I-EP-13 5/3/84 Ans to EP-13

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)	)	February 22, 1984

APPLICANTS' ANSWERS AND OBJECTIONS TO CAROLINA ENVIRONMENTAL STUDY GROUP'S AND PALMETTO ALLIANCE'S FIRST ROUND OF INTERROGATORIES

In answering these interrogatories, it has been necessary for Applicants to refer some of them to and seek information from the state and local agencies involved in off-site emergency planning for Catawba Nuclear Station as well as to obtain information from other off-site organizations (including the Red Cross and telephone companies). To the extent that Applicants have thereby undertaken research to respond to interrogatories, we have done so in a spirit of cooperation but we do not thereby waive any proper objection thereto. Applicants have not yet received the requested information from the state and local agencies who have been preoccupied with the recent exercise. As discussed with and agreed to by Mr. Riley, Applicants will supplement their answers when such information is received. Moreover, because of the timing of these interrogatories such that responses were due after the close of discovery and during the period when many of the Duke personnel involved in responding were also engaged in the preparation for and conduct of the recent exercise, these responses were delayed a few days with Mr. Riley's kind consent.

NUCLEAR REGULATORY COMMISSION

Docket No. 50-413 & 414-OL

In the matter of Catawba

Official Exh. No. Duke EP-13

Staff

Applicant

Intervenor ✓

Cont'g Off'r

Contractor

Other

Reporter LJ

IDENTIFIED ✓

RECEIVED ✓

REJECTED

DATE 5/3/84

Witness Cat 1&7 Panel

Contention 7

7-3 DO THE BROCHURE INSTRUCTIONS, P. 9, ITEMS 2 AND 3, EFFECTUATE ADEQUATE SHELTER FOR THE TYPES OF RESIDENCE IN THE EPZ? (DPC, H. D. Brewer)

Yes. Using these instructions, the average shielding factors for houses in this area are;

Shielding factor for passing cloud = 0.74

Shielding factor for ground contamination = 0.31

7-4 WOULD ADEQUATE SHELTERING BE MORE NEARLY REALIZED BY PROVISIONS TO BE MADE IN ADVANCE SUCH AS DUST RESPIRATORS AND SOME MINIMAL SUPPLY OF CANNED FOODSTUFFS AND BEVERAGES? FOR A SEVERE RELEASE WHAT DOSAGE REDUCTION WOULD BE EXPECTED FROM THESE MEANS? (DPC, H. D. Brewer)

a. These measures would not provide any dose reduction from releases of noble gases, the most likely accident for which sheltering would be recommended. If significant amounts of particulates are in the release, evacuation would be the recommended emergency response. Therefore, respiratory protection would only have a limited effect. Information on the effectiveness of various types of respiratory protection are provided in the response to Question 1-14.

b. If significant levels of radioactive particulates are released, evacuation would be the recommended emergency response. Since food and beverages would be supplied at the evacuation centers, the consumption of privately stored food stuffs would not be necessary. Therefore, no dose reduction would be expected.

7-7 HAVE EPZ RESIDENTS BEEN CLEARLY AND IN SUFFICIENT DETAIL ADVISED AS TO WHAT CONSTITUTES INADEQUATE SHELTER? WHAT STRUCTURES ARE LESS EFFECTIVE THAN A CLOSED AUTOMOBILE? (DPC, P. F. Carter, H. D. Brewer)

a. See response to 7-6.

b. For external exposure, any structure would provide better protection than a closed automobile. Dose reduction depends on two factors:

- distance
- attenuation by passage of radiation through material.

Since cars provide little distance and little attenuation, they are not as effective as larger volume houses, buildings, etc. The following reduction factors are provided by WASH-1400, Appendix VI:

	Cars	Wood Frame House (No Basement)	Masonry House (No Basement)
Passing Cloud	1.0	0.9	0.6
Deposited Material	0.5	0.4	0.2

For inhalation exposure, the dose reduction is very dependent on infiltration rates. Cars have high infiltration rates and as such would provide less protection than structures.

7-11 WHAT ADVICE CAN BE GIVEN EPZ RESIDENTS IN REGARD TO CONTINUING SHELTERING IF THERE IS A COMMUNICATIONS BREAKDOWN. FOR EXAMPLE IF THE RESIDENT'S LINE POWERED RADIO OR TV BREAKS DOWN OR IS NOT SUPPLIED WITH POWER? (DPC, P. F. Carter)

See Brochure, Page 8, last line, "In case of an emergency, fire, police and rescue units would patrol the affected areas and sound their sirens." Further, use of battery powered radios and car radios would allow EPZ residents to receive information if they lost power.

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In the Matter of	)	
	)	
DUKE POWER COMPANY, et al.	)	Docket Nos. 50-413
	)	50-414
(Catawba Nuclear Station	)	
Units 1 and 2)	)	March 20, 1984

APPLICANTS' SUPPLEMENTAL ANSWERS TO CAROLINA ENVIRONMENTAL STUDY GROUP'S AND PALMETTO ALLIANCE'S FIRST ROUND OF INTERROGATORIES

The answers herein (except for 1-19 which was inadvertently omitted in our previous response) were provided by state and local agencies and other institutions (as stated in our previous response) and supplement Applicants' answers of February 22, 1984. The objections stated in Applicants' response and cover letter of February 22, 1984 remain applicable to the corresponding questions and answers herein.

Additional answers will be provided upon receipt of same from the North Carolina Division of Emergency Management.

After each interrogatory the agency or institution providing the answer is listed in parenthesis.

Contention 1

1-15 "A STEADY, THREE-MINUTE SIGNAL WOULD SOUND." P.8 JUST ONCE? (SC-EPD)

Answer: No (DPC Note: See 8-22)

(MECKLENBURG COUNTY)

Answer: Vehicles that are contaminated will be staged at the EPZ boundary; the passengers will be provided transportation to shelter. Vehicles will be decontaminated at shelters if necessary. Standard fire hoses and fire equipment can be used to decontaminate vehicles. The rate of decontamination depends on water supply, level of contamination, and available resources. If a commercial facility is to be used, it is assumed the utility, through Price/Anderson Act, will cover cost. The water and other effluents will be diked with logistical and technical support coming from utility, state, and federal agencies.

6-8 WHAT VEHICLE DECONTAMINATION EQUIPMENT IS IN PLACE? AT WHAT RATE CAN THIS EQUIPMENT PROCESS CARS? IF IT IS A COMMERCIAL CAR WASH, HOW WILL PAYMENT BE MADE? WILL THE CONTAMINATED EFFLUENT BE TREATED TO REMOVE THE CONTAMINATION OR WILL IT BE SEWERED? (SC-EPD)

Answer: A. None

B. Unknown

C. No plan to use commercial car wash

D. Disposed of under DHEC--BRH instructions

Contention 7

7-3 DO THE BROCHURE INSTRUCTIONS, P. 9, ITEMS 2 AND 3, EFFECTUATE ADEQUATE SHELTER FOR THE TYPES OF RESIDENCE IN THE EPZ? (SC-DHEC)

Answer: Sheltering inside the average home or other structure provides some reduction in the dose received by external exposure from an airborne plume of radioactive material. The exact degree of reduction depends on the type of construction, whether brick or

concrete (most reduction) or frame (least reduction), the size (dose is reduced with increasing distance from the nearest external wall), and the degree of airtightness. Dose reduction factors for construction typical of the Southeast range from 0.5 to 0.8. If the structure includes a basement, the degree of protection is further increased.

If radioactive material contaminates the ground, dose reduction inside a structure depends on the factors enumerated above. In addition, if a basement is available, the reduction in exposure to ground contamination is much greater. Typical values range from 0.3 to 0.08.

7-4 WOULD ADEQUATE SHELTERING BE MORE NEARLY REALIZED BY PROVISIONS TO BE MADE IN ADVANCE SUCH AS DUST RESPIRATORS AND SOME MINIMAL SUPPLY OF CANNED FOODSTUFFS AND BEVERAGES? FOR A SEVERE RELEASE WHAT DOSAGE REDUCTION WOULD BE EXPECTED FROM THESE MEANS? (SC-DHEC)

Answer: Dust respirators will only protect against airborne particulate contamination. A good quality industrial dust respirator would probably provide more protection than ad hoc measures such as breathing through a damp handkerchief.

Stockpiling canned foodstuffs and beverages would probably not provide any significant additional measure of protection because sheltering is intended to be an interim measure lasting no more than a few hours. The dose reduction available from most structures is not enough to justify extended sheltering; sheltering followed by

evacuation as conditions permit is a more reasonable plan. Dose reduction factors are given in the response to Question 7-3.

7-5 HAS GOVERNMENT ANY AUTHORITY TO REQUIRE THE UPGRADING OF SHELTER CAPABILITY FOR THE RESIDENTS OF THE EPZ? IF THERE IS SUCH AN UPGRADING, CAN THE ASSOCIATED EXPENSE BE PASSED ON TO THE APPLICANT? (SC-ATTORNEY GENERAl)

Answer: While the State and its subdivision may require an upgrading of shelter capability in connection with its comprehensive emergency management, no legislative authority exists which requires associated expenses to be passed on to the applicant.

7-6 HAVE APPLICANT OR LOCAL AUTHORITIES ADVISED EPZ RESIDENTS AS TO HOW TO ACHIEVE ADEQUATE SHELTER?

(YORK COUNTY)

Answer: Duke Power's education process through brochures provided to each household, public media notification of the availability of such information and the utilization of the EBS in an emergency situation should provide adequate education concerning sheltering.

(MECKLENBURG COUNTY)

Answer: Local authorities have provided information upon request. The applicant advises through brochures and through public meetings with local government participation.