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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of)
)
CAROLINA POWER & LIGHT COMPANY)
AND NORTH CAROLINA EASTERN)
MUNICIPAL POWER AGENCY)
)
(Shearon Harris Nuclear Power Plant))
)

Docket No. 50-400 OL

APPLICANTS' MOTION FOR SUMMARY DISPOSITION OF EPJ-1

Carolina Power & Light Company and North Carolina Eastern Municipal Power Agency ("Applicants") hereby move the Atomic Safety and Licensing Board ("Board"), pursuant to 10 C.F.R. §2.749, for Summary Disposition in Applicants' favor of EPJ Contention 1. As discussed herein, there is no genuine issue as to any fact material to EPJ-1, and Applicants are entitled to a decision in their favor on EPJ-1 as a matter of law. This motion is supported by:

- 1) "Applicants' Statement of Material Facts as to Which there is no Genuine Issue to be Heard on EPJ-1";
- 2) "Affidavit of Brian D. McFeaters on EPJ-1";
- 3) "Affidavit of M. C. Adams on EPJ-1";
- 4) "Affidavit of Robert D. Klimm on EPJ-1," and
- 5) "Applicants' Memorandum of Law in Support of Motions for Summary Disposition of Emergency Planning Contentions," filed October 8, 1984.

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I. Procedural Background

EPJ Contention 1 was admitted as a contention in this proceeding in the course of the May 2, 1984 prehearing conference. See Tr. 974-975, 993-996, attached to "Order (Ruling on Various Procedural Questions and Eddleman Contention 15AA)" (May 10, 1984). As admitted by the Board, EPJ-1 contends:

Insufficient consideration has been given in the off-site Emergency Plans to the effects of severe snow and ice conditions on evacuation times and/or capabilities to clear evacuation routes.

Section IV.E.8 of the State plan (at 50) is deficient because the state does not have enough snow plows in this area to effectively clear the roads of snow or ice in a reasonable amount of time.

Applicants have served one set of interrogatories and request for production of documents on the Joint Intervenors on the subject of EPJ-1. See "Applicants' Emergency Planning Interrogatories and Request for Production of Documents to Sponsors of EPJ-1 and EPJ-2 (First Set)" (August 9, 1984). Joint Intervenors' "Response to 'Applicants' Emergency Planning Interrogatories and Request for Production of Documents to Sponsors of EPJ-1 and EPJ-2 (First Set)'" ("9/17/84 Responses") were late-filed on September 17, 1984.¹ Neither the Joint Intervenors nor the NRC Staff/FEMA filed any discovery request on EPJ-1 prior to the last date for filing discovery requests of August 9, 1984. However, on October 8, 1984, Joint Intervenor CHANGE filed its "Emergency Planning Interrogatories and Request for Production of Documents to Applicants" on

¹The 9/17/84 Responses and a later set of interrogatories were filed by CHANGE although CCNC had been designated as the lead intervenor on EPJ-1. See "Final Set of Rulings on Admissibility of Offsite Emergency Planning Contentions, Ruling on Petition for Waiver of Need for Power Rule, and Notice of Upcoming Telephone Call," dated August 3, 1984.

Contentions EPJ-1, EPJ-2, and EPJ-4. Despite the late nature of this filing, Applicants responded to the interrogatories on October 29, 1984. See "Applicants' Response to [CHANGE] Emergency Planning Interrogatories and Request for Production of Documents [on Contentions EPJ-1, EPJ-2, and EPJ-4]," dated October 29, 1984 ("Applicants' 10/29/84 Responses"). Discovery on this contention is now complete.

EPJ-1 is classified as an Emergency Planning Contention to be addressed in the hearings scheduled to commence June 18, 1985. Written direct testimony on the contention is scheduled to be filed June 3, 1985. Further, the Board has established January 14, 1985 as the last day for filing summary disposition motions on this contention. Thus, the instant motion is timely, and EPJ-1 is ripe for summary disposition.

II. Governing Legal Standards

A. Summary Disposition

"Applicants' Memorandum of Law in Support of Motions For Summary Disposition of Emergency Planning Contentions," filed previously in this proceeding on October 8, 1984, is fully applicable to this motion and is incorporated by reference herein.

B. Substantive Law

The Commission's Emergency Planning Regulations, at 10 C.F.R. §50.47(b)(10), require, in relevant part, that:

A range of protective actions have been developed for the plume exposure pathway EPZ for . . . the public.

As noted in footnote 1 to 10 C.F.R. §50.47, this planning standard is further addressed by NUREG - 0654/FEMA - REP - 1, "Criteria For Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980). In particular, NUREG-0654 in Appendix 4 gives guidance on providing evacuation time estimates within the plume exposure pathway. At Part IV.A. of the Appendix, the NUREG requires that

the two conditions - normal and adverse - are considered in the (evacuation time) analyses. Adverse conditions would depend on the characteristics of a specific site and could include flooding, snow, ice, fog or rain. The adverse frequency used in this analysis shall be identified and shall be severe enough to define the sensitivity of the analysis to the selected events. These conditions will affect both travel times and capacity. (Emphasis added.)

CP&L has performed such an analysis of an adverse condition which is found in Part I Section IV.E.8 at p. 50 of the North Carolina Emergency Response Plan ("ERP"). There is no regulatory requirement that licensees must calculate their adverse weather scenario based on snow and ice conditions nor is there a requirement that one must postulate the most extreme weather conditions for that calculation. Cf. Duke Power Company, et al (Catawba Nuclear Station, Units 1 and 2), ASLBP 81-463-06-OL, "Supplemental Partial Initial Decision on Emergency Planning," dated September 18, 1984 at 103. ("There is an inherent danger in basing time estimate studies on only worst case scenarios: it could lead to advising the population to shelter when evacuation is feasible and safer.")

To meet the Emergency Planning Regulations set forth at 10 C.F.R. § 50.47, an emergency plan for a nuclear generating facility "must provide for a variety of protective measures including sheltering, evacuation, and the possible use of blocking agents such as potassium iodide — the overall objective being the avoidance of as much radiation exposure as possible." See Cincinnati Gas & Electric Co., et al. (Wm. H. Zimmer Nuclear Power Station, Unit No. 1), ALAB-727, 17 NRC 760, 761 (1983)

("Zimmer"). Consideration of adverse weather conditions as required by NUREG-0654, Revision 1 is designed to provide information to assist decision-makers in determining which protective measures should be utilized. See Consumers Power Company (Big Rock Point Nuclear Power Plant), ASLBP 79-432-11-LA, "Initial Decision (On All Remaining Issues)," dated August 29, 1984 ("Big Rock Point") at 146-47. There may be situations in which evacuation is not possible. See Consolidated Edison Company of N.Y. (Indian Point, Unit No. 2) and Power Authority of the State of N.Y. (Indian Point, Unit No. 3), LBP-83-71, 18 NRC 811, 980 (1983) ("Indian Point"). However, "[n]o NRC or FEMA regulation requires that dose-saving evacuation be possible in any set of circumstances whatsoever. No realism worthy of the name could so require. Thus, every emergency plan makes sheltering an option." See Philadelphia Electric Company (Limerick Generating Station, Units 1 and 2), Docket Nos. 50-352-OL and 50-353-OL, "Memorandum and Order Rejecting AWPP's New Contention on Evacuation," dated September 14, 1984; accord Big Rock Point at 146.

III. Argument

Contention EPJ-1 challenges the evacuation aspects of the North Carolina ERP. In particular, it is alleged that the effect of "severe snow and ice conditions" on evacuation times and on capabilities to clear roads has not been given sufficient consideration. Specifically, it is contended that the state of North Carolina lacks the necessary snow plows in the area "to effectively clear the roads of snow or ice in a reasonable amount of time."

In the event of a radiological emergency at Harris, the full range of protective measures for the public will be considered. The determination as to whether evacuation is a viable option will be made by the County or by the Radiation Protection Section

(RPS), Division of Facility Services, North Carolina Department of Human Resources. See ERP Part 1, Section IV.E.8.c.d; ERP Parts 2-5, Section IV.E. In making such a determination the impact of snow and ice conditions are accounted for. See Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit No. 1), LBP-81-59, 14 NRC 1211, 1589-90 (1981), aff'd ALAB-698, 16 NRC 1290 (1982). In the circumstance of an extremely heavy storm, involving frozen precipitation, the only protective action possible may be sheltering. See e.g. Indian Point at 980.

As stated in the Affidavit of Robert D. Klimm ("Klimm Affidavit"), the evacuation time estimates for the Shearon Harris Nuclear Power Plant (SHNPP) plume exposure Emergency Planning Zone (EPZ) include consideration of adverse weather conditions. Klimm Affidavit at 2. Because the NUREG-0654, Rev. 1 requirement to assess adverse weather conditions is intended to provide information which would be helpful to decision-makers in the event of an accident at the plant, the adverse condition addressed should not be so severe or lacking in severity that it presents a scenario which occurs infrequently. Id. at 2-3.

Mr. Klimm points out that consideration was actually given to all adverse weather conditions which occur within the SHNPP EPZ including rain, fog, flooding, snow, ice and high winds when developing the Applicants' ETE study adverse weather scenario. However, the heavy or severe rainstorm condition was chosen as most appropriate because it represents a condition which is severe enough and occurs often enough to provide a reasonable frame of reference for protective action decisionmaking during adverse weather conditions. Id. at 2. As indicated by Mr. McFeaters in his affidavit, any occurrences of snow or ice in the area are infrequent and a significant accumulation of either is rare. Affidavit of Brian D. McFeaters ("McFeaters Affidavit") at 2-3. This is further supported in the Affidavit of M.C. Adams. Affidavit of M. C. Adams ("Adams Affidavit") at 2. Thus, snow and ice conditions were considered in the SHNPP ETE

studies (Klimm Affidavit at 2), but because of their infrequency and, accordingly, diminished usefulness as a frame of reference for planning, they would not have been used as the adverse weather scenario in the study. Klimm Affidavit.

The Harris Plant ETE studies as performed by HMM Associates have been examined by the Nuclear Regulatory Commission's contractor responsible for review of evacuation time estimates — Battelle Pacific Northwest Laboratories. Dr. Thomas Urbanik II, Associate Research Engineer with the Texas Transportation Institute of the Texas A&M University System and subcontractor to Battelle, performed the review and concluded that all aspects of the ETE studies were "adequate" (his highest rating). See NRC Staff Response to Interrogatories Propounded by Wells Eddleman on June 29, 1984 on Contentions 215 and 224 ("NRC Staff Responses") at Attachment entitled "Evaluation of Evacuation Time Estimate." Assumptions, methodology, and consideration of adverse weather were among numerous aspects of the studies evaluated as adequate. Id.

That Intervenors misunderstand the adverse weather scenario as a planning tool becomes evident in their answers to interrogatories. Contention EPJ-1 indicates that roads² should be cleared in a reasonable amount of time, defined as the "time identified in the ERP for evacuation in adverse weather." 9/17/84 Responses at Answer EPJ-1-9. This would mean within 3 hours and 56 minutes. ERP at 50. When asked to explain why, in their opinion, roads must be cleared within this amount of time, Intervenors stated, "... this must be accomplished if the integrity of the plan options in adverse weather conditions is to be maintained. Otherwise, the plan is based on incorrect assumptions, and may be unworkable under normal snow and ice conditions." 9/17/84 Responses at Answer EPJ-1-10. Such an answer appears to clearly reflect a failure to comprehend the

²Intervenors have not defined this term but Applicants have done their analysis on the basis of all roads within the EPZ and all primary evacuation routes outside the zone. See Adams Affidavit at 4-5.

adverse weather scenario as simply a basis upon which protective action decisions will be made. Certainly there are adverse weather circumstances which will have lesser effects and greater effects upon evacuation times than the scenario used.³ However, decision makers will take this into account in determining appropriate responses during an emergency at the Harris Plant. Klimm Affidavit at 4; see also Big Rock Point at 265 ("As conditions depart from the circumstances considered in the evacuation time studies, the decision makers will use their experience and judgment to factor such conditions into their evaluations of appropriate protective measures.")

The key aspect of Intervenor's contention that inadequate consideration has been given to severe snow and ice conditions, are their assertions that capabilities to clear evacuation routes have not been considered, and that the State of North Carolina does not have enough snow removal equipment in the "area around the (Harris) plant"⁴ to "effectively clear roads of snow or ice in a reasonable amount of time." It is not clear from the language of the contention itself what is meant by "severe" snow and ice conditions. However, Intervenor has defined the term "severe snow and ice conditions" as used in the contention as "anything more than 1/2 inches of snow in a 24-hour period." 9/17/84 Responses at Answer EPJ-1-1(a). Applicants reviewed historical data to determine that large accumulations of snowfall and severe ice storms in the area around the Harris Plant site are rare. McFeaters Affidavit at 2-3. This same data shows that average monthly snow accumulations are not more than 2.5 inches. Id. at 2.

³See generally Big Rock Point at 149: "Intervenor apparently ascribe to the evacuation time studies a greater purpose than the studies are meant to serve. Although evacuation time estimates are useful devices to aid in the protective action decision making process, such estimates are only one of the tools that decision makers use. The evacuation time estimates cannot possibly evaluate every conceivable evacuation scenario."

⁴Intervenor has only defined this as the "general area around the plant." See 9/17/84 Responses at Answer EPJ-1-7(b).

Therefore any given snowfall in the Harris Plant area, no accumulation above 2.5 inches would be expected. Thus, any snow or ice storms occurring within the Harris Plant EPZ will most likely be slight in accumulation, and such storms requiring the use of snow removal equipment for extended periods of time would be unlikely events. Id. at 3.

The North Carolina Department of Transportation (NCDOT) is one of the primary response organizations referred to in the North Carolina ERP. Adams Affidavit at 2. The Department has the responsibility of keeping roadways in North Carolina clear of hazards. Id. Mr. M. C. Adams, who has been with the NCDOT for 22 1/2 years, is Manager of the Maintenance and Equipment Branch of the NCDOT, and as such is responsible for overseeing and maintaining roadways throughout the state including the four counties which lie in part within the EPZ: Harnett, Wake, Chatham and Lee. Id. at 1-3.

The timing of an emergency situation at Harris in relation to possible adverse weather conditions is important. The NCDOT works closely with the National Weather Service to track any such conditions which may affect roadways in North Carolina, and keeps its offices across the state informed through a computer communications network. Id. at 2-3. At any time of the day, whenever snowfall is imminent, the NCDOT maintains at least a minimum crew at each county office, and vehicles equipped with plows and salt spreaders are dispatched to points along major transportation routes where clearing is to begin. Thus clearing operations are ready to commence as soon as snow starts. Id. at 3.

At its offices in each of the four counties within the EPZ, the NCDOT currently has 110 pieces of snow removal equipment. Each of these snow removal vehicles is equipped with a snow plow and some also include spreaders for salt. Id. at 3. In the event of an accident at the Harris Plant during a snowfall, 50 pieces of snow removal equipment — approximately one unit for each twelve miles of road — are assigned to

perform snow clearing operations solely within the EPZ and on major evacuation routes outside the EPZ.⁵ Id. There are more than sufficient personnel to provide two operators per vehicle.⁶ All routes will be cleared simultaneously. In this manner, in the event of snow (up to six inches) or ice conditions, all roads within the EPZ and major evacuation routes outside the EPZ (to evacuation centers) will be cleared in 4 hours or less.⁷ Id. at 3-4. This means that primary U.S. and N.C. routes will be scraped twice and every other road scraped once. If conditions are such that more equipment and personnel are needed to meet this time frame, the NCDOT will make them available. Id. at 5.

There may be times, due to adverse weather or otherwise, that, during a plant emergency, evacuation may not be possible. Klimm Affidavit at 4. However, given the average accumulations of snowfalls in the area around the Harris Plant and the time required to clear such snow from EPZ roadways and major evacuation routes outside the 10 mile zone, evacuation time estimates under such conditions may be somewhat higher but not significantly greater than a heavy rainstorm condition. Id. In any event those times would be taken into account by those making protective action decisions. Id.

⁵Under non-accident conditions, 25 pieces of equipment are used to clear these roads. See Applicants' 10/29/84 Responses at Answer EPJ-1-3(c).

⁶The willingness of personnel to respond in emergency situations is the subject of Emergency Planning Contention EPJ-3.

⁷Compare this with Intervenor's definition of a "reasonable amount of time" for clearing roads as that which would allow adverse weather evacuation times of 3 hours, 56 minutes to be met. See 9/17/84 Responses at Answer EPJ-1-9 and ERP at 50; contra Zimmer at 762: "[t]he Commission's emergency planning requirements do not prescribe specific time limits governing the evacuation of plume EPZs. The matter of the time within which evacuation can be accomplished is left to be determined on a case-by-case basis upon consideration of all relevant conditions prevailing in the specific locality."

Conclusion

Intervenors have alleged that insufficient consideration has been given in the ERP to the effects of "severe snow and ice conditions" on evacuation times and capabilities to clear evacuation routes, and that the State of North Carolina does not have enough plows to clear roads in a reasonable amount of time. The adverse weather scenario included in Applicants' ETE represents a heavy or severe rainstorm condition. Such adverse weather scenarios are developed pursuant to NUREG-0654, Rev. 1, Appendix 4 in order to address a condition which would be helpful to decision-makers in determining protective actions during an accident. While snow and ice conditions were considered for the ETE, the scenario chosen is one which is severe enough and occurs often enough to provide a reasonable frame of reference for protective action decision making during adverse weather conditions. The NRC expert has reviewed the Harris Plant ETE studies, including adverse weather considerations, and have concluded them to be adequate.

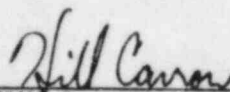
Intervenors have defined "severe snow and ice conditions" as "more than 1/2 inch of snow in a 24-hour period." Historical data reveals that severe snow and ice conditions, meeting even this very general definition, in the vicinity of the Shearon Harris Plant are not common occurrences. In fact, an average single snowfall in the area would not be expected to be greater than 2.5 inches. Thus, snow or ice storms requiring extended use of snow removal equipment are unlikely events.

For snowfalls up to six inches in accumulation, the NCDOT, in the event of a Harris Plant emergency, has assigned sufficient equipment and personnel to clear all roads within the EPZ and all major evacuation routes outside the EPZ within four hours. This includes scraping all primary U.S. and N.C. routes twice, and all other roads once. If conditions are such that more equipment and personnel are needed to meet this time frame, they will be made readily available. While this may make the time estimates for evacuation slightly higher than during a heavy rainstorm condition, the effect will not be

significant. However, in any event, this information will be taken into account by decision makers in determining appropriate protective actions.

Thus contrary to Intervenor's assertions, sufficient consideration has been given to the effect of "severe snow and ice conditions" both on evacuation time estimates and the capability to clear roadways. It has been demonstrated that the State of North Carolina has more than adequate plows and snow removal equipment and personnel to clear all roads in the EPZ and evacuation routes outside the zone in an expeditious manner.

This the 10th day of December, 1984.



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