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April 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	)	Docket No. 50-400 OL
NC Eastern Municipal Power Agency	)	
	)	
(Shearon Harris Nuclear Power Plant)	)	

APPEAL FROM PARTIAL INITIAL DECISION
ON ENVIRONMENTAL CONTENTIONS

Now come the Conservation Council of North Carolina (CCNC), Wells Eddleman (pro se), and the Joint Intervenors with an appeal from the Partial Initial Decision on Environmental Contentions dated February 20, 1985, in the above-captioned matter. CCNC and Mr. Eddleman are Intervenors in this docket while the Joint Intervenors consist of several of the Intervenor groups and individuals as proponents of certain consolidated contentions. Mr. Eddleman and Counsel for CCNC are authorized to argue on behalf of the Joint Intervenors as appropriate in this appeal.

A Notice of Appeal pursuant to 10 CFR 2.762 was duly served on March 5, 1985, and a request for a brief extension was filed with the Appeals Board on April 4, 1985. Both the NRC Staff and the Applicants agreed to this with the proviso that their time for responses did not begin to run until this Appeal was served.

In its Partial Initial Decision, the Atomic Safety and Licensing Board stated on page 59 that "pursuant to 10 CFR 2.760(a) and 2.762, an appeal from this Partial Initial Decision or from any prior Board Order granting a motion

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for summary disposition, in whole or in part, of an environmental contention or excluding a proposed environmental contention from litigation may be taken..." In 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. With this in mind, we have attempted to address those contentions (including rejections of contentions, granting of summary disposition, the denial of 2.758 petition, as well as those discussed in the Partial Initial Decision) which broadly fit the definition of an environmental contention. We do not however desire to lose the opportunity to appeal rulings on other contentions which the other parties might argue fit into an environmental classification. There are procedural advantages in breaking up the decision on an operating license into partial decisions; this process should not be used as a means of precluding review by the Appeal Board.

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REQUEST FOR ORAL ARGUMENT

Pursuant to 10 CFR 2.763, CCNC, Mr. Eddleman, and the Joint Intervenors hereby request an opportunity to be heard on oral argument in support of these appeals, either in person or in a conference call at the Appeal Board's pleasure.

QUESTIONS PRESENTED

I. Did the Licensing Board err in its determination that environmental matters raised concerning the appropriate time periods for considering health effects, the effects of attachment of radionuclides to fly ash particles, and the effects of coal particulates associated with the fuel cycle were resolved against the Intervenors and secondly that the Final Environmental Statement for the Harris facility satisfied the Staff's obligations under the National Environmental Policy Act?

II. Did the Licensing Board err in wholely depriving the various Intervenors of an opportunity for hearing on important environmental claims, including the adequacy of proposed radiological monitoring, the effect of ocean dumping of radioactive wastes, the adequacy of preoperational radiation program, and the cost of operation of the Harris facility by rejecting contentions based on an arbitrary standard for specificity and bases and other errors of law?

III. Did the Licensing Board err in denying the 2.758 petition advanced by Mr. Eddleman seeking waiver of the need for power rule in order to permit litigation of the Applicants' need for power projections and to show that certain alternatives would be economically and environmentally superior to the operation of the Shearon Harris facility?

IV. Did the Licensing Board err in its various rulings regarding the environmental effects of transporting radioactive waste and spent fuel from the Applicants' other nuclear reactors to the Harris facility by denying Intervenors the opportunity for hearing under the National Environmental Policy Act?

I.

THE LICENSING BOARD ERRED IN ITS DETERMINATION THAT ENVIRONMENTAL MATTERS RAISED CONDERNING THE APPROPRIATE TIME PERIODS FOR CONSIDERING HEALTH EFFECTS, THE EFFECTS OF ATTACHMENT OF RADIONUCLIDES TO FLY ASH PARTICLES, AND THE EFFECTS OF COAL PARTICULATES ASSOCIATED WITH THE FUEL CYCLE WERE RESOLVED AGAINST THE INTERVENORS AND SECONDLY THAT THE FINAL ENVIRONMENTAL STATEMENT FOR THE HARRIS FACILTY SATISFIED THE STAFF'S OBLIGATIONS UNDER THE NATIONAL ENVIORNMENTAL POLICY ACT.

If the instructions of the Commission's chartering legislation, the Atomic Energy Act, 42 USC Section 2232(a), its implementing substantive regulations at 10 CFR 50.57(a)(3)(i), and the holding of Union Electric Company (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343 (1983), are to be read as demanding meaningful protections for the public health and safety in the construction and operation of a nuclear power plant, then the evidence in the record concerning the gross understating of environmental concerns by the Applicants and Staff requires the denial of the Licensing Board's Partial Initial Decision on Environmental Contentions. Applicants have failed to carry their burden of proving that the Shearon Harris Nuclear Power Plant will operate "without endangering the health and safety of the public..." 10 CFR 50.57(a)(3).

The Licensing Board, in its role as the agency decision-maker under the National Environmental Policy Act, 42 USC 4321 ff. ("NEPA"), has not adequately explained or justified its decision to proceed with this action despite the grave environmental concerns raised in the record. The provisions of the Administrative Procedures Act, particularly 5 USC 706(2)(A), empower a reviewing court (and the Appeal Board acts as a

reviewing court in this Appeal) to "hold unlawful and set aside agency action, findings and conclusions found to be...arbitrary, capricisios, an abuse of discretion." The United States Supreme Court held in the most notable of the NEPA cases, Citizens to Preserve Overton Park v. Volpe, 401 US 402 (1971), that, in reviewing agency action, "the court must consider whether the decision was based on a consideration of the relevant factors and whether the decision was based on a consideration of the relevant factors and whether there has been a clear error in judgment" which may "require some explanation in order to determine if the...(agency's) action was justifiable." at 416, 420. This was further reiterated by the holding that "the agency must articulate a 'rational connection between the facts found and the choice made.'" Bowman Trans., Inc. v. Arkansas - Best Freight, 419 US 281, 285 (1974).

In addition, the Appeal Board has made it absolutely clear that a Licensing Board must clearly confront the facts established by intervenors and articulate a rational basis if it decides to reject the intervenors' arguments or proposed findings. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 40 - 41 (1977). In short, NEPA requires rational articulated decision-making by the Licensing Board in assessing the environmental impacts from the operation of Harris facility.

The Licensing Board's misapplication of its role under NEPA is further apparent in its Conclusions of Law at page 58 of the Partial Initial Decision, in which it states that, "the environmental matters in controversy in this proceeding are limited to those raised by the Intervenors," and cites the regulations at 10 CFR 2.760a. The Licensing Board then concludes "that as to all contested matters the Final Environmental Statement for the Harris

facility satisfies the Staff's obligations under the National Environmental Policy Act." The Licensing Board's review under NEPA is required to be much broader than ruling solely on contested matters; the Licensing Board has the obligation to undertake an independent review of the FES and to make findings on whether the FES complies with NEPA. This review of the FES is to determine whether the NRC Staff has met its burden of assessing all environmental issues and alternatives from the construction and operation of the facility. Indeed, it the Staff has failed in a material way, defects in the record cannot even be corrected by the Applicant's testimony. Boston Edison Co. (Pilgram Nuclear Generating Station, Unit 2) ALAB-479, 7 NRC 774 (1978). The Licensing Board's review of the Staff relative to the thoroughness of the FES cannot be as summarily conducted as it was in the Partial Initial Decision.

Each of the three environmental matters litigated at the evidentiary hearings will be discussed below in reference to the above standard of review.

1. JOINT CONTENTION II(e) (EFFECTS OF ATTACHMENT OF RADIONUCLIDES TO FLY ASH PARTICLES)

In light of the above standard of review, the Licensing Board erred in not finding that the dose estimates of radionuclides attached to fly ash in the FES were underestimated. On page 29 of the Partial Initial Decision, the Licensing Board agreed that many of the assumptions used in the Applicants' dose estimates "were found deficient upon cross-examination" and that the exact concentration and size distribution of particulate matter at the Harris site and the degree in which radionuclides attached to particulates had not been determined. The Licensing Board also agreed that the "exact extent of lung deposition had not been established" because of the variability in breathing. As a result of the insufficient technical data presented by the

Staff and the Applicants the Licensing Board was not able to assess the effects of radionuclides attached to particulates on the population surrounding the Harris facility.

Without adequate foundation in the record concerning the mechanics of how radionuclides attached to particulates effect public health, the Licensing Board erred in concluding that the uncertainty fit within the regulatory does limit specified in 10 CFR 20.105 and the dose design objective in 10 CFR 50, Appendix I, Section II C ("ALARA"). The issue raised by the evidentiary hearings on this contention revolved around the adequacy of the analysis done by the Staff and Applicants rather than whether the potential serious health effects were acceptable. Under NEPA, decisions cannot be made without adequate information.

The Staff did not meet the burdens imposed on it by NEPA in that it failed in a material way to fairly and directly assess the impacts of radionuclides when they are attached to particulates. The Applicants testimony not only did not correct deficiencies in the record but contributed to the uncertainty of the potential impacts.

2. JOINT CONTENTION II(c) (APPROPRIATE TIME PERIODS FOR CONSIDERING HEALTH EFFECTS)

In light of the standard of review discussed above, the Licensing Board erred in finding that the Staff had not significantly underestimated the health risks represented by normal operation of the Harris facility. Starting on page 13 of the Partial Initial Decision) the Licensing Board points out a series of deficiencies in the Staff's analysis yet concludes that even in light of these deficiencies the Staff met their burden under NEPA. These deficiencies are: 1) that 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); 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., occassioned by radioactive plant effluents (see Finding 15, page 18, PID). The Licensing Board found that for "practical purposes" the Staff's results were not misleading although made the observation "that in future assessments of environmental impact it might be well to include life-of-the-plant risk assessments as well as annualized assessments to provide the reader with a fuller appreciation of the overall risks involved" (Finding 19, page 20, PID). Intervenors agree and also add that added to these annualized assessments are an analysis of the effects of the plant after it is no longer in operation, the effects on fetuses, potential birth defects and the like, and have as a result the information necessary for the agency to make an informed decision of the risks of the nuclear power plant.

3. CONTENTION 8F(1) (COAL PARTICULATE HEALTH EFFECTS)

The Licensing Board committed clear error in limiting its consideration to effects within 50 miles of certain coal-fired power plants, in failing to confront the evidence of record concerning the best estimate of health effects caused by particulate emissions from coal-burning power plants, and by failing to deal with the key question, whether the deaths expected to result nationwide from the coal particulate emissions specified in Table S-3 of 10 CFR 50.20 are worth it for the benefit of electricity from the Harris plant.

The Board below (P.I.D. "Summary of Findings" pp 8-12; finding 32, p.48) does not accept the finding that consideration of health effects only within 50 miles of emission sites is incomplete consideration of the effects of the Table S-3 coal particulate emissions. The Board explains its disagreement: "The fifty mile radius encompasses the area most affected by the coal particulates. Use of that radius amounts to a 'worst case' analysis and places the particulate lung deposition phenom(e)non in perspective. Even in those limited areas, the calculated health effects are very small." (Entire explanation, PID p.48)

This finding ignores the admission by both Applicants' and Staff's witnesses that nothing stops the health effects of these particulate emissions at a 50-mile radius. (Eddleman proposed findings, 7/20/84, p.4, finding 14)

Applicants' witness Hamilton was questioned on the health effects of particulates at various distances from the point of emission, as follows (Tr. 1259):

> Q. Okay. Now as to this mixing, you don't consider the effects of these particles after they have gone past 50 miles from the plant, do you?
>
> A. Not in this calculation, but I do later on in my testimony. I considered [there] the long-range distribution throughout the United States.
>
> Q. All right. Now let me ask you this hypothetically. Suppose there were two identical coal particles, one of which had been ... emitted ... from CP&L's Cape Fair plant over to the west of Raleigh, and another of which might have been emitted from a coal plant in Europe or the Soviet Union or China, and let's assume that the two particles are identical. By breathing either of those particles, either one will have the same effect on me, wouldn't it?
>
> A. Well, if they were of similar chemical composition, yes.

The Staff witnesses did not know how much of the coal particulate emissions passed beyond 50 miles from the plant emitting them (Tr. 1567-69). However, they testified that fine particulates could be transported long distances (Tr. 1486, Habegger), particularly from tall stacks (Tr. 1486-88). The stacks of the emitting plants are from approximately 500 feet to over 1000 feet tall (Tr. 1487) Witness Habegger admitted that "there isn't any magic circle at 50 miles that detoxifies these things and keeps them from having health effects" Tr. 1569.

NEPA requires the fullest consideration of the

environmental effects of proposed actions. Calvert Cliffs Coordinating Committee v. AEC, 449 F 2d 1109, (D.C. Circuit 1971). Thus, even if the effects outside 50 miles were small (as the Staff witnesses claimed based on their opinions), these would have to be considered.

The only model submitted that includes these effects is Dr. Hamilton's "U.S. Population" model (Hamilton prefiled, pp 15-16, calculation shown in footnote 11 on p.15; prefiled follows Tr. 1178). Therefore this model should be used. Dr. Hamilton testified (Tr. 1331) that the Harvard studies "are the best state of the art effort that we can now make in order to come up with these numerical bounding estimates." The Staff witnesses included Dr. Özkaynak who was one of the authors of these Harvard studies. He testified as follows (Tr. 1439)

> Q ... If we have our math in order then, we could say, looking at these two ranges of confidence, the earlier estimate which Dr. Hamilton picked up from your work and the later estimate looks a little higher.
>
> A. That's correct, it is a little higher.

Dr. Özkaynak testified further that the fine particulate measures derived from health data for mortality "you do find more statistical significance" than you do with data from total suspended particulate levels or inhalable particulate levels, and reduced standard error and a stronger relationship between the measure of pollution and mortality. Tr. 1443.

The staff prefiled (follows Tr. 1380) shows that a range of "0 to 2.31 ± 0.81 deaths/year/100,000 persons per ug/m^3 FP" was adopted (A. 51, p.33) Page 33 of that testimony also shows that the 2.31 ± 0.81 is from the "latest findings from Harvard's research ..." (A.50, end). It is "significant" and should "provide improvement" Id. p.34 Thus, the 2.31 coefficient the Board is not satisfied to use (PID p.49) is the latest data available and also the upper bound of the range of known coefficients for mortality from coal particulates (see Staff prefiled answer 51, p.33, following Tr. 1380: "... all the other coefficients, if used, would project mortality impacts within the range generated by these risk coefficients."). The Board errs in not using this coefficient, and in not taking the upper bound of risk known.

This is, first, because as shown in Eddleman proposed finding 10 (7/20/84 at 3) these studies do not capture the effect of air pollution except in the year of a person's death (citing Tr. 1329, 1420-21, 1334, 1421-22) even though the effects seen may be results of exposure many years ago (Hamilton, Tr. 1334 -35) Thus, the damage coefficients may not capture all the damage that is due to particulate exposure, especially exposure more than one year before death.

Second, the possibility that the damage is at the upper limit of the range cannot be excluded. Finally, the health effects of Table S-3 emissions add to those

of the other particulates present in the air. Staff Witness Özkaynak testified (Tr. 1563):

> Q. So actually the health effects of these particulate emissions from this Table S-3 power plant would be the effects of adding those emissions to whatever is already out there ...?
>
> A. That is correct.

Thus, it is the addition to the health effects that is relevant here. The Staff witnesses testified that at least 40% of the particulate emissions of a Table S-3 plant were fine particulates (Tr. 1459). This is the type of particulate to which the 2.31 ± 0.81 deaths coefficient applies. But the Staff witnesses could not say how much less than 68% of the particulates were fine particulates (Tr. 1473).

> Q. But you just testified that you don't really know how much fine particulates those things would remove.
>
> A. That's right, and that's why we used the 68 percent, and that's the basis for our conclusions in our testimony.
>
> Q. Okay. So you don't really know how conservative your assumption is. You just made it because that's the most fine particulates you could get, right?
>
> A. That's right. (Tr. 1473)

Thus, 68 percent of the values calculated by Eddleman using the Hamilton equation (Board finding 33, PID pp 48-49) is conservative, not 40%. Also, as shown above, the higher Harvard damage coefficient is the conservative one to use. Thus, the Board should have found 20 to 120 deaths could result (68% of 32 to 180 deaths) not 10 to 70. This error

should be reversed and remanded, since full consideration of possible effects, not just the most likely ones, is required in NEPA proceedings.

Finally, the Board failed its NEPA responsibilities by not weighing the possible 10 to 70 deaths inherent in the Table S-3 coal particulate emissions effects agains the benefit of electricity produced at the Harris facility. The Licensing Board sidestepped the issue by stating that those deaths would not be detected in statistics (PID pp 49-50). However, if the deaths occur, they are a cost. As noted above, such deaths would be an incremental (i.e. additional) effect above the deaths that would otherwise be expected to occur. Cf. Tr. 1563). The question is not whether the deaths caused by the Harris plant are an "undue risk to the population of the United States" (PID p. 50) but whether the deaths are worth the benefit of elctricity produced at the Harris facility. The Licensing Board must not be allowed to avoid its responsibility under NEPA to answer this question.

For all the above reasons, the Licensing Board's decision on Contention 8F(1) must be reversed and remanded.

II.

THE LICENSING BOARD ERRED IN WHOLELY DEPRIVING THE INTERVENORS THE OPPORTUNITY FOR HEARING ON IMPORTANT ENVIRONMENTAL CLAIMS, INCLUDING THE ADEQUACY OF PROPOSED RADIOLOGICAL MONITORING, THE EFFECT OF OCEAN DUMPING OF RADIOACTIVE WASTES, THE ADEQUACY OF PREOPERATIONAL RADIATION PROGRAM, AND THE COST OF OPERATION OF THE HARRIS PLANT IN REJECTING CONTENTIONS BY NOT ADHERING TO THE PROPER STANDARD FOR THE ADMISSION OF CONTENTIONS.

The Licensing Board in this matter is required under NEPA to hear all environmental claims to reach an "informed decision" regarding the environmental impact of the licensing of the Harris Nuclear Power Plant. The Licensing Board erroneously reject contentions regarding: 1) the adequacy of proposed radiological monitoring; 2) the effect of ocean dumping of radioactive waste, 3) the adequacy of preoperational radiation program, and 4) the cost of operation of the Harris plant. MEMORANDUM AND ORDER (Reflecting Decisions Made Following Prehearing Conference), September 22, 1982.

The admissability of contentions is governed by 10 CFR 2.714(b) which requires that an intervenor file a list of contentions "and the bases for each contention set forth with reasonable specificity." The Licensing Board recognized this regulatory requirement and explained it further by stating that a contention is required to include "a reasonably specific articulation of its rationale--eg., why the applicant's plans fall short of certain safety requirements, or will have a particular detrimental affect on the environment." Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), LBP-82-50, slip op. at 4 (March 5, 1982). The point of this rule is to assure that the Licensing Board considers only those issues that are reasonably capable of being litigated and that the utility and the Staff are put on

notice of the charges they must defend against. Philadelphia Electric Co. (Peach Bottom Atomic Power Station), 8 AEC 13, 20 (1974).

While the rule for adequate bases and specificity has been upheld by the Court of Appeals in BPI v. AEC, 502 F. 2d, 424 (1974), misapplication of this standard of review might impermissibly dprive intervenors of the right to a hearing under the Atomic Energy Act, 42 USC 2239, and be impermissible under NEPA, p. 102, requiring that environmental questions be considered "to the fullest extent" possible throughout the Commisssion's review process. One pitfall which the Licensing Board in this matter fell into was in reaching the merits of a contention at the initial pleading stage, although it addressed this issue correctly in its Memorandum and Order at p. 4 by stating "if an applicant believes that it can readily disprove a contention admissible on its face, the proper course is to move for summary disposition following its admission, not to assert a lack of specific basis at the pleading stage. Houston Lighting and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980). The Allens Creek decision held further that although there should be some factual basis for the allegation contained in the contention, the extent of factual support that is required is minimal. In that case, the Appeal Board reversed the Licensing Board and admitted a contention alleging that the plant was not needed in light of the potential for producing energy from a marine biomass farm. Although the Appeal Board was highly skeptical of the intervenor's ability fo support the contention, it ruled the contention was valid as both the Staff and the utility knew what they would have to defend against. The validity of factualy allegations may not be considered in determining whether a contention may be admitted.

With this standard of review, various contentions which were rejected

will be addressed. Other specific arguments will also be raised for each if appropriate in light of the rationale advanced by the Licensing Board in rejecting each contention.

1. THE ADEQUACY OF PROPOSED RADIOLOGICAL MONTIORING (CCNC Contentions 16 through 18; Eddleman 2)

In ruling on the admissibility of CCNC Contentions 16 through 18 and Eddleman 2 regarding the adequacy of the proposed radiological monitoring, the Licensing Board erred in rejecting these contentions as it went to the merits of the contentions rather than rule on adequate specificity and bases. (See the discussion of Houston Lighting above). The proper procedure would have been to admit the contentions and allow the other parties the opportunity to move for summary disposition.

Further, the Licensing Board states that Eddleman 2 is sufficiently specific but rejects it because it is redundent of Joint Contention VI (Memorandum and Order, September 22, 1982). This is error in that on its face Eddleman 2 is more specific than Joint Contention VI and should have been admitted. Additionally, although the Licensing Board is authorized to consolidate parties and contentions under 10 CFR 2.715a on motion or on its own initiative, on motion the parties may respond and present their positions on how the consolidation will adversely prejudice their rights. In fairness, if the Licensing Board consolidates contentions on its own initiative, a similar opportunity for response need be afforded.

2. THE EFFECT OF OCEAN DUMPING (Eddleman Contention 12)

Again, in light of the holding in Houston Lighting discussed above, the Licensing Board was obligated to admit this contention and allow the Applicants to move for summary judgment. The Licensing Board went to the merits of the contention and rejected it by stating that it fails under a

rule of reason test (and cited Scientist' Institute for Public Information v. AEC, 481 F. 2d 1079, 1091—92 (D.C. Cir. 1973) by referring to previous ruling in the Memorandum and Order). The Licensing Board apparently relied on a unsupported statement by Applicants' counsel in the Applicants' Response to Supplement to Petition to Intervene by Wells Eddleman that the Applicant is not contemplating ocean dumping. The contention should have been admitted as on its face it gives the Applicants and Staff fair notice of the issue to be litigated.

3. THE ADEQUACY OF PREOPERATIONAL RADIATION PROGRAM (Eddleman 82)

The Licensing Board erred in rejecting this contention as on its face it questions the adequacy and sufficiency of the Applicants' preoperational radiation monitoring program (Memorandum and Order, September 22, 1982; page 62). It is readily apparent that if a program that is designed to provide a baseline for radioactive emissions is deficient then any monitoring program utilized while the plant is in operation will not provide accurate measurement above background. Public health and safety depends on the timely discovery of radioactive emissions so that problems can be corrected.

4. CONTENTIONS ON COST OF OPERATION OF THE HARRIS PLANT

On 27 May 1983 the Licensing Board rejected contentions including Eddleman 22(a) and (b) concerning fuel and payroll costs, Eddleman 15 (re waste disposal costs) and CHANGE 79(c) concerning regulatory costs. These are the contentions listed in footnote 1 (p.3); ordered rejected at p.9 (Memorandum and Order (Ruling on Cost Savings Contentions, Discovery Disputes, and Scheduling Matters), March 27, 1983).

This Order effectively deprived intervenors (CHANGE is one of the Joint Intervenors) of their right under NEPA to have an assessment of the costs of the Harris plant's benefits (electricity). There is no question that there are economic costs to operate nuclear power plants -- costs of fuel, payroll, waste disposal, regulation, taxes, insurance, and other costs. The 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).

If the Harris plant operates, these costs will be incurred. They depend on the operating license, therefore. They certainly do not depend on the possible alternative energy sources that might displace Harris. And they depend in no way on whether the Harris plant is found to be needed. (That consideration is barred by 51.53(c) unless a 2.758 petition succeeds.) They are direct costs of the action NRC proposes to take (licensing Harris to operate). Thus they are and must be litigable under NEPA. To rule otherwise would "make a mockery of the act" contrary to Calvert Cliffs, supra.

III. THE LICENSING BOARD ABUSED ITS DISCRETION AND ERRED IN DENYING THE 2.758 PETITION ADVANCED BY MR. EDDLEMAN SEEKING WAIVER OF THE NEED FOR POWER RULE IN ORDER TO PERMIT LITIGATION OF THE APPLICANT'S NEED FOR POWER PROJECTIONS AND TO SHOW THAT CERTAIN ALTERNATIVES WOULD BE ECONOMICALLY AND ENVIRONMENTALLY SUPERIOR TO THE OPERATION OF THE HARRIS FACILITY.

In denying intervenor Eddleman's petition to waive the need for power rule (P.I.D. pp 50-58), the Licensing Board violated the Administrative Procedure Act, 5 USC 706(2)(A) by using a false premise (that the use of Harris to displace coal-fired generation is "not addressed" in the petition, P.I.D. p.56, last paragraph)[1] and by failing to compare the costs and benefits of Harris operation versus the environmental costs and benefits of the alternative proposed in the 2.758 petition. Both these actions are "clear error in judgment" and fail to make a "consideration of the relevant factors". Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 416, 420 (1971). The Board's decision must be reversed and remanded to confront the key facts (cf. Seabrook, ALAB-422, 6 NRC 33 at 40-41) put forward by the Intervenor, namely that there is an economically and environmentally superior alternative to operation of the Harris #1 unit.

The petition and supporting affidavits show just such an alternative, able to displace 2600 MW of peak demand (vs. 900 MW at most for Harris #1), and able to displace the generation of a Harris unit at 56% capacity

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[1] This error of fact is evidently derived directly from Applicants' Response to Eddleman Petition Under 10 CFR 2.758 Re Alternative and Need For Power Rule, 8-31-83, see at 6 ("an alternative not even addressed in Mr. Eddleman's petition") and compare pp 5-7 id. with PID pp 56-57

factor (Petition[2] e.g. at 3, 9). The Board's error appears to be made without reference to the source documents, for the Board below states,

> Mr. Eddleman compares his alternative to operating Harris under four different scenarios, the principal variables being cancellation or postponement of Unit 2 or Unit 1. In each of these scenarios, however, operation of Harris or implementation of the alternative is considered only with reference to meeting increased demand or peak loads. (P.I.D. 55-56)

However, a look at the four scenarios ("Petition" at 10 ff) makes it obvious that the Board below is wrong. Scenario 1 begins as follows:

> 1. As shown above, there is no need for Harris capacity. Thus the only benefit of the Plant is its ability to generate power at economic costs below that of coal. See NRC rule, 47 FR 12941 and 12942. (Petition at 10; compare cite to "Petition at 10" P.I.D. p. 56, bottom) (emphasis added)

What the Board says Eddleman did not consider is considered in plain sight at a place the Licensing Board cites in connection with this alleged failure to consider. The Licensing Board's false premise could hardly be more striking.

The "Petition" (see footnote this page) continues in the next paragraph (p.10 ibid.) by showing that the

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[2] What the Board calls the "Petition" is actually the Eddleman affidavit supporting it. The petition and four supporting affidavits were filed 6-30-83. As amended by Dr. Reeves' affidavit of 9-30-83 the GWH saving (generation saved) from the alternative is 4338 GWH/year. One Harris unit is estimated by NRC Staff to produce 4182 GWH/year at 55% capacity factor. See Harris FES, NUREG-0972, table 6.1 at p. 6-2, "8,364 x 10^6 kWh/yr (Units 1 and 2". Unit 1 would produce half of this at 55% capacity factor, i.e. 4182 GWH/year.

alternative will save more money (approximately $6.9 billion 1982 dollars) than the highest estimate of fuel savings ($4.03 billion 1982 dollars) from using two Harris units at 70% capacity factor to displace generation by coal (see Appendix to "Petition", item 15, Pp.3-4 for calculation. The amount is $80.3 million (1982 dollars) per unit per year, derived from the power company's own estimate of such "fuel savings", Harris ER Amendment 5, section 8). Thus, the economic superiority of the alternative over the use of Harris to displace coal-fired generation is clearly shown. That is confirmed in scenario 2 ("Petition" at 10-11) which states that "the benefits of Harris 1 operation vs. coal sum to about $2 billion plus in the constant 1982 dollars used for comparison" (versus over $6.9 billion of benefits from dollar savings under the alternative). The Licensing Board ignored these plain statements of comparison of Harris operation versus coal-burning. In the present situation, with Unit 2 canceled (see letter from Applicants' counsel Baxter to the Harris Licensing Board, 12/21/83) the economic comparison is that of scenario 2. Note that the alternative is able to displace the generation of a Harris unit at 56% capacity factor ("Petition" at 9 and as cited on the previous page; see footnote on that page). Thus it is preferable, economically,

The environmental superiority of the alternative, versus operation of a nuclear plant, is shown in Section III of the "Petition" (pp 14-19 and references therein). As both the "Petition" (pp 14-15) and Eddleman's 9-30-83 "response" (p.2) note, the argument basically is that "alternatives generally have less environmental impact than nuclear power plants (for comparable energy produced) ... (and) the alternative to Harris as set out by Dr. Reeves[3] has even less environmental impact than most alternatives."

Thus, the alternative is environmentally and economically superior to operation of the Harris plant. Given this superiority, then, the alternative should be used (instead of operating Harris) to displace coal-fired generation. The alternative will save more money and have less environmental impact.

The Board misunderstood the statement that "It is illogical to combine Harris with the alternative to it" (9/30/83 Eddleman response at 2, quoted in fn. 17, P.I.D. at 56). The point is that you have to compare alternatives with one another, not combine them. In the Eddleman "Petition", use of the alternative is compared to use of the Harris plant (now, only unit 1 is left at Harris).

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[3] Dr. G. George Reeves provided three affidavits filed 6-30-83 in support of the Eddleman 2.758 petition, setting forth the alternative to Harris operation.

After first establishing that with the alternative there is no need for power from the Harris plant ("Petition" pp 3-9), the alternative is also compared for the purpose of displacing coal-fired generation. The alternative saves far more money (about $6.9 billion vs. about $2 billion claimed fuel savings from one Harris unit operating to displace coal-fired generation) and provides more GWH than the Staff (Harris FES, Table 6.1, p. 6-2, NUREG-0972) says one Harris unit will produce (4338 GWH for the alternative vs. 4152 for a Harris unit). (See discussion, supra.)

The alternative is also established as having less environmental impact than operation of a Harris unit. Thus, the alternative would displace coal-fired generation at less cost and with less environmental impact than would operation of Harris 1. That is the point.

The Commission, in adopting the need-for-power and alternatives rule (47 FR 12940) states its tentative conclusion that:

> ...at the time of the operating license proceeding the plant would be needed to either meet increased energy needs or replace older less economical generating capacity and that no viable alternatives to the completed nuclear plant are likely to exist which could tip the NEPA cost-benefit balance against issuance of the operating license. ... In addition, this conclusion is unlikely to change even if an alternative is shown to be marginally environmentally superior in comparison to operation of a nuclear facility because of the economic advantage which operation of nuclear power plants has over available fossil generating plants. An exception to the rule would be made if, in a particular case, special circumstances are shown in accordance with 10 CFR 2.758 of the Commission's regulations.

What is shown in the Eddleman petition and affidavits under 10 C.F.R. 2.758 is an alternative that is environmentally superior to the operation of Harris (prima facie)[4] and which can save more money, when used to displace coal-fired generation, than the "economic advantage" of running the nuclear power plant to displace the same coal-fired generation. The alternative can displace more coal-fired generation than the Staff finds the Harris unit 1 is expected to produce. This is exactly the kind of alternative that the Commission contemplates, under section 2.758, in its statement adopting the "Need for Power and Alternative Energy Issues in Operating License Proceedings" rule, 47 FR 12940 ff.

The Board below (P.I.D. p.56) misreads the Commission and seems to hold that the alternative must be able to displace all other coal-fired capacity on the Applicants' system. This position contradicts NEPA, which requires consideration of "alternatives to the proposed action" (42 U.S.C. 4321 et seq.) (emphasis added). Moreover, the Commission's statement quoted by the Licensing Board (P.I.D. p.56) links the use of the completed nuclear plant to displace coal-fired capacity, with the nuclear plant's being preferable "to any realistic alternative" (for such use) (47 FR 12942). The "Petition" presents such an alternative.

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[4] The Board claims, fn. 16, PID p.55, that the usual meaning of the term prima facie does not apply here, but the Board does not reach the adequacy of the showing, nor confront the facts raised in the "Petition" which the Staff questions. See Eddleman 9/30/83 response, p.3 and elsewhere. The licensing Board's definition of the term prima facie is wrong and unreasonable. See next page.

The Licensing Board is required by this Board's Seabrook ruling (ALAB-422, 6 NRC 33, 40-41) to clearly confront the facts raised by intervenors. By using the clearly erroneous claim that the Petition and affidavits do not consider the alternative's use to displace coal-fired generation (or the use of Harris plant output to displace coal generation), and by failing to compare the alternative to Harris, as NEPA requires, the Board below committed clear error. The Eddleman 2.758 petition and supporting affidavits should be remanded to the Licensing Board for the proper consideration of their prima facie showing under 10 C.F.R. 2.758, correcting the above-cited errors of the Licensing Board.

Although relegated to a footnote (P.I.D. p.55 fn 16) the Licensing Board's interpretation of the term "prima facie" in the context of 10 C.F.R. 2.758 is potentially prejudicial on remand, and evidently wrong in terms of the case the Board cites in its interpretation. Therefore the issue of a reasonable interpretation of this term is raised here.

The Licensing Board cites Consumers Power Co. (Midland Plant), 7 AEC 19, 32 (1974) for the proposition that "meanings given this phrase ["prima facie"] in civil litigation, particularly in association with jury trials, are not controlling here." What the holding in the

Midland case actually says on the question of burden of proof in the context of the Licensing Board's citation (evidently to a footnote on page 32) begins on page 31:

> Established rules of burden of proof governing conventional civil litigation are not necessarily completely dispositive in agency licensing proceedings where affirmative public interest findings are requisite. See, e.g., United Church of Christ v. FCC, 425 F.2d 543, 546-550 (1969). Particularly is this true under NEPA, which, of course, imposes upon us an affirmative obligation to develop an adequate record upon whichto assess the environmental impact of proposed nuclear plants. Giving appropriate recognition to these general principles, wemust nevertheless have workable subsidiary rules for the orderly conduct of these proceedings.
>
> Midland, supra, at 31

The Commission goes on to observe in the footnote on page 32,

> We do not equate this burden with the civil litigation concept of a prima facie case, an unduly heavy burden in this setting. But the showing should be sufficient to require reasonable minds to inquire further. Compare United Church of Christ v. FCC, supra.

In this context, the Midland case clearly stands for the proposition that the civil litigation definition of "prima facie" is an unduly heavy burden in NRC proceedings, particularly those involving NEPA.

Instead, a showing should be "sufficient to require reasonable minds to inquire further." That is clearly a less stringent standard than "prima facie". Yet the Licensing Board, after citing to the very page where this less stringent standard appears, imposes a standard more stringent than "prima facie" in civil law.

The licensing board says (fn 16, P.I.D. at 55) that "it seems reasonable to equate 'prima facie' showing with 'substantial' showing." (So far, so good, as will be explained below.) But the Board below continues:

> This would mean that the affidavits supporting a petition for waiver should present each element of the case for waiver in a persuasive manner and with adequate supporting facts from a qualified expert, where appropriate. Mr. Eddleman's Response ... suggests his view, with which we disagree, that mere assertions in an affidavit by a putative expert are, in and of themselves, sufficient for a "prima facie" showing and binding on the Board.

Black's Law Dictionary, 5th Ed., defines prima facie case as "Such as will prevail until contradicted and overcome by other evidence. Pacific Telephone & Telegraph Co. v. Wallace, 158 Or. 210, 75 P.2d 942,947."

Under the definition of "prima facie evidence" Black's says "...'prima facie case' is one that will entitle party to recover if no evidence to contrary is offered by opposite party." This is the standard Eddleman used. It is the one the Midland case says is too strict for NEPA use by the NRC. The Licensing Board cannot ask more than this.

Black's defines "substantial evidence" (the closest term to "substantial" showing as used by the Harris board) in administrative proceedings, as follows:

> Under the substantial evidence rule, as applied in administrative proceedings, all evidence is competent and may be considered, regardless of its source and nature, if it is the kind of evidence that "a reasonable mind might accept as adequate to support a conclusion."

Contrarily to this, the Licensing Board requires

more than evidence that would prevail unless contradicted, and more than the kind of evidence "a reasonable mind might accept as adequate to support a conclusion" (emphasis added). Yet Midland, supra (at 32) requires less, only a showing "sufficient to require reasonable minds to inquire further."

The Harris Licensing Board had no counter-affidavits (as allowed under 10 C.F.R. 2.758) before it, so the evidence of the Eddleman 2.758 Petition and affidavits is uncontroverted by evidence. It plainly is stricter than the "prima facie" standard to place requirements on the evidence of the Eddleman petition and supporting affidavits that go beyond the "prima facie" standard. The Harris Licensing Board, without any facts, characterizes these affidavits as "mere assertions ... by a putative expert". However, the expertise of the affiants is shown prima facie in attachments to the affidavits. The Board would require a degree of persuasiveness that would compel a conclusion, not a showing that "a reasonable mind might accept" or one "sufficient to require reasonable minds to inquire further." This is wrong, and unreasonable. In the face of uncontradicted evidence, the licensing Board should certify the matter raised in the petition to the Commission as provided in 10 C.F.R. 2.758.

At minimum, the Licensing Board's proposed interpretation of "prima facie" should be voided for the reasons set forth above.

IV.

THE LICENSING BOARD ERRED IN ITS VARIOUS RULINGS REGARDING THE ENVIRONMENTAL EFFECTS OF TRANPORTING RADIOACTIVE WASTE AND SPENT FUEL FROM THE APPLICANTS' OTHER NUCEAR REACTORS TO THE HARRIS FACILITY AND DENIED THE INTERVENORS THE OPPORTUNITY FOR HEARING UNDER THE NATIONAL ENVIORNMENTAL POLICY ACT.

The Licensing Board originally accepted two contentions (CCNC 4 and CHANGE 9) and deferred several other contentions (among them, Eddleman 25, 64D, 64E, and 126) concerning the environmental impacts of the transportation of spent fuel from the Applicants' other nuclear reactors to the Harris facility for interim storage. (Memorandum and Order, September 22, 1982). The admitted contentions were later rejected after the Licensing Board granted a motion for reconsideration by the Applicants and at the same time rejected Mr. Eddleman's contentions (including two late-filed contentions). (Memorandum and Order (Ruling on Spent Fuel Transportation Contentions and Miscellaneous Motions), August 24, 1983). All of these contentions revolved around the necessity of analyzing the site-specific impacts from trans-shipping wastes and spent fuel from the Applicants' other reactors to the Harris facility as the Table S-4 values in 10 CFR 51.20 do not apply in this situation.

The Licensing Board relied heavily on a ruling from a similar Licensing Board in the operating license for Duke Power's Catawba Nuclear Station (and which was appealed to the Appeal Board in January 1985) and granted Applicants' motion for the following reasons: 1) the impacts associated with the transportation of spent fuel from Brunswick and Robinson (the other reactors) were already considered in the licensing of those facilities; 2) no specific incremental impacts were identified by the Intervenors; and 3) that

even if the S-4 values were "doubled or even multiplied severalfold, they would still be too small to affect the cost-benefit balance." As the discussion of the Licensing Board's role under NEPA presented above points out, the Licensing Board must review all environmental impacts, not just those that somehow upset the cost-benefit analysis. The NEPA cases, such as Calvert Cliffs, supra., are clear that the reviewing body must afford the Intervenors the opportunity for hearing to ensure the "fullest possible consideration of the environment" in its reaching the decision on this action.

The Licensing Board's ruling flies in the face of the Commission's environmental regulation 10 CFR 51.20(g)(1) which provide that:

> "if such transportation does not fall within the scope of this paragraph a full description and detailed analysis of the environmental effects of such transportation and, as the contribution of such effects to the environmental costs of licensing the nuclear power reactor, the values determined by such analyses for the environmental impact under normal conditions of transport and the environmental risks from accidents in transport (be evaluated)."

Table S-4 is clearly stated as summarizing the "environmental impact of transportation of fuel and waste to and from one light-water-cooled nuclear power reactor" (emphasis added). The additional impacts from shifting fuel and waste from one reactor to another and the cumulative problems this will cause is outside the Table S-4 analysis.

The Licensing Board put little weight on instances where a site-specific environmental review was performed in a similar scheme and even though the Board relied on the Catawba Board's ruling, it admitted that that Board had not relied upon a previous record. (Memorandum and Order, August 24, 1983, page 4). Again, it was Duke Power's "cascade plan" for intermediate spent fuel shipments between its reactors for temporary storage that required a separate review. Duke Power Co. (Oconee/McGuire Spent Fuel Proceeding), 12

NRC 459 (1980). A subsequent proceeding on an amendment to Duke's materials license held that:

> "Should Duke (pursuing the "Cascade Plan") seek at some future date permission to make further spent fuel shipments between its facilities, the request will have to receive a separate environmental assessment. That assessment will not be influenced by, let alone turn upon, how the present application might have fared. Rather, the initial inquiry will be into whether those further shipments will have a significant environmental effect. Should that question be answered affirmatively, a full environmnetal impact statement will be required in order to comply with the Section 102(2)(C) mandate. In that statement, the staff will, of course, have to identify and weigh the benefits and costs of the proposal in the context of the overall waste disposal situation then obtaining. In doing so, it might well conclude, upon a consideration of all factors, that the proposed additional shipments are an unacceptable solution" (emphasis added).

Duke Power Co. (Amendment to Materials License SNM-1773), ALAB-651, 14 NRC 307, 315 (1981). Consistent with NEPA, the Licensing Board must consider the need for such a hazardous spent fuel transshipment scheme and its full environmental impact; and what the Licensing Board failed to do in this instance, fully consider the availability of environmentally less harmful alternatives.

CONCLUSION

For the foregoing reasons, CCNC, Mr. Eddleman, and the Joint Intervenors urge that the Partial Initial Decision of the Licensing Board and the previous decisions of the Licensing Board on other environmental matters herein appealed from be reversed and that these proceedings be remanded to the Licensing Board for further consideration consistent with the positions urged herein.

Respectfully submitted,

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This is the 9th day of April, 1985.

CERTIFICATE OF SERVICE

I hereby certify that copies of this Appeal From Partial Initial Decision on Environmental Contentions were served on the following persons by deposit in the U. S. Mail, postage prepaid, or by hand-delivery.

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