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April 3, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
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'84 APR -6 P3:52

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of:

CAROLINA POWER AND LIGHT COMPANY
AND NC EASTERN MUNICIPAL POWER
AGENCY

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

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Docket Nos. 50-400 OL
50-401 OL

CONTENTIONS ARISING FROM REVIEW
OF EMERGENCY RESPONSE PLAN

Pursuant to the Board's Order contained within the Telephone Conference Call, dated March 8, 1984, the Conservation Council submits the following contentions arising from our review of the Emergency Response Plan (ERP). We are at the same time dropping any previous contentions concerning emergency response which have been deferred by the Board to this point. We would request the Board allow us the opportunity to amend any of the following contentions or provide further basis for each before they are ruled on.

It has been exceedingly difficult to analyze two major areas of the ERP as the information is currently missing. The first is the role of State government responsibility for carrying out major sections of the ERP; the Memorandum of Understanding (MOU) between the Applicants and the State is not included. Similarly, the ERP is incomplete as it does not include any maps of the plume exposure EPZ with its evacuation routes and notification areas are not included. We reserve the right to formulate additional contentions when this material becomes available.

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We found the ERP to be inadequate in several major areas and as such there is a lack of reasonable assurance that the license activities will be conducted with Commission regulations, most notably 10 CFR 50.33(g) and 50.47. The Applicants do not appear to take the likelihood of an accident seriously and have not even done the minimum necessary to protect public health and safety.

CONTENTIONS

1. The criteria for evacuation proposed by CP&L is far too conservative. The Emergency Classification System and Protective Response Options (ERP, Part 2, Page 34, and repeated throughout) does not call for immediate evacuation even after "(e)vents have occurred or are in progress which involve imminent or actual substantial core degradation or melting with potential loss of containment." At that point, if it is not too late, an assessment will be made and sheltering will be recommended. The public will be notified only after a major release of radiation. The NRC Staff's Final Environmental Statement, October 1983, stated that in the case of a major accident, evacuation out to ten miles would decrease the number of early deaths by between 5 and 10 times. Accordingly to a December 1982 Study by Sandia National Laboratories for the NRC, delayed evacuation greatly increases the risk of early fatalities as does limiting an emergency response to anything other than evacuation and relocation. Table 2.5-6 of the study shows that a one-hour delay even at 10 miles would cause 180 early fatalities and a five-hour delay would increase that to 1400.
2. Sheltering as the recommended response to the release of radiation is not adequate to protect public health. The typical rural house found around the

plant site is not well-insulated and air in it is exchanged several times each hour. Early sheltering rather than evacuation means that if conditions worsen and evacuation becomes necessary, people become exposed to greater amounts of radiation in their automobile or a bus. Testimony by Drs. Johnson and Zeigler before the Suffolk County Legislature also suggests that when notified that sheltering is necessary up to one-fourth of the population would evacuate. This "evacuation shadow phenomenon" is based on lack of trust of gov^{ernment} and the utilities and an extremely high estimation of the risks presented by a radiological emergency.

3. Annex G of the ERP (Warning and Notification of Boaters on Jordan Lake and the Surrounding Recreation Areas) does not address the unique evacuation and sheltering problems inherent in the Reservoir area. Currently, on a summer weekend the Department of Natural Resources and Community Development estimates that there are between 5 and 10,000 people on the lake, and this is without many of the boat access points proposed for development. At some of the places there is up to a two-hour delay for putting a boat in the water. Several additional state recreation areas will come on line in the next couple of years, increasing the number of people boating, fishing swimming, and hiking around the reservoir. Most of this activity is expected to take place within the southern end of the reservoir (that is, within the 10-mile zone around Harris) as the water is cleaner and deeper there. Even with minimum response time for notification, there could be up to a three-hour time lag between notification on the water and returning to the boater's automobile. This is compounded by sail boats facing adverse winds. Open boats are also not adequate for sheltering. Further, Annex G

does not contain clear routes for evacuation from the reservoir area and no hospitals in Chatham County are able to handle radiation exposure.

4. 10 CFR 50.47(b)(6) requires "prompt communications among principal response organizations." The communication system contained in the ERP is inadequate as the primary means of communication between the outlying counties, the State and Federal Response organizations, and the Wake County EOC are by commercial telephone service with some radio. Only the EOC is connected to the Harris Plant by a dedicated line. The system is likely to be greatly overburdened during times of a nuclear accident. The heaviest user day in this area was after the recent tornadoes when worried people sought information. In the time of a crisis, assuring rapid and reliable communication among all principal response organization and not just between the EOC and the Applicants is essential for an effective response.

5. The ERP does not adequately address delays caused by inclement weather conditions. The NRC Staff's Final Safety Evaluation reports maximum snow conditions (up to 17.2 inches in a month), ice (four days a year up to .75 inches), and fog (36 days a year with less than .25 mile visibility).

The NC Department of Transportation is expected to clear the highways for the evacuation routes regardless of the conditions (Part 1, Page 50).

The ERP also implies that the conditions of snow and ice have been included in calculating the evacuation times under "adverse" conditions although no winter days are included. Additionally, the Evacuation Time Estimates for the Plume Exposure Pathway EPZ by HMM Associates, September 1983, upon which the evacuation time estimates at Figure 13, Part 1, Page 51 and elsewhere,

are based defines "adverse weather" conditions to be only heavy rain, not snow or ice (Page 1-3). Truly adverse weather would greatly increase the times for both notification and evacuation and would also greatly increase accidents which would block evacuation routes. Disastrous weather, such as hurricanes (roughly every ten years) and tornadoes, would slow down the evacuation process and at the same time increase the likelihood of reactor accident.

6. The ERP to be effective relies on paid and volunteer workers in the various counties to alert and evacuate citizens, guide traffic, maintain order, and carry out the broad range of required tasks. In addition to the specific tasks outlined, under the ERP "any county or municipal agency, department or organization may be tasked with an emergency mission" (Part 2, Page 3; Part 3, Page 3; Part 4, Page 3; Part 5, Page 3). The ERP makes the false assumption that once all the required workers are contacted that virtually all of them will choose to immediately carry out the task assigned. This would require workers, who are also parents and responsible family members, to both put themselves at considerable risk, and more importantly, to choose not to go back to their families and assure their safety in the face of a threat. In Wake County alone there will necessarily be 100 bus drivers to evacuate the 5000 school children, and volunteer firemen from 21 departments. Kai Erickson, a sociologist at Yale University, in his Testimony Before the Suffolk County Legislature Regarding Emergency Planning for the Shoreham Nuclear Power Station, January 1983, page 4, estimated that in the face of a nuclear accident up to two-thirds of the expected workers would not carry out their assigned task. In this, the ERP violates 10 CFR 50.47(b)(1) which states that there must be

assurance that "each principal response organization has staff to respond and to augment its initial response on a continuous basis."

7. The Evacuation Time Estimates (Part 1, Figure 13, Page 51; Part 5, Figure 6, Page 34) are intentionally misleading as they are based on the assumption that alerting and notification times are calculated to be 15 minutes (Evacuation Time Estimates, HMM Associates, September 1983, Figure 7-1). Among groups which have specifically rejected the possibility of a 15-minute notification are the Sandia Nation Laboratory, the Emergency Preparedness Division of South Carolina, the Civil Defence Department of Alabama, and Baltimore Gas & Electric Company (Joint Review of Comments; Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NRC and FEMA, April 1981, Pages IV-11 to IV-15). The NRC and FEMA maintained that a 15-minute notification is feasible only on the grounds that "(r)esources may be provided by the utility" (Page IV-11). The Applicants have not justified its 15-minute notification times and is not providing any resources for alerting and notification except in those areas in their direct control (that is, the plant site and the exclusion zone). Notification times for each of the counties are substantially longer than 15 minutes (Part 2, Pages 22-23; Part 3, Page 21; Part 4, Pages 22-23; Part 5, Pages 22-25).

8. 10 CFR 50.47(b)(1) mandates that "each principal response organization has staff to repond and to augment its initial response on a continuous basis" (emphasis added) while (b)(15) requires that "(e)mergency response training is provided to those who may be called on to assist in an emergency." The Radiation Protection Section (RPS) of the NC Department of Human Resources,

one of the principal state agencies, does not have adequate staff and does not have adequately trained staff. The RPS has 21 technical people and is called on in the ERP to be in up to 8 distinct locations (man the office, SERT support at the Department of Administration, staff the mobile lab, and two survey teams, and provide support for the four counties).

Section Head, Dayne Brown, stated that it was "assuredly difficult" to fill the RPS's role and that even the short exercises consumed all of their resources, let alone several days on duty. RPS staff is able to call on an untrained volunteer team (called TOREV) and after a few days, get help from other states, but neither of these groups are familiar with the ERP for Shearon Harris. Brown also states that his staff and the volunteers needs progressive training, especially with the hospitals, but does not have adequate funding.

9. 10 CFR 50.47(b)(8) requires that "(a)adequate emergency facilities and equipment to support the emergency response are provided and maintained," and (b)(1) requires adequate staff. The combined capacity for treatment of the hospitals in the ERP (Part 1, Pages 68-70) with outside support is between 88 and 98 radiation victims. This emergency medical capability is dependent on the transfer of heavy, valuable, and sensitive equipment from other locations. The equipment offered by GE is located approximately 150 miles away and under the best conditions is over 3 hours away, not including the time necessary for breakdown, setup, and calibration. Duke Power's equipment is also a considerable distance away. This equipment also needs personnel with expertise in its use. The ERP mentions that seven doctors have agreed to assist but does not present their qualifications or location. There is no mention at what emergency classification level that this equipment would

be requested; additional delay will cause deaths. Additionally, Chatham County has no hospitals which can handle radiation victims yet the western evacuation route, US Rt. 64, travels through it. The medical facilities do not provide the necessary of support needed for an adequate emergency response.

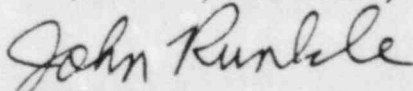
10. The ERP contains an inconsistency which brings into question the adequacy of the entire plan. Notification in the 10-mile zone, excluding the Jordan Reservoir, is primarily with sound truck which travel along pre-assigned routes and stop every quarter-mile to make an announcement. At several places in the ERP, it is stated that, including stops for announcement, "it is estimated that each vehicle will travel an average fifiteen miles per hour" (Part 2, Page 2; Part 3, Page 20; Part 4, Page 19; Part 5, Page 20). However in other places the speed at which the sound alert vehicles are expected to travel vary considerably (ranging from 12 to 60 miles per hour with an average over 30 miles per hour). If a constant figure of 15 miles per hour is used, then the overall time required to alert would rise by over 200%. This would further compound the evacuation times raised in Contention 7. No explanation for this gross error has been presented.

11. Local county and city governments have the primary responsibility to protect public health and safety. In the ERP they are the first line of defense, yet each is understaffed and without a budget to train personnel. The counties must rely on the Applicants for information packets and the wording of the alert bulletins. Applicants recommend protective action and the counties must follow their recommendations if the emergency management coordinator cannot be reached. The counties are on their own until the SERT takes control; this can take between two and nine hours after DEM is notified that there is an emergency at the plant. The counties need trained personnel

and equipment necessary to determine the best response to an evolving accident independent to the utility. Public confidence and trust is an important factor or there will be panic.

12. The ERP does not present any rationalization for keeping the plume exposure pathway EPZ at a 10-mile radius or the ingestion pathway EPZ at 50 miles. 10 CFR 50.47(c)(2) states that "(t)he exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be 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." Evacuation plans should be developed for the towns of Sanford and Cary as it is likely that the people in those areas are likely to evacuate themselves (see Johnson and Zeigler, Testimony before the Suffok County Legislature). Similarly, each of the cities within 25 miles probably needs evacuation planning, including routes, personnel to direct traffic and prevent looting. Depending on wind changes, it is likely that major areas of the population will evacuate themselves, regardless of the recommendations coming from the Applicants through local governments. Extensive dislocation occurred around TMI far outside the 5-mile radius recommended. The Applicants have not provided any planning for the potential area-wide panic or discussed with local government what can be expected.

Respectfully submitted,



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CERTIFICATE OF SERVICE

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I hereby certify that copies of Contentions Arising From Review of Emergency Response Plan were served upon the following persons by deposit in US Mail, postage prepaid, this 3rd day of April, 1984. 84 APR -6 P3:52

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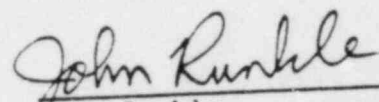
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This is the 3rd day of
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cc. Dayne Brown, Head, Radiation
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