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BEFORE THE ATOM'IC SAFETY AND LICENSING BOARD

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(Shearon Harris Nuclear Power Plant)

Docket No. 50-400 OL

APPLICANTS' RESPONSE TO RICHARD WILSON INTERROGATORIES
ON EPJ-5, WILSON 11, WILSON 12b2, WILSON 12b3

Applicants Carolina Power & Light Company ("CP&L") and North Carolina Eastern Municipal Power Agency, pursuant to 10 C.F.R. § 2.740b, hereby submit the following responses to "Richard Wilson Interrogatories to the Applicant on EPJ-5, Wilson 11, Wilson 12b2, Wilson 12b3." The provision of answers to these interrogatories is not to be deemed a representation that Applicants consider the information sought to be relevant to the issues to be heard in this proceeding.

GENERAL INTERROGATORIES

1. Please list the names and affiliations of each person responding to these interrogatories and the specific ones they respond to.

ANSWER: The responses to all interrogatories are provided by Applicants Carolina Power & Light Company and North Carolina Eastern Municipal Power Agency. The following persons provided information upon which Applicants relied in responding to the listed interrogatories:

8410190454 841016
PDR ADCK 05000400
G PDR

DS 03

<u>PERSON AND AFFILIATION</u>	<u>INTERROGATORY NO.</u>
Mark Scott Chatham County Emergency Management Agency	1.a - f; 8.
J. T. Kirkman Sanford-Lee Emergency Management Agency	1.a - f
Gene Barry Wake County Emergency Management Agency	1.a - i; 2; 3; 4; 5; 6; 7.
Tommy Harvell Fire Chief - Buies Creek, Harnett County	1.a - f
Larry Knott Chief Deputy Sheriff, Harnett County	1.a - f
Bob Bailey State Emergency Medical Services	1.a - f
Elizabeth Bean CP&L Corporate Communications	1.a - f
Henry Johnson Harnett County Emergency Management Agency	2.d
Albert Garrou CP&L	4
Robert D. Klimm HMM Associates	10-13

2. Please make each document identified in response to the interrogatories below available for inspection and copying.

ANSWER: Copies of all documents identified in responding to these interrogatories will be made available for review and copying at a mutually convenient time, unless copies have already been served on the parties to this proceeding. Please contact Applicants' counsel Dale E. Hollar at (919) 836-8161 to arrange a document production.

SPECIFIC INTERROGATORIES

1. a) Do you have a mechanism for identifying non-ambulatory homebound people in the EPZ?

b) If so, how many such people are there, and what is the mechanism for identifying them?

c) How will new people in this category be identified as they become disabled or move into the EPZ?

d) If you do have a mechanism, how have you tested its effectiveness and accuracy?

e) If you do not have a mechanism, are you preparing or planning one? Please present the current status of such a project or plan.

f) If your mechanism for identifying non-ambulatory homebound people has not been put into effect, how can you be confident that the numbers will not overwhelm the sources of assistance? If you have estimated, please state the basis for your estimates.

g) How many vehicles each from the rescue squad, the police department, and the fire departments in each community will be required should secondary notification be necessary? How many workers per vehicle?

h) What will be the time interval following the evacuation order during which this notification will be carried out?

i) Have you revised or are you studying the estimates of time and vehicles required for secondary notification presented in the ETE Study? If so, please present the status of your study.

ANSWER: a) At the present time, there are no formal mechanisms in place for identifying non-ambulatory homebound people in the EPZ. See Answer 1.e for a discussion of the planned mechanisms.

b) The information requested is not presently available.

c) The public information brochure for the Harris Plant will be mailed out annually in an updated form. Information on disabled persons will be obtained and re-verified as described in Answer 1.e below. To reach new CP&L customers, it is presently planned to supply brochures to area CP&L offices, electric membership cooperative offices, and wholesale utility offices where they will be available to new customers.

d) The mechanism is not in place yet and therefore has not been tested.

e) The public information brochure for the Harris Plant will contain a postcard to be returned to the North Carolina Division of Emergency Management which will be used to identify non-ambulatory homebound persons. A draft of the brochure, including

the postcard, was served on the parties to this proceeding on July 9, 1984. The results of this postcard mail-back program will be supplemented by the knowledge of personnel from rescue squads, fire departments, and social service agencies, and visiting nurses of the county health department as to the identity of non-ambulatory homebound persons in the area. Information will also be gathered by door-to-door checks performed by rescue squad and fire department volunteers. Lists of non-ambulatory persons will be kept in the rescue vehicles or in the stations where the vehicles are kept.

f) The knowledge of rescue squad and fire department personnel of numbers of non-ambulatory persons in the area provides a basis for planning. On this basis, it is believed that sufficient vehicles and personnel are available to evacuate non-ambulatory persons. In addition, an adequate number of backup vehicles is available through the State Emergency Medical Service emergency procedures.

g) The number of vehicles required is as follows:

	<u>Rescue</u>	<u>Police</u>	<u>Fire</u>
Apex	2	3	3
Fuquay-Varina	1	2	3
Holly Springs	No rescue squad	1	2

At least two workers per vehicle will be provided in rescue and fire department vehicles and at least one for each police vehicle. In addition, personnel from the following fire departments will report: Morrisville (two vehicles), YRAC (two vehicles), Fair View (two vehicles).

h) See the North Carolina Emergency Response Plan in Support of the Shearon Harris Nuclear Power Plant (Rev. 1), Part 5, pages 22-25.

i) Estimates of time and vehicles required for secondary notification are under study.

2. a) How many vehicles each from the rescue squad in each community will be required for evacuating hospital and nursing home residents? How many workers per vehicle?

b) What will be the time interval following the evacuation order during which this evacuation will be carried out?

c) How long will one round trip from the following sites to the nearest appropriate designated shelter take? Include loading and unloading time. Include assumptions regarding traffic conditions.

1. ESE Sector, 9-10 mile zone
2. NNE Sector, 2-3 mile zone
3. NE Sector, 8-9 mile zone
4. SE Sector, 10 mile zone

d) How many round trips from all special facilities does each rescue squad estimate they will have to make?

ANSWER: a) Estimates of the number of vehicles required for evacuating hospital and nursing home residents are not presently available. If necessary, rescue squad vehicles from Wake County communities other than Apex, Holly Springs and Fuquay-Varina will respond to transport hospital and nursing home residents. A minimum of two workers per vehicle will be provided. Some hospital and nursing home residents would be evacuated using vehicles other than rescue squad vehicles.

b) Within 236 minutes (maximum) including notification. See HMM, Inc. Evacuation Time Estimate, Table 7-1.

c) 1. Approximately 80 minutes (loading and unloading time = 5 minutes each).

2. Approximately 76 minutes (loading and unloading time = 5 minutes each).

3. Approximately 52 minutes (loading and unloading time = 5 minutes each).

4. Not available.

The above times were calculated for normal daytime traffic conditions.

d) This question is being investigated, and no information is presently available.

3. a) What shelters and decontamination stations will, under the direction of the Emergency Management Agency, will be operated or manned by the Rescue Squads from Apex, Fuquay-Varina, and Holly Springs?

b) How many workers will be required at each of these areas?

c) What will be the time interval following the evacuation order during which this activity will be performed?

ANSWER: a) None. Other Wake County rescue squads will be assigned these responsibilities.

b) No personnel from the rescue squads in Apex or Fuquay-Varina will be required. Holly Springs does not have a rescue squad.

c) Personnel decontamination will be performed upon arrival at shelters. Vehicle decontamination may take place later.

4. a) How many vehicles, workers, and hours would be required to respond fully to a serious accident with 10 seriously injured people and 20 less seriously injured people at the SHNPP site?

b) Which rescue squads would be involved in such assistance? How many vehicles and workers from each?

c) Please attach copies of all written agreements between the rescue squads and the Applicant for emergency service at the SHNPP site.

d) Based on these documents, would the Applicant expect the rescue squads to provide all necessary assistance for an accident such as that described in part a above?

ANSWER: a) The required number of vehicles and workers and the time needed for response in this hypothetical situation cannot be determined without more information about the nature of the postulated accident and injuries. No estimate has been made.

b) Apex Rescue Squad would be the primary responder. Backup could be from other rescue squads and emergency organizations in Wake County. The exact number of vehicles and workers cannot be determined. See Answer 4.a above.

c) A copy of the agreement with the Apex Rescue Squad is contained in Annex A to the on-site emergency plan, Shearon Harris Nuclear Power Plant Emergency Plan (Rev. 3, August 1984), which has been served on the parties to this proceeding.

d) Yes. However, if an accident were to occur, such as the one hypothesized in Interrogatory 4.a, other rescue squads in Wake County could be called upon to respond as well.

5. Please prioritize the 5 duties (a-e) assigned primarily to the rescue squads in Section III F2 of Wake County Plans (p.5). That is, which activities would be done if there were not enough resources for the local squads to do them all? In addition to the 5 duties in the plan, please include routine responses to illness and injury in the priority list.

ANSWER: All duties of the rescue squads, including routine responses to illness and injury, will be performed as needed. Rescue squads can rely upon mutual aid agreements with other squads to fulfill their duties if necessary. See Answer 7.g below.

6. a) How will the Wake County EMS Director receive requests for assistance from local squads?

b) Who will make specific evacuation assignments to county rescue squads assisting the local squad?

c) How will county rescue squad workers know the sites of special facilities and non-ambulatory home-bound people?

d) Which rescue squads would be the first, second, and third areas asked by the EMS Director?

e) How many vehicles and workers from each would be available, considering other routine and special responsibilities they might have?

ANSWER: a) Personnel at Area Command Posts will notify the Emergency Operations Center (EOC) using telephone or two-way radio. The EMS Director or his representative will be at the EOC.

b) The chiefs of the local rescue squads needing assistance.

c) Directions to special facilities and non-ambulatory homebound people will be given by the chief of the local rescue squad.

d) Assuming that the question asks the order in which rescue squads will be asked to provide assistance, the information is not available at this time. A method for determining the order is being developed.

e) The information is not available. See Answer 6.d above.

7. a) How many vehicles capable of transporting non-ambulatory people does the Apex, Fuquay-Varina, and Holly Springs Rescue Squads have? How many non-ambulatory people can each vehicle carry?

b) How many members does each rescue squad have?

c) How many members from each would be available and would respond in case of an evacuation?

d) How many members of each squad are single?

e) How many from each squad live outside the EPZ?

f) How many from each squad work outside the EPZ?

g) Have any of the squads been involved in a major emergency requiring full mobilization?

h) In your planning what percentage of the full staff of each rescue squad have you assumed will be available? On what do you base this assumption? Please list all documents and case citations you would use to support this assumption.

ANSWER: a) The Apex Rescue Squad has 3 vehicles capable of transporting nonambulatory persons. The Fuquay-Varina Rescue Squad also has 3 such vehicles. Holly Springs does not have a rescue squad. Each vehicle can carry 1 or 2 stretcher patients, or 3 sitting patients in addition to one stretcher patient.

b) The Apex Rescue Squad has 20 members, and Fuquay-Varina has 15 members.

c) It is assumed that approximately 11 members of the Apex Rescue Squad and 8 members from the Fuquay-Varina Rescue Squad would initially be available at the time of an accident. Subsequently it is expected that additional members would respond.

d) The Apex Rescue Squad has 7 single members, and Fuquay-Varina has 5 single members.

e) Seven members of the Apex Rescue Squad live outside the plume EPZ. No member of the Fuquay-Varina Rescue Squad lives outside the plume EPZ.

f) Seven members of the Apex squad and six members of the Fuquay-Varina squad work outside the plume EPZ.

g) Although the rescue squads have been involved in responding to major emergencies, full mobilization of all equipment and personnel has not been necessary. Mutual assistance agreements with other rescue squads have been used to avoid mobilizing all resources at any one time.

h) Based on actual experience with rescue calls by the rescue squads, it is assumed that 55 percent of the Apex Rescue Squad members and 53 percent of the Fuquay-Varina Rescue Squad members will initially be available at the time of an accident.

8. a) Homebound non-ambulatory people will be scattered throughout the EPZ. How long will one round trip including loading and unloading time from the following sites to the nearest designated shelter take? Please include assumptions regarding traffic conditions.

- a) W Sector 6-7 mile zone
- b) SSW Sector 6-7 mile zone
- c) NNW Sector 6-7 mile zone

ANSWER: a) Approximately 36 minutes (loading and unloading time = 5 minutes each)

- b) Approximately 32 minutes (loading and unloading time = 5 minutes each)
- c) Approximately 23 minutes (loading and unloading time = 5 minutes each)

The above times were calculated for normal daytime traffic conditions.

9. a) Who will be allowed to enter the EPZ during the evacuation?
- b) Will parents of children in day care be allowed to enter?
 - c) Will parents with children at home be allowed to enter?

d) Will people with other family members of non-family dependents (which might include mentally, handicapped, physically handicapped, elderly, or non-English-speaking people) be allowed to enter?

e) Will people needing to secure their businesses be allowed to enter?

f) Will emergency workers reporting for duty (still in their private cars) be allowed to enter?

g) Will emergency workers (rescue squad, fire, police) on duty be allowed to enter?

h) Will maintenance personnel for CP&L electrical transmission lines, Dixie Pipelines, Southern Telephone equipment, Allied and Universal Polymer Chemical Plants, CP&L Cape Fear Plant be allowed to enter? Are these facilities aware of this policy and have they consented?

i) For each answer above to parts b-h which is NO, please explain why not.

j) For each answer above which is not unequivocally YES or NO please explain the criteria by which decisions would be made.

k) What training and written instructions will be given to people at traffic check points to guide their decisions?

l) If an official at a traffic check point wishes to make an exception, does he/she have the power to do so? If not who must he/she consult?

m) On a map showing all traffic control points at entrances to the EPZ, please show how a large number of cars trying to enter the EPZ would be diverted.

n) For each answer to parts b-h above, please estimate the number of vehicles which will try to gain entry.

OBJECTION: Applicants object to all subparts of this interrogatory as untimely. Interrogatory No. 9 requests information regarding Wilson Contention 11. Pursuant to the discovery schedule established by the Board, the last day for discovery requests on that contention was August 9, 1984.

10. Please demonstrate your calculation that there would be 410 households in the EPZ that have no transportation. Please state and justify all assumptions.

ANSWER: As indicated in the ETE report (at page 3-2), data from the 1980 Census of Population, Advance Estimates of Social, Economic, and Housing Characteristics was used to identify the number of permanent residents within the EPZ who do not own a vehicle. The 1980 federal census data used for the analysis is as follows:

<u>County</u>	Number of Households Which Do Not Own a Vehicle	Total Housing Units	Percentage of Total Housing Units Which Do Not Own a Vehicle
Chatham	1,047	12,896	8.12%
Harnett	2,100	22,175	9.47%
Lee	1,153	13,998	8.24%
Wake	2,494	55,506	4.49%

(not including
City of Raleigh)

These percentages, which represent the proportion of households within each county which do not own vehicles, were then applied to the estimated number of households in each county which are within the EPZ, from data presented in the 1983 CP&L demographic study. For analysis purposes, it was assumed that the percentage of non-auto-owning households within the county would also apply to the portion of households within the EPZ in that particular county. The resultant non-auto-owning household estimates are as follows:

<u>County</u>	Estimated Number of Households Within the Shearon Harris EPZ Which Do Not Own Vehicles
Chatham	84
Harnett	54
Lee	32
Wake	240
	<u>410</u>

11. Have you revised this estimate?

ANSWER: The estimated number of households within the EPZ which do not own vehicles is presently being verified.

12. a) How many households in the EPZ have one car which is driven out of the EPZ to work each day?

b) How many with 2 cars which are driven out of the EPZ?

c) If these considerations raised the percentage of households without vehicles from 5.5% (410/7347) to 30% or 50%, would ride-sharing with neighbors be adequate to evacuate the population? Please provide an explanation of your answer and document your assumptions.

d) Were these considerations investigated during the preparation of the Evacuation Time Estimates? If not, why not?

e) If ride-sharing were not adequate, who would decide when and where pick-up points would be established? What criteria would be used to make the decisions?

ANSWER a) Applicants do not know exactly how many vehicles are driven out of the EPZ to work each day. However, an estimate of this number is currently being prepared.

In compiling the Shearon Harris evacuation time estimates, all cases examined assumed at least one family member is in each residence. This is a simplifying assumption made to indicate that the evacuation simulations provide for one vehicle to begin each evacuation from each permanent residence in the EPZ. This assumption does not imply that there is a resident in each home at the time the initial notification is issued. Instead, it means that regardless of the location of the residents of each home in the EPZ when notification is indicated, one vehicle will depart from the residence after mobilization and preparation for evacuation. This assumption accounts for permanent residents on shopping trips, at work, on errands and on recreational trips.

b) Applicants do not know how many households within the EPZ use two vehicles to drive to work each day, and are not preparing an estimate of this number. Refer to response a.

c) If family members were at home in 30% to 50% of the households within the EPZ with no access to vehicles, ride sharing might not be adequate to evacuate all of these people. Under such conditions, an effective evacuation might require additional transport vehicles. The time to evacuate this population component would then be based upon the transport time of vehicles to travel to the homes or designated areas for pick-

up, and the travel time out of the EPZ. Empirical data on past evacuations, however, indicates that such a scenario is unlikely, since family members generally unite, if possible, prior to evacuating.

d) A consideration of the transport-dependent population was taken into account in the ETE. During an evacuation, transportation for all non-auto-owning households will be furnished through rides with neighbors or through coordinated efforts by state and county emergency preparedness officials. The exact number of vehicles which would be required to evacuate this population category would vary based upon several factors, including the type and number of transportation resources available at the time of the evacuation.

The ETE used the best available data to estimate the number of households within the EPZ which do not own vehicles and, accordingly, would require some type of transportation assistance. The methodology used in the ETE assumes that vehicle occupancy rates for the non-auto-owning population are similar to those for the auto-owning population; that is, one vehicle per household. This assumption was reviewed with the local emergency preparedness officials and considered appropriate since it provides the most realistic representation of evacuation traffic which would be generated from the non-auto-owning households providing for one vehicle trip to each such residence to pick up the evacuees. In practice, providing for these trips is a reasonable means for accounting for vehicles along the network following internal routes to collect non-auto-owning passengers. As a practical matter, the number of vehicles assumed to accommodate the non-auto-owning population is not significant. Slight reductions or increases in the estimate of 410 non-auto-owning households would not appreciably affect the total evacuation time.

e) If ride-sharing were not adequate, or other unforeseen circumstances resulted in an increased number of transport-dependent persons, the state and county

emergency preparedness officials would be responsible for implementing pick-up procedures for these people, depending upon factors such as the location of the people, the available transportation resources and the circumstances of the emergency.

13. a) How many households in the EPZ have one car which is driven to work in the EPZ?

b) Does the NETVAC simulation include the "counter-current" flow of traffic of these vehicles trying to reach home?

c) Will traffic control points permit "counter-current" flow during the evacuation?

d) The time required for travel from work to home was not explicitly mentioned in the ETE. Was it considered?

ANSWER a) Applicants do not know exactly how many households in the EPZ have one vehicle which is driven to work in the EPZ. See Response to 12a.

b) The methodology used in the Shearon Harris ETE study did not specifically consider counter flow traffic, since the state-of-the-art simulation modeling capabilities do not easily permit evaluation of multiple origin trips (i.e., trips from work-to-home, and home-to-work). Such interaction, which would be expected, was however taken into account by evaluating vehicle origins at (1) places of residences, (2) major work places, (3) major recreation areas, and (4) at special facilities. Such an analysis provides a realistic assessment of the effect and consequences of such counter flow interaction.

c) Counter flow traffic will generally be permitted during the course of the evacuation. Traffic controllers, however, may restrict movement along certain roadway sections during portions of the evacuation, to expedite the flow of evacuating vehicles.

d) The time required for travel from work to home was considered in the evacuation time estimate study. The methodology used in the ETE incorporated a range of time associated with preparation and mobilization activities of the permanent residents. Based upon discussions with local emergency preparedness officials, it was concluded that at a minimum, permanent residents may require 15 minutes to prepare to

evacuate following a 15-minute notification period. This minimum preparation/mobilization period would apply to a small percentage of the population who would happen to be at home at the time of the notification, and would require minimal time to prepare. Therefore, it was assumed in the ETE that no permanent residents would begin to evacuate until 30 minutes following the initial alert (15-minute notification and 15 minute minimum preparation and mobilization period.) The majority of the permanent residents, however, would require longer periods to prepare and mobilize. Discussions with local emergency preparedness officials also led to the conclusion that a preparation/mobilization time range of two hours would be appropriate for the entire permanent resident population. This would represent a range of times that would be associated with a number of preparation and mobilization activities including: leaving work; traveling home and uniting with the family before evacuating; closing places of business; returning home from shopping trips; providing transport vehicles to those who need assistance, etc.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

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

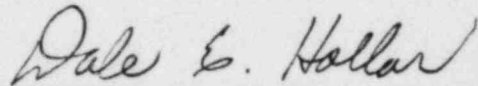
(Shearon Harris Nuclear Power Plant)

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Docket No. 50-400 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "Applicants' Response to Richard Wilson Interrogatories on EPJ-5, Wilson 11, Wilson 12b2, Wilson 12b3" were served this 16th day of October, 1984 by deposit in the United States mail, first class, postage prepaid, to the parties on the attached Service List.



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Dated: October 16, 1984

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