

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DOCKETED
USNRC

In the Matter of)

CAROLINA POWER AND LIGHT COMPANY AND)
NORTH CAROLINA EASTERN MUNICIPAL)
POWER AGENCY)

(Shearon Harris Nuclear Power Plant,)
Units 1 and 2))

Docket Nos. 50-400 OL
50-401 OL

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NRC STAFF/FEMA PROPOSED FINDINGS OF FACT
AND CONCLUSION OF LAW ON EMERGENCY PLANNING
CONTENTIONS EPJ-4(b) AND EDDLEMAN 57-C-10

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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50-401 OL

3. Numerous contentions were filed by the Intervenor, Wells Eddleman, Conservation Council of North Carolina (CCNC), Chapel Hill Anti

Nuclear Group Effort (CHANGE), Dr. Richard Wilson and Dr. Phyllis Lotchin. Twenty six of the proffered contentions were admitted. ^{1/} Applicants filed motions for summary disposition on all of the admitted contentions. The Board granted summary disposition of all but three of the contentions. ^{2/} The contentions remaining for litigation were: Emergency Planning Joint (EPJ) Contention 4(b), Eddleman Contention 57-C-10 and Eddleman Contention 57-C-3. Hearing on Contentions EPJ-4(b) and Eddleman 57-C-10 was held June 24 and 25, 1985. ^{3/}

4. Both the Applicants and the Federal Emergency Management Agency (FEMA) provided prefiled testimony and witnesses on these contentions. The Intervenor filed no testimony, but proceeded by cross examination of the Applicant and FEMA witnesses.

III. REGULATORY REQUIREMENTS

5. The regulatory requirements for emergency planning are found in 10 C.F.R. § 50.47 and 10 C.F.R. Part 50 Appendix E. These regulations provide that no operating license for a nuclear power plant will be

^{1/} The admitted contentions were sponsored by CCNC, CHANGE, Mr. Eddleman and Dr. Wilson. a number of the admitted contentions were joint contentions for which the Board designated lead intervenors. All of Dr. Lotchins contentions were rejected.

^{2/} See Memorandum and Order (Ruling on Eleven Summary Disposition Motions), February 27, 1985 and Memorandum and Order (Ruling on Remaining Summary Disposition Motions), April 24, 1985. In those Orders the Board presented only its rulings on Applicants' Motions. The reasons for the grant of summary disposition will be discussed in this Partial Initial Decision.

^{3/} Contention 57-C-3 will be the subject of a later hearing.

issued unless the NRC finds that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. 10 C.F.R. § 50.47(a)(1). Regarding the adequacy of offsite emergency measures, the NRC must base its findings on a review of the FEMA findings and determinations as to whether there is reasonable assurance that the emergency plans can be implemented. 10 C.F.R. § 50.47(a)(2).

6. Guidance as to how these regulatory standards can be satisfied is provided in a regulatory guidance document NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980). The criteria set forth in NUREG-0654 are intended for use in drafting and reviewing emergency plans, and are the criteria against which FEMA determines the adequacy of offsite emergency plans. Duke Power Company, et al. (Catawba Nuclear Station, Units 1 and 2), LBP-84-37, 20 NRC 933, 939 (1984). NUREG-0654 is given "considerable weight" by NRC licensing boards in evaluating emergency plans. Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), LBP-85-12, 21 NRC 644, 653 (1985); Duke Power Company, et al. supra; Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 NRC 1170, 1177 n.5 (1983).

IV. FINDINGS OF FACT

A. Contention EPJ-4(b)

7. Emergency Planning Joint Contention 4(b) was initially advanced in the Contentions of Richard Wilson Concerning North Carolina Emergency

Response Plan (April 13, 1984) as part of Wilson Contention 8. ^{4/}
EPJ-4(b) was admitted as a contention in this proceeding in the Board's
August 3, 1984 Memorandum and Order,
Carolina Power & Light Company, et al. (Shearon Harris Nuclear Power
Plant, Units 1 & 2), LBP-84-29B, 20 NRC 389, 420-21 (1984). As admitted
by the Board, the contention reads as follows:

Section E4d of State Procedures (p. 47) is deficient
because --

Adult bus drivers have minimal education and are paid
very low wages. They cannot be trusted to put their
jobs above family obligations or to perform
adequately in emergency situations.

8. Subsequently, in ruling on the Applicants' Motion for Summary
Disposition of Contention EPJ-4(b), filed January 11, 1985, the Board
ruled out litigation concerning the wage and education levels of the
adult bus drivers. Rather, the Board focused on the fact that adult bus
drivers (as opposed to student drivers) would likely not already be at
the schools when an emergency arose and also would be more likely than
student drivers to have family obligations and the opportunity to weigh
conflicting obligations. ^{5/} Hence, the issue remaining in this
contention concerns "role conflict", that is, that adult bus drivers may
experience a conflict between family obligations and their emergency

^{4/} CHANGE was designated lead intervenor on this contention and
conducted cross-examination during the hearing.

^{5/} Memorandum and Order (Ruling on Remaining Summary Disposition
Motions), April 24, 1985, p. 8 (unpublished).

response role in the event of an evacuation due to a radiological emergency at the Shearon Harris Nuclear Power Plant.

9. Applicants presented the testimony of Joseph F. Myers and Dennis S. Mileti, to address this contention. Mr. Myers is the Director of the Division of Emergency Management (DEM) of the North Carolina Department of Crime Control and Public Safety. The basic responsibility of DEM includes fulfilling the State's role in emergency planning and in responding to and recovering from disasters. As Director of DEM, Mr. Meyers has been involved in the development of offsite emergency capability for the Shearon Harris Nuclear Power Plant, as well as the Catawba, McGuire and Brunswick Nuclear Plants. He has been employed by DEM for nine years, and prior to becoming director, was the area coordinator responsible for offsite emergency plans, drills, and exercises for the Counties involved with the Catawba and McGuire Nuclear Power Plants. He has coordinated the State's response to hundreds of emergencies over the past several years. Dr. Mileti is a Professor in the Department of Sociology and Director of the Hazards Assessment Laboratory at Colorado State University, specializing in the study of organizations, hazards, policy and methods, with a particular emphasis on public response to emergencies. (Testimony of Joseph F. Myers and Dennis S. Mileti on Contentions EPJ-4(b), ff. Tr. 7782 [hereinafter Myers, et al., ff. Tr. 7782].)

10. The Federal Emergency Management Agency (FEMA) presented the testimony of Thomas I. Hawkins and John C. Heard. Mr. Heard is the Chief of the Technological Hazards Branch of FEMA Region IV. Mr. Hawkins is an Emergency Management Program Specialist for FEMA Region IV and provides

the liaison between FEMA Region IV and the States of North and South Carolina. (Testimony of John C. Heard and Thomas I. Hawkins, FEMA, Regarding Emergency Planning Contentions Eddleman 57-C-10 and EPJ-4(b), ff. Tr. 8130 [hereinafter Heard/Hawkins, ff. Tr. 7130].)

11. The concept of "role conflict" or "role strain" in workers in disasters originated in an article by Lewis Killian, "The Significance of Multi-Group Membership in Disaster," American Journal of Sociology, January 1952, pp. 309-314. (Myers, et al., ff. Tr. 7782 at 7.) This was one of the first major publications on behavior in emergencies and disasters that enjoyed widespread distribution among social scientists and it provides a vivid illustration of the consequences of "role conflict." This illustration of the concept has been used to support a recent hypothesis that the ability of emergency workers to do their emergency jobs during a radiological emergency at a nuclear power plant might be constrained by family obligations. (Id.)

12. A role is defined as a "job", that is, certain behavioral rights and obligations are associated with it, so that a father role could be considered a job behaviorally speaking. (Mileti, Tr. 7789.) Conflict or strain would arise when an individual is faced with fulfilling different role obligations at the same time. (Myers, et al., ff. Tr. 7782 at 6.) However, this does not imply that one role's obligations will be serviced while another's are abandoned. (Id. at 8.) In fact, the basic thrust of Killian's article was to point out that people with emergency roles will perform them, even though they may experience anxiety about potential conflicting obligations. (Id.)

13. Since the original work by Killian was published, a number of studies of human response to emergencies have been undertaken in the last three decades. All of this research has demonstrated that the actual behavior of people with defined organizational responsibilities in emergencies, those emergency workers who have a clear idea of their emergency roles, is that they do their emergency jobs. (Id. at 12-15.)

14. One of the key factors that determines whether emergency workers do their jobs is whether they have had training and know that they have a job to do. (Mileti, Tr. 7816.) Training gives the emergency worker a clear understanding of what is expected of him or her and makes the worker aware of the advantage of forming family contingency plans in advance of an emergency. (Myers, et al., ff. Tr. 7782 at 21; Mileti, Tr. 7864.) Training also makes the worker aware that the community depends on him or her and informs the worker about the nature of the radiation risk. (Myers, et al., ff. Tr. 7782 at 17.) On cross examination Intervenor raised a question with regard to a radiological emergency being different than other types of emergencies. However, Dr. Mileti pointed out that the invisibility of radiation just makes planning more important. (Mileti, Tr. 7848.) The type of accident makes no difference in emergency response. (Id.) In fact, at TMI bus drivers did not abandon their roles, but did drive the school buses. (Mileti, Tr. 7847.) Dr. Mileti also pointed out there have been other types of invisible hazards, such as a gas leak in Santa Barbara which could not be seen or smelled, yet emergency work was carried out successfully. (Id.)

15. Additionally, because emergency workers' jobs provide them with information about the emergency, they have access to accurate and more

informed knowledge of the scope of the risk and are better able to assess the danger to family members. (Myers, et al., ff. Tr. 7782 at 17.) In fact, the sense of obligation to perform the emergency role is strengthened by the cohesiveness of the work group and a sense of obligation to the community as a whole. (Id.) Additionally, the traditional image of spouse and parent, since it includes the obligation to perform adequately the necessary work-related emergency roles, reinforces the emergency role of the emergency worker. (Id.)

16. Intervenors on cross examination raised questions regarding the training to be given to the adult bus drivers. All adult bus drivers assisting with the school evacuation of the Shearon Harris EPZ, including back-up drivers, are being trained. (Myers, et al., ff. Tr. 7782 at 21; Myers, Tr. 7824.) This training consists of an hour which includes an overview of basic radiation concepts, training on their specific role in the plan, and an overview of the offsite emergency plans. (Myers, Tr. 7821.) Additionally, workers who would be entering the EPZ to evacuate the schools receive an additional two hours of training on the use of KI and dosimetry. (Id.) This training is given at the beginning of the school year in August, and a refresher course is given annually. (Id.)

17. Of the 38 designated adult bus drivers who would be available to assist with school evacuation, 21 of these are employed in some capacity with the school system, and 12 of these are inside the EPZ. (Myers, et al., ff. Tr. 7782 at 19; Myers, Tr. 7874.) Hence, a number of adult drivers would already be at their emergency stations and away from home if an evacuation were ordered while school was in session. (Myers, et al., ff. Tr. 7782 at 19.) Dr. Miletic pointed out that where the buses

are prior to an emergency would not influence the bus drivers' decision regarding performing their jobs. Rather, all that matters is that the workers now have a job to do and a willingness to participate, which comes from training. (Mileti, Tr. 7881-82.) If the training is sound, the more likely problem in evacuating the children from the schools would be that too many back-up drivers would show up. (Mileti, Tr. 7876-77; Tr. 7827.) Dr. Mileti also pointed out that the amount of time devoted to emergency training should be proportional to what the emergency job is that they are to perform. (Mileti, Tr. 7879-80.) Bus drivers should already know how to drive buses, so they would only need an overview of emergency planning and the radiological risk and know that they have a job to do. (Id.) The bus drivers will be given brochures and general guidance on what to do. (Myers, Tr. 7889.) This would include the back-up drivers from Athens and Cary as well. (Myers, Tr. 7824.)

18. The overwhelming evidence from historical analysis is that role abandonment is not a problem regarding trained emergency workers doing their jobs. (Mileti, Tr. 7823; Testimony of Heard/Hawkins, ff. Tr. 8130 at 4.) Mr. Myers pointed out that North Carolina has experienced several nuclear transport accidents and train wrecks and has never experienced emergency workers abandoning their work. (Myers, Tr. 7847; Myers, et al., ff. Tr. 7782 at 22-23.)

19. Intervenors on cross examination also questioned how bus drivers would know the evacuation routes to be used in an emergency. Route maps will be provided by the State and County to the school system bus supervisors, who normally make the determination as to who drives what bus and what route on a daily basis during the normal course of the school year.

(Myers, Tr. 7822-23.) However, the emergency routes are pre-picked, and from the schools the drivers will go to predetermined shelters on routes that are pre-determined as part of the emergency response plan (ERP). (Myers, Tr. 7882.)

Conclusion

20. The overwhelming evidence in the record before us does not support the hypothesis that role conflict or role strain would prevent adult bus drivers from doing their jobs. Rather, there is ample evidence that this has not been a problem in emergency response in the past so long as the emergency workers have a clear idea of their role in the emergency. Training is a key factor in identifying this role for the emergency worker and there is no reason to suppose that adult bus drivers needed to evacuate school children would respond any differently than other emergency workers who are trained and ready to assist in an emergency. The State of North Carolina provides training to school bus drivers on an annual basis, and they will be provided with brochures and route maps to reinforce their roles. The Board finds this contention to be without merit.

B. Contention Eddleman 57-C-10

21. As originally admitted by the Licensing Board, ^{6/} Contention Eddleman 57-C-10 reads as follows:

The State Plan (PT I pp. 45-56 and 50-53) provides no useful analysis or information on sheltering

^{6/} Further Rulings on Admissibility of Offsite Emergency Planning Contentions Submitted by Intervenor Eddleman, June 14, 1984, pp. 16-18.

effectiveness; but without knowledge of sheltering effectiveness, a decision of that option versus evacuation will be ill-informed and quite possibly wrong. The plan's discussion of protective actions is mostly a list of them and a little hand waving -- it's hopelessly inadequate. The plan, for potential shelters typical of those in the SHNPP plume EPZ does not comply with Evaluation Criterion J.10.m of NUREG-0654, which calls for inclusion in the plan of "expected local protection afforded in residential units or other shelter for direct and inhalation exposure...."

22. In response to this contention, the Applicants undertook a survey of housing in the EPZ and determined protection factors (PF's) for residential housing. Subsequently, the Applicants moved for summary disposition of this contention based on the results of its survey. ^{7/} This motion was granted in part, in that indeed the expected local protection afforded in residential units had been documented and the results of the survey would be incorporated in the North Carolina Emergency Response Plan (ERP). However, what remained for litigation was the adequacy of the Applicants' review of sheltering other than single-family residential. While the survey did include counts of commercial, industrial and other similar buildings, the Applicants did not determine what protection factors are afforded by typical institutional structures (schools, churches), commercial and industrial facilities. See Memorandum and Order (Ruling on Remaining Summary Disposition Motions), April 24, 1985 at 3, 6.

^{7/} Applicants' Motion for Summary Disposition of Eddleman Contention 57-C-10, January 14, 1985.

23. Applicants presented the testimony of Guy Martin, Jr. and Joseph F. Myers to address this contention. Mr. Martin is the Manager of the Radiological Assessment Department of Ebasco Services, Inc., and he is a FEMA Certified fallout shelter analyst. (Testimony of Guy Martin, Jr. on Eddleman Contention 57-C-10, ff. Tr. 7895 at 1-2 [hereinafter Martin, ff. Tr. 7895].) Mr. Myers is the Director of the Division of Emergency Management (DEM) of the North Carolina Department of Crime Control and Public Safety. Mr. Myers' qualifications are discussed earlier in the Board's Findings On Contention EPJ-4(b). See Finding No. 9. (Testimony of Joseph F. Myers on Eddleman Contention 57-C-10, ff. Tr. 7897 at 1 [hereinafter Myers, ff. Tr. 7897].)

24. Testimony was also filed by John C. Heard and Thomas I. Hawkins of the Federal Emergency Management Agency (FEMA). Mr. Heard is the Chief of the Technological Hazards Branch of FEMA Region IV, and Mr. Hawkins is an Emergency Management Program Specialist for FEMA. (Testimony of John C. Heard and Thomas I. Hawkins, Federal Emergency Management Agency, Regarding Emergency Planning Contentions 57-C-10 and EPJ-4(b), ff. Tr. 8130 [hereinafter Heard, Hawkins, ff. Tr. 8130].)

25. The sheltering effectiveness of a structure is measured in terms of its Protection Factor (PF) which is the ratio of the radiation dose outside the structure to the dose inside. (Martin, ff. Tr. 7895 at 4; Martin, Tr. 8098.) It indicates the degree to which a structure would afford protection from a radiation release compared with no shelter at all. (Martin, ff. Tr. 7895 at 4.)

26. The sheltering effectiveness of a structure is a function of the mass of material between the source of radiation and the person

inside. (Martin, ff. Tr. 7895 at 5.) A building constructed of dense material, such as brick or concrete, would have a higher PF than a wood frame structure. (Martin, Tr. 8020.) Also, a multi-story building would provide more protection than a single story structure. (Id., Martin, Tr. 8024.) Additionally, since the inhalation exposure PF is a function of the air exchange rate between a structure and the outside, doors and windows and other exterior openings are important factors. (Martin, ff. Tr. 7895 at 5.)

27. Mr. Martin and DEM staff used a number of sources to identify the commercial, industrial and institutional structures within the EPZ. These sources included the earlier shelter study of hospitals, nursing homes and family care structures done in connection with the residential housing survey; the property tax records of the counties in the EPZ; information from Carolina Power and Light Company district managers; discussions with members of local chambers of commerce, municipal clerks and postal employees; North Carolina State listings of manufacturing facilities; an aerial photograph of the EPZ area; State tax records and a road survey. (Martin, ff. Tr. 7895 at 6-7; Myers, ff. Tr. 7897 at 2.)

28. The predominant type of commercial/industrial structures identified by the survey are small retail establishments such as service stations, fast food restaurants and food markets. (Martin, ff. Tr. 7895 at 7.) These establishments are similar in terms of sheltering effectiveness to single family residential housing of brick veneer construction. (Id.) However, the survey did identify some 51 large commercial and industrial facilities that can be divided into six categories: 1) shopping centers; 2) Butler-type buildings; 3) steel

frame, brick/concrete buildings; 4) multi-story homogeneous structures; 5) complex sites; and 6) downtown shopping districts. (Id. at 7-8.) Institutional structures fall within three basic categories: 1) schools; 2) churches; 3) hospitals and nursing homes. (Id.)

29. Representative structures from the six categories of commercial/industrial structures and two schools were selected for detailed analysis. This analysis consisted of site visits to obtain information regarding the construction material, wall, floor and roof thickness, size and window and door spacings. (Martin, ff. Tr. 7895 at 8-9.) Once detailed information on the structure was obtained, the data was transmitted to FEMA for input into its Shelter Analysis for Nuclear Defense (SAND) computer code. This code was used to calculate PFs for direct exposure to deposited nuclides. (Id.) Inhalation exposure PFs were calculated using a mathematical equation to determine the fraction of dose avoided by remaining in the structure. (Martin, ff. Tr. 7895 at Attachment 5.)

30. The churches and small commercial units have construction features which are comparable to the typical residence in the Harris Plant EPZ in terms of sheltering effectiveness. (Martin, ff. Tr. 7895 at 10.) The homes for the elderly and family care facilities were surveyed earlier and are essentially of the residential type construction. (Id. at 11.) Hospitals and nursing homes have construction characteristics that provide better protection than a typical residence. (Martin, ff. Tr. 7895 at 11.) Nursing homes have a PF range comparable to that for typical small commercial structures, and the hospitals have structural characteristics comparable to certain wings of the schools which were

analyzed, so the hospital PFs fall within the range of school PFs. (Id. at 13.)

31. From the data obtained in the survey, a range of PFs for representative structures in the six categories of commercial/industrial structures and the schools were derived. (Martin, ff. Tr. 7895 at 11, Attachment 6-8.) Inhalation exposure PFs were also derived for commercial, industrial and school structures. (Id., Attachment 5.) The summary of the range of PFs (Attachment 8), the inhalation PF (page 4 of Attachment 5) and a summary addressing the smaller commercial establishments, churches, hospitals and nursing homes will be incorporated into the North Carolina State Emergency Plan. (Myers, Tr. 8058-59; Myers, Tr. 8104-5; Heard, Tr. 8145.)

32. On cross examination Intervenor Eddleman questioned the ventilation rate employed by Applicants in their analysis. In determining the appropriate ventilation rate which affects inhalation exposure rate, the survey compared those structures in the EPZ to those in the literature to determine the air/exchange ratio and found them comparable. (Martin, Tr. 8043-44.) Applicants' witness testified that typical ventilation rates for private residences range from 1 to 2 air exchanges per hour and representative institutional, commercial and industrial structures which were surveyed in the Harris EPZ have construction features better than the average private residence. The institutional/commercial/industrial structures fall into an intermediate category with respect to ventilation rates, hence use of an air exchange rate value of .5 to 1 is justified. (Martin, ff. Tr. 7895, Attachment 5 at 1-2; Martin, Tr. 8043-44.) While wind speed increases the differential pressure between the outside and

inside of a building, therefore increasing the potential for air infiltration, from a PF point of view, it is not important in judging inhalation dose. (Martin, Tr. 8050.) The typical wind speed assumed in assessing air exchange rates is one mile per hour. (Martin, Tr. 8109.)

33. In his proposed finding No. 16, Mr. Eddleman argues that using a ventilation rate factor of .5 to 1.5 air exchanges per hour is necessary, rather than the .5 to 1 factor used by the Applicant's witness. The Board notes, however, the use of an air exchange rate factor of .5 to 1 was explicated and justified in the Applicants' testimony. (See finding 32, supra). Mr. Eddleman provided no evidence to controvert this finding. In this connection, we note that Mr. Eddleman appears to be equating infiltration and air exchange (ventilation) rate. (See Eddleman Proposed Findings, No. 11, 15.) Since the inhalation PF is a function of ventilation rates and immersion, the inhalation PFs incorporate the ventilation rate and therefore that rate need not be separately noted in the summary of protection factors to be incorporated into the plan. (See Martin, ff. Tr. 7895 at Attachment 5).

34. Although the Intervenor on cross examination questioned whether one's position inside the structure was a relevant factor in determining the PF of a structure, neither ceiling heights nor whether the occupant is sitting, standing or lying down are relevant in such calculations. (Martin, Tr. 8079-81.) The FEMA computer codes assume nine standard locations for occupants inside a structure irrespective of the occupant's posture (sitting, standing, etc.). Once the computer output from FEMA is received, it is compared with the actual structures to determine the PFs.

If an area is inapplicable, such as in a closet, it is eliminated as a potential shelter space in the PF determination. (Martin, Tr. 8110-11.)

35. In response to the Board's questions FEMA pointed out that considering only residential housing for sheltering protection factors is more conservative than using the factors for commercial or industrial buildings since residences provide less protection than more substantial buildings. (Heard, Tr. 8149-50.) Additionally, FEMA pointed out that in place sheltering contemplates that people would shelter wherever they were at the time of an emergency, and the plan does not call for moving people from one building to another since that would expose the population. (Heard, Tr. 8151-52; Martin, Tr. 8005.) This in-place sheltering is contemplated in the case of a puff release, i.e., a short time of two hours or less. (Id.)

36. FEMA also pointed out it would be difficult for decision makers to choose appropriate protective actions based on individual sector specific PFs, but rather, an entire two to five mile ring is evacuated. (Heard, Tr. 8155-56.) Also, a commercial building would likely not be available at night, so whether there are better protection factors in one sector over another would serve no real purpose for decision makers. (Id.)

C. Reply to Wells Eddleman's Proposed Findings/Conclusions on 8/
Contention 57-C-10

37. The Staff/FEMA reply to Mr. Eddleman's Proposed Findings No. 11, 15 and 16 is set forth in Staff/FEMA Finding No. 33, supra.

38. In his proposed findings Nos. 20, 22 and 23, Mr. Eddleman appears to misunderstand the direct testimony of FEMA in his claims that an inconsistency developed on cross-examination of FEMA witnesses regarding FEMA testimony on the use of residential PFs brings into question the adequacy of FEMA's review of the EPP. In direct testimony, FEMA stated generally that the use of residential PFs which were given for brick and single-story frame houses would be conservative. (Heard, Hawkins, ff. Tr. 8130 at 3). Applicants' survey demonstrated the accuracy of this general statement. The airborne nuclide PF for a single-story wood frame house without a basement is 1.1 (see Applicants' Ex. 29), whereas the lowest airborne nuclide PF for large commercial/industrial/institutional structures is also 1.1 (Martin, ff. Tr. 7895, Attachment 6, 8).

39. In his Proposed Finding No. 20, Mr. Eddleman focuses solely on a brick house with no basement. While it may be true that a brick house with a PF of 1.7 for airborne nuclides may offer more protection than some of the commercial/industrial/institutional structures in the Shearon Harris EPZ, nevertheless none of these structures offers less protection

8/ It should be noted that Intervenor failed to file proposed findings of fact and conclusions of law on Contention EPJ-4(b) as directed by the Board. (Tr. 8160) Therefore, pursuant to 10 C.F.R. § 2.754(a)(3)(b), Intervenor may be deemed to be in default concerning this contention.

than that of a wood frame house. (Martin, ff. Tr. 7895 at Attachment 6, 8). Therefore, Mr. Eddleman's claims in Findings 22 and 23 are without merit.

40. In Mr. Eddlemans' Introduction, Proposed Finding 24 and Conclusions A, C and D, Mr. Eddleman also presents arguments that the use to be made of this information was an issue in this proceeding. This argument is beyond the scope of the contention. The PF data in the ERP is included to provide the State Emergency Response Team (SERT) leader an estimate of the sheltering effectiveness of structures in the Harris EPZ. (Applicants' Exhibit 29). Decision making logic, however, is beyond the scope of the contention. The issue before the Board is whether the Applicants' and State and local officials have done an adequate job in determining the protection factors associated with certain types of buildings other than residential structures. (See, Tr. 7934).

41. For the reasons set forth above, the Board declines to adopt the above discussed proposed findings and conclusions of Mr. Eddleman.

Conclusion

42. The Board finds that a study has now been done which assesses and sets forth with reasonable specificity the protection factors afforded by and commercial, industrial and institutional structures in the Shearon Harris EPZ. The summary of these protection factors will be incorporated into the North Carolina State Emergency Response Plan, and we find this now satisfies the regulatory guidance of NUREG-0654, J.m.10. Hence, the Board finds this contention to be without merit.

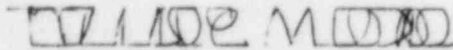
V. CONCLUSIONS OF LAW

1. The Board has considered the entire record in this portion of the proceeding relating to off-site emergency planning, except for matters relating to Eddleman Contention 57-C-3 regarding which will be the subject of a later hearing. Except for issues raised in Contention 57-C-3, the Board concludes, in accordance with 10 C.F.R. § 2.760a and Section VIII of Appendix A to Part 2, that the off-site emergency response plan for the Shearon Harris Nuclear Power Plant, with respect to all matters placed in controversy and considered in this partial initial decision, complies with the applicable provisions of 10 C.F.R. § 50.47 and 10 C.F.R. Part 50, Appendix E, and provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

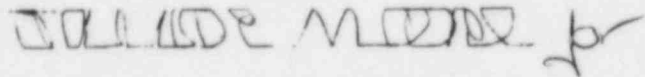
Effectiveness and Review of Initial Decision. This Partial Initial Decision is effective immediately and will constitute the final decision of the Commission 45 days after the date hereof, unless a party appeals or seeks a stay. Pursuant to 10 C.F.R. § 2.762, an appeal from this Partial Initial Decision may be taken by filing a notice of appeal with the Atomic Safety and Licensing Appeal Board within 10 days after service of this decision. A brief in support of an appeal must be filed within 30 days after the filing of the notice of appeal (40 days if the appellant is the NRC Staff). Within 30 days after the period for filing and service of the briefs of all appellants has expired, any party not an appellant may file a brief in support of or in opposition to the appeal.

The NRC Staff may file a responsive brief within 40 days after the period for filing and service of the briefs of all appellants has expired.

Respectfully submitted,



Janice E. Moore
Counsel for NRC Staff



Steven M. Rochlis
Regional Counsel, FEMA, Region IV

Dated at Bethesda, Maryland
this 22nd day of August, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DOCKETED
USNRC

In the Matter of)

CAROLINA POWER AND LIGHT COMPANY AND)
NORTH CAROLINA EASTERN MUNICIPAL)
POWER AGENCY)

(Shearon Harris Nuclear Power Plant,)
Units 1 and 2))

'85 AUG 27 P3:43

Docket Nos. 50-400 OL
50-401 OL OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

I hereby certify that copies of "NRC STAFF/FEMA PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON EMERGENCY PLANNING CONTENTIONS EPJ-4(b) AND EDDLEMAN CONTENTION 57-C-10" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or deposit in the Nuclear Regulatory Commission's internal mail system (*), this 22nd day of August, 1985:

James L. Kelley, Chairman*
Administrative Judge
Atomic Safety and Licensing Board
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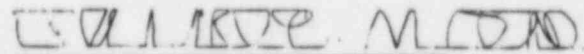
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