate background noise levels on the lake will include the types of recreational activities on the lake; time of year, day of the week, and time of day; demographic distribution on the lake; types of boats in use; number of boats in each type and possible locations; distribution of boats; characteristics of boats; and locations of access points. For the purpose of siren system design, a conservative background noise level among the different cases will be utilized. Bassiouni Affidavit, ¶ 4.

To verify the simulated acoustic environment through the computer model, ATI and CP&L will perform extensive acoustic measurements on the lake. These measurements will include monitoring background noise levels throughout the lake;

determining the ambient noise levels for swimmers, boaters and waterskiers; verifying noise characteristics of different types of boats; and validating computer model parameters and inputs. Bassiouni Affidavit, ¶ 5. Using the data obtained from these measurements and surveys, the computer model will be verified and, if necessary, modified. Bassiouni Affidavit, ¶ 6.

Based upon the simulated background noise levels on the lake, developed through the computer model, the existing siren system will be enhanced to ensure that the siren signal is distinguishable above the projected ambient noise levels aboard a boat. Such a signal would also be sufficient to alert swimmers and waterskiers. Black Affidavit, ¶ 6; Bassiouni Affidavit, ¶ 7.

In summary, the proposed alert system for boaters, swimmers, and waterskiers on Harris Lake is being evaluated. Actual background noise acoustic measurements of activities on the lake are planned, and modeling for simulation of activities of the population on the lake will be performed. A report will be prepared to document the design, evaluation, and verification of the alert system for boaters, swimmers and skiers on Harris Lake. Bassiouni Affidavit, ¶ 8. Because the report describing the enhanced system design and demonstrating the ability of the signal to alert boaters is scheduled for issuance in early Spring 1985,^{2/} Applicants respectfully request

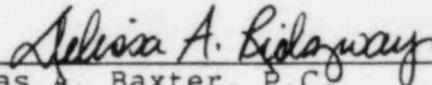
^{2/} Applicants will serve the Board and all parties with copies of the report promptly upon receipt.

that the Board hold this motion in abeyance, and toll all parties' response times, pending availability of the technical report.

IV. CONCLUSION

Upon issuance of the ATI report on the enhanced alerting system for Harris Lake, no genuine issue of material fact will remain to be heard on Eddleman Contention 213. Accordingly, upon issuance of that report, and the receipt of responses from Mr. Eddleman and the NRC Staff/FEMA, Applicants' Motion For Summary Disposition of Eddleman 213 should be granted.

Respectfully submitted,



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Dated: January 14, 1985

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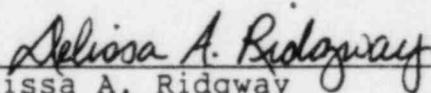
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OFFICE OF SECRETARY
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BRANCH
Docket No. 50-400 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "Applicants' Motion For Summary Disposition of Eddleman 213 and Motion To Toll Parties' Response Times," "Applicants' Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard on Eddleman 213," "Affidavit of M. Reada Bassiouni on Eddleman 213," and "Affidavit of Robert G. Black, Jr. on Eddleman 213" were served this 14th day of January, 1985, by deposit in the U.S. mail, first class, postage prepaid, upon the parties listed on the attached Service List.



Delissa A. Ridgway

Dated: January 14, 1985

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NUCLEAR REGULATORY COMMISSION

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