

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

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In the Matter of )

CAROLINA POWER & LIGHT COMPANY )  
and NORTH CAROLINA EASTERN )  
MUNICIPAL POWER AGENCY )

(Shearon Harris Nuclear Power )  
Plant) )

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

Docket No. 50-400 OL

APPLICANTS' BRIEF IN REPLY TO  
INTERVENORS' APPEAL FROM THE  
PARTIAL INITIAL DECISION ON  
ENVIRONMENTAL CONTENTIONS

Thomas A. Baxter, P.C.  
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May 9, 1985

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APPLICANTS' BRIEF IN REPLY TO  
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ENVIRONMENTAL CONTENTIONS

COUNTERSTATEMENT OF THE CASE

On February 21, 1985, the Atomic Safety and Licensing Board's Partial Initial Decision on Environmental Contentions was served upon the parties to this proceeding. See Carolina Power & Light Company, et al. (Shearon Harris Nuclear Power Plant), LBP-85-5, 21 N.R.C. \_\_\_\_ (Feb. 20, 1985). On March 5, 1985, the Conservation Council of North Carolina ("CCNC"), Joint Intervenor<sup>1/</sup> and Wells Eddleman filed a "Notice of Appeal." On April 9, 1985, those parties filed "Appeal from Partial Initial Decision on Environmental Contentions" (cited hereafter as

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<sup>1/</sup> The Joint Intervenor, consolidated for certain contentions only, are Mr. Eddleman, CCNC, Chapel Hill Anti-Nuclear Group Effort ("CHANGE") and Kudzu Alliance.

"Intervenors' Brief"). Pursuant to 10 C.F.R. § 2.762(c), Carolina Power & Light Company ("CP&L") and North Carolina Eastern Municipal Power Agency (collectively "Applicants") file this brief in reply and opposition to the appeal.

The relevant history of the proceeding has been set forth in the Licensing Board's decision and need not be repeated here.<sup>2/</sup> As noted by the Intervenors, the Licensing Board's Partial Initial Decision, in addition to resolving the environmental contentions which went to hearing, also made ripe for appellate review any other dispositive ruling on environmental matters. Intervenors' Brief at 1-2; LBP-85-5, slip op. at 1, 59. Intervenors state that "[i]n preparing this Appeal, we discovered that the Licensing Board has never ruled on which of the contentions propounded in the various Supplements to Petition to Intervene and various late-filed contentions were environmental contentions." Intervenors' Brief at 2. Intervenors proceed to express some doubt that they have identified all of the rulings subject to appeal at this point.

While the Licensing Board never published a list identifying which of the proposed contentions rejected at the pleading stage were environmental (such a ruling was neither requested nor expected), the discussions in the rulings should be of some assistance to the Intervenors. Further, the Intervenors should know

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<sup>2/</sup> Applicants note, for the Appeal Board's information, that fuel loading for the Shearon Harris facility is scheduled for March, 1986.

whether or not a contention they proposed challenges the agency's implementation of its statutory responsibilities under the National Environmental Policy Act. As to contentions admitted at some point for discovery, it has been established which are considered to be "environmental." The classification of originally admitted contentions was a matter of stipulation among the parties. See Licensing Board Memorandum and Order (Reflecting Decisions Made Following Second Prehearing Conference) at 6 (March 10, 1983). In proposed findings, Applicants identified four subsequently admitted contentions as environmental, and no party replied in disagreement. See Applicants' Proposed Findings of Fact and Conclusions of Law on Environmental Matters, July 20, 1984, at ¶ 9.

Turning to the matters actually appealed, Intervenors' Brief includes argument on four questions presented. Part I challenges the decision on the three contentions which went to trial. Parts II and IV challenge rulings which rejected contentions for failure to meet the requirements for admission to the proceeding. Part III appeals from a denial of a petition to waive, in this proceeding, a Commission regulation. Applicants reply to the four arguments in the order presented by Intervenors.

## ARGUMENT

- I. The Licensing Board Correctly Rejected Joint Intervenors' Contentions II(c) and II(e) and Eddleman Contention 8F(1) and Found Adequate the NRC Staff's NEPA Analysis on the Basis of the Overwhelming Weight of the Evidentiary Record

### A. Introduction

In its Partial Initial Decision on Environmental Contentions, the Licensing Board resolved the three outstanding environmental contentions that were not withdrawn, dismissed or resolved by the summary disposition process. These three contentions concerned the appropriate time periods for considering the health effects of normal radiological releases from the Harris Plant (Joint Contention II(c)), the environmental effects of radionuclides attaching to fly ash existent in the atmosphere (Joint Contention II(e)), and the environmental effects of Table S-3 coal particulates (Eddleman Contention 8F(1)). Contrary to the Intervenors' assertion, the Licensing Board did not err in its determination that these contentions are without merit, and that the Final Environmental Statement (FES) for the Harris Plant satisfies the agency's responsibilities under the National Environmental Policy Act (NEPA) and the Commission's implementing regulations, 10 C.F.R. Part 51.



## B. The Standard of Review

Intervenors begin by incorrectly equating the Appeal Board's review with that of a court reviewing agency action. Intervenors' Brief at 8-9. While the incorrect standard cited by Intervenors would make reversal of the Licensing Board more difficult, Applicants are compelled to describe the appropriate standard for Appeal Board review.

The Appeal Board "stand[s] in the Commission's shoes" in its exercise of authority when reviewing licensing board decisions. Duke Power Company (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 N.R.C. 397, 404 (1976); 10 C.F.R. §§ 2.785, 2.786. The Appeal Board accordingly is not bound by a "substantial evidence" rule. Catawba, supra, ALBA-355, 4 N.R.C. at 404-405. "[W]here the administrative record considered as a whole will fairly sustain a result deemed preferable by the agency to the one selected by its initial decision maker, the law is clear that the agency may substitute its judgment for its subordinate's." Id. at 403-404 and authorities cited therein.

While the Appeal Board has the authority to reject or modify findings of a licensing board, it has stressed that it does not do so lightly. Id. at 404. Rather than evaluating the evidence on a clean slate, the Appeal Board carefully considers the licensing board's evaluation of the evidence and its disposition of the issues. Id. In the present case, Applicants submit that this consideration will result in a determination that not only



the preponderance of the evidence supports the Licensing Board's decision -- the applicable standard on which a decision must be based -- but that the overwhelming weight of the evidence supports the Licensing Board's rejection of Joint Contentions II(c) and II(e) and Eddleman Contention 8F(1). Id. at 405 n.19, citing Consolidated Edison Company of New York (Indian Point Station, Unit No. 2), ALAB-188, 7 A.E.C. 323, 356-57 (1974), remanded on other grounds, CLI-74-23, 7 A.E.C. 953 (1974); accord, Consolidated Edison Company of New York (Indian Point Station, Unit No. 3), CLI-75-14, 2 N.R.C. 835, 839 n.8 (1975).

#### C. The Agency's NEPA Responsibilities

Intervenors next argue that the Licensing Board misapprehended its NEPA responsibilities by deciding only the matters in controversy. Intervenors' Brief at 9-10. This argument displays a fundamental misunderstanding by Intervenors of the two-step licensing process and the licensing boards' role at the operating license stage.

NEPA requires that federal agencies take a "hard look" at the significant environmental consequences of major Federal actions. Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976); see, e.g., Boston Edison Company (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 N.R.C. 774, 779 (1978). In order to accomplish this purpose, the NRC issues an FES for the construction of the facility,<sup>3/</sup> and then prepares a supplement to the FES

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<sup>3/</sup> NRC's regulations require the applicant for a construction permit to submit an Environmental Report ("ER"), which facil-

(Continued Next Page)

when an applicant seeks an operating license. 10 C.F.R. §§ 51.75, 51.92, 51.95. The supplemental FES accompanies the operating license (OL) application through the agency review process. 10 C.F.R. § 51.94. It addresses only those matters which differ from, or reflect significant new information since issuance of the construction permit (CP) on matters discussed in the FES. 10 C.F.R. § 51.95; see Final Rule, Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions and Related Conforming Amendments, Supplementary Information, 49 Fed. Reg. 9352, 9364 (1984) (Supplemental FES requirement is not a requirement to repeat at the OL stage the full-scale environmental review required at the CP stage; the "sole function" of the supplement is to update the prior environmental review); see, e.g., San Luis Obispo Mothers for Peace v. NRC, 751 F.2d 1287, 1298 (D.C. Cir. 1984). Thus, for example, the cost-benefit analysis need not be redone at the OL stage unless significant new information makes it necessary to do so.

Moreover, by rule, the supplemental FES should not discuss alternative sources of energy, alternative sites or the need for power. 10 C.F.R. § 51.95; compare Intervenor's Brief at 10 (Licensing Board review must determine "whether the NRC Staff has met its burden of assessing all environmental issues and

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(Continued)

itates the NRC Staff's assessment of the environmental impact of the proposed action. 10 C.F.R. § 51.45. The ER is then supplemented at the operating license stage. 10 C.F.R. § 51.53.

alternatives from the construction and operation of the facility.").

A Commission decision on an action for which an FES has been prepared is formalized in the public record of decision. 10 C.F.R. § 51.102(a). When a hearing has been convened, the record of decision is the initial decision of a licensing board (or the subsequent Appeal Board or Commission decision). 10 C.F.R. § 51.102(c). The record of decision may be integrated into any other agency record prepared on the matter or may itself incorporate by reference material in the FES as a part of the record of decision. 10 C.F.R. § 51.103(b) and (c). Thus, the agency's consideration of the environmental impact of a proposed action and its position on the matter is contained in the record of decision, which includes the final adjudicatory decision and any other documents considered necessary or appropriate by the decisionmaker.

The Commission's new environmental regulations give to a licensing board a different role in an OL proceeding than is mandated in a CP proceeding -- distinct roles which conform to NRC precedent and practice. See 49 Fed. Reg. at 9365 ("Section 51.104 has been extensively revised to reflect NRC practice respecting the consideration of environmental issues in licensing hearings."). In a CP proceeding, a licensing board must independently ensure that the agency's NEPA obligations have been satisfied. 10 C.F.R. § 51.105; see Pilgrim, supra, ALAB-479, 7 N.R.C. at 792-93 (licensing board serves as an independent check

on whether the NRC Staff has fulfilled its NEPA responsibilities); accord, Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), CLI-77-8, 5 N.R.C. 503, 526 (1977), citing Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-123, 6 A.F.C. 331, 334, rev'd on other grounds sub nom. Aeschliman v. NRC, 547 F.2d 622 (D.C. Cir. 1976), rev'd sub nom., Vermont Yankee Nuclear Power Corp. v. NRC, 435 U.S. 519 (1978).

In contrast, during an OL proceeding, a licensing board's responsibilities are much more limited, consistent with the non-mandatory nature of the hearing process. Section 189(a) of the Atomic Energy Act, 42 U.S.C. § 2239. Obviously, the board must decide all issues in controversy among the parties. 10 C.F.R. § 51.104(a)(3). Although the regulation is not explicit on this point, see 10 C.F.R. § 51.106, it is clear that the role of a licensing board at the OL phase extends no further than deciding contested matters. This conclusion follows from the absence in the regulations of any mention of the board's independent responsibilities, which are made very explicit in the regulation concerning CP proceedings. Compare 10 C.F.R. § 51.106 with 10 C.F.R. § 51.105. It is also consistent with the statement of considerations accompanying the promulgation of revised Part 51, which refers to conformance with current NRC practice, and with the Commission's Rules of Practice set forth in Subpart G of 10 C.F.R. Part 2. 49 Fed. Reg. at 9365. The Rules of Practice provide that in OL proceedings, a licensing board cannot pursue its own issues, absent compelling reasons to do so. 10

C.F.R. §§ 2.760a, 2.785(b)(2); see Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-183, 7 A.E.C. 222, 226 (1974); Virginia Electric and Power Company (North Anna Nuclear Power Station, 1 & 2), ALAB-491, 8 N.R.C. 245, 247 (1978); see also Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 N.R.C. 1105, 1115 (1982) (reference to stringent procedures applicable to the raising of new issues sua sponte). Environmental matters are expressly included in the Rules of Practice concerning matters not put into controversy by the parties. See 10 C.F.R. §§ 2.760a, 2.785(b)(2). Furthermore, there is no reason to apply a different rule to environmental issues raised in an OL proceeding.

In summary, the Licensing Board in this case was responsible for resolving three environmental contentions which challenged very specific facts presented in the FES. It had no independent oversight responsibilities. If the evidence presented on these contentions raised significant new environmental considerations not previously addressed during the CP stage or absent from the supplemental FES prepared for the OL application (which we show below is not the case), the agency would have to consider how this information might affect the previous cost-benefit analysis for the proposed facility. Absent any such finding, however, the Licensing Board's job would end with a decision on the three issues in controversy. Compare Intervenor's Brief at 18 (need for additional cost-benefit analysis).



Also of general applicability to Intervenor's appeal is their apparent position that exhaustive evaluation is required of any conceivable environmental impact of the proposed action, without regard to its significance. In contrast, determinations "need not be based on every scrap of data which could conceivably be gathered." Consolidated Edison Company of New York, Inc. (Indian Point Nuclear Generating Station, Unit No. 3), CLI-75-14, 2 N.R.C. 835, 839 (1975), citing Jicarilla Apache Tribe v. Morton, 471 F.2d 1275 (9th Cir. 1973). Remote and speculative possibilities need not be explored. Philadelphia Electric Company (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-562, 10 N.R.C. 437, 446 (1979), citing Life of the Land v. Brinegar, 485 F.2d 460, 472 (9th Cir. 1973), cert. denied, 416 U.S. 961 (1974). Nor must every uncertainty be definitely eliminated. Long Island Lighting Company (Shoreham Nuclear Power Station), ALAB-156, 6 A.E.C. 831, 838 (1973). As the Ninth Circuit stated in Jicarilla, "[i]f we were to impose a requirement that an impact statement can never be prepared until all relevant environmental effects were known, it is doubtful that any project could ever be initiated." 471 F.2d at 1280.

In short, the agency must utilize a "rule of reason" when evaluating and predicting environmental effects. San Luis Obispo Mothers for Peace v. NRC, supra, 751 F.2d at 1300; see, e.g., Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), ALAB-573, 10 N.R.C. 775, 779 (1979), remanded on other grounds, CLI-80-8, 11 N.R.C. 433 (1980), and numerous authorities cited therein.



D. Joint Contention II(e): Fly Ash

Joint Contention II(e) alleged that radiological doses from the anticipated routine gaseous emissions from the Harris Plant have been underestimated because the NRC Staff and Applicants' analyses fail to account for the attachment of radionuclides to respirable fly ash particles in the ambient atmosphere, and their subsequent deposition in the lung. LBP-85-5, slip op. at 21. The Licensing Board concluded that Joint Contention II(e) was incorrect. It found that the NRC Staff and Applicants' dose estimates, which conform to the guidance contained in Regulatory Guides 1.109 and 1.111 concerning inhalation dose conversion factors and effluent deposition velocities, have not been significantly underestimated. Id. at 25, 29, 30.

Intervenors now challenge this conclusion on the basis of two assertions, each of which is incorrect: (1) that many of the assumptions used in Applicants' dose estimates were found deficient by the Licensing Board; and (2) that there was insufficient technical data presented to be able to assess the effects on the population of Joint Intervenors' fly ash phenomenon. Intervenors' Brief at 10. In Intervenors' view, because of these alleged inadequacies in the record, the environmental analyses of plant operation by the NRC Staff and Applicants are materially deficient. Id. at 11. Contrary to the Intervenors' claim, the Licensing Board's analysis is thorough and sound.

Intervenors selectively cite the findings of the Licensing Board in order to mount their challenge to the Licensing Board's resolution of Joint Contention II(e). Indeed, the Licensing Board agreed with the Joint Intervenors that three particular facts concerning the fly ash phenomenon were not known with the exactitude demanded by the Joint Intervenors. LBP-85-5, slip op. at 29. These facts were: (i) the exact concentration and size distribution of atmospheric particulate matter at the Harris site; (ii) the degree to which radioactive particulate isotopes to be emitted from the Harris Plant may become associated with atmospheric particulate matter; and (iii) the exact extent of lung deposition in the Harris population. Id. at 29. These uncertainties were expressly found to be of no consequence, however, because of the insignificance of their impact on the estimated dose from normal releases from the Harris Plant.

As the Licensing Board observed, the incremental impact of worst case assumptions about these factors would be to increase the estimated dose of 0.2 millirem per year by one tenth of one millirem. Id. at 29-30. This calculation is based on the assumption that the radionuclides released from the plant that can take particulate form<sup>4/</sup> attach to fly ash particles of an optimal

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<sup>4/</sup> Over 98 percent of the whole body dose from inhalation comes from tritium in the form of tritiated water -- a fact Intervenors do not here dispute. LBP-85-5, slip op. at 22. Tritiated water cannot lodge in the lung, but would be exhaled or pass through it. Id. Furthermore, even if this were not the case, only a miniscule fraction of the tritiated water emitted from the Harris

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size such that all of these inhaled particles deposit in the respiratory tract. Id. at 28.5/ In the Licensing Board's view, this increment of uncertainty, attributable to the fly ash phenomenon, is "acceptably small." Id. at 30. Intervenor's offer no facts whatsoever to challenge this analysis. In fact, the evidence strongly supports the view that the fly ash phenomenon identified in Joint Contention II(e) produces precisely the kind of unlikely and insignificant environmental effects that an agency need not address in its environmental impact statement. See section I.C., supra.

Thus, it is particularly ironic that Intervenor's second basis for appealing the Licensing Board's resolution of Joint Contention II(e) is an alleged insufficiency of technical data to support the Licensing Board's findings. The Joint Intervenor's opted to present no affirmative evidence on Joint Contention II(e). LBP-85-5, slip op. at 21. In contrast, however, Applicants' and the NRC Staff's witnesses were health physics

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Plant would be associated with the minute quantities of fly ash in the air and then be inhaled by the population. Id. at 23. In short, the major dose contributor -- tritium -- is virtually unaffected by the fly ash phenomenon of concern in Joint Contention II(e). Id.

5/ Applicants' testimony established that 100 percent retention of inhaled particulate matter is unrealistic. Applicants' Testimony of John J. Mauro and Steven A. Schaffer on Joint Contention II(e) (Fly Ash), ff. Tr. 1,605 ("Mauro & Schaffer"), at 8-9; LBP-85-5, slip op. at 26. At most one would expect 75 percent retention, which is what the Regulatory Guide 1.109 model assumes. Id. at 25-26.

experts<sup>6/</sup> who analyzed in considerable detail the fly ash phenomenon postulated by the Joint Intervenors. These experts utilized distinct but complementary approaches to resolving the issue raised by Joint Contention II(e). Drs. Mauro and Schaffer analyzed in detail the significant features of the inhalation dosimetry and atmospheric deposition models used in the Applicants' ER and in the FES to predict doses from gaseous releases, whereas Dr. Branagan enveloped the problem by calculating the perceived impact of fly ash particles of optimal size on the dose to the critical organ (thyroid). LBP-85-5, slip op. at 25-31; see Mauro & Schaffer, supra; Branagan-II(e), supra. Both analyses effectively established that the assumptions and parameters employed to calculate predicted doses from normal operation of the Harris Plant conservatively account for the attachment of airborne radionuclides to fly ash, notwithstanding the fact that the calculations do not explicitly consider this phenomenon. LBP-85-5, slip op. at 7-8, 26, 27, 30.7/

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<sup>6/</sup> Applicants' witnesses Mauro and Schaffer have doctorates in biology and environmental health science and biology, respectively. They have over a decade of experience in the fields of radiological and environmental assessment. Mauro & Schaffer at 1. Dr. Branagan, the Staff's expert, has a doctorate in radiation, biophysics and is Senior Radiobiologist with the NRC's Radiological Assessment Branch. NRC Staff Testimony of Edward F. Branagan, Jr., on Joint Contention II(e), ff. Tr. 1,865 ("Branagan-II(e)"), attached Professional Qualifications.

<sup>7/</sup> Intervenors may be arguing that some of the uncertainties present and assumptions used in making dose assessments, such as the percentage of inhaled particles deposited in the lung, cause the analysis to be inadequate. See Intervenors' Brief at 11.

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In short, contrary to Intervenor's assertion, the NRC Staff did not fail to meet its NEPA responsibilities by not addressing in detail in the FES the impacts of radionuclides should they attach to fly ash particles in the ambient atmosphere. See Intervenor's Brief at 11. As the evidence presented below clearly established, the phenomenon of concern is of no environmental significance and, therefore, it need not have been addressed in the FES. See section I.C supra; cf. 10 C.F.R. § 51.45(b)(1) ("Impacts shall be discussed in proportion to their significance.")8/

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However, Intervenor identifies no facts to support this charge, nor do they address the ample evidence introduced in the record to support the assumptions used. See, e.g., LBP-85-5, slip op. at 25-26. Furthermore, Intervenor ignores the fact that some factors, such as the exact extent of lung deposition, necessarily vary with each individual and cannot be established with certainty for a population group. Id. at 29. The courts have made it absolutely clear that NEPA does not "require the impossible." Long Island Lighting Company (Shoreham Nuclear Power Station), ALAB-156, 6 A.E.C. 831, 838 (1973), citing EDF v. Corps of Engineers, 325 F. Supp. 749, 798 (E.D. Ark. 1971), quoted with approval in Calvert Cliffs' Coordinating Committee v. AEC, 449 F.2d 1109, 1121 n.28 (D.C. Cir. 1971).

8/ To the extent the fly ash phenomenon required any attention at all, it was extensively analyzed and described on the record in this proceeding. These analyses confirmed the appropriateness of the FES and ER findings on radiological doses from routine plant emissions. If necessary, this evidence can be incorporated into the record of decision on the OL application for the Harris Plant. 10 C.F.R. §§ 51.102, 51.103; see section I.C supra.



E. Joint Contention II(c): Duration  
of Radiological Dose Calculations

Joint Contention II(c) alleged that radiological dose effects have been estimated "over an arbitrarily short period of time compared to the length of time the radionuclides actually will be causing health and genetic damage." LBP-85-5, slip op. at 13. The Licensing Board granted partial summary disposition of Joint Contention II(c), and that ruling is not in dispute. See Carolina Power & Light Company, et al. (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-84-7, 19 N.R.C. 432, 457-58 (1984). Specifically, the Licensing Board barred litigation of speculative radiological impacts over geologic time periods; however, it left for adjudication whether the FES should: (i) describe the risks from routine radiological releases in terms of the 40-year plant life; (ii) take into account the incremental impact on people who live near the plant for many years; and (iii) reflect the time period subsequent to the plant's actual operation. LBP-85-5, slip op. at 5.

After considering the environmental impact of the three issues raised with respect to the duration of radiological dose calculations, the Licensing Board concluded that the FES was adequate without further discussion of these impacts. Id. at 5-6. Intervenors summarily challenge the Licensing Board's conclusions, arguing without any supporting analysis that the Licensing Board erred in finding that the NRC Staff had not significantly underestimated the health risks represented by normal operation of the Harris Plant. Intervenors' Brief at 11.



Intervenors' appeal is based on five statements which simply do not constitute support for the position they maintain. The first three bases are no more than restatements of the contention that was admitted for litigation:

1) the Staff expressed the health risks represented by the normal operation of the facility on an annual basis rather than over the life of the plant (an underestimation of 4000 percent given a forty-year plant life;

2) the Staff did not present any analysis of the effect on people living near the plant for many years;

3) the Staff did not present any analysis on the effects after the plant was no longer in operation (although the Applicants figured the effects over 100 additional years and stated that the increase was an additional forty percent over the operating life);

Intervenors' Brief at 11-12. These assertions utterly fail to address the analyses presented in response to Joint Contention II(e) and summarized by the Licensing Board which: (1) described the method used in the FES and the ER for calculating radiological doses and risks, and explained the reasons for characterizing the offsite impacts of these doses on an annual basis; (2) quantified the reasonable and maximum life-of-the-plant and 100-year post-operation impacts; and (3) demonstrated the insignificance of these impacts relative to normal background radiation. LBP-85-5, slip op. at 5-6, 13-17, 19-20; Applicants' Testimony of John J. Mauro and Stephen F. Marschke on Joint Contention II(c) (Radiological Dose Calculations), ff. Tr. 1,971 ("Mauro & Marschke"); NRC Staff Testimony of Edward J. Branagan, Jr. on Joint Contention II(c), ff. Tr. 2,058 ("Branagan-II(c)").

Moreover, the Intervenor's fail to address the significance of their only two factual observations made in support of their first three assertions -- the alleged 4000 percent plant life underestimation and the Applicants' forty percent underestimate for the post-operation 100-year effects. The alleged 4000 percent underestimation is not really an underestimation, but simply the reflection of characterizing doses on an annual, rather than life-of-the-plant (40 year) basis. To the extent costs increase by 4000 percent, benefits do as well. Most importantly, the 4000 percent and 40 percent alleged omissions from the FES are percentages of two extremely small impacts -- e.g., 4000 percent of 0.004 cancer deaths (i.e., 0.16 cancer deaths), and 40 percent of the 1740 person-rems (i.e., 706 person-rems) 100-year computed dose to the U.S. population (in contrast to about one billion person-rems of natural background), respectively. Mauro & Marschke at 7; LBP-85-5, slip op. at 15; Tr. 2,051-52 (Mauro). As the Licensing Board stated, "adding 40% of a very small number to a very small number, particularly when the unknowns in these analyses are considered, would not constitute a significant change." LBP-85-5, slip op. at 15.

The Intervenor's fourth and fifth bases for appeal on Joint Contention II(c) significantly overlap:

4) that neither the Staff or the Applicants analyzed the effect of plant operation on fetuses from conception to birth although the risk to the fetus is five times higher than to an adult (see Finding 13, page 17, PID); and

5) that neither the Staff or the Applicants fully considered the effects of fetal losses, genetic effects, birth defects, etc., occasioned by radioactive plant effluents (see Finding 15, page 18, PID).

Intervenors' Brief at 12. Intervenors correctly point out that the dose calculations used by Applicants and the NRC Staff begin at age 0, not at conception. LBP-85-5, slip op. at 17; Tr. 1,975-76 (Marschke). The issue, then, is the significance of this fact to the dose calculation, which Intervenors do not address.

As the Licensing Board explained, the omission of fetal dose has little effect on the dose estimate. LBP-85-5, slip op. at 17. This is because, notwithstanding the higher risk coefficient that is applied to the fetus,<sup>9/</sup> the duration of this higher risk is very brief -- three quarters of one year -- out of a 70-year lifetime. Id.; see Tr. 1978-82 (Mauro). Quantitatively, the increase in lifetime dose, factoring in fetal dose, is about 5 percent. Tr. 1986-87 (Mauro). Similarly, the genetic effects from plant operation are insignificant: the Staff calculated the effect to be 0.16 of a potential genetic disorder for the 1.75 million people in the 50-mile plant radius,<sup>10/</sup> in contrast to the

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<sup>9/</sup> It should be noted that this higher risk coefficient may be very conservative as it is derived primarily from the Japanese atomic bomb data base, which involved high exposure levels. Tr. 1978-79 (Mauro).

<sup>10/</sup> This figure represents the calculated sum of potential genetic disorders that may occur over all future generations of the exposed population (within 50 miles) due to exposure to radioactive effluents from 40 reactor-years of operation. Branagan-II(c) at 9.

normal expected rate of about 11 percent of this population.

LBP-85-5, slip op. at 18.

In summary, the Licensing Board carefully considered whether the FES' annualized treatment of radiological doses and risks failed to contain any significant information concerning the duration of dose or risk which it ought to address. It concluded that no significant information was absent from the FES. Id. at 5-6. Moreover, annualizing doses facilitates the assessment of their significance and provides a reasonable representation of the radiological impacts of plant operation. Id. at 19-20; Mauro & Marschke at 5. Plant lifetime doses readily can be calculated from annualized doses and, of course, the cost-benefit ratio essentially would remain unchanged. LBP-85-5, slip op. at 20; Branagan-II(c) at 3. Intervenor's appeal is hollow because it offers no facts or arguments which rebut these findings.

F. Eddleman Contention 8F(1): Coal  
Particulate Health Effects

Eddleman Contention 8F(1) challenged the NRC Staff's estimation of the health effects of the coal particulate value, 1,154 metric tons a year (MT/yr),<sup>11/</sup> contained in Table S-3 of 10

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<sup>11/</sup> The 1,154 MT/yr is a hypothetical attribution of energy from a coal-fired plant needed to support the uranium fuel cycle for one year of the Harris Plant's operation. Most of this energy is used in the uranium enrichment process at gaseous diffusion plants. LBP-85-5, slip op. at 33-34; Applicants' Testimony of Leonard D. Hamilton on Wells Eddleman's Contention 8F(1) (Table

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C.F.R. Part 51, the generic quantification of the environmental impact of the uranium fuel cycle.<sup>12/</sup> LBP-85-5, slip op. at 31. These health effects are treated briefly in the FES. Id. at 32. After reviewing the detailed analyses of Applicants' and NRC Staff's experts,<sup>13/</sup> the Licensing Board found that "the Staff

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S-3 Coal Particulates), ff. Tr. 1,178 ("Hamilton"), at 3; NRC Staff Testimony of Dr. Loren J. Habegger, Dr. A. Haluk Ozkaynak and Mr. Ronald L. Ballard Regarding Eddleman Contention 8F(1) (Health Effects of Coal Particulates at the Table S-3 Level), ff. Tr. 1,380 ("Habegger et al."), at 4.

<sup>12/</sup> As the Licensing Board observed, Table S-3 values are not subject to challenge in individual licensing proceedings. Baltimore Gas and Electric Co. v. NRDC, 103 S.Ct. 2246 (1983); see LBP-85-5, slip op. at 31. However, the health effects attributable to these values are not part of the Table and therefore they may be litigated in individual proceedings. See 10 C.F.R. Part 51, Table S-3 at n.1.

<sup>13/</sup> Dr. Leonard D. Hamilton testified on behalf of Applicants. Dr. Hamilton is an expert on the health and environmental effects of all energy sources, including the health effects of air pollution from fossil fuel combustion for electricity generation. He is the head of the Biomedical and Environmental Assessment Division in the National Center for Analysis of Energy Systems at Brookhaven National Laboratory. LBP-85-5, slip op. at 33; Hamilton at 1 and Attachment 1; cf. Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 N.R.C. 1076, 1092 (1983) (reference to Dr. Hamilton's expert qualifications in the appraisal of radiation health risks).

Dr. Loren J. Habegger, Dr. A. Haluk Ozkaynak, and Mr. Ronald J. Ballard testified on behalf of the NRC Staff. Dr. Habegger is the Manager of the Environment and Natural Resources Section, Energy Environmental System Division, Argonne National Laboratory. Dr. Ozkaynak is the Project Director of Harvard University's multi-disciplinary study of the health effects of ambient particulate matter. Mr. Ballard is Chief of the Environmental and Hydrologic Engineering Branch of NRC's Division of Engineering. LBP-85-5, slip op. at 32-33; Habegger et al., at Attachments 1, 2 and 3.



succinctly and correctly concludes in the FES that there is a miniscule incremental environmental impact from the coal particles identified in Table S-3." Id. at 12. Mr. Eddleman challenges this finding. However, his position is based on three arguments which reflect a misunderstanding of the facts and law at issue.

Mr. Eddleman first maintains that the Licensing Board erred by limiting its consideration of Table S-3 coal particulate health effects to those effects within 50 miles of the coal plant emission sites. Intervenor's Brief at 13-15. Mr. Eddleman doubts that this analysis is a "worst case" analysis because, since coal particulates can travel beyond a 50-mile radius, he believes these effects have been improperly excluded from the analysis.

Mr. Eddleman's concern is unfounded. The model used by Dr. Hamilton assumes that all of the 1,154 MT/yr of coal particulates at issue here are trapped within a 50-mile radius of the coal plant sites because this results in a more conservative assessment of the environmental impact of the particulates. This is because of two independent factors: (i) a greater geographic dispersion of the particulates significantly reduces the particulate concentration level in the atmosphere, and in fact the actual coal plants producing the 1,154 MT/yr are widely geographically dispersed; and, (ii) each actual contributing plant distributes small amounts of particulates over large areas. In contrast, in order to estimate an upper limit of health risk,

Dr. Hamilton focused on only five specific plant sites and attributed all of the particulates to a 50-mile radius around each site. Hamilton at 4, 6-7; see LBP-85-5, slip op. at 35-36.

A further conversatism in Dr. Hamilton's calculation is the linear assumption he uses in applying the damage function for fine particles. LBP-85-5, slip op. at 42. Thus, not only is his calculated 50-mile dose conservatively high, but so is the risk attributable to that dose.

Utilizing a Gaussian dispersion model and actual meteorological data for the sites at issue, the NRC Staff experts calculated the exposure levels within 50 miles. Habegger et al. at 12. These experts did not extend their calculation beyond 50 miles because it was unnecessary to do so: EPA guidelines for such analyses do not recommend estimations beyond 50 miles when concentration levels are below a level which is higher than any level that was found within the 50-mile perimeter. Id. at 15; see LBP-85-5, slip op. at 36-38.

Furthermore, "[n]o worst case analysis is required if an agency has carefully studied the potential environmental impacts of a proposed action and has determined, with a reasonable degree of certainty, the probability and consequences of such impacts." San Luis Obispo Mothers for Peace v. NRC, supra, 751 F.2d at 1302; cf. 49 Fed. Reg. 9352, 9366-9368 (discussion of worst case analysis and NRC view that NEPA analyses should be limited to events that "can reasonably be expected to occur"). In this case, the impact of 1,154 MT/yr has been determined with a very reasonable degree of certainty and accuracy.

In short, if anything, the 50-mile analyses of coal particulate health effects conducted by Applicants was unnecessarily conservative and thorough. Moreover, Dr. Hamilton also performed an alternative calculation of the health (mortality) effects of coal particulate emissions attributable to the uranium fuel cycle by assessing the health risk to the United States due to the long-range transport of these particles and found the risk to be miniscule. LBP-85-5, slip op. at 45, 48-50; Hamilton at 12, 15-16; Tr. 1,279-81 (Hamilton). Although the NRC Staff's experts did not do a long-range transport calculation, because the health effects at the outer boundary of the 50-mile radius were virtually negligible, they would expect effects further away from the coal plants to be even less. Tr. 1,571-72 (Habegger).

Mr. Eddleman next maintains that the Licensing Board failed to confront the evidence of record concerning the best estimate of health effects caused by particulate emissions from coal-burning power plants. Intervenor's Brief at 13. This claim is based on Mr. Eddleman's view that a higher risk coefficient --  $2.31 \pm 0.81$  deaths/year/100,000 persons per  $\text{ug}/\text{m}^3$  FP -- should have been used to estimate coal particulate health effects. Id. at 16. Mr. Eddleman also faults the risk coefficient used because it allegedly may not capture the adverse effect of air pollution prior to the year of a person's death. Id. In addition, he believes that the percentage estimate of particulates that are in the fine particle size range should be 68 and not 40 percent. Id. at 17.

Mr. Eddleman misinterprets the Licensing Board's treatment of the higher risk coefficient preferred by Mr. Eddleman. The Licensing Board recognizes that this coefficient is applicable to fine particle concentrations;<sup>14/</sup> their dissatisfaction is with Mr. Eddleman's application of the coefficient to total (gross) coal emissions from the fuel cycle, not fine particle emissions. LBP-85-5, slip op. at 49. The evidence presented and the Licensing Board's decision reflect the use of the more conservative damage coefficient used by the NRC Staff experts, see id. at 44-45, as well as the slightly lower damage coefficient used by Dr. Hamilton. Id. at 42-43; see n.14, supra. The two estimates of the range of excess deaths attributable to 1,154 MT/yr, using the two different risk coefficients, were found to be quite consistent: 0.03 to 0.09 annually, in contrast to 0.001 to 0.13. LBP-85-5, slip op. at 45.

Similarly, Mr. Eddleman is incorrect in stating that the risk coefficients used may not capture the adverse effects of air pollution prior to the time period studied. Dr. Hamilton and Dr. Ozkaynak specifically testified that the cross-sectional data

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<sup>14/</sup> Dr. Hamilton used the FP damage coefficient published in the most recent Harvard study on the subject. LBP-85-5, slip op. at 42; Hamilton at 12, citing 1983 Harvard Report (Staff Ex. 3) at 45-50. In their testimony, the Staff experts chose to use a slightly higher risk coefficient that was derived from more recent time series analyses and was presented in the latest Harvard research report, which was in preparation at the time the witnesses testified. Habegger et al., at 32-33. Both risk coefficients apply to FP inhalation. LBP-85-5, slip op. at 42, 49; Habegger et al., at 33; Tr. 1440 (Ozkaynak).

they relied upon to generate a risk coefficient for mortality due to air pollution do fully account for the effects of past exposure. The very nature of a cross-sectional study, such as the Harvard group's analysis, ensures that the resultant mortality figures capture the long-term risk from air pollution which ultimately results in fatalities. See Tr. 1,334-35 (Hamilton) ("what you are seeing is the effect [of] . . . very long term exposure to these particles"); Tr. 1,421-22 (Ozkaynak); see also Tr. 1,331-32 (Hamilton: this is the best state of the art, and is a very conservative assessment); Tr. 1,329 (Hamilton: basis for confidence in cross-sectional analyses is confirmatory experimental evidence); Tr. 1,421-22 (Ozkaynak: analysis assumes people exposed to typical level of particle concentrations in previous years of their life); Tr. 1,548 (Ozkaynak: cross-sectional data consistent with time series mortality data).

With respect to the applicable percentage of particles that constitute fine particles (FP), Mr. Eddleman may be confused. The Licensing Board's discussion of the NRC Staff experts' analysis does rely on the extremely conservative figure of 68 percent of the annual Table S-3 particulate emissions as FP, used by the Staff experts, which results in 790 of the 1,154 MT/yr of coal particulate emissions being less than 2.5 ug. LBP-85-5, slip op. at 38; see Habegger et al. at 8-9.<sup>15/</sup> However, reference also is

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<sup>15/</sup> The reference reactor or model plant that was used as the basis for the Table S-3 1,154 MT/yr coal particulates would pro-

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made by the Licensing Board to the FP estimate of 10 percent that is used by Dr. Hamilton.<sup>16/</sup> LBP-85-5, slip op. at 42-43. It is noteworthy that using either percentage,<sup>17/</sup> the estimated health risk associated with these emissions is inconsequential.<sup>18/</sup> Id.

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duce 9,295 MT/yr of ash, of which 7,900 MT/yr is carried in the flue gas as fly ash; the rest is collected as bottom ash. The question is, how much of the hypothetical 1,154 MT/yr that is released is FP (2.5 ug or smaller)? Arguably, using available data for pulverized-coal fired boilers, approximately 10 percent or 115.4 MT/yr should be FP. The NRC Staff experts assumed, however, that the 1,154 MT/yr attributable to Table S-3 coal particulates was made up first of all of the most harmful size particles contained in the 7,900 MT/yr of available fly ash, and then of the midsize particles, with none of the least harmful particles present. Thus, all of the available FP, or 10 percent of 7,900 which is 790 MT/yr, was assumed to be emitted FP. This meant that 68 percent of the 1,154 MT/yr was FP. This figure is conservative. Available empirical data suggests that for pulverized-coal fired boilers, approximately 10 percent of the fly ash emitted without controls is FP. Habegger et al. at 8-9.

<sup>16/</sup> Dr. Hamilton's estimate reasonably assumes that 10 percent of the 1,154 MT/yr released is FP, which is the percentage of FP in an uncontrolled pulverized coal-burning power plant. See Hamilton at 12.

<sup>17/</sup> The NRC Staff experts' testimony about a 40 percent FP emission rate was elicited by Mr. Eddleman on cross-examination and was based on a plant with an electrostatic precipitator. Tr. 1,458-59 (Habegger). It was not the figure relied on by the NRC Staff experts in their calculation. (Mr. Eddleman may also be confusing Dr. Hamilton's use of a 40 percent figure, which was relied upon in the context of his comparative health assessment. Here, Dr. Hamilton refers to TP, or thoracic particles, to evaluate health effects. LBP-85-5, slip op. at 39-41. TP constitute about 40 percent of the mass of total particles. Id. at 40. FP is a small subset of TP. Id. at 42.)

<sup>18/</sup> Even using Mr. Eddleman's preferred calculation assumptions of (i) the high risk coefficient and (ii) the high FP percentage used by the NRC Staff experts in their 50-mile calculation, plus (iii) Dr. Hamilton's long-range calculation formula (but not his

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at 41, 43, 45.

Finally, Mr. Eddleman argues that the Licensing Board should have done a new cost-benefit analysis, weighing his alleged health effects of Table S-3 coal particulates against the benefit of electricity produced at the Harris Plant. Intervenor's Brief at 18. Mr. Eddleman is incorrect. The FES identified only a miniscule risk associated with the 1,154 MT/yr of coal particulates identified in Table S-3, and the evidence presented in this case fully substantiates that finding. See LBP-85-5, slip op. at 46-47. In the absence of significant new environmental information, there is no basis for the Licensing Board (or the NRC Staff) to update the cost/benefit analysis conducted at the construction permit phase for the Harris Plant. See section I.C, supra. The health effects of Table S-3 coal emissions are insignificant; they therefore prompt no additional NEPA responsibilities for the agency.

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assumed FP percentage), and then (iv) multiplying the figure by 40 years, the resultant 40-year U.S. population effects are extremely small. Cf. LBP-85-5, slip op. at 49-50 (uses all of these assumptions except the NRC Staff experts' 50-mile FP factor of 68%). Moreover, this calculation ignores the fact that in using the Harvard risk coefficient, as Mr. Eddleman does, one may not exclude zero risk as a possibility. It also ignores Dr. Hamilton's view that in biological reality, the risk to the U.S. population is essentially zero. See, e.g., Tr. 1,273-79 (Hamilton).

## G. Conclusion

The Licensing Board thoroughly evaluated the merits of Joint Intervenors' Contentions II(c) and II(e) and Eddleman Contention 8F(1) and found them to be unsubstantiated. Intervenors present no factual or legal basis for challenging the Licensing Board's findings. Moreover, the record overwhelmingly establishes the sufficiency of the FES' treatment of the issues in controversy.

II. The Licensing Board did not Err in its Rulings Rejecting as Inadmissible Proposed Contentions CCNC 16 through 18, Eddleman 2, 12, 15, 22(a) and (b), and 82.

## A. Introduction

In Carolina Power & Light Company, et al. (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 N.R.C. 2069, 2070-71 (1982), the Licensing Board discussed in a general way the case law which expounds upon the requirement, in 10 C.F.R. § 2.714(b), that an intervenor set forth with reasonable specificity the bases for each contention. On appeal, Intervenors claim that in certain instances the Licensing Board failed to adhere to the guidance of a decision it discussed -- i.e., Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 N.R.C. 542 (1980).<sup>19/</sup>

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<sup>19/</sup> No law is cited in support of the sweeping observation by Intervenors that the Licensing Board is required under NEPA to hear all environmental claims. See Intervenors' Brief at 19. The Commission's standards for admitting contentions apply without distinction to NEPA issues as well as to those which address health and safety matters under the Atomic Energy Act. See generally 10 C.F.R. § 2.714(b).

In Allens Creek, a construction permit proceeding, the Appeal Board reversed the denial of a petition for leave to intervene, holding that the licensing board erroneously had gone to the merits of the proffered contention and rejected it because of the absence of factual support. Intervenor's argue from this holding that the validity of factual allegations may not be considered in determining whether a contention may be admitted, and that fair notice of the issue raised is all that is required. Intervenor's' Brief at 20, 22.

Intervenor's' reading of Allens Creek is erroneous, however, and essentially would repeal the basis requirement of 10 C.F.R. § 2.714(b). Licensing boards are expected to scrutinize a proposed contention to determine if the basis advanced is credible or arguable. Where no attempt is made to identify with reasonable specificity a credible or arguable basis for a proffered contention, dismissal by a licensing board is justified.

Philadelphia Electric Company (Limerick Generating Station, Units 1 and 2), ALAB-765, 19 N.R.C. 645, 652-656 (1984), petition for review filed, Anthony v. Philadelphia Electric Co., No. 84-3409 (3d Cir., June 28, 1984). In Limerick, it was found that the intervenor fundamentally misunderstood the laws of physics and the physical properties of unirradiated fuel. Here, where the intervenor displays a fundamental misunderstanding of information available in Applicants' Environmental Report ("ER") and/or Final Safety Analysis Report ("FSAR"), the Licensing Board similarly was correct in rejecting the proposed contention.<sup>20/</sup>

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<sup>20/</sup> Applying Allens Creek, the Licensing Board overruled Applicants' objections which amounted to a premature defense on the



B. CCNC 16 through 18

CCNC asserts, without elaboration, that the Licensing Board erred in rejecting CCNC proposed Contentions 16, 17 and 18, allegedly on the merits. Intervenor's Brief at 21. These contentions claimed that Applicants' operational radiological monitoring program is deficient with regard to three sample points listed in the Environmental Report. CCNC argued that its proposed modifications would enable corrective measures to be taken as soon as radiation levels are greater than background.<sup>21/</sup>

In their written response in opposition to these contentions, Applicants argued, inter alia, that CCNC misunderstood the purpose of the monitoring program and thus had not advanced a meaningful deficiency. ER section 6.1.5 explained that the purpose of monitoring at the sampling points in question is to establish environmental data to demonstrate that mathematical models used to estimate population exposure from plant releases are reasonable, and that significant transport pathways are included in estimating public exposure. The concern for prompt

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(Continued)

merits of a proposed contention. See, e.g., LBP-82-119A, supra, 16 N.R.C. at 2071, 2076, 2077, 2081 (1982).

<sup>21/</sup> Conservation Council of North Carolina Supplement to Petition to Intervene, May 14, 1982, at 9-10. At the construction permit stage, CCNC also challenged the radiological monitoring program, which was found to be adequate. Carolina Power & Light Company (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), LBP-78-4, 7 N.R.C. 92, 122-124 (1978).



notification of increased radiation levels is met by the effluent radiological monitoring and sampling system, described in FSAR section 11.5. CCNC did not address this system.22/

During the special prehearing conference on July 13, 1982, the Licensing Board asked CCNC to respond to this argument. CCNC stated that the effluent monitoring system could not account for unknown discharge points. Tr. 203-207. The Licensing Board ultimately rejected CCNC Contentions 16 through 18 because they inaccurately ascribe to one monitoring system a function performed by another, without advancing a deficiency, with basis and specificity, in the system which performs the function.23/ LBP-82-119A, supra, 16 N.R.C. at 2082 (1982).

Here, the Licensing Board was not asking CCNC to advance factual support, as Allens Creek proscribes. Rather, CCNC was faulted for its clear misapprehension of information it reviewed, and for its failure to address information available to it in a document (the FSAR) available and filed in support of the operating license application. Discovery and summary disposition are not necessary to assess the purported basis for such misplaced assertions.24/

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22/ See Applicants' Response to Supplement to Petition to Intervene by Conservation Council of North Carolina, June 15, 1982, at 6-8.

23/ No credible theory, argument or facts were advanced to explain why unknown discharge points will emerge.

24/ CCNC did not file an objection to this aspect of the Licensing Board's special prehearing conference order, although it did object to other rulings. See CCNC "Response to Memorandum and Order," October 14, 1982.

C. Eddleman 2

Mr. Eddleman argues that the Licensing Board erred in rejecting his proposed Contention 2 as redundant of Joint Contention VI, which was admitted. Intervenor's Brief at 21; LBP-82-119A, supra, 16 N.R.C. at 2090 (1982). In his Contention 2, Mr. Eddleman proposed additional radiological monitoring equipment for emergency response decision-making.<sup>25/</sup> Applicants opposed its admission for lack of basis.<sup>26/</sup>

Mr. Eddleman acknowledges that the Licensing Board has the authority to consolidate parties as to certain issues. Intervenor's Brief at 21; 10 C.F.R. § 2.715a. Mr. Eddleman was the drafter (Tr. 275) and a sponsor of Joint Contention VI, which he concedes is broader than Eddleman 2. Missing from Intervenor's Brief is any assertion that Mr. Eddleman was prejudiced by this consolidation -- i.e., that he was not permitted subsequently to pursue the issues raised in allegedly specific Eddleman 2 through the adjudication of the broader Joint VI. Rather, the academic point raised on appeal is that Mr. Eddleman should have been provided with an opportunity to address how consolidation might

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<sup>25/</sup> Supplement to Petition to Intervene by Wells Eddleman, pro se, May 14, 1982, at 29-30. See also Post-Hearing Submission of Wells Eddleman, August 10, 1982, at 2-3. While it is not clear that Eddleman 2 raises an environmental issue, it has been proposed for Appeal Board consideration. Applicants do not object to appellate review at this time.

<sup>26/</sup> Applicants' Response to Supplement to Petition to Intervene by Wells Eddleman, June 15, 1982, at 102-105.

prejudice his rights. Since Mr. Eddleman continues to remain silent on any potential prejudice to him, the Appeal Board is left to speculate on what Mr. Eddleman's response to such an opportunity would have been. A party "must make a reasonable effort to have a procedural error corrected, not hoard it for use as a ground for reversal in the event it does not like the ultimate decision on the merits." Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 N.R.C. 179, 189 (1978). Mr. Eddleman is continuing to hoard.

In fact, Mr. Eddleman had the opportunity, provided by Commission regulations, to object to any aspect of the prehearing conference order. 10 C.F.R. §§ 2.751a(d), 2.752(c). Additionally, in this instance the Licensing Board quoted the applicable regulation and set a schedule for filing objections. LBP-82-119A, supra, 16 N.R.C. at 2113-14 (1982). Consequently, Mr. Eddleman is incorrect in asserting that no opportunity for objection was available.<sup>27/</sup>

Finally, it is revealing that the Licensing Board eventually dismissed Joint Contention VI because Joint Intervenors,

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<sup>27/</sup> Further, Applicants note that Mr. Eddleman availed himself of that opportunity. However, his only reference to Contention 2 was a general request that the Board clarify the effect of rejecting a contention as redundant. Wells Eddleman's Objections to 9/22/82 Memorandum and Order "Reflecting Decisions Made Following (Special) Prehearing Conference," October 15, 1982, at 5. The Licensing Board responded to this request. Licensing Board Memorandum and Order (Addressing Motions for Reconsideration and Clarification of the Board's Prehearing Conference Order) at 9 (Jan. 11, 1983).

including Mr. Eddleman, defaulted on their discovery obligations. Licensing Board Order (Ruling on Various Procedural Questions and Eddleman 15AA) at 6-7 (May 10, 1984). A fair inference is that Mr. Eddleman's interest in pursuing the issues raised in his original Contention 2 was fleeting at best.

D. Eddleman 12

Mr. Eddleman argues that in light of the Appeal Board holding in Allens Creek, supra, the Licensing Board was obligated to admit into controversy Eddleman proposed Contention 12. Mr. Eddleman appears to take the position that providing fair notice of the issue meets the basis requirement for contentions found in 10 C.F.R. § 2.714(b). Intervenors' Brief at 21-22.

Mr. Eddleman asserted, in this proposed contention, that Applicants had not included in their application documents analyses of the effects of dumping into the ocean low-level radioactive waste produced at the Shearon Harris facility. The asserted basis for the contention was that the State of North Carolina was not a member of a waste disposal compact and had no land burial facility. Consequently, it was argued, the absence of alternatives might compel resort to ocean dumping of the wastes.<sup>28/</sup>

In opposition to admission of this proffered contention, Applicants stated that they do not contemplate ocean-dumping of

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<sup>28/</sup> Supplement to Petition to Intervene by Wells Eddleman, pro se, May 14, 1982, at 61.

low-level waste.<sup>29/</sup> Mr. Eddleman cited no document or other reference to contradict that statement. The Licensing Board correctly rejected Eddleman 12, holding that ocean dumping of wastes is not contemplated, no basis had been advanced to indicate that it is probable, and consequently that ocean dumping need not be considered under the NEPA "rule of reason" as an environmental impact of proposed operation of the Shearon Harris facility. LBP-82-119A, supra, 16 N.R.C. at 2092 (1982).

This holding by the Licensing Board does not conflict with Allens Creek, which involved a proposed alternative to construction of the power plant. Here, Mr. Eddleman asked that the NRC include as an environmental impact of facility operation the effects of an unplanned and highly improbable activity. NEPA contemplates dealing only with circumstances "as they exist and are likely to exist." Carolina Environmental Study Group v. United States, 510 F.2d 796, 801 (D.C. Cir. 1975). Remote and speculative possibilities need not be explored.<sup>30/</sup> Life of the Land v.

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<sup>29/</sup> Applicants' Response to Supplement to Petition to Intervene by Wells Eddleman, June 15, 1982, at 53. Mr. Eddleman was provided with the opportunity to file a statement, after the special prehearing conference, in response to the written objections of Applicants and the NRC Staff to those proposed contentions not discussed during the conference. Tr. 411. His post-conference filing did not address Contention 12. See Post-Hearing Submission of Wells Eddleman, August 10, 1982.

<sup>30/</sup> Mr. Eddleman's assertion that inadequate provision had been made for low-level waste disposal was admitted by the Licensing Board as a health and safety issue. LBP-82-119A, supra, 16 N.R.C. at 2102 (1982) (Eddleman 67). Without conceding any causal relationship between this contention and the likelihood of

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Brinegar, 485 F.2d 460, 472 (9th Cir. 1973), cert. denied, 416 U.S. 961 (1974).

E. Eddleman 82

Mr. Eddleman argues that the Licensing Board erred in rejecting his proposed Contention 82, which claims that Applicants' preoperational environmental radiation monitoring program is deficient.<sup>31/</sup>

In opposition to this proposed contention, Applicants first pointed out that the preoperational environmental radiological monitoring program had been evaluated and approved by the NRC in connection with review of the construction permit application.<sup>32/</sup> See LBP-78-4, supra, 7 N.R.C. 92, 122 (1978). There is substantial doubt that the preoperational program should be subject to challenge in this operating license proceeding. See Philadelphia Electric Company (Limerick Generating Station, Units 1 and 2), LBP-82-43A, 15 N.R.C. 1423, 1458-59 (1982) (NEPA does not mandate

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ocean dumping, Applicants note the Licensing Board's finding, after completion of discovery on the issue, that there is reasonable assurance that adequate long-term disposal capacity for Shearon Harris low-level waste will be available when it is needed. Licensing Board Memorandum and Order (Revision of and Schedule for Filing Written Testimony on Eddleman Contention 9; Rulings on Eddleman Contentions 45 and 67) at 5 (July 24, 1984).

<sup>31/</sup> Supplement to Petition to Intervene by Wells Eddleman, pro se, May 14, 1982, at 188-189.

<sup>32/</sup> Applicants' Response to Supplement to Petition to Intervene by Wells Eddleman, June 15, 1982, at 45-46.

that environmental issues considered in the construction permit proceedings be considered again in the operating license hearing, absent new information, citing Calvert Cliffs' Coordinating Committee, Inc. v. AEC, 449 F.2d 1109, 1128 (D.C. Cir. 1971), and Union of Concerned Scientists v. AEC, 499 F.2d 1069, 1079 (D.C. Cir. 1974)), ALAB-785, 20 N.R.C. 848, 871 n.78 (1984).

Nevertheless, the Licensing Board rejected the contention as lacking in basis because it did not indicate how the alleged inadequacies would adversely affect public health and safety or the environment. LBP-82-119A, supra, 16 N.R.C. at 2104 (1982). In this regard, contentions should be material to those findings which precede licensing. See Union Electric Company (Callaway Plant, Unit 1), ALAB-740, 18 N.R.C. 343, 346 (1983), reconsideration denied, ALAB-750, 18 N.R.C. 1205 (1983), as modified, ALAB-750A, 18 N.R.C. 1218 (1983); Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-82-106, 16 N.R.C. 1649, 1654-55 (1982). The contention itself should evince this materiality. It is no answer to attempt to provide the cure for this deficiency in the contention for the first time on appeal. See Intervenors' Brief at 22; Public Service Electric and Gas Company (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 N.R.C. 43, 49 (1981) (Appeal Board will not entertain arguments that a licensing board had no opportunity to address and that are raised for the first time on appeal). Mr. Eddleman did not address this contention in his objections to the Licensing Board's order.<sup>33/</sup> If the Licensing

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<sup>33/</sup> Wells Eddleman's Objections to 9/22/82 Board Memorandum and Order "Reflecting Decisions Made Following (Special) Prehearing Conference," October 15, 1982.

Board misconstrued Mr. Eddleman's contention, he should have objected at the time, and not remained silent for two and one-half years. See Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 N.R.C. 777, 802 n.75 (1983) aff'd, CLI-83-22, 18 N.R.C. 1309 (1983).

Further, Mr. Eddleman failed to address Applicants' program and to indicate specifically which sampling points or sample frequencies he found insufficient. Similarly, he provided no basis for the alleged deficiency in the program in not establishing specific concentrations of radionuclides in the air with certain continuous reading monitoring equipment proposed in Eddleman Contention 2. Nor did Mr. Eddleman provide any basis for arguing that algae and other lower forms of life in the Harris Reservoir are not sufficiently monitored. The vagueness of the allegations simply did not put Applicants on notice as to what sampling program Mr. Eddleman believed to be required and why he contended that Applicants' program did not provide a statistically reliable base line concentration of radionuclides. Finally, Mr. Eddleman advanced no basis for his suggestion that sampling points would be deliberately or accidentally contaminated.<sup>34/</sup>

Proposed Eddleman Contention 82 was based on unexplained and unfounded allegations and unsupported speculation on future

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<sup>34/</sup> Applicants' Response, n.32, supra. Mr. Eddleman did not respond to these positions by Applicants in Post-Hearing Submission of Wells Eddleman, August 10, 1982.

events. Adding to the confusion inherent in the original contention, Mr. Eddleman now argues on appeal that "[p]ublic health and safety depends on the timely discovery of radioactive emissions so that problems can be corrected." Intervenor's Brief at 22. Once again, Intervenor's have confused the function of the environmental monitoring program with that of the effluent monitoring program. See argument on CCNC 16-18, supra. This misplaced argument only serves to support the wisdom of the Licensing Board's ruling.

F. Eddleman 15, 22(a) and (b)

Mr. Eddleman appeals<sup>35/</sup> the Licensing Board's ruling that his Contentions 15, 22(a) and (b) are barred from adjudication in this proceeding by 10 C.F.R. § 51.53(c) (1982).<sup>36/</sup> Intervenor's Brief at 23; Carolina Power & Light Company, et al. (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-83-27A, 17 N.R.C. 971, 971-76 (1983).

As originally admitted by the Licensing Board,<sup>37/</sup> the

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<sup>35/</sup> Intervenor's purport to appeal the dismissal as well of CHANGE Contention 79(c). While CHANGE was a Joint Intervenor for purposes of the Joint Contentions (including II(c) and II(e), discussed above), CHANGE Contention 79(c) was not consolidated with other contentions and is sponsored by CHANGE alone. CHANGE is represented in this proceeding by Mr. Daniel F. Read, and no effective appeal on this contention has been filed by Mr. Read or any other representative of CHANGE.

<sup>36/</sup> Recodified as 10 C.F.R. § 51.106(c) (1984).

<sup>37/</sup> LBP-82-119A, supra, 16 N.R.C. at 2092-94 (1982). Mr. Eddleman does not challenge the Licensing Board's limitations imposed on these contentions as admitted at the outset for discovery.



Eddleman contentions at issue stated as follows:

15. Applicants' ER makes no mention of the economic costs of nuclear waste disposal as a cost in its cost-benefit analysis, though it does include such costs as a "benefit" in its calculation of per-kilowatt-hour charges to customers. (Table 8.2.1-2, page 8.2.1-4, line under "Fuel Cycle Costs" for "spent fuel storage/disposal"). Nuclear waste disposal costs should be included as costs, at more realistic figures than 1.2 mills/kwh.

Applicants' ER assumes a 70% DER capacity factor for the full lifetime of the units, ignoring the fact that no large Westinghouse PWR had (as of 12/31/80) ever achieved such a lifetime capacity factor to date (large PWRs being 700 MW and over, CP&L's turnkey unit Robinson 2 having the highest lifetime DER CF at 66.5% as of that date).

22. The cost benefit analysis in the ER is deficient in the following respects:

(A) CP&L's Amendment 2 fuel cost estimates in Table 8.2.1-2 as amended are erroneously low, as are the fuel cost lifetime estimates in section 8.2 as amended and section 11 as amended (all in the ER).

(B) CP&L's estimates in the amended section 8 of the ER that the operating payroll at the Harris plant based on only 2 units will not be decreased by any significant amount, compared to the operation of all 4 units at the site, is not accurate.

Applicants' Motion for Codification of Admitted Contentions, December 17, 1982; Licensing Board Memorandum and Order (Addressing Applicants' Motion for Codification), January 17, 1983.

At the time these contentions were proposed by Mr. Eddleman, Applicants' Environmental Report included information on need for power (e.g., load forecasts and reserve margins) and a related



cost-benefit analysis comparing the Shearon Harris facility (including construction and operation costs) with alternative energy sources. The ER had not yet been amended to conform with the Commission's amendment to 10 C.F.R. Part 51, effective April 26, 1982, which eliminated the need for this information.<sup>38/</sup> See 10 C.F.R. § 51.53(c) (1982); 10 C.F.R. § 51.106(c) (1984). ER Amendment 5, which revised Chapters 8 and 11 (Benefits and Costs), was filed with the NRC Staff on December 15, 1982, and served upon the Licensing Board and parties under letter from Applicants' counsel, dated December 21, 1982.

In response to this information, Mr. Eddleman filed twenty new proposed contentions.<sup>39/</sup> As a result of the pleadings subsequently filed by the parties with respect to these late-filed contentions,<sup>40/</sup> the Licensing Board called for further briefs, which eventually led to the dismissal of Eddleman Contentions 15, 22(a) and (b), the subject of appeal here. The Licensing Board asked the parties to address the question of whether contentions

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<sup>38/</sup> See Applicants' Response to Supplement to Petition to Intervene by Wells Eddleman, June 15, 1982, at 19, 29-30.

<sup>39/</sup> Wells Eddleman's Revised, Amended and Additional Contentions Based on Eddleman 15 and ER Amdt. 5, February 11, 1983.

<sup>40/</sup> Applicants' Reply to Intervenor Wells Eddleman's Revised, Amended and Additional Contentions Based on Eddleman 15 and ER Amendment 5, March 11, 1983; NRC Staff Response to Wells Eddleman's Revised, Amended and Additional Contentions Based on Eddleman Contention Number 15, March 11, 1983; Wells Eddleman's Answer to Staff & Applicants Re Revised, Amended and Additional Contentions Based on Eddleman 15 and ER Amendment 5, March 18, 1983.

based on comparative cost savings analyses in Applicants' Environmental Report are barred by 10 C.F.R. § 51.53(c), and the related question of whether such cost savings can be counted as a benefit in the NEPA cost/benefit analysis. Licensing Board Memorandum and Order (Memorializing Telephone Conference and Setting Forth Questions for Briefing), March 25, 1983. Responses were filed by Applicants, Mr. Eddleman and the NRC Staff.<sup>41/</sup>

The Licensing Board considered these responses and concluded that comparative cost savings contentions which directly implicate need for power projections and comparisons to coal-fired plants are barred by 10 C.F.R. § 51.53(c). The Licensing Board also held that such comparative cost savings may not be counted as a benefit in the Staff's NEPA cost/benefit analysis.<sup>42/</sup> LBP-83-27A, supra, 17 N.R.C. at 974 (1983). Consequently, Eddleman Contentions 15, 22(a) and (b) were dismissed.<sup>43/</sup> Id. at 976.

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<sup>41/</sup> Applicants' Response to the Licensing Board's Memorandum and Order Dated March 20, 1983, Wells Eddleman's Response to Board Questions re Need for Power Rule, Eddleman 15's, and CHANGE 79c, NRC Staff Response to Board Order of March 25, 1983, all dated April 20, 1983.

<sup>42/</sup> The Staff's environmental impact statement complies with this holding. See Staff Ex. 1, Chapter 6.

<sup>43/</sup> Eddleman Contention 15AA, which challenged the capacity factor assumption underlying the Staff's statement of the benefits from plant operation, was subsequently admitted for adjudication. Licensing Board Memorandum and Order (Ruling on Wells Eddleman's Contentions on the Staff Draft Environmental Statement), at 7-8 (Aug. 18, 1983). Following discovery, the contention was decided in Applicants' favor on motion for summary disposition. Licensing Board Order (Ruling on Various Procedural Questions and Eddleman Contention 15AA), at 7-10 (May 10, 1984).

On appeal, Mr. Eddleman argues that "[t]he Licensing Board advances no reason why 10 C.F.R. 51.53(c) would bar questions of the economic cost of agency action proposed (licensing the Harris plant to operate)." Intervenor's Brief at 23. To the contrary, the Licensing Board provided a full discussion not only of the parties' views on this question, but a numerical listing of the reasons for its conclusions. LBP-83-27A, supra, 17 N.R.C. at 974-76 (1983).

With somewhat more particularity, Mr. Eddleman argues that the economic "costs of the Harris plant's benefits (electricity)" to be incurred, depend upon issuance of the operating license, and are not dependent upon need for the plant or possible alternative energy sources. Intervenor's Brief at 23. Fundamentally, Mr. Eddleman seeks to challenge benefits which are not claimed by the Staff's environmental impact statement. To the extent the benefits of plant operation are thus understated, Mr. Eddleman has suffered no conceivable harm and his appeal is moot -- i.e., no claimed comparative cost savings arguably reflect the conclusion Mr. Eddleman would have urged upon the Licensing Board through his proposed contentions.

Second, while there certainly are economic costs of running the plant, those costs translate into benefits of plant operation only in a comparison with the companion generating costs associated with alternatives, as the Licensing Board found. While Applicants understand the rejected contentions to challenge the "benefits" side of the cost-benefit balance, to the extent Mr.

Eddleman now contends that the "costs" side is understated, he clearly challenges the Commission's findings, which underlie the 1982 amendments to Part 51, that operation of a completed nuclear plant will be more economical than available alternatives.<sup>44/</sup> See 46 Fed. Reg. at 39,940-41 (1981); 47 Fed. Reg. at 12,940 (1982).

In short, Mr. Eddleman has advanced no basis upon which to question the Licensing Board's interpretation of 10 C.F.R. § 51.53(c) (1982). Given the exclusion from environmental impact statements of any claimed benefit from comparative cost savings of operating the nuclear plant, the rejection of these contentions clearly was correct.

III. The Licensing Board Correctly Denied Intervenor Eddleman's Section 2.758 Petition to Waive the Need for Power Rule in this Proceeding

A. Introduction

Any rule or regulation of the Commission, and the underlying basis for that rule or regulation, is not subject to attack in an individual license proceeding unless a petition is first made to the Licensing Board for an exception or waiver. The sole ground for a petition for waiver or exception shall be that special circumstances with respect to the subject matter of the particular

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<sup>44/</sup> Operating costs of the proposed plant and alternatives were evaluated at the construction permit stage. See Revised Final Environmental Statement (March 1974), Staff Ex. 6 in that proceeding, at 10-21.



proceeding are such that application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted. The petition is to be accompanied by an affidavit in support of that basis for the petition. Opportunity is provided for other parties to respond to the petition, including the submission of reply affidavits. If the Licensing Board does not determine that a prima facie showing has been made in support of waiver or exception, it must deny the petition. 10 C.F.R. § 2.758; Potomac Electric Power Company (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 A.E.C. 79, 89 (1974).

On June 30, 1983, nearly one year after the Licensing Board explained this procedure to him,<sup>45/</sup> Mr. Eddleman filed his "Petition Under 10 CFR 2.758 Re Alternatives and Need for Power Rule." The Eddleman petition sought a waiver of amendments to 10 C.F.R. Part 51 adopted by the Commission on March 22, 1982. See 47 Fed. Reg. 12940 et seq., Need for Power and Alternative Energy Issues in Operating License Proceedings (March 26, 1982). In essence, the amendments provide that, for NEPA purposes, need for power and alternative energy source issues will not be considered in operating license proceedings for nuclear power plants.<sup>46/</sup>

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<sup>45/</sup> Tr. 40-44. See also LBP-82-119A, supra, 16 N.R.C. at 2073 (1982).

<sup>46/</sup> In 1984, 10 C.F.R. Part 51 was amended and reorganized. The 1982 amendments with respect to an applicant's environmental report (§ 51.21), the Staff's impact statement (§ 51.23(e)), and permissible hearing issues (§ 51.53(c)) are now found, respectively, at §§ 51.53(a), 51.95(a) and 51.106(c).



Mr. Eddleman sought to litigate those issues in this operating license proceeding.

Responses in opposition to the Eddleman petition were filed by the NRC Staff and by Applicants.<sup>47/</sup> Mr. Eddleman replied to these responses<sup>48/</sup> and, over five months later, sought leave to file further material in support of the petition.<sup>49/</sup> Finally, Mr. Eddleman filed a supplement to his petition to address the intervening cancellation of Unit 2 of the Shearon Harris facility.<sup>50/</sup> On August 3, 1984, the Licensing Board announced its conclusion that Mr. Eddleman's petition must be denied. The basic conclusion on the petition was issued at that point without elaboration to facilitate planning by the parties for the upcoming hearing on environmental matters, then scheduled for

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<sup>47/</sup> NRC Staff Response to Intervenor Wells Eddleman's Petition for a Waiver Pursuant to 10 C.F.R. § 2.758, August 26, 1983; Applicants' Response to Eddleman Petition Under 10 C.F.R. § 2.758 Re Alternatives and Need for Power Rule, August 31, 1983.

<sup>48/</sup> Wells Eddleman's Response re 2.758 Petition of 6-30-83 on Need for Power and Alternatives to Shearon Harris Plant, September 30, 1983.

<sup>49/</sup> Motion to Allow Filing of Affidavit of Dr. John O. Blackburn Concerning Wells Eddleman's 2.758 Petition and Affidavits, March 7, 1984. Applicants and the Staff opposed the motion. Applicants' Response to Wells Eddleman's Motion to Allow Filing of Affidavit of Dr. John O. Blackburn, March 9, 1984; NRC Staff Response in Opposition to Wells Eddleman's Motion to Allow Filing of the Affidavit of Dr. John O. Blackburn, March 23, 1984. The Licensing Board denied the motion as moot, holding that it made no practical difference to its ruling on the petition. LBP-85-5, slip op. at 51, n.15.

<sup>50/</sup> Wells Eddleman's Supplement re Effect of Cancelling Harris 2 on 2.758 Petition of 6-30-83, April 16, 1984.

January, 1984. Carolina Power & Light Company, et al. (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-84-29B, 20 N.R.C. 389, 424 (1984). The Licensing Board set forth its reasons for the denial in the Partial Initial Decision on Environmental Contentions. LBP-85-5, slip op. at 50-58.

B. The Licensing Board Decision

The Licensing Board found that the Eddleman petition failed to make the required showing that application of the regulation in question (referred to as the "need for power rule") to this case would not serve the purposes for which the rule was adopted. Indeed, the Licensing Board reviewed the Commission's stated purposes in adopting the rule, and concluded that "the purposes underlying the need for power rule fit this case precisely." Id. at 51.

The Eddleman petition presented an alternative to operation of the Shearon Harris facility, which was claimed to be economically and environmentally superior. The alternative was a combination of load shifting, energy storage, solar energy and energy saving measures. Four scenarios were discussed in the economic assessment, which addressed only fuel savings because of the purported showing that the capacity from the Harris plant is not needed under the suggested alternative. The sole basis for the petition, then, was Mr. Eddleman's claim that a combination of load-shifting, energy-storage, solar heat and energy saving measures is an environmentally and economically superior alternative to the operation of Shearon Harris.

As the Licensing Board concluded, what is most significant is what the petition did not address. Id. at 54. The petition fundamentally ignored the requirement, under 10 C.F.R. § 2.758, for a showing that application of the Commission's regulation to this proceeding "would not serve the purposes for which the rule or regulation was adopted." No such showing was made or even attempted. Rather, Mr. Eddleman did no more than advance a need for power/alternatives contention with purported affidavit support.<sup>51/</sup>

The purpose of the Commission's regulation on Need for Power and Alternative Energy Issues in Operating License Proceedings was to avoid litigation of need for power and alternative energy issues at the operating license stage. The underlying premise behind the regulation, based on the Commission's experience, is that at the operating license stage the NEPA balance overwhelmingly supports operation of the nuclear plant compared to the operation of existing fossil fuel capacity. Neither Mr. Eddleman nor Dr. Reeves (the affiant) disputes the necessity of all of CP&L's existing baseload fossil fuel capacity, with the exception of the 705 MW Mayo Unit No. 1, which began commercial operation in March, 1983. See Reeves Affidavit of July 14, 1982, at the Conclusion. Therefore, even assuming the viability of the

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<sup>51/</sup> Because Mr. Eddleman did not address the legal standard for waiver of the regulation, Applicants did not present their views, by counter affidavits, on the numerous substantive errors which invalidated the bases for the petition.

alternative energy-saving measures proposed by Mr. Eddleman and the resulting decrease in system load projections, the premise of the Commission's regulation would dictate operation of the Harris units in order to displace existing fossil baseload generation (an alternative not even addressed in Mr. Eddleman's petition). The purpose served by the regulation would thus remain unaltered.

In his petition, Mr. Eddleman simply assumed that 3500 MW of existing baseload coal-fired plants will be operated on the CP&L system until the year 2000. See Eddleman Affidavit at 5. This ignores, and fails to challenge, the Commission's premise that even if a constructed nuclear plant is not needed to meet increased energy needs, there is an economic advantage which operation of nuclear power plants has over available fossil generating plants. See 47 Fed. Reg. 12,940 (1982). In fact, Mr. Eddleman calculated the cost savings of operating the Harris units instead of operating other CP&L units to be \$4.03 billion. Eddleman Affidavit at 10. While Mr. Eddleman conceded that there is this economic advantage, he made the mistaken argument that the savings from his own alternative will be greater. See id. The fallacy in this comparison, however, is that Mr. Eddleman's alternative included operation of the existing fossil capacity (and not the Harris units). Had Mr. Eddleman computed his energy-savings scenario on the basis of operating the Harris Plant rather than existing fossil capacity, the computed savings would have been even greater than he asserted for his alternative. In other words, even if one assumed that no additional capacity is needed



on the CP&L system and that Mr. Eddleman's assessment of his alternative was correct, there is still an unchallenged economic advantage, as the Commission found, to operating the nuclear plant in place of existing fossil capacity.

Thus, without regard to their merits, the energy savings measures proposed by Mr. Eddleman do nothing to undermine the premise of the Commission's regulation that at the operating license stage operation of nuclear power plants instead of existing fossil plants is justified on a cost-benefit basis by the savings in operating costs, regardless of the extent to which system capacity may exceed load requirements. In short, Mr. Eddleman claimed he had a cheaper alternative, but he did not challenge the economic advantage which underlies the regulation sought to be waived. LBP-85-5, slip op. at 55-58.

### C. The Appeal

The Licensing Board's analysis of the Eddleman petition tracks to a considerable extent Applicants' basic argument in their August 31, 1983 response, which the Licensing Board found to be "not only sound but dispositive of the petition." Id. at 55. In his response to Applicants at the time, Mr. Eddleman appeared either not to understand Applicants' position or to avoid it. Mr. Eddleman characterized Applicants' argument to be that he had not compared the fuel cost savings from the Harris Plant with the benefits of his alternative.<sup>52/</sup> To the contrary,

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<sup>52/</sup> Wells Eddleman's Response re 2.758 Petition of 6-30-83 on Need for Power and Alternatives to Shearon Harris Plant, September 30, 1983, at 1.



Applicants asserted that since Mr. Eddleman found fuel cost savings from operating Shearon Harris, it was inconsistent with the Commission's findings on the rule in question for Mr. Eddleman to retain in his analysis CP&L's fossil-fueled capacity.

Mr. Eddleman came closest to grasping the issue when he stated that CP&L's suggestion to run Harris with his alternative was illogical because his alternative shows that the Harris capacity is not needed.<sup>53/</sup> See LBP-85-5, slip op. at 56 n.17. However, Mr. Eddleman still assumed operation of existing coal-fired capacity (which could be replaced by his alternative instead of replacing the Harris plant) and failed to challenge the Commission's finding that the nuclear plant would be used to displace existing coal-fired capacity. Id. at 56.

On appeal, Mr. Eddleman argues in more detail that Applicants, and now the Licensing Board, have misread his petition. Mr. Eddleman begins by quoting the Licensing Board's observation that his alternative is considered only with reference to meeting increased demand or peak loads (instead of base loads). Mr. Eddleman purports to refute this finding with a quote from the beginning of his "Scenario 1," which simply states "[a]s shown above, there is no need for Harris capacity." Intervenor's Brief at 25. The Eddleman quote continues with a purported logical deduction that "thus" the only benefit of the proposed plant is an economic savings over coal. Mr. Eddleman calls the

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<sup>53/</sup> Id. at 3.

Licensing Board's failure to consider these statements "in plain sight" to be "striking." Id.

What is striking, however, is Mr. Eddleman's totally irrelevant challenge to this Licensing Board observation.

Mr. Eddleman's purported showing that Harris capacity is not needed is an argument that it is not needed to meet peak load.

In Mr. Eddleman's own words:

Dr. Reeves' first affidavit (14 July 1982) demonstrates how neither Harris unit is needed to meet peak load on the CP&L system....

...

Under those conditions, Reeves affidavit #1 shows a reduction of 2600 MW in CP&L peaks in the year 1995. This reduction exceeds the combined capacity of both Harris units (1800 MW total), plus Mayo 2 (720 MW). (Reeves #1, pp. 30-31).

...

At CP&L's growth rate for peaks under Dr. Reeves' peaks-reducing program, it would take at least 15 more years to fully utilize the 1800 MW capacity of 2 Harris units....

This completes the explanation of why the Harris plant isn't needed for capacity in the foreseeable future.

Affidavit in Support of 2.758 Petition Wells Eddleman, June 30, 1983, at 3-4 (footnote omitted).

Having advanced the argument that the Harris capacity is not needed to meet peak loads, Mr. Eddleman clearly proceeded to rely upon and use for base load capacity CP&L's existing coal-fired plants:

True base load (arround-the-clock load) will only be about 3600 MW then [1995]. CP&L's existing capacity is over 5000 MW for base load, and includes 3500 MW of baseload coal plants that will still be around in the year 2000.... Thus, there is no base load (year-round) for the Harris units to meet.

....[Y]ou don't build a Harris unit for peaking or intermediate load.

In sum, a Harris baseload unit (or both units) simply isn't needed to meet CP&L peak loads through the year 2014. This is the principal conclusion of Reeves affidavit #1 (p. 31) and is used in the scenarios comparing costs and benefits below.

Id. at 5 (emphasis added).

Mr. Eddleman's petition has not been misread. He attempted to establish that the Harris Plant is not needed to meet peak loads, and assumed operation of existing fossil baseload units to meet baseload requirements. It makes no sense whatsoever to argue, as Mr. Eddleman does on appeal, that his proposed alternative may be used separately and independently: (1) to replace peak loads; and (2) in an analysis which purports to show that it will save even more money than the Harris Plant as a replacement for fossil base load capacity. See Intervenor's Brief at 25-29. Mr. Eddleman essentially "used up" his alternative in his attempt to displace the Harris facility as a peak load unit. In this attempt, he explicitly assumed continued operation of existing coal plants, contrary to the Commission's findings. He cannot, then, use the same alternative anew in an attempt to challenge that Commission finding by showing that the alternative saves even more money than Harris as a replacement for the coal plants.

NEPA does not require or contemplate the kind of fictionalized, segmented analysis Mr. Eddleman appears to press on appeal. The Licensing Board's reading of the Eddleman petition is correct, and the petition was properly denied for failure to meet the standards of 10 C.F.R. § 2.758 for waiver of a Commission regulation.<sup>54/</sup>

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<sup>54/</sup> Mr. Eddleman devotes considerable attention to the Licensing Board's comments, essentially dicta here, on the meaning of "prima facie" as employed in 10 C.F.R. § 2.758. Intervenor's Brief at 30-33. As is clear from the Licensing Board's decision, footnote 16 merely sets forth the standard the Licensing Board would have required -- a "substantial showing" -- had it reached the substantive claims set forth in Mr. Eddleman's petition; the Board did not reach those issues and thus its discussion of "prima facie" was not dispositive of the petition. LBP-85-5, slip op. at 55 and n.16. Secondly, Mr. Eddleman clearly misperceives the Licensing Board's comparison citation to the Midland decision. In that decision, the Commission was explicating its standards for the initial acceptance of energy conservation contentions in construction permit proceedings, clearly a much more lenient standard than that required to make a prima facie showing under 10 C.F.R. § 2.758. See Consumers Power Company (Midland Plant, Units 1 and 2), CLI-74-5, 7 A.E.C. 19, 30-32 (1974); see also Houston Lighting and Power Company (South Texas Project, Units 1 and 2), LBP-83-49, 18 N.R.C. 239, 240 (1983) (persuasive evidence not bare allegations to satisfy a showing of unusual and compelling circumstances required for a petition under 10 C.F.R. § 2.758).

IV. The Licensing Board did not Err in its Ruling Rejecting as Inadmissible Proposed Contentions on the Transportation of Spent Fuel to the Shearon Harris Facility

A. Description of the Record Below

CCNC and Mr. Eddleman have appealed the Licensing Board's dismissal of contentions which sought to raise the issue of the potential environmental impacts of transportation of spent fuel from other reactors to the Harris Plant for the purpose of interim storage. Intervenor's Brief at 34. In LBP-82-119A, the Licensing Board considered a number of contentions dealing with the spent fuel "transshipment" issue, accepted CCNC Contention 4 and CHANGE Contention 9 -- subject to reconsideration after issuance of the draft environmental statement (DES) -- and deferred ruling on proposed Eddleman Contentions 24, 25, 64(d), 64(e) and 126x. LBP-82-119A, supra, 16 N.R.C. at 2080-81, 2083, 2094, 2100, 2108 (1982). Subsequently, on the basis of a licensing board's rejection of similar contentions in the Catawba proceeding,<sup>55/</sup> Applicants moved for reconsideration of the Board's decision admitting CCNC 4 and CHANGE 9 and, further, requested that the Board reject Mr. Eddleman's proposed spent fuel transshipment contentions.<sup>56/</sup>

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<sup>55/</sup> Duke Power Company (Catawba Nuclear Station, Units 1 and 2), LBP-83-8B, 17 N.R.C. 291 (1983).

<sup>56/</sup> Following the issuance of the Staff's DES, intervenor Eddleman proposed a new spent fuel transportation contention -- Contention 25B -- and reasserted previously proposed Contentions 25, 64(d), 64(e) and 126x. See "Wells Eddleman's Response to Staff DEIS," dated June 20, 1983, at 18, 25, 29-30.



See "Applicants' Motion for Reconsideration of CCNC Contention 4 and CHANGE Contention 9 and Applicants' Response to Intervenor Wells Eddleman's Contentions Regarding Spent Fuel Transportation," dated July 8, 1983 (hereafter "Applicants' Motion for Reconsideration").57/

The Staff supported Applicants' Motion for Reconsideration. See "NRC Staff Response to Applicants' Motion to Dismiss Contentions Regarding Spent Fuel Transportation," dated July 28, 1983 (hereafter "NRC Staff Response"). Responses in opposition to Applicants' Motion were filed by intervenors CHANGE58/ and Mr. Eddleman.59/ In its Memorandum and Order (Ruling on Spent Fuel Transportation Contentions and Miscellaneous Motions) (August 24, 1983) (hereafter "August 24 Memorandum and Order"), the Licensing Board granted Applicants' Motion for Reconsideration, dismissing CCNC Contention 4 and CHANGE Contention 9, rejecting Eddleman Contentions 25B, 64(d), 64(e) and 126x, and conditionally rejecting Eddleman Contentions 24 and 25.60/

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57/ The texts of the spent fuel transportation contentions at issue are reproduced at Appendix A to Applicants' Motion for Reconsideration.

58/ See "Response to Applicants' Motion for Reconsideration of CCNC Contention 4 and CHANGE Contention 9 and Applicants' Response to Intervenor...", dated July 29, 1983.

59/ Mr. Eddleman's response is found in his "MINI\*BRIEF," at pages 29-31 of a pleading entitled, "Wells Eddleman's filing re 5 factors and answer to Staff and Applicants re DEIS contentions and 15AA," dated July 27, 1983.

60/ Eddleman proposed Contentions 24 and 25 concerned the adequacy of security plans for the possible shipment of spent fuel

(Continued Next Page)

## B. Background

Applicants, as part of their application for an operating license, seek authority to receive and store at the Harris Plant spent fuel from CP&L's Robinson Unit 2 and Brunswick Units 1 and 2.<sup>61/</sup> Applicants are not requesting authority to transship spent

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(Continued)

from the Brunswick and Robinson facilities to the Harris Plant. These two contentions were conditionally rejected absent a showing on Mr. Eddleman's part as to why he did not make a timely proffer of an expert to review transportation security plans. August 24 Memorandum and Order, at 6-7. Mr. Eddleman attempted to make such a showing. "Wells Eddleman's Response to Board 8-24-83 Order (pp. 6-7) re Spent Fuel Security," dated August 31, 1983. Applicants replied, arguing that (1) the Licensing Board has no jurisdiction regarding health and safety issues involved in the transportation of spent fuel from Robinson and/or Brunswick; (2) proposed Contention 24 constituted an impermissible challenge to the Commission's regulations at 10 C.F.R. § 73.37; (3) Mr. Eddleman had failed to establish any basis with required specificity for the far-fetched scenarios alleged to endanger spent fuel shipments in North Carolina; and (4) in any event, Applicants' security procedures for such shipments are unlikely to be developed prior to issuance of the operating license for the Harris Plant. "Applicants' Reply to Wells Eddleman's Response to Board 8-24-83 Order (pp. 6-7) re Spent Fuel Security" dated September 29, 1983. The Board rejected proposed Contentions 24 and 25 in its Memorandum and Order (Ruling on Various Safety and Procedural Questions) (July 27, 1984) at 2-4. It does not appear from Intervenor's Brief that the Board's July 27, 1984 Memorandum and Order is being challenged.

<sup>61/</sup> The application for an operating license for the Harris Plant included the request for "authorization to store source, special nuclear, and byproduct material irradiated in the nuclear reactors licensed under DPR-23 [Robinson], DPR-62 and DPR-71 [Brunswick Units 1 and 2] and subsequently transported to the Shearon Harris nuclear Power Plant site." Such additional spent fuel storage was discussed in Applicants' Final Safety Analysis Report and Environmental Report made available for public inspection. See 47 Fed. Reg. 3898 (January 27, 1982).

fuel from Robinson and Brunswick to the Harris Plant. CP&L already has authority, by virtue of its licenses to operate the Robinson and Brunswick Plants, and by virtue of the general license conferred on it by 10 C.F.R. § 70.42(b)(5), to transfer the spent fuel "to any person authorized to receive such special nuclear material under terms of a specific license or a general license or their equivalents . . . ."

At the present time, CP&L has no firm plans to ship spent fuel from its Robinson and/or Brunswick Plant to the Harris Plant.<sup>62/</sup> Thus, CP&L has not defined schedules or the modes (i.e., truck or rail) of transportation of spent fuel to the Harris Plant, has not selected routes, and has not requested NRC approval of any routes for such shipment. The shipment of spent fuel from CP&L's Robinson and/or Brunswick Plant to the Harris Plant in the future is, however, a possibility. It is Applicants' intention that any shipments will be made such that their environmental impacts will be encompassed within the values contained in Table S-4 to 10 C.F.R. § 51.20. As such, the number of shipments of spent fuel from Robinson and/or Brunswick to the Harris Plant, either by rail or by truck, would be within the

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<sup>62/</sup> For example, Applicant CP&L has recently applied to the Commission for authority to conduct with the Department of Energy a demonstration program of dry spent fuel storage in concrete silos. If successful, this program could certainly reduce the need for early shipments of spent fuel from the Robinson Plant. Thus, for many reasons, CP&L's plans at this time are not firm regarding possible transshipments of spent fuel to the Harris Plant.

parameters underlying the assumptions to Table S-4. See Affidavit of L. H. Martin dated July 6, 1983 (attached as Appendix B to Applicants' Motion for Reconsideration).

The Commission has already considered the environmental impacts of the transportation of spent fuel from Robinson and Brunswick to any facility authorized to receive it in the context of the licensing proceedings for those two facilities. See U.S. Nuclear Regulatory Commission, Final Environmental Statement Related to the Operation of H.B. Robinson Nuclear Steam-Electric Plant Unit 2 (NUREG-75/024), at § 4.4.2 (April, 1975); U.S. Atomic Energy Commission, Final Environmental Statement Related to the Continued Construction and Proposed Issuance of an Operating License for the Brunswick Steam Electric Plant, Units 1 and 2, at V-45 to V-55 (January 1974).

### C. The Decision and the Appeal

The Licensing Board carefully set forth the rationale for dismissing the proposed transshipment contentions. August 24 Memorandum and Order at 1-7. In doing so, the Licensing Board referred to the analysis of similar contentions that were rejected by a licensing board in Catawba. See note 55 supra. Each argument before the Licensing Board had been briefed in detail by both Applicants and the Staff. Nevertheless, Intervenor ignored the Licensing Board's reasoning, the facts in this case, and Applicants' and the Staff's arguments, and do no more than make the most perfunctory nod to broad statements of law -- without



citation.<sup>63/</sup> Intervenor's Brief at 35-36. Intervenor's requested relief is for the Licensing Board to "consider the need for [an alleged] hazardous transshipment scheme and its full environmental impact" and "fully consider the availability of environmentally less harmful alternatives." Id. at 36.

Intervenors cite as authority for their arguments a case involving an amendment to a materials license held by Duke Power Company. Duke Power Company (Amendment to Materials License SNM-1773 -- Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-651, 14 N.R.C. 307 (1981). There, considering the proposed shipment of 300 spent fuel assemblies from Duke Power Company's Oconee Plant to its McGuire Plant<sup>64/</sup>, the Appeal Board reversed the licensing board's decision holding that preparation of an environmental impact statement was necessary, and found that (1) if carried out without incident, the shipments will have "negligible environmental effects;" and (2) the "possibility of an untoward event at

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<sup>63/</sup> Intervenor's arguments consist entirely of such bromides as "the Licensing Board must review all environmental impacts, not just those that somehow upset the cost-benefit analysis," and "the reviewing body must afford the Intervenor the opportunity for hearing to ensure the 'fullest possible consideration of the environment' in reaching the decision on this action." Intervenor's Brief at 35. The origin of these statements, their context in the facts of a particular case and Intervenor's view of their applicability here are left to the imagination.

<sup>64/</sup> Such shipments were to have occurred prior to issuance of an operating license for the McGuire Plant. See Duke Power Company (Amendment to Materials License SNM-1773 for Oconee Nuclear Station Spent Fuel Transportation and Storage at McGuire Nuclear Station), LBP-80-28, 12 N.R.C. 459, 463 n.1 (1980).



any point in the course of the transfer with accompanying serious environmental consequences is extremely remote." Id. at 321. Further, the Appeal Board rejected intervenors' arguments there that alternatives to spent fuel shipments must be considered. The Appeal Board held that NEPA does not obligate the NRC "to search out possible alternatives to a course which itself will not either harm the environment or bring into serious question the manner in which this country's resources are being expanded." Id. at 321-22, citing Portland General Electric Company, (Trojan Nuclear Plant), ALAB-531, 9 N.R.C. 263, 266 (1979).

Intervenors further misuse the Duke Power decision by attempting to equate the so-called "cascade plan" -- which if it existed at all was found by the Appeal Board not to be before the Commission -- with Applicants' proposal here. Intervenors refer to a "similar scheme" (Intervenors' Brief at 35) and "such a hazardous spent fuel transshipment scheme" (id. at 36). Applicants simply have requested authority to store spent fuel from CP&L's other reactors at the Harris Plant without any definite plans to transship any such spent fuel. Applicants have committed, however, that any such shipments would be within the parameters underlying the assumptions to Table S-4. Affidavit of L. H. Martin, supra. As such, both the actual situation in Duke Power (including shipment of 300 assemblies) and the references to the "cascade plan" are inapposite.

Fatal to Intervenors' arguments are the issues that they have failed to address. Foremost, they ignore the fact that the

environmental impacts of shipments of spent fuel from Robinson and Brunswick have already been considered by the Commission. NEPA does not require duplicative environmental reviews for every licensed activity. August 24 Memorandum and Order at 2; Applicants' Motion for Reconsideration at 6-9; NRC Staff Response at 2-3. Intervenors do not address the compelling logic of this holding by the Licensing Board and the substantial precedent cited in support.

Intervenors do assert that the impacts of shifting fuel from one reactor to another is outside the Table S-4 analysis, but they do not hint as to what additional impacts there might be. They do not address Applicants' commitment to ship spent fuel within the parameters underlying the assumptions in Table S-4. Intervenors have not responded to the Board's suggestion that, if they "believe they can make a prima facie showing that Table S-4 should not apply, identifying with reasonable specificity the environmental impacts that are not adequately accounted for by Table S-4, they may file a petition under 10 C.F.R. 2.758." August 24 Memorandum and Order at 3; Applicants' Motion for Reconsideration at 9-10, 15-18; NRC Staff Response at 3-4.

When Intervenors, in response to Applicants' Motion for Reconsideration, earlier attempted to identify particular significant impacts that would not be encompassed in Table S-4, they could only point to additional loading and unloading of fuel that would be necessitated by interim storage. As the Licensing Board noted below, however, the proposed contentions do not make any

allegations regarding on-site loading and unloading. These are not impacts covered by Table S-4. August 24 Memorandum and Order at 4-5.

Further, Intervenor did not address the argument that, even assuming arguendo the transshipment of spent fuel were to double the Table S-4 values, the result would be insignificant and would not influence the cost-benefit balance. Instead, Intervenor simply assert all environmental impacts no matter how insignificant must be reviewed. This flies in the face of the "rule of reason" applied to NEPA analyses, discussed supra (section I.C).

With respect to Intervenor's arguments that alternatives to spent fuel transshipments must be considered, as discussed in the context of the Duke Power decision, supra, because the impacts on the environment are clearly de minimis, the NRC need not search out possible alternatives. See Applicants' Motion for Reconsideration at 14-15.

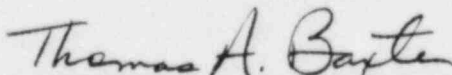
In sum, the Licensing Board did not err in its ruling rejecting as inadmissible proposed contentions on the transportation of spent fuel to the Harris Plant. Applicants have stated their intention that any spent fuel shipments from Robinson and/or Brunswick to Harris will be encompassed within the parameters of Table S-4 and thus the radiological impacts will be reflected by the values of Table S-4. No matter how such transshipments of spent fuel are viewed, the Table S-4 values -- established by Commission rule -- cannot be challenged absent a successful petition pursuant to 10 C.F.R. § 2.758. Shipments of

spent fuel from Robinson and Brunswick to Harris, with eventual shipments to a reprocessing facility or final repository, can be viewed analytically as two legs of a journey previously analyzed in the context of the Robinson and Brunswick licensing proceedings. As such, any transportation impacts are outside the scope of this proceeding. Even assuming arguendo that there are some incremental, unanalyzed environmental impacts of spent fuel shipments either to or from the Harris Plant, such impacts are encompassed within a multiple of the values of Table S-4 and are clearly insignificant.

#### CONCLUSION

For all of the foregoing reasons, the Licensing Board's decisions on environmental contentions should be affirmed.

Respectfully submitted,



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Dated: May 9, 1985



May 9, 1985

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT COMPANY	)	
and NORTH CAROLINA EASTERN	)	Docket No. 50-400 OL
MUNICIPAL POWER AGENCY	)	
	)	
(Shearon Harris Nuclear Power	)	
Plant)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "Applicants' Brief in Reply to Intervenors' Appeal From the Partial Initial Decision on Environmental Contentions" were served this 9th day of May, 1985, by deposit in the U.S. mail, first class, postage prepaid, to the parties on the attached Service List.

Thomas A. Baxter  
Thomas A. Baxter, P.C.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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DOCKETED  
USNRC

In the Matter of )

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and NORTH CAROLINA EASTERN )  
MUNICIPAL POWER AGENCY )

(Shearon Harris Nuclear Power )  
Plant) )

Docket No. 50-400 OL

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