PDR-016

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

May 9, 1984

Docket No. 50-413/414

Ms. Donna M. Ahler
Palmetto Alliance, Inc.
2135 1/2 Devine Street
Columbia, SC 29205

IN RESPONSE REFER
TO FOIA-84-253

Dear Ms. Ahler:

This is in further response to your letter dated April 2, 1984, in which you requested, pursuant to the Freedom of Information Act, records regarding emergency planning for the Catawba Nuclear Station Units 1 and 2.

A copy of the documents listed on the Appendix A is enclosed.

The documents listed on Appendix B have already been made available for public inspection and copying at the NRC Public Document Room (PDR), 1717 H Street, NW, Washington, DC 20555. The charge for reproducing documents located in the PDR is five cents ($0.05) per page, as specified in 10 CFR 9.14(a). Copies of these documents can be purchased by writing directly to the PDR. Upon your agreement to pay the reproduction charges, the PDR will arrange for the records to be reproduced by the Literature Research Company (LRC), a private reproduction contractor servicing the PDR. You will be billed by LRC for the reproducing charges, plus tax and postage.

The NRC has not completed its review of the remaining documents subject to your request. We will respond as soon as that review is completed.

Sincerely,

J. M. Felton, Director
Division of Rules and Records
Office of Administration

Enclosures: As stated

APPENDIX A

1. Contention 1 undated

2. NRC Staff Response to CESG and Palmetto Alliance Interrogatories to Duke and NRC Staff re: Emergency Planning Contentions dated February 14, 1984

3. Proposed Catawba Nuclear Station Emergency Plan for Southwest Charlotte dated March 21, 1984

4. Memorandum and Order concerning Motion to Bifurcate Proceeding dated February 22, 1984

5. Recommendations from Palmetto undated, 1 page

6. Letter from Bishop, Liberman, Cook, Purcell and Reynolds to Morton B. Margulies, ASLB, dated March 12, 1984

7. Adjudicatory Hearing Schedule of Emergency Planning Contentions dated April 4, 1984

8. Maps of Emergency Planning Zone for Southwest Charlotte, 2 pages

9. Cover letter and page 4 of Inspection Report Nos. 50-413/84-23 and 50-414/84-14 dated March 21, 1984

10. Memorandum from W. V. Thomas to File dated February 24, 1984

11. Letter from Hal Tucker to James P. O'Reilly, dated November 30, 1983

12. Letter from Hugh Dance to H. B. Tucker, dated December 22, 1983

13. Letter from Elinor Adensam to H. B. Tucker, dated August 18, 1983

14. Letter from H. B. Tucker to H. R. Denton, dated July 26, 1983

15. Inspection Report Nos. 50-413/83-23 and 50-414/83-20 dated September 13, 1983

16. Inspection Report Nos. 50-413/83-29 and 50-414/83-25 dated September 30, 1983

17. Emergency Preparedness Appraisal dated December 28, 1983

18. Inspection Report No. 50-413/84-12 and 50-414/84-08 dated March 7, 1984

APPENDIX B

1. Letter from H. B. Tucker to H. R. Denton dated April 20, 1983, transmitting evacuation times, DCS Accession No. 8305160293/PDR

2. Letter from H. B. Tucker to H. R. Denton dated July 14, 1983, transmitting implementing procedures, DCS Accession No. 8311100376/PDR

3. Letter from H. B. Tucker to H. R. Denton dated February 16, 1983, TRANSMITTING Rev. 2 of the Emergency Plan, DCS Accession No. 8303100168/PDR

Copies to Stohr/Trojanowski 2/17/84 Brad Jane 3

February 14, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of	)	
DUKE POWER COMPANY, et al.	)	Docket Nos. 50-413 50-414
(Catawba Nuclear Station Units 1 and 2)	)	

NRC STAFF RESPONSE TO CESG AND PALMETTO ALLIANCE INTERROGATORIES TO DUKE AND NRC STAFF RE EMERGENCY PLANNING CONTENTIONS

The NRC Staff herewith provides its answers to "CESG and Palmetto Alliance Interrogatories to Duke and NRC staff Re Emergency Planning Contentions, First Round", dated January 26, 1984. As the Staff has done with previous interrogatories directed to the Staff, the Staff has examined the subject interrogatories in light of the requirements of 10 C.F.R. § 2.720(h)(2)(ii), and determined to respond (or object, as appropriate) to interrogatories numbered 1-13, 3-21, 3-28, 7-8, 7-9, 7-10, 7-15, 8-33, 8-44, 8-47, 11-2, 11-4, 11-12, 11-13 and 11-14.1/

1/ The Staff notes that there is no showing by CESG or Palmetto that answers to the interrogatories directed to the Staff are either necessary to a proper decision in this proceeding or are not reasonably available from other sources. 10 C.F.R. § 2.720(h)(2)(ii). We further note that the subject interrogatories have been forwarded to FEMA for their review and voluntary response, as appropriate, as their responsibilities with respect to emergency preparedness concern off-site emergency planning and review and the assessment of State and local emergency plans for adequacy. See Memorandum of Understanding Between NRC and FEMA to Accomplish A Prompt Improvement In Radiological Emergency Planning and Preparedness, NUREG-0755, at D-3. I have been informed that due to FEMA's involvement in and evaluation of the exercise planned for February 15 and 16 their responses to any interrogatories will not be filed before mid-March.

The Staff responds to these interrogatories and not the others directed to the Staff on the basis that had there been a proper showing under Section 2.720(h)(2)(ii), the Staff could have been required to respond to these interrogatories. While the Staff does not waive its right to assert as to any other interrogatories objections based upon Section 2.720(h)(2)(ii), the Staff believes the procedure adopted reduces the number of discovery pleadings and serves to expedite the discovery process.

Respectfully submitted,

Henry J. McGurren
Counsel for NRC Staff

Dated in Bethesda, Maryland
this 14th day of February 1984.

Interrogatory 1-13

Has the NRC staff critiqued this brochure? If so, provide critique.

Response

The Federal Emergency Management Agency (FEMA) has reviewed and critiqued the offsite/public aspects of emergency preparedness including the public information brochures prepared by Duke Power Co. for the Catawba site. Attached is a copy of the review comments transmitted to Duke Power Co. for their consideration in the next revision of the brochure.

Interrogatory 3-21

Will reimbursement be provided under the Price-Anderson Act for expenditures related to evacuation and away-from-home sheltering?

Response

The Price-Anderson Act provides a system of nuclear liability insurance to pay claims by members of the public for personal injury and property damage resulting from a nuclear accident. Price-Anderson provides coverage for immediate assistance following a nuclear accident and funds would be available to pay costs related to evacuation, such as for food, shelter and emergency medical care. The only instance where evacuation assistance has been needed was in connection with the Three Mile Island Unit 2 (TMI-2) accident that began on March 28, 1979. In this case, the insurance pools responded rapidly by establishing an office to pay claims for the living expenses of the families who evacuated the five-mile area around the reactor. On March 31, 1979, the first day of the operation at the emergency claims center, the pools made

payments of the almost $12,000. A total of approximately $1.4 million in claims for living expenses and lost wages was paid by July 1979 to some 3,170 claimants.

It is not as clear, however, as to whether the expenses incurred by state and local municipalities in responding to a nuclear accident would be covered under Price-Anderson. The only case to date on this issue was brought before the U.S. District Court for the Middle District of Pennsylvania by the Commonwealth of Pennsylvania, two municipalities, and a class of other local municipalities within a 100 mile radius of the TMI-2 reactor. Plaintiffs sought damages for overtime, operational expense and lost work time incurred in responding to the accident. The Court determined that the Pennslyvania Emergency Management Services Code designated the role and responsibilities of the Commonwealth of Pennslyvania and its subdivisions in the event of an emergency, including a nuclear accident, and that the Code had no provisions for recovery of expenses by municipalities in responding to any disaster. Further, the Court found that because all of the expenses claimed by the plaintiffs were for purely economic losses and not for expenses incurred in either protecting or restoring government property damaged in the TMI-2 accident, the plaintiffs were not entitled to recovery.

Interrogatory 3-28

In the FEIS at p. 5-39 it is stated in connection with the consequence/probability data that "early evacuation of the plume exposure pathway was ensured." What does this mean in regard to operations during an emergency? What does it translate to in terms of the assumptions made in the CRAC calculation including specifics such as demography, weather, evacuation rate as miles per hour normal to plume pathway, and numbers of persons over the range of dosages?

Response

The sentence "For these calculations, early evacuation of the plume exposure pathway EPZ was ensured" appearing on page 5-39 of the FEIS refers to the assumptions used in computing the probability distributions in Figures 5.3 through 5.6. The evacuation models are described in Appendix F. For the computations referred to by the quoted sentence, the population in the EPZ was modeled as remaining stationary for one hour, and then moving radially from the EPZ at a constant velocity of 3 meters/sec (6.7 mph). The CRAC code performed these calculations for all 91 weather sequences to produce the dose distributions in the cited figures. The CRAC algorithm does not permit movement normal to the plume pathway.

Interrogatory 7-8

What does FEMA/NRC consider a fully effective list of the actions to be taken by a person in the EPZ hearing the warning siren? Provide detail in regard to preparing and/or choosing shelter.

Response

In response to the siren, persons in the EPZ should immediately turn on the radio or television to (one of) the local emergency broadcast station(s) to receive information on the emergency as directed in the public information brochure. The public information brochure, when revised per the attachment (as noted in Response to Interrogatory 1-13), will contain an adequate list of actions to be taken by the public in the event of an emergency, including sheltering.

Interrogatory 7-9

For what spectrum of releases do FEMA/NRC see sheltering as being more beneficial than evacuating?

Response

The NRC staff believes that the choice between sheltering vs. evacuation is complex one depending upon the severity of the accident, its estimated timing of release, the distance from the reactor, and special circumstances, such as adverse weather conditions, that may prevail at the time of an accident.

Generally, the Staff believes that, where time permits, evacuation is preferable to sheltering at close-in distances (within about 2 miles) for most degraded core conditions. Beyond this distance, the Staff estimates that sheltering of the population followed by relocation of those members of the public exposed to high levels of ground contamination may be about as beneficial as evacuation. However there exist special circumstances, such as adverse weather conditions, where evacuation might be temporarily infeasible, and might impose a greater degree of risk to the public than sheltering.

Interrogatory 7-10

For what periods of time may sheltering last?

Response

Sheltering times may last from periods of about one hour up to about one day.

Interrogatory 7-15

Is there a requirement prominently to display sheltering instructions? Does the NRC favor such a requirement?

Response

10 CFR 50 Appendix E, Section IV D,2 states that ..."Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs." NUREG-0654 contains the criteria, Section G, that the means for accomplishing this dissemination may include, but are not necessarily limited to: information in the telephone book; periodic information in utility bills; posting in public areas; and publications distributed on an annual basis.

Also, the public information programs should include provision for written material that is likely to be available in a residence during an emergency. Updated information shall be disseminated at least annually. Signs or other measures (e.g., decals, posted notices or other means, placed in hotels, motels, gasoline stations and phone booths) should also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an emergency or accident occurs. Such notices should refer the transient to the telephone directory or other sources of local emergency information and guide the visitor to appropriate radio and television frequencies.

Interrogatory 8-33

What scenarios would call for an evacuation order before SERT was able to function--7 to 9 hours from inception?

Response

Any developing situation that threatens to release radioactive material into the atmosphere, either through the vent stack or rupture of a containment could result in a recommendation to offsite authorities that the population at risk be evacuated or sheltered depending upon the circumstances.

Interrogatory 8-44

Please provide EPA 520/1-78-001B, a factor in protective action consideration.

Response

EPA 520/1-78-016 entitled "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans In Support of Light Water Nuclear Power Plants," dated December 1978 is available for your inspection and copying at the NRC Public Document Room. See Pennsylvania Power and Light Company (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 323 (1980).

Interrogatory 8-47

Memorial Hospital has 10 "radiation beds". What accidental release would most likely result in this number of people requiring such treatment?

Response

Only severe accidents, such as core-melt releases, would result in this number of people, or greater, requiring such treatment. Further,

only about 30 percent of all core-melt accidents are estimated to result in doses that could require such treatment.

Interrogatory 11-2

Does NRC contest CESG's meteorological testimony? If so, in what respects?

Response

The Staff has reviewed the direct testimony of John Purvis presented on behalf of CESG concerning DES Contention 17. In General, the Staff does not contest the statistical meteorological information (e.g., average wind speed, wind direction frequency, annual precipitation) presented in the direct testimony. However, some of the statements in the direct testimony are incomplete and/or misleading. For example, the statement on page 2 concerning reversals of wind direction is not supported by the preceding discussion of average wind direction frequencies. Wind direction reversals can only be identified by analyzing an ongoing record of wind direction occurrences, such as on a strip chart recorder monitoring the movement of a wind vane. Similarly, the statement on page 3 concerning deposition of particulate matter during "relatively still air" is most relevant to large particles which are influenced by gravity and, therefore, have appreciable settling velocities. Small particles are more influenced by atmospheric turbulence, and, during "relatively still air" and stable atmospheric conditions, these particles will likely remain aloft. The direct testimony is also somewhat misleading with respect to the amount of precipitation measured at Charlotte compared to other areas. Normal

annual total precipitation at Charlotte is typical of the normal annual precipitation for states along the Atlantic coast of the United States. Annual precipitation amount higher than that at Charlotte are typically observed throughout the southeastern United States. The reference to "rainout" of page 5 of the direct testimony is incorrect. Rainout is a specific mechanism for removal of material from the atmosphere through interaction with cloud and precipitation development processes. This mechanism is unlikely to be involved in removal over Charlotte of material generated by the Catawba plant because of insufficient time for interaction with the cloud and precipitation development processes in the travel distance between Catawba and Charlotte. The most likely wet deposition mechanism affecting Charlotte is that of washout, whereby material below a cloud is removed through contact with falling precipitation. The direct testimony also presents wind direction information for the Catawba site for the period June 30, 1971 to June 30, 1972. The Staff considers onsite wind data for the two-year period December 17, 1975 to December 16, 1977 to be a better representation of wind direction frequencies in the vicinity of the Catawba plant.

Interrogatory 11-4

What fraction of the population of Charlotte are aware of NRC and Sandia Laboratory findings that early deaths could result as far as 20-25 miles from the point of release in a major accident?

Response

This information is not within the possession of the NRC and would require extensive independent research to develop. See Susquehanna, ALAB-613, supra, at 334.

Interrogatory 11-12

Has the NRC staff considered the appropriateness of including some or all of Charlotte in the EPZ? IF so, provide these considerations.

Response

Under 10 CFR 50.47(c)(2), the exact boundaries of the 10-mile EPZ are determined "in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries." Adverse meteorological conditions, however, have been factored into the planning basis assumptions and analyses which led to the Commission adoption of the "about 10-mile" standard. See, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," NUREG-0396/EPA 510/1-78-016, December 1978, pp. 16-17 I-26-I-34. The guidance in this report "is now reflected in the NRC Final Rule on Emergency Planning" (NUREG-0654, Rev. 1, page 6). See also, 10 CFR Section 50.47, footnote 1.

Also, the plans need not consider the speculative possibility that in the future, a portion of the City of Charlotte might encroach upon the "10-mile EPZ," as currently formulated. If this were to happen, the State and local authorities involved could then consider the need for appropriate coordination. However, in any event, the mere fact that a

small peripheral portion of the jurisdiction of Charlotte might, in the future, fall within the currently formulated EPZ would not justify inclusion of all of Charlotte in the EPZ under 10 CFR Section 50.47(c)(2). Nor does the flow of evacuees through Charlotte, or the possibility of "volunteers" adding to the traffic, warrant treating Charlotte as a part of the plume exposure pathway EPZ. At most, traffic control may be required along evacuation routes. This is provided for in the North Carolina Emergency Response Plan, Part 1, page 50.

Finally, the City of Charlotte has, in place and operating, an effective emergency evacuation plan, which has been exercised, at least in part, on several occassions. For example, on Sept. 13 & 14, 1982, an area of approximately 4 to 5 square miles was evacuated due to a fire at the Baxter - Harris Chemical plant, involving approximately 2,000 people.

Interrogatory 11-13

Referring to Tr. 11,321, do the 19,000 early fatalities mentioned involve one sector only? If so, provide the corresponding early fatalities and early illnesses in the remaining sectors and the early illnesses in the subject sector. How far from Catawba do fatalities reach in each sector? Early illnesses?

Response

The computed number 19,000 early fatalities was the largest of all computations of accident sequences used to generate the probability distribution labeled "evac to 10 mi" (evacuation to 10 miles) in Figures 5.6 on page 5-63 of the FEIS. For this peak consequence, the likelihood was once in 100,000,000 reactors years, and the wind was assumed to blow into one sector only for the entire course of the accident. The plume width, however, need not have been limited to that

one sector. The corresponding peak consequences for winds into other sectors are not contained in the CRAC output. The latent cancer fatality risk isopleths are graphed for all sectors in Figure 5.9, page 5-66 of the FEIS, but the distributions requested were not computed.

Interrogatory 11-14

The FEIS, p. F-4, also refers to 24,000 fatalities. What are the differences for arriving at the number and for arriving at 19,000? What was Dr. Read's reason for not mentioning the 24,000 number?

Response

In order to demonstrate the sensitivity of computed risk to changes in the early health effects model, one CRAC computation was redone without the assumption of supportive medical treatment. This was reported in Appendix F as resulting in an increase in peak computed consequences from 19,000 to 24,000, and a doubling of risk. There is no apparent reason for including this computation in a discussion of Table 5.12 of the FEIS, nor is there any apparent reason for supposing supportive medical treatment would be denied following a reactor accident.

JAN 20 1984

Docket Nos.: 50-413
and 50-414

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Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Comments on the Public Information Brochure and Transmittal of the Fire Protection Site Audit Summary - Catawba Nuclear Station

In the performance of the Catawba Station licensing review, the NRC staff has completed its review of the public information brochure for Catawba with the assistance of the Federal Emergency Management Agency (FEMA). Our comments are included (Enclosure 1) for your consideration in revising the brochure. Enclosure 2 is a summary of the fire protection site audit conducted at the Catawba Station on November 1 through November 4, 1983. This summary includes several concerns discussed with you during the site audit. We request that you provide your responses to our concerns by February 21, 1984. If you have any questions, please contact the Licensing Project Manager, Kahtan Jabbour, at (301) 492-7800.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

/s/

Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Enclosures:
As stated

cc w/ enclosure:
See next page

8402010243

CATAWBA

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ENCLOSURE 1

COMMENTS ON THE PUBLIC INFORMATION BROCHURE

CATAWBA NUCLEAR STATION

The NRC staff has completed its review of the public information brochure for Catawba Nuclear Station with the assistance of the Federal Emergency Management Agency (FEMA), who has primary responsibility for offsite emergency preparedness matters. Our comments are included for your consideration in revising the brochure.

(1) In the section "We Want You To Be Prepared" at the very beginning of the brochure, it should be mentioned that the brochure is not only for people who reside within 10 miles of the Catawba Nuclear Power Station but also those who work there but live elsewhere.

(2) In the section "If You Are Ordered To Evacuate" on p. 10, item 5 should be expanded to explain the pertinent functions of the reception center such as a check for possible radiation contamination.

(3) In the section "What If My Children Are In School?" on p. 11, a better format would make it easier for parents to locate the specific school emergency information. For example, it would be useful to have one or two fill-in-the-blanks sections right below these instructions, with

entries such as "child's name...," "school..." and "pick-up point..." A separate listing of schools and their associated reception centers would improve the Brochure. Such techniques have proven helpful in other brochures.

(4) In the section "What If I Don't Have Transportation?" on p. 11, people should call in advance to ensure that they are identified as ones needing transportation.

(5) In the section "If You Are Ordered To Evacuate" on p. 10, an additional instruction could be added, i.e., residents could be advised to leave a towel or white cloth on the door to indicate to the local authorities that they have left, to facilitate the task of emergency workers who verify that areas have been evacuated. This type of signal should be included in the training of offsite local emergency workers.