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March 3, 2000

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Before the Atomic Safety and Licensing Board

In the Matter of	)	
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CAROLINA POWER & LIGHT COMPANY	)	Docket No. 50-400-LA
(Shearon Harris Nuclear Power Plant)	)	ASLBP No. 99-762-02-LA

APPLICANT'S RESPONSE TO BCOC'S LATE-FILED ENVIRONMENTAL CONTENTIONS

I. INTRODUCTION

Pursuant to the Licensing Board's February 14, 2000 Order (Granting Amended Request for Time Extension to File Reply), Applicant Carolina Power & Light Company ("CP&L" or "Applicant") files this response to the January 31, 2000 late-filed environmental contentions of the Board of Commissioners of Orange County ("BCOC"). BCOC requested admission of four late-filed environmental contentions which challenge the adequacy of the Nuclear Regulatory Commission Staff's ("NRC Staff" or "Staff") environmental analysis regarding the activation of spent fuel storage pools C and D at the Harris Nuclear Plant ("Harris"). See Orange County's Request for Admission of Late-Filed Environmental Contentions ("BCOC Env. Cont.") at 1 (Jan. 31, 1999). The Staff's environmental analysis is documented in its December 15, 1999 Environmental Assessment and Finding of No Significant Impact ("EA"). 64 Fed. Reg. 71,514 (1999). BCOC now challenges the NRC Staff's EA and its conclusion that "the proposed action will not have a significant effect on the quality of the human environment."

All four of BCOC's late-filed contentions must be rejected for failure to comply with the Commission's pleading requirements for admissible contentions.

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II. ANALYSIS OF THE FIVE FACTORS FOR LATE-FILED CONTENTIONS

BCOC filed its contentions 45 days after receiving the EA (which included 13 days of "unavoidable" delay and the Christmas and New Year's holidays). BCOC Env. Cont. at 25. Based on the specific factual circumstances stated by BCOC, Applicant will not challenge BCOC's compliance with the good cause factor.[1]

BCOC necessarily concedes that admission of any one of these late-filed contentions "will broaden and delay this proceeding significantly beyond the current time-table." Id. at 26. Factors two and four, regarding the availability of other means to protect BCOC's interests and the extent to which BCOC's interests will be represented by another party, weigh in BCOC's favor. Applicant strongly disagrees, however, with BCOC's assertion that its participation can be expected to assist in the development of a sound record. BCOC's late-filed contentions are supported only by Dr. Gordon Thompson. Dr. Thompson does not have the education, qualifications, or experience to assist the Board in the development of a sound record on the issues raised in the late-filed contentions. Flaws in Dr. Thompson's February 1999 report, which forms the asserted bases for BCOC's late-filed contentions, again demonstrate that Dr. Thompson would be of little help to the Board and the NRC Staff.[2] This factor does not support consideration of BCOC's late-filed contentions.

Nevertheless, based on the considerable weight given to a finding of good cause for late-filing, Applicant does not challenge weighing the five late-filed factors in BCOC's favor.

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[1] Under different factual circumstances, Applicant reserves the right to contest an intervenor's compliance with the good cause test if the intervenor were to wait 45 days to file contentions. In addition, Applicant does not agree with the assertion that "[t]he County has a right to make a timely challenge to the Staff's compliance with NEPA." Id. at 27 (emphasis added). Under the Commission's regulations, BCOC has no right to challenge the Staff's environmental analysis. As with any party, BCOC must first demonstrate that it meets the Commission's pleading requirements in 10 C.F.R. § 2.714.

[2] See NRC Staff Brief and Summary of Relevant Facts, Data and Arguments upon which the Staff Proposes to Rely at Oral Argument on Technical Contentions 2 and 3 at 14-19 (Jan. 4, 2000); see also Summary of Facts, Data and Arguments on which Applicant Proposes to Rely at the Subpart K Oral Argument at 55 n.122, 72 n.72 (demonstrating Dr. Thompson's lack of expertise).

III. STANDARDS FOR ADMISSIBILITY OF CONTENTIONS

Applicant incorporates by reference Section II of Applicant's Answer to Petitioner Board of Commissioners of Orange County's Contentions ("Applicant's May 5, 1999 Answer") at 2-11, which sets forth the Commission's requirements for the admissibility of contentions pursuant to 10 C.F.R. § 2.714.

IV. RESPONSE TO LATE-FILED ENVIRONMENTAL CONTENTIONS

A. Introduction

The NRC has done more than is required by the National Environmental Protection Act ("NEPA") in connection with its review of the license amendment application ("Lic. Amend. App.") to place Harris spent fuel pools C and D in operation and to store a limited amount of spent fuel – limited to a maximum heat load of 1.0 MBTU/hr.[3] The "Final Environmental Statement Related to the Operation of Shearon Harris Nuclear Power Plant, Units 1 and 2" (NUREG-0972) (October 1983) ("Harris FES") supported the issuance of the Operating License for Harris Unit 1 alone, as Harris Unit 2 had been cancelled. The Harris FES, however, considered two-unit operation and bounded the environmental impacts for single unit operation. In fact, the maximum number of fuel assemblies contemplated at the time of the Harris FES, for two-unit operation with all four spent fuel pools, exceed the maximum number of fuel

[3] NEPA directs federal agencies to prepare an environmental impact statement ("EIS") for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C) (emphasis added). The NRC has consistently found that there is no significant environmental impact from the expansion of spent fuel storage capacity at a nuclear power plant. In light of the Department of Energy's delay in implementing the Nuclear Waste Policy Act of 1982 and in developing the permanent repository for spent nuclear fuel, license amendments to expand spent fuel storage capacity have been requested and granted at almost every nuclear operating facility – often more than once. In each case, an environmental assessment has been prepared. In each case, as with the instant application, there has been a finding of "no significant [] environmental impacts associated with the proposed action." See 64 Fed. Reg. at 71,515; see also, e.g., 64 Fed. Reg. 2,688 (Union Electric Company, Callaway Plant) (1999); 64 Fed. Reg. 23,133, 23,134 (Florida Power & Light Company, St. Lucie Plant) (1999). Accordingly, the NRC has never prepared an EIS in connection with the many expansions of on-site spent fuel storage in existing spent fuel pools. See, e.g., Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 42 n.13 (1989); Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-87-24, 26 NRC 159, 166 (1987).

assemblies that will be stored pursuant to the instant license amendment request, because of the 1.0 MBTU/hr limit on total heat generation in spent fuel pools C and D.[4]

Applicant sought to have this license amendment treated as a "categorical exclusion" not requiring an environmental review or environmental assessment, pursuant to 10 C.F.R. § 51.22(c)(9).[5] The NRC Staff did not find that the categorical exclusion was inappropriate, but nevertheless prepared an EA.[6] The EA addressed inter alia the environmental impacts of severe accidents, referring to the considerable analysis performed by the NRC Staff in addressing Generic Issue 82 ("Beyond Design Basis Accidents in Spent Fuel Pools").[7] Based on the analysis performed by the NRC Staff regarding severe accidents and its analysis of the Harris Plant design and construction, the NRC Staff concluded that the potential for environmental impact from severe accidents is negligible.[8]

NEPA requires an agency to do no more than take a "hard look" at environmental consequences. See Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 346 (1989).

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[4] The Applicant's license amendment includes the addition of Technical Specification 5.6.3.d to the Harris operating license, which requires that "[t]he heat load from fuel stored in Pools 'C' and 'D' shall not exceed 1.0 MBtu/hr." Lic. Amend. App., Encl. 5 at 5-7. Pursuant to the 1.0 MBTU/hr, Technical Specification limit, Applicant does not currently intend to load any fuel in pool D under this license amendment. See Lic. Amend. App., Encl. 1 at 4 (pool D is not scheduled for use until 2016. The total number of assemblies in pools A, B and C combined, even if pool C was loaded to its maximum capacity, is less than the total number of assemblies that was considered in the Harris FES. Compare Lic. Amend. App. Enc. 5 at 2 (Harris originally licensed for up to 7640 assemblies) with id. at 3 (pools A, B and C combined are 7359 assemblies).

[5] The Commission has found by rule that a certain "category of actions does not individually or cumulatively have a significant effect on the human environment." 10 C.F.R. § 51.22(a). In its EA, the NRC noted its finding that "the proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released offsite, and there is not significant increase in occupational or public radiation exposure." 64 Fed. Reg. at 71,515.

[6] 64 Fed. Reg. 71,514.

[7] "Regulatory Analysis for the Resolution of Generic Issue 82: Beyond Design Basis Accidents in Spent Fuel Pools" (NUREG 1353) (1989); "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82" (NUREG/CR-4982) (1987); "Seismic Failure and Cask Drop Analyses of the Spent Fuel Pools at Two Representative Nuclear Power Plants" (NUREG/CR 5176) (1989); "Value/Impact Analysis of Accident Preventative and Mitigative Options for Spent Fuel Pools" (NUREG/CR 5281) (1989).

[8] 64 Fed. Reg. at 71,515.

The NRC took a "hard look" at the impact of spent fuel storage in its "Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel" (NUREG 0575) (1979). The NRC addressed the very issue raised by BCOC — the potential environmental impacts of severe accidents — in its investigation of Generic Issue 82. The Commission has determined that there are no significant environmental impacts associated with on-site spent fuel storage generically in the context of license renewal.[9] The Commission has found by rule[10]:

> [I]f necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations.

The NRC took a hard look at the environmental impacts of Harris Plant operations, including operation of its four spent fuel pools and storage of spent fuel from its other nuclear plants, in the Harris FES. The NRC Staff took another hard look at any incremental impacts from the proposed license amendment in the EA. NEPA requires no more.

NEPA is subject to a "rule of reason," requiring consideration only of a range of "reasonably foreseeable" environmental impacts. San Luis Obispo Mothers for Peace v. NRC, 751 F.2d 1287, 1300-01 (D.C. Cir. 1984), rehearing en banc granted on other grounds, 760 F.2d 1320 (D.C. Cir. 1985), aff'd en banc, 789 F.2d 26, cert. denied 479 U.S. 923 (1986); Dubois v. United States Dep't of Agric., 102 F.3d 1273, 1286-1287 (1st Cir. 1996). NEPA does not require consideration of "remote and highly speculative" impacts. San Luis Obispo, 751 F.2d at 1300. Under NEPA, an EIS need only provide "a 'reasonably thorough discussion of the significant aspects of the probable environmental consequences'." City of Carmel-By-The-Sea

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[9] See "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," 61 Fed. Reg. 66,537, 66,538 (1996). See also Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 343-44 (1999).

[10] 10 C.F.R. § 51.23(a).

v. United States Dep't of Transp., 95 F.3d 892, 899 (9th Cir. 1996); Dubois, 102 F.3d at 1287 (quoting Carmel-By-The-Sea). An EIS is not required to include a "worst case analysis" of possible but substantially uncertain environmental impacts. Robertson, 490 U.S. at 354-56. Considering unlikely worst-case impacts "distort[s] the decisionmaking process by overemphasizing highly speculative harms." Id. at 356. The scenarios advanced by Dr. Thompson as "new information" requiring yet another look, as we discuss infra, are highly remote and speculative.

Licensing Boards have consistently — and correctly — accepted NRC Staff determinations that license amendments related to storing spent fuel in fuel pools have no significant environmental impacts and therefore do not require an EIS. In one case where the Licensing Board admitted a contention claiming that an EIS was required because of the possibility of zircaloy-cladding fire, the Atomic Safety and Licensing Appeal Board reversed the Licensing Board. Vermont Yankee, ALAB-919, supra, 30 NRC at 43-52. Most recently, the Millstone licensing board rejected contentions similar to those here, likewise relying on the very same report authored by Dr. Gordon Thompson, claiming that reracking spent fuel at Millstone would have significant environmental impacts, based on an accident scenario involving severe accidents, and would therefore require an EIS. Northeast Nuclear Energy Co. (Millstone Nuclear Power Station), LPB-00-02, slip op. at 41-49 (contentions 8-11).

BCOC (citing Marsh v. Oregon Natural Resources Council, 490 U.S. 371 (1989)) apparently contends that the Harris FES must be supplemented because of "new information." BCOC Env. Cont. at 4. The reasons for supplementing an existing EIS are essentially the same as the reasons for preparing an initial EIS. See Marsh, 490 U.S. at 374 (explaining that "the decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance"); Wisconsin v. Weinberger, 745 F.2d 412, 417 (7th Cir. 1984) (courts apply the same standard in deciding whether a supplemental EIS was required as in deciding whether an EIS was required in the first place). NEPA does not expressly require preparation of a supplemental EIS after an initial EIS has been completed. A supplement to an existing EIS is required only when "new information provides a seriously different picture of the environmental

landscape such that another hard look is necessary." Weinberger, 745 F.2d at 418 (emphasis in original). "[T]here is no benefit in taking another 'hard look' at an action if that view is taken from the same vantage point and overlooks the same environmental panorama." Id. (citation omitted). While BCOC uses the phrase "new information" as a mantra throughout its environmental contentions, the only thing actually new in Dr. Thompson's report are unsupported assertions without basis as will be discussed in some detail in the remainder of this Response

BCOC has advanced four environmental contentions, alleging (1) an EIS is required for activation of Harris spent fuel pools C and D; (2) the EIS should consider cumulative impacts of Harris pools A and B; (3) the scope of an EIS should include Brunswick and Robinson spent fuel storage; and (4) even if not required by law, the Board should direct an EIS as an exercise of its discretion. In light of the foregoing statement of the law and the NRC Staff's hard looks at the environmental consequences of spent fuel storage, both generically and at the Harris Plant, we address each of the proposed environmental contentions in turn.

B. Contention EC-1: Environmental Impact Statement Required

1. The Contention and Bases

Contention EC-1 asserts that NEPA requires the NRC Staff to prepare an EIS. In summary, the two-page statement of contention EC-1 claims that the NRC Staff's decision not to prepare an EIS violates NEPA because accident risks exceed those analyzed in the EA in two general respects: (1) changes proposed in the physical characteristics and mode of operation of the Harris plant are not accounted for in the EA; and (2) new information on accident risks in spent fuel pools since the Generic Environmental Impact Statement ("GEIS") (NUREG-0575) (1979) and Harris FES are not accounted for in the EA. BCOC Env. Cont. at 2-3.

The lengthy statement of contention EC-1 does not itself provide any specific factual or legal bases sufficient to form the basis for an admissible contention. The general statement in

contention EC-1 is followed by a statement of bases for the contention.[11] See BCOC Env. Cont. at 3-16. In its statement of bases, BCOC asserts that "[t]he EA is incorrect in its evaluation of the increment of accident risk that would arise from operation of pools C and D at Harris, in three respects."[12] BCOC Env. Cont. at 7.

> Basis 1 – The EA does not address the environmental effects of a significant release of radioactive material to the atmosphere initiated by a "degraded-core" reactor accident, followed by containment bypass, followed by loss of all spent fuel pool cooling and makeup systems, followed by inability to restart any pool cooling or makeup systems due to substantial radiation doses precluding equipment access, followed by loss of most or all pool water through evaporation, followed by initiation of an exothermic zirconium oxidation reaction in pools C and D; in that (a) new information shows that this scenario is not a remote and speculative event; and (b) the EIS for a spent fuel pool license amendment must consider severe accidents because EIS's for reactor operating licenses, reactor emergency planning, and reactor IPEs have considered severe accidents;
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> Basis 2 - EIS is required because the increment of accident risk from operating pools C and D, in comparison to pools A and B, is significant in its own right
>
> Basis 3 – The EA does not address the environmental risks of sabotage to spent fuel in pools C and D.

See BCOC Env. Cont. at 7-16.

[11] It is well established that the scope of a contention hinges upon its terms coupled with its specific bases. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988). In fact, a contention is limited in scope by the specific alleged basis or bases set forth in the contention. Illinois Power Co. (Clinton Power Station, Unit 1), LBP-81-61, 14 NRC 1735, 1737 (1981). The first five pages of the basis for Contention EC-1 provide background on regulatory requirements, the proposed change, and previous and current environmental evaluations for Harris. See BCOC Env. Cont. at 3-7. The specific allegations supporting Contention EC-1 are found in Section F. See id. at 7-16.

[12] These three issues are addressed in Sub-Sections 1, 2 and 3, of Section F. See BCOC Env. Cont. at 8, 12, 14.

2. Applicant's Response to the Contention

a. Basis 1 for contention EC-1 must be rejected as a flawed, severe beyond-design-basis "Class 9" accident scenario, lacking basis with specificity and requesting analysis beyond that required under governing law.

BCOC first argues that "new information" shows that its accident scenario is not a remote and speculative event for Harris spent fuel pools C and D, and therefore must be evaluated under NEPA. BCOC seeks to skirt the governing law that environmental reviews under NEPA need not address remote and speculative events. San Luis Obispo, 751 F.2d at 1300. NEPA does not require NRC environmental reviews to consider scenarios based on "severe, beyond-design-basis ["Class 9"] accidents because they are, by definition, highly improbable — i.e., remote and speculative — events." Vermont Yankee Nuclear Power Corp., (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, 30-31 (1987) (rejecting admission of contention); see also San Luis Obispo, 751 F.2d at 1301 ("NEPA ... does not require the consideration of Class Nine accidents in future EISs."). Thus, under governing case law, BCOC's Basis 1 must be rejected unless it can be shown, with the required basis with specificity, that the proffered accident scenario is not based on a "Class 9" or severe, beyond-design-basis accident.[13] BCOC's accident scenario is predicated on a chain of highly unlikely events; each link must at least be credible — not remote and speculative — or BCOC's postulated scenario and the postulated environmental impacts cannot require preparation of an EIS.[14]

Basis 1 postulates the following series of events: 1) a "degraded-core" reactor accident; 2) containment bypass; 3) loss of all spent fuel pool cooling and makeup systems; 4) extreme radiation doses precluding equipment access; 5) inability to restart any pool cooling or makeup

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[13] "Class 9" is the terminology previously used by the Commission to describe severe accidents of very low probability, involving significant deterioration of the fuel and breach of containment. See id. at 31 n.26. "Class 9" severe reactor accidents are beyond-design-basis events. 50 Fed. Reg. 32,138, 32,139 (1985).

[14] Essentially, this same contention, based on the same February 1999 report authorized by Dr. Thompson, was recently rejected by a licensing board in Millstone as "requesting analysis of a severe accident without adequate demonstration of the causation of such an accident or the likelihood that such an accident might occur at this facility." Millstone, LBP-00-02, supra, slip op. at 41.

systems due to extreme radiation doses; 6) loss of most or all pool water through evaporation; and 7) initiation of an exothermic zirconium oxidation reaction in pools C and D.[15] A "degraded-core" reactor accident, the first link in BCOC's scenario, is, by definition, a beyond-design-basis event.[16] BCOC's scenario never makes it to the next link. However, this "house of cards" completely collapses in Links 4 and 5.[17]

In addition to the fact that it is initiated by some undefined beyond-design-basis "degraded-core" event, Basis 1 falls apart because substantial radiation doses on which its accident scenario hinges are derived from "Class 9" accidents. Contention EC-1 baldly states that "[r]estoration of cooling water or makeup of water lost by evaporation would be precluded because onsite radiation levels would prevent access by personnel." BCOC Env. Cont. at 8-9. BCOC's alleged basis for this assertion is a figure in Appendix C of the Thompson Report.[18]

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[15] Though BCOC makes a generalized reference to "a class of severe pool accident scenarios," this is the only scenario specifically identified in EC-1. BCOC Env. Cont. at 12.

[16] "Degraded core accident" is the Commission's previous terminology for what it now calls a "severe reactor accident." 50 Fed. Reg. at 32,139. Severe reactor accidents are beyond-design-basis events. Id. Therefore, the very first link in the chain of BCOC's postulated accident scenario is already a beyond-design-basis event.

[17] While there are other failures to provide basis with specificity – no specific "degraded-core" reactor accident is identified, nor is the type, location, and magnitude of alleged containment bypass – the fatal flaws in Links 4 and 5 are so significant that any further criticism of this basis amounts to "beating a dead horse," which the page limit on this response discourages. As just one example, in Dr. Thompson's February 1999 report ("Thompson Report") supporting contention EC-1, BCOC cites a probability of spent fuel pool boiling for the Susquehanna BWR and a probability of reactor core damage for the Harris PWR and then, without further explanation, concludes that "[t]he similar magnitudes of these probabilities suggests that pool accidents could be a major contributor to risk at Harris." Thompson Report at C-2. Besides the fact that one statement concerns a spent fuel pool and the other a reactor, the two facilities are completely different reactor types (BWR vs. PWR) with completely different spent fuel pool safety systems (pool in reactor building vs. separate pool building). See NRC Information Notice 93-83, Supp. 1 at 1-3 (Aug. 24, 1995) ("Potential Loss of Spent Fuel Pool Cooling After a Loss-of-Coolant Accident or a Loss of Offsite Power") (Susquehanna pool cooling system does not remain functional after design basis events and is not connected to the emergency diesel generators). Moreover, the probability cited for Susquehanna is dominated by an entirely different type of event that occurs with the reactor shutdown and defueled. Id. at 2-3. The Thompson Report upon which contention EC-1 is based is rife with such junk science and conclusory nonsense.

[18] In Appendix B of the Thompson Report, it is asserted that "the Harris plant and its immediate surroundings would become radioactively contaminated to the point where access by personnel would be precluded." Thompson Report, at B-6. Again, the only basis provided for this assertion is a reference to Appendix C of the Thompson Report.

See id. at 9-10. The large radiation doses cited in the Thompson Report, however, are not for Harris, but are rather for generic "Class 9" accidents. "Figure C-1" of the Thompson Report is used to conclude that doses of "1,000 rem over one day" or "much higher" would result from a severe reactor accident, and that a "qualitatively similar result," could be developed for Harris. Thompson Report at C-4. Precedent establishes that the Board should not accept uncritically an intervenor's assertion that a document supplies the basis for a contention, but should instead "review the information provided to ensure that it does indeed supply a basis for the contention." Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998). Review of the radiation doses cited by BCOC shows that they are for a "Class 9" accident, and thus beyond the requirements for NEPA review. San Luis Obispo, 751 F.2 at 1301.

"Figure C-1" is taken from a 1983 Department of Health and Human Services report. See Thompson Report at C-4 n.6 (citing Preparedness and Response in Radiation Accidents, U.S. Department of Health and Human Services, FDA 83-8211, at 170 (Figure 3.5-10)) (relevant pages of FDA 83-8211 are included as Attachment 1 to this response). The flaw in the argument is that "Figure C-1" (Figure 3.5-10 of FDA 83-8211) is specifically for "a PWR 'atmospheric' release (PWR 1-5)," which the 1983 FDA report defines as a "Class 9" accident. FDA 83-8211 at 11, 170. The FDA report describes the "Class 9" accident that forms the basis for BCOC's contention as a "[h]ypothetical sequence of successive failures more severe than those postulated for establishing the design basis." Id. at 11 (Table 1.1-3). Thus, BCOC's causative chain, which requires that access to equipment be precluded due to high radiation doses, is founded on a "Class 9" accident.[19] Basis 1 must be rejected for requesting NRC environmental review of a

[19] Moreover, BCOC has selected the most extreme "Class 9" accident. Compare FDA 83-8211 at 170 ("PWR1-5") with id. at 168 ("PWR 6-7).

scenario based on a "Class 9" severe, beyond-design basis accident.[20] San Luis Obispo, 751 F.2d at 1301.

Basis 1 can also be independently rejected for numerous other reasons. Most notably, it falls apart as well on Link 5 of the causative chain — inability to restart any pool cooling or makeup systems due to substantial radiation doses. When a postulated accident scenario provides the premise for a contention, a causative mechanism for the accident must be described and some credible basis for it must be provided. Vermont Yankee, ALAB-919, supra, 30 NRC at 44 (citing Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit No. 1), CLI-80-16, 11 NRC 674, 675 (1980)). BCOC fails to identify a credible basis for its accident scenario to occur at the Harris facility. BCOC has completely failed to address the specific features of the Harris facility in its postulated accident scenario.

First, BCOC fails to address the numerous makeup systems available to add water to the Harris pools. Four separate systems are available in the design basis to provide makeup water to the spent fuel pools:[21]

- RWST (Refueling Water Storage Tank);
- ESW (Emergency Service Water) System;
- RMWST (Reactor Makeup Water Storage Tank); and
- Demin Water System.

All four of these are safety-grade systems which will be functional and available to provide makeup to the spent fuel pools following a design basis accident at Harris. Moreover, additional non-safety-grade makeup sources are available, including the Fire Water System, Potable Water System, and fire tanker trucks. BCOC fails to address any of these specific systems that provide

[20] Basis 1 must also be rejected because BCOC does not even attempt to tie the "Class 9" radiation dose figures it puts forward to the specific features of the Harris facility. Thus, Basis 1 lacks basis with specificity as required for an admissible contention.

[21] Harris Final Safety Analysis Report ("FSAR") at 9.1.3-66; CP&L System Description SD-116 at 4 (included as Attachment G to Exhibit 1 of Applicant's January 4, 2000 Subpart K Summary); CP&L Operating Procedure OP-116 at 24, 25, 50, 78.

pool water makeup at Harris. BCOC's generalized, sweeping assertion that restoration of makeup water would be precluded fails to address the specific features to accomplish this at the Harris facility, and therefore fails to provide the required specificity for an admissible contention.

Second, BCOC entirely neglects to address the analysis of post severe-accident equipment accessibility in the Harris FSAR. Section 12.3.2.16 of the Harris FSAR addresses the accessibility of different areas of the Harris plant following a severe accident with core damage. FSAR at 12.3.2-13b to 13e. The FSAR concludes that "vital areas of the plant requiring occupancy or access to mitigate the postulated accident are accessible for performing the necessary post-accident operations without overexposing an individual." Id. at 12.3.2-13b. The numerous spent fuel pool makeup systems described above, as well as the spent fuel pool cooling system, are all controllable from the Harris Auxiliary Building and Fuel Handling Building. The post severe-accident accessibility analysis demonstrates that these locations will be accessible by Harris operators following a severe accident. For example, the Harris FSAR shows that the post severe-accident dose rates in Zone R16, where the pool cooling system would be reinitiated, would be less than 15 mrem/hr one hour after a severe accident. FSAR Figure 12.3A-8 ("Post-Accident Dose Rates and Accessibility Analysis"). 15 mrem/hr certainly does not preclude personnel access. BCOC completely fails to address the post-accident accessibility analysis in the Harris FSAR. Basis 1 again fails to provide the required basis with specificity for an admissible contention.

Third, BCOC's scenario is based on a mistaken understanding of the license amendment at issue. In Basis 1, BCOC bases its accessibility scenario on "the bounding decay heat load for pools C and D ... estimated to be 15.6 million BTU/hr." Thompson Report at C-5 (emphasis added). On the basis of a heat load of 15.6 MBTU/hr, BCOC estimates that the water in pools C and D "will be entirely evaporated over a period of 180 hours (7.5 days)." Id. (emphasis added). The license amendment before this Board, however, limits the heat load in pools C and D to only 1.0 MBTU/hr, not 15.6 MBTU/hr as BCOC mistakenly assumes. Lic. Amend. App., Encl. 5 at 5-7. Based on the correct heat load of 1.0 MBTU/hr for pools C and D, using BCOC's analysis

it would take not 7.5 days, but rather 117 days (or about four months) to evaporate the water from pools C and D. BCOC provides no credible basis to believe that pool cooling or pool water makeup could not be restored to pools C and D in the intervening four months after a reactor accident. BCOC gives no explanation how such a scenario could be credible at Harris.

Thus, in addition to basing its accident scenario on a "Class 9" accident, BCOC simply fails to demonstrate how its scenario would apply to the specific features of the Harris facility. As the Millstone licensing board concluded, this accident scenario, founded on the same Thompson Report, "appears to be requesting analysis of a severe accident without adequate demonstration of the causation of such an accident or the likelihood that such an accident might occur at this facility." Millstone, LBP-00-02, supra, slip op. at 45 (citing Private Fuel Storage, LBP-98-7, supra, 47 NRC at 181). As did the licensing board in Millstone, the Board here should reject this contention.

BCOS's second premise for Basis 1 alleges that its postulated accident scenario, even though based on a severe accident, must be considered by the NRC in an EIS for this license amendment because the Commission has considered severe accidents in the past in EISs for reactor operating licenses, reactor emergency planning, and reactor Individual Plant Examinations ("IPE"). BCOC Env. Cont. at 10-12. BCOC asserts that because severe accidents with core damage and containment bypass have been considered in these past reactor evaluations, ipso facto such a scenario "is recognized as a credible event by the NRC." Id. at 11. There is no support, nor does BCOC provide any, for such a statement by the NRC. Such a supposition goes directly against NRC precedent and practice.

Governing case law makes clear that the NRC environmental review for a spent fuel pool license amendment need not consider beyond design-basis severe accidents simply because such accidents have been considered in prior NRC analyses for reactors. It is well established that "[t]o the extent that the Commission ever considers the environmental impact and risks of a beyond design-basis accident, it does so as an exercise of discretion under its 1980 NEPA Policy Statement." Vermont Yankee, ALAB-869, supra, 26 NRC at 38-39 (citing San Luis Obispo, 751 F.2d at 1301). Nothing in the Policy Statement indicates that it was intended to apply to a

license amendment proceeding. Id. Moreover, these reactor analyses do not address the issue of whether an EIS is required.[22] See id. The mere fact that other NRC analyses have considered the effects of severe, beyond design-basis accidents involving a degraded core with containment bypass as an exercise of Commission discretion neither makes such a scenario credible nor requires it to be evaluated in the environmental review for a spent fuel pool license amendment. The analogous contention founded on the Thompson Report was rejected earlier this year by the licensing board in Millstone, based on the fact that "the NRC did not intend to apply its Severe Accident Policy Statement to a license amendment proceeding involving reracking of a spent fuel pool." Millstone, LBP-00-02, supra slip op. at 41 (citing Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-876, 26 NRC 277, 282 (1987)). BCOC's assertion is contrary to governing case law and must be rejected as insufficient to form the basis for an admissible contention.

b. Basis 2 for contention EC-1must be rejected as irrelevant to the NRC's environmental review.

Basis 2 asserts that an EIS is required because the increment in accident risk from pools C and D in comparison to pools A and B is significant in its own right, regardless of the absolute magnitude of the accident risk. BCOC Env. Cont. at 12. As a matter of law, BCOC's premise is mistaken. NEPA requires that an EIS be conducted where the subject action itself has a significant impact on the environment. See 42 U.S.C. § 4332(2)(C). The mere fact — even if true — that an action "doubles" or "triples" the accident risk compared to some existing risk does not, of itself, require an EIS.[23] (Two times nothing is still nothing.) If BCOC's reasoning

[22] Neither the IPE nor emergency planning goes to the issue of the threshold for evaluating risks under NEPA. While both address beyond design-basis degraded core accidents, the mere fact that the Commission has determined to evaluate such events does not demonstrate that they are credible. For instance, the IPE process clearly considers only "severe accidents." Generic Letter No. 88-20 at 1 (Nov. 23, 1988) ("Individual Plant Examination for Severe Accident Vulnerabilities").

[23] BCOC appears to be addressing the definition of "significant increase" in the No Significant Hazards Determination, which was the subject of the Thompson Report. The No Significant Hazards Determination test is different from that for requiring an EIS, and therefore this analysis is completely misplaced.

were correct, virtually any change to an existing facility would require an EIS because of the "comparative risk." BCOC's legal error and faulty logic affects all of Basis 2.

BCOC provides three disconnected, incomplete, random examples of its alleged increase in comparative risk. None of these provide the required basis with specificity to suggest that the activation of pools C and D will result in a significant environmental impact requiring an EIS.

BCOC first provides one paragraph pointing out that the storage capacity of pools C and D could exceed that of pools A and B. BCOC Env. Cont. at 12. This, in itself, is an unremarkable proposition.[24] BCOC states that this will increase the quantity of long-lived radionuclides stored at the Harris plant. Id. This is also unremarkable. BCOC then states that a release of all these radionuclides to the atmosphere would yield significant consequences. Id. None of these three statements identify any accident scenario by which the environment would be affected. The mere fact that a license amendment increases spent fuel storage capacity cannot, without more, require completion of an EIS. Otherwise, an EIS would be required, ipso facto, for every spent fuel storage capacity expansion. In fact, the Commission has never performed an EIS for a license amendment to increase spent fuel pool storage capacity. BCOC's assertion that the mere increase in number of fuel assemblies stored requires an EIS lacks basis with specificity and is contrary to Commission case law and practice.

Just like its statements that the number of assemblies will increase, BCOC next alleges that the decrease in center-to-center spacing between PWR assemblies, from 10.5" to 9.0", itself is a significant change that requires an EIS. BCOC Env. Cont. at 13. Again, if this were true, virtually every spent fuel storage capacity expansion (at least those going to higher-density storage) would, ipso facto, require an EIS. NRC case law and practice clearly demonstrate that this is not the case. BCOC identifies no accident scenario whereby this change results in a

[24] Moreover, BCOC ignores the fact that Harris is already licensed to store up to 7,640 assemblies, twice as many as the 3,669 assemblies for pools A and B. See Lic. Amend. App., Encl. 5 at 2 (Technical Specification 5.6.3).

significant environmental impact.[25] See id. BCOC states that "[o]ther factors being equal, this reduced distance would increase the propensity of pools C and D, as compared to pools A and B, to experience an exothermic reaction." Id. (emphasis added). Of course, other factors are not equal. Unlike pools A and B, pools C and D are limited in the requested license amendment to only 1.0 MBTU/hr of heat and to storage of fuel cooled five years or more out of the reactor. Lic. Amend. App., Encl. 5 at 4, Encl. 7 at 5-2. Moreover, even if the probability is increased relative to pools A and B that does not, itself, show there is any significant environmental impact warranting an EIS. BCOC also asserts that because of the smaller distance between assemblies, the "conditional probability of an exothermic reaction in pools C and D would be comparable to or greater than the conditional probability of a similar reaction in pools A and B." BCOC Env. Cont. at 13. This statement is not only irrelevant, it is wrong. BCOC fails to show why an increase in "conditional probability" is, in itself, relevant to the need for an EIS. Moreover, BCOC ignores the fact that pools C and D are only permitted to store old fuel which has been cooled for at least 5 years, whereas pools A and B can store much hotter fuel freshly discharged from the reactor. Lic. Amend. App., Encl. 7 at 5-2. Finally, BCOC alleges that "the probability of a substantial release of radioactive material from [pools C and D] would be comparable to the probability of a substantial release from the Harris reactor." BCOC Env. Cont. at 13. BCOC provides neither specific support for this assertion nor an explanation of why it demonstrates that an EIS is required.

BCOC's third allegation in Basis 2 is that the mere fact that pools C and D will prevent criticality using "administrative controls on the burnup of PWR fuel," while pools A and B do not, is a significant increment in accident risk at Harris. BCOC Env. Cont. at 13-14. Again, as for the first two parts of Basis 2, the mere fact of this change does not demonstrate the need for an EIS. BCOC then states that the use of burnup credit will "significantly increas[e] the probability that a criticality accident would occur at the Harris plant," incorporating by reference

[25] BCOC does refer back to the scenario identified in Basis 1 of EC-1, but does not show that this spacing has any effect on whether or not an EIS is required.

its Subpart K pleading regarding criticality prevention. Id. at 14. Again, assuming arguendo that the probability of an accident were to significantly increase relative to what it was before, this would not itself justify an EIS. Moreover, BCOC's Subpart K filing failed to identify any scenario leading to criticality in pools C and D that was not remote and speculative.[26] BCOC fails to provide in its contention any explanation of such a scenario or demonstrate that it would require an EIS. BCOC's general assertions regarding criticality control must be rejected for failure to provide basis with specificity to support its contention that an EIS is required.

The second paragraph on criticality prevention rings hollow and provides no basis for an admissible contention. BCOC alleges only that the NRC's GEIS for spent fuel storage and handling does not address credit for burnup. BCOC Env. Cont. at 14. The contention proposed by BCOC, however, is that an EIS is required. See id. at 1. To have an admissible contention, BCOC must show that some accident scenario not evaluated in the EA is not remote and speculative. The mere fact that one of several environmental analyses cited in the EA does not address credit for burnup fails to demonstrate the existence of credible accident scenario that has not been considered or bounded by the EA. BCOC's allegations regarding the scope of the 1975 GEIS do not provide the basis for an admissible contention.

c. Basis 3 for contention EC-1 must be rejected because it lacks basis with specificity and flies in the face of governing Commission case law regarding evaluation of sabotage risks in NRC environmental reviews.

Basis 3 asserts that the NRC Staff's EA violates NEPA because it fails to consider the risks of sabotage during transportation, handling, and storage of spent fuel at Harris. BCOC Env. Cont. at 14-15. BCOC lists a series of random, unrelated terrorist events over the past 17 years and baldly asserts that these "have demonstrated that sabotage is a reasonably foreseeable

[26] The only scenario BCOC was able to identify that would lead to criticality in pools C and D involved misloading every assembly in the pools using fresh 5 wt.% uranium-235 fuel, combined with the complete loss of all soluble boron from the pools. BCOC has never stated, nor does it attempt to allege in its filing here, that such an extreme scenario is not remote and speculative. In fact, Dr. Thompson admitted in his deposition under oath that misloading every assembly in the pool is not credible. Thompson Dep. Tr. at 164.

and significant threat whose risks must be addressed in an EIS, whether or not those risks can be quantified." BCOC Env. Cont. at 15. The series of random, unrelated terrorist events cited by BCOC, ranging from bombing of a Marine barracks in Lebanon to release of nerve gas on a subway in Japan, provide no specific facts or reference to the Harris facility, and therefore lack the basis required for an admissible contention.[27] See Florida Power & Light Co. (St. Lucie Nuclear Power Plant, Unit 1), LBP-88-10A, 27 NRC 452, 455 (quoting Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-73-10, 6 AEC 173, 174 (1973)).

Basis 3 to Contention EC-1 files in the face of Commission law regarding environmental analysis of sabotage risks. The Commission has clearly established that the environmental review to support an NRC licensing action need not include the environmental effects of the risk of sabotage. Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 701 (1985); Comm'n rev. denied, 23 NRC 125 (1986); aff'd Limerick Ecology Action v. NRC, 869 F.2d 719, 742 (3rd Cir. 1989); see also Private Fuel Storage, L.L.C., LBP-98-7, supra, 47 NRC at 199, 200-01 (dismissing contentions Utah U, basis 4 and Utah V, basis 4.c. regarding failure to consider sabotage risks in environmental report). The Appeal Board in Limerick held, and the Third Circuit upheld, that "the risk of sabotage is simply not yet amenable to a degree of quantification that could be meaningfully used in the [NEPA] decisionmaking process." Limerick, ALAB-819, 22 NRC at 701. In fact, BCOC itself admits that the probability of a sabotage/terrorism event at Harris cannot be quantified. Thompson Report at C-

[27] Neither the random list of events cited, nor the generalized description of an event in the Thompson Report, relate to the specific features of the Harris facility. See Thompson Report, App. C at C-5 to C-6. BCOC never addresses or cites any alleged weaknesses the Harris Physical Protection Plan. Indeed, CP&L has been routinely commended for excellence in its resistance to sabotage and terrorism at Harris. In fact, following the Operational Safeguards Response Evaluation to assess the ability of Harris to respond to a design basis terrorist threat, the NRC Staff concluded that "the protective strategy for Harris was being effectively implemented and that the response force demonstrated excellent capabilities in protecting public health and safety against the NRC design basis threat." Letter from W. Travers (NRC) to Senator J. Helms at 1 (June 23, 1999) (emphasis added); see also NRC Inspection Report 50-400/98201 (Operational Safeguards Response Evaluation) at 1 (Apr. 12, 1999) (page 1 not safeguards information). BCOC completely ignores information regarding the sabotage resistance of Harris in making its generalized claims in contention EC-1.

6. Nothing in BCOC's filing gives cause for the Board to disturb governing Appellate precedent.[28]

Because its three bases fail to meet the Commission's pleading requirements, contention EC-1 must be rejected in its entirety.

C. Contention EC-2: EIS Should Consider Cumulative Impacts In Light Of New Information

1. The Contention and Bases

Contention EC-2 asserts simply that:

> The EA is deficient because it fails to acknowledge or evaluate the significant cumulative environmental risk posed by the operation of pools A, B, C, and D.

BCOC Env. Cont. at 16. This contention is focused on the accident risk from the operation of Harris spent fuel pools A and B. See id. at 7, n.5. BCOC's discussion of this contention comprises two pages. BCOC identifies three specific issues that form the bases for its contention. The Applicant has summarized BCOC's three bases as follows:

> Basis 1 – The NRC Staff should be required to evaluate the environmental risks of spent fuel pool accidents in all four Harris spent fuel pools, including Harris pools A and B. This evaluation must consider the cumulative impacts of adding pools C and D to the operation of Harris pools A and B;
>
> Basis 2 - The NRC Staff should perform an integrated risk evaluation of Harris pools A, B, C and D that shows how the pool loading pattern, over all four fuel pools, influences accident risk;
>
> Basis 3 – The integrated risk evaluation should address the potential for an accident at one pool to influence the development of an accident at another pool.

BCOC Env. Cont. at 16-18.

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[28] Note also that the CEQ regulation cited by BCOC, 40 C.F.R.§ 1502.22, is not binding on the NRC and cannot form the basis for an admissible contention. Vermont Yankee, ALAB-919, supra, 30 NRC at 44 n.17 (1989). In addition, the SAMDA issue raised by BCOC concerning SAMDAs to mitigate environmental effects of sabotage risks pertains only to the scope of an EIS, not whether or not an EIS is required.

2. **Applicant's Response to the Contention**

a. **Basis 1 for contention EC-2 must be rejected because it requests analysis beyond the scope required by NEPA and because its vague, generalized assertions lack the required specificity.**

In Basis 1, BCOC asserts that "the NRC is required by law to evaluate the cumulative impacts of pools C and D in conjunction with the impacts of the current operation, including the environmental risks of operating pools A and B."[29] BCOC Env. Cont. at 17 (emphasis added). BCOC provides no statutory, regulatory, or case law support for its proposition that the NRC must analyze the "environmental risks of operating pools A and B" as part of this operating license amendment. In fact, no such requirement exists, and BCOC's assertion is directly counter to existing Commission case law on this issue.

The scope of this proceeding concerns only the activation of Harris spent fuel pools C and D. The Commission defined the scope of this proceeding in its Notice of Opportunity for Hearing, which states that "[t]he proposed amendment would support a modification to the plant to increase the spent fuel storage capacity by adding rack modules to spent fuel pools (SFPs) "C" and "D" and placing the pools in service." 64 Fed. Reg. at 2,238. Harris pools A and B are already licensed by the Commission and are not being changed by the present license amendment.

NRC case law precedent clearly establishes that the environmental analysis for a spent fuel pool expansion proceeding must be confined to only "the incremental effect on the environment occasioned by the proposed license amendment." Public Service Electric and Gas Co. (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 NRC 43, 66 (1981) (emphasis added). In another case, the Appeal Board held that where spent fuel storage pools had already been considered in the environmental review supporting issuance of the plant's operating license,

[29] Basis 1 addresses itself to "the environmental risks of operating pools A and B," "conclusions about the environmental impacts of operating fuel pools A and B," and "the risks of . . . an accident for pools A and B." BCOC Env. Cont. at 17. BCOC notes that "the accident risk . . . from operating pools C and D" is addressed elsewhere, "in Contention EC-1." Id. at 18.

> Nothing in NEPA ... dictates that the same ground be wholly replowed in connection with a proposed amendment to those 40-year operating licenses. Rather, it seems manifest to us that all that need be undertaken is a consideration of whether the amendment itself would bring about significant environmental consequences beyond those previously assessed.

Portland General Electric Co. (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 266 n.6 (1979) (citing Northern States Power Co., (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 46 n.4 (1978)) (emphasis added); see also Consumers Power Co. (Big Rock Point Nuclear Plant), ALAB-636, 13 NRC 312, 316 (NEPA does not require the preparation of duplicative environmental reviews). BCOC's contention requests the NRC to "replow" the environmental review for pools A and B.

The environmental impacts of operating Harris spent fuel pools A and B have already been considered as part of the Harris FES. The current license amendment does not request any change to pools A and B. Consistent with the requested license amendment and NRC case law, the NRC Staff's EA is confined to the incremental environmental effects of "increas[ing] the spent fuel storage capacity by adding rack modules to spent fuel pools (SFPs) 'C' and 'D' and placing the pools in service." 64 Fed. Reg. at 71,514. Basis 1 of EC-2 requests an analysis beyond what is required by the Commission's regulations. Such a contention constitutes an impermissible collateral attack on the Commission's regulations, and must be rejected. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1656 (1982); 10 C.F.R. § 2.758.[30]

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[30] BCOC attempts to support Basis 1 with an unexplained reference to Baltimore Gas & Electric Co. v. Natural Resources Defense Council, 462 U.S. 87, 106-07 (1983) (citing Council on Environmental Quality regulations 40 C.F.R. §§ 1508.7 and 1508.8). BCOC Env. Cont. at 16-17. Neither Baltimore Gas nor the CEQ regulations supports the admission of Basis 1. A closer inspection of the citation to Baltimore Gas reveals only a cursory statement regarding what "NEPA requires an EIS to disclose." However, it does not address the standard for requiring an EIS to be performed in the first instance, which is the subject of BCOC's contention. Moreover, the reference to "cumulative impacts" is just that, a reference. No further description or explanation is provided. BCOC's reference to the CEQ regulations also fails to support admission of its contention. It is well established that the NRC, as an independent regulatory agency, is not bound by, and has declined to adopt, the CEQ regulations. Vermont Yankee, ALAB-919, supra, 30 NRC at 44 n.17; see also Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-880, 26 NRC 449, 461 (1987).

Moreover, BCOC simply fails to provide any specific basis regarding what sort of "cumulative impacts" it is talking about, much less how pools A and B somehow relate to the inquiry. BCOC simply provides a vague, generalized assertion that the NRC Staff must "consider the cumulative impacts of adding pools C and D to the operation of pools A and B." BCOC Env. Cont. at 17. BCOC provides no explanation of what the "cumulative impacts" would be and fails to show that the NRC Staff EA has not already considered, and bounded, any such effects.[31] NRC precedent requires that "the bases of a contention be set forth with reasonable specificity . . . to put the other parties on notice as to what issues they will have to defend against or oppose." Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988). A petitioner must provide documents or other factual information or expert opinion setting forth the specific issue to be litigated. Private Fuel Storage, L.L.C., LBP-98-7, supra, 47 NRC at 180. Basis 1 fails to provide the requisite basis with specificity required to put the other parties on notice as to what is to be litigated.[32]

b. Basis 2 for contention EC-2 must be rejected because it too lacks the required specificity and is outside the scope of this proceeding.

In Basis 2, BCOC alleges that the NRC Staff has failed to perform an "integrated risk evaluation" of Harris pools A, B, C and D that addresses "how the pool loading pattern, over all four fuel pools, would influence accident risk." BCOC Env. Cont. at 18. Basis 2 is completely devoid of the specificity required for an admissible contention under the Commission's pleading requirements. See 10 C.F.R. § 2.714(b)(2)(ii). This is a two-sentence basis.[33] Basis 2 asserts

[31] BCOC refers to Section F of contention EC-1, but states that "the significance of the increment of accident risk at Harris that would arise from operating pools C and D" is addressed in contention EC-1. BCOC Env. Cont. at 18. BCOC fails to provide any specific facts whatsoever concerning alleged unaccounted for "cumulative impacts" caused by operating pools C and D along with the already-licensed pools A and B. This same failure plagues Bases 2 and 3 of contention EC-2, as well.

[32] To be admissible, a "contention must address concrete issues and may not consist of 'vague generalized assertions, drawn without any particularized reference to the details of the challenged facility.'" St. Lucie, LBP-88-10A, supra, 27 NRC at 455.

[33] The only additional statement made by BCOC on Basis 2 is a footnote, which asserts that "the fuel loading pattern would influence both the conditional probability and the consequence of a pool accident." BCOC Env. Cont. at 18 n.11. This simply restates the assertion in the text.

that the NRC Staff should evaluate the influence on accident risk from "the pool loading pattern, over all four fuel pools." BCOC Env. Cont. at 18. The naked assertion that some matter ought to be considered is not a sufficient basis for an admissible contention. See Private Fuel Storage, L.L.C., LBP-98-7, supra, 47 NRC at 180. BCOC fails to identify the "pool loading pattern" to which it refers to or define what it means by "an integrated risk evaluation." See BCOC Env. Cont. at 18. Nor does BCOC provide any information on the alleged connection between the "pool loading pattern" and accident risk. There is also no description of how "all four fuel pools" are involved. BCOC fails to explain how whatever "pool loading pattern" it is referring to is not bounded by the Staff's accident evaluation in the EA. The Commission's requirements demand basis with specificity in order "to put the other parties on notice as to what issues they will have to defend against." Seabrook, ALAB-899, supra, 28 NRC at 97. Here, BCOC fails to identify any concrete and specific issues concerning the details of the Harris facility, making it unclear what issue would be litigated. A proposed contention will not be admitted based on "vague generalized assertions, drawn without any particular reference to the details of the challenged facility." St. Lucie, LBP-88-10A, supra, 27 NRC at 455.

Moreover, as with Basis 1, BCOC's request that the Staff reevaluate the environmental impacts of Harris pools A and B to address the "the pool loading pattern" is beyond the scope of this proceeding and must be rejected. This proceeding must focus on the proposed license amendment, activation of pools C and D. Salem, ALAB-650, supra, 14 NRC at 66. As discussed above for Basis 1, BCOC's request that the Staff revisit the operation of pools A and B goes beyond what NEPA and the Commission require for the subject license amendment. Basis 2, therefore, advocates stricter requirements that those imposed by the Commission and must be rejected. 10 C.F.R. § 2.758.

c. Basis 3 for contention EC-2 must be rejected as devoid of specificity and requesting an analysis outside the scope of this proceeding.

In Basis 3, BCOC simply asserts that the "integrated risk evaluation," requested in Basis 2, should also address "the potential for an accident at one pool to influence the development of an accident at another pool." BCOC Env. Cont. at 18. This is a one-sentence

assertion. There is no more. See id. Just as with Basis 1, BCOC here again fails to provide the required basis with specificity to meet the Commission's requirements for a litigable contention. BCOC provides no discussion of what type of accident is addressing, much less any description of how the development of the undefined accident in "one pool" would be "influenced" by another pool. In fact, the pools are all physically separated.[34] See Lic. Amend. App., Encl. 7, Figure 1-1 FSAR at Figure 1.2.2-55. For example, pools A and B are separated from pools C and D by approximately 300 feet. See Affidavit of R. Steven Edwards ¶ 20 (Exhibit 1 of Applicant's Jan. 4, 2000 Subpart K Summary). BCOC fails to address the specific facts of Harris in its one-sentence basis, and fails to explain how "an accident in one pool" would "influence the development of an accident at another pool," in light of the physical separation between pools at Harris. A proposed contention based on "'vague generalized assertions, drawn without any particular reference to the details of the challenged facility'" must be rejected. St. Lucie, LBP-88-10A, supra, 27 NRC at 455.

In addition, Basis 3 must be rejected for the same reasons cited supra regarding Basis 2. BCOC fails to show the analysis it is requesting is not bounded by the Staff's analysis and BCOC's request to analyze pools A and B goes beyond the scope of this proceeding. Contention EC-2 must be rejected.

D. Contention EC-3: Scope of EIS Should Include Brunswick and Robinson Storage

1. The Contention and Bases

BCOC asserts in contention EC-3 that:

> The EIS for the proposed license amendment should include within its scope the storage of spent fuel from the Brunswick and Robinson nuclear power plants.

BCOC Env. Cont. at 18. BCOC provides three brief paragraphs as bases for this contention, which are summarized as follows:

[34] The physical separation between the spent fuel pools was obvious to Dr. Thompson when he toured the Harris Fuel Handling Building on October 20, 1999.

Basis 1 - There is no independent utility to the expansion of spent fuel pool capacity at Harris that does not include storage of spent fuel from Brunswick and Robinson.

Basis 2 - CP&L has a global plan for storage of spent fuel from its three North Carolina reactors that includes the option of dry storage at Brunswick.

Basis-3- The license amendment focuses on only pool storage and ignores other alternatives.

2. Applicant's Response to the Contention

Contention EC-3 is identical to Contention 6 in BCOC's original Supplemental Petition to Intervene ("BCOC Supp. Pet."), at 38-39, except that a new Basis 3 has been added. Applicant responded to Contention 6 in its May 5, 1999 Answer at 53-59, and during the prehearing conference (Prehearing Conference Tr. at 160-162). Applicant incorporates by reference its previous responses to the Contention. Contention EC-3 attempts to raise issues that are beyond the scope of this proceeding, and run directly counter to Commission precedent. Furthermore, the bases asserted by BCOC fail to address or challenge relevant Applicant's filings and NRC Staff analysis and do not provide the required specificity for an admissible contention.

a. BCOC's Contention EC-3 is Outside of the Scope of this Proceeding

BCOC's Contention EC-3 must be rejected because it raises issues that are outside of the scope of this proceeding. There are only three issues before the NRC for approval as part of the instant license amendment request, as restated clearly in the Harris EA: (1) a revision to Harris Technical Specification 5.6 to identify burnup restrictions, enrichment limits, pool capacities, heat load limitations and nominal center-to-center distances in the racks to be installed in Harris spent fuel pools C and D; (2) an alternative plan in accordance with 10 C.F.R. § 50.55a to demonstrate an acceptable level of quality and safety in completion of the Harris CCW system and spent fuel pool cooling and cleanup system; and (3) an unreviewed safety question for additional heat load on the Harris CCW system.[35] Transshipment of spent fuel from Robinson

[35] 64 Fed. Reg. at 71,514.

and Brunswick and receipt of spent fuel from Robinson and Brunswick at Harris are not here before the NRC. Applicant is already licensed to receive spent fuel from Robinson and Brunswick at Harris.[36] The alternative of spent fuel storage at Brunswick and Robinson is outside the scope of this license amendment proceeding to expand spent fuel storage capacity of Harris.[37]

b. BCOC's Bases Fail to Meet the Commission's Pleading Requirements

BCOC asserts in Basis 1 that "there is no independent utility to the racking of a spent fuel pool" that does not include storage of spent fuel from Brunswick and Robinson. BCOC Env. Cont. at 19-20. Even if true, this does not provide a basis to require an EIS to evaluate dry storage at Brunswick and at Robinson. Moreover, there is independent utility of the license amendment request to Harris — the continued operation of the Harris Plant. Even if Applicant terminated receipt of spent fuel from Robinson and Brunswick this year, Harris would run out of spent fuel storage capacity in 2006, twenty years before the end of its licensed life.[38] BCOC fails to address the fact that the license amendment request has independent utility beyond the storage of spent fuel from Robinson and Brunswick.

BCOC's second basis asserts that "CP&L has a global plan for storage of spent fuel" which includes "the option of dry cask storage at Brunswick." BCOC Env. Cont. at 19. BCOC provides no support for this assertion, which is factually mistaken. CP&L corrected BCOC's mistaken understanding in Applicants May 5, 1999 Answer at 56-57. BCOC ignored Applicant's Answer and has simply repeated its mistaken and unfounded assertion here again.

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[36] See Shearon Harris Nuclear Power Plant, Unit 1, Facility Operating License, License NPF-63 at 3 (Jan. 12, 1987) (Section 2.B(8)).

[37] This very issue has previously been addressed in a prior agency proceeding. See Virginia Electric and Power Co. (North Anna Power Station, Units 1 and 2), LBP-84-40A, 20 NRC 1195, 1200, aff'd, ALAB-790, 20 NRC 1450, 1453-54 (1984). For the application of North Anna to this proceeding, see Applicant's May 5, 1999 Answer at 53-59; Prehearing Conference Tr. at 160-162.

[38] See Prehearing Conference Tr. at 161-162.

In its new third basis, BCOC asserts: "This license amendment focuses on only one storage methodology, ignoring other alternatives that are safer and also cost-effective. The NRC Staff should be required to thoroughly examine the alternative of dry storage in an EIS." BCOC Env. Cont. at 19. BCOC ignores the fact that the NRC Staff did evaluate alternatives in its EA, including "the alternative of dry storage."[39] The Staff found that the environmental impacts of the alternative technologies were similar to those of the proposed action and were not environmentally superior.[40] BCOC does not contest the NRC Staff's analysis. A contention asserting that an EIS is required to address alternatives to spent fuel pool expansion must be rejected where no specific basis is provided to show the alternatives are environmentally superior.[41]

Contention EC-3 must be rejected.

E. Contention EC-4: Discretionary EIS Warranted

BCOC Contention EC-4 asserts the following:

> Even if the Licensing Board determines that an EIS is not required under NEPA and 10 C.F.R. § 51.20(a), the Board should nevertheless require an EIS as an exercise of its discretion, as permitted by 10 C.F.R. §§ 51.20(b)(14) and 51.22(b).

BCOC Env. Cont. at 20.

Contention EC-4 is identical to Contention 8 in BCOC's original Supplemental Petition. BCOC Supp. Pet. at 40-43. Applicant responded to Contention 8 in its May 5, 1999 Answer at 59-64. Applicant incorporates by reference its previous response to Contention 8. Contention EC-4 must be rejected because the Licensing Board has no authority to direct the Commission to perform a discretionary act. See discussion during Prehearing Conference Tr. at 155-56. Furthermore, Petitioner has made no showing of "special circumstances" which would warrant

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[39] 64 Fed. Reg. at 71,516.

[40] Id.

[41] St Lucie, LBP-88-10A, supra, 27 NRC at 459.

such a discretionary environmental impact statement. Finally, preparation of a discretionary EIS regarding additional spent fuel pool storage at Harris would simply be redundant of the evaluation in the Harris FES and of numerous definitive, generic findings by the Commission concluding that there is no significant environmental impact from spent fuel pool storage.

Contention EC-4 must be rejected.

V. CONCLUSION

For the reasons set forth herein, Applicant submits that contentions EC-1 through EC-4 must be rejected.

Respectfully submitted,

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ATTACHMENT 1

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radiological health

NATIONAL CENTER FOR DEVICES AND RADIOLOGICAL HEALTH

Preparedness and Response in Radiation Accidents

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Food and Drug Administration

HHS Publication FDA 83-8211

Preparedness and Response in Radiation Accidents

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WHO Collaborating Centers for:
- Standardization of Protection Against Nonionizing Radiations
- Training and General Tasks in Radiation Medicine
- Nuclear Medicine

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Food and Drug Administration
National Center for Devices and Radiological Health
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requires specialized skills and equipment. For accidents at nuclear power plants where local communities are likely to have these skills and equipment, and the licensee definitely does, partial social preparedness is possible. This is less likely for a radiological transportation accident because one cannot be sure where they might occur. Interestingly, except for social preparedness, the characteristics of radiological transport accidents and floods are similar.

Table 1.1-2 Characteristics of selected hazardous events (from Reference 9)

Characteristic	Nuclear power plant accident	Radiological transport accident	Earthquake	Flood
Scope of impact	Narrow or widespread	Narrow	Widespread	Narrow
Speed of onset	Gradual	Sudden	Sudden	Sudden or gradual
Duration of impact	Long	Short (although variable)	Short or repeated	Short (although variable)
Social preparedness	Partial	No	No	Yes
Secondary impacts	Yes: physical and public health (radiation)	Yes: physical and public health (radiation)	Yes: physical and public health	Yes: physical and public health

In addition to the characteristics cited in Table 1.1-2, all hazardous events exhibit the same phases of social response; that is, threat detection, threat evaluation, information dissemination (notification), and response (9). Radiological transportation accidents, given the remoteness of many accident sites from the location of skilled personnel and equipment, can be expected to have a longer period between occurrence and notification of appropriate responders than an accident at a nuclear power plant.

While radiation accidents cause important secondary impacts that differ from other hazardous events, radiation accidents need to be treated within a community emergency planning context for all hazardous events. As has been shown, the myriad of similarities in the characteristics of all accidents makes radiation emergency planning most sensible in a broad overall emergency planning concept.

1.1.3 The Probability and Consequences of Nuclear Power Reactor Accidents

The risk to the public from a radiation accident must consider three factors: (1) the probability of a sequence of undesirable events occuring, (2) the consequences of these events, and (3) the action taken to mitigate the consequences of the accident.

$$\text{Risk}\left(\frac{\text{accident consequences}}{\text{unit time}}\right) = \text{probability}\left(\frac{\text{events}}{\text{unit time}}\right) \times \text{magnitude}\left(\frac{\text{accident consequences}}{\text{event}}\right)$$

Nuclear power reactor accidents are best discussed in terms of specific accident classes. Postulated reactor accidents have been classified by the NRC and are addressed in the agency's review of a nuclear power reactor applicant's environmental report (10). These accident classes are shown in Table 1.1-3. Class 1 accidents are of minor consequence, whereas Class 8 events are considered the most serious category to be considered by the applicant. Class 8 accidents are called Design Basis Accidents or DBA's. Class 9 accidents are a hypothetical sequence of successive failures leading to releases of radioactivity generally, but not always, of a greater magnitude than DBA's. The Reactor Safety Study (WASH-1400, the RSS, or the Rasmussen report), considers these accidents in terms of their probability and consequences (11). Accidents at Pressurized Water Reactors (PWR) and Boiling Water Reactors (BWR) equivalent to NRC's Class 9 accidents are the Reactor Safety Study's release categories PWR 1 through 7 and BWR 1 through 4. The Reactor Safety Study's release categories PWR 8 and 9 and BWR 5 are essentially NRC Class 8 or a DBA and do not pertain to core-melt sequences. They have marginal offsite consequences unless unique and unfavorable weather conditions exist at the time of the release.

Table 1.1-3 Classification of postulated nuclear power plant accidents (from Reference 10)

Class	Description	Examples	RSS Class
1	Trivial incidents	Small spills and leaks inside the containment	--
2	Small releases outside the containment	Small spills and leaks outside the containment	--
3	Radwaste system failures	Equipment leakage or malfunction, release from gas or liquid waste storage tank	--
4	Fission products to primary system (BWR)	Fuel cladding defects, off-design transients inducing fuel failures	--
5	Fission products to primary and secondary systems (PWR)	Fuel cladding defects and steam generator leaks, off-design transients, steam generator tube rupture	--
6	Refueling accidents	Fuel assembly drop, heavy object drop onto fuel in core	--
7	Spent-fuel handling accident	Fuel assembly drop in storage pool, heavy object drop onto fuel rack, fuel cask drop	--
8	Accident-initiation events considered in design-basis evaluation in the Safety Analysis Reports	Loss-of-coolant accidents (small and large), control rod ejection (PWR) or drop (BWR), steam line breaks (BWR), outside containment (PWR)	PWR 8-9 BWR 5
9	Hypothetical sequence of successive failures more severe than those postulated for establishing the design basis		PWR 1-7 BWR 1-4

These six exposure modes may be further classified into plume exposure (modes 1, 2, and 3 above) and ground exposure (modes 4 through 6). Often cloudshine, noble gas exposure, and groundshine are characterized as direct exposure pathways since there are no intermediate vectors, such as air, food, or drinking water, to carry radioactive materials into the body. Alternatively, the inhalation and ingestion modes of exposure are indirect with exposure occurring because of the entrance of radioactive material into the body through air, food, or drinking water.

The Reactor Safety Study consequence model allows the input of site specific or assumed population data as a function of distance from the reactor site. Release magnitudes, timing, and other parameters that characterize release categories are found in the RSS. The RSS describes the progression of the cloud of radioactive material from the containment structure during and following a reactor accident. A standard Gaussian dispersion model is used to calculate ground-level airborne concentrations of radioactive material downwind of the reactor site. Weather input to the model is based on hourly meteorological readings for a 1-year period at seven selected reactor sites (11).

For the most part, core-melt accidents of the "melt-through" types (PWR 6 and 7) or "atmospheric" types (PWR 1 through 5) describe the broad classes of accident sequences of consequence to emergency planners. This is because core overheating or melting and loss of containment integrity following a Loss-of-Coolant-Accident (LOCA) could release significant quantities of radioactive material to the atmosphere. Containment failure can result from melt-through of the containment vessel by molten fuel. It can also result from inadequate isolation of containment openings, a reactor steam explosion, hydrogen burning, and overpressure which, in turn, cause a release of radioactive materials to the atmosphere. The information and conclusions for BWR accidents under the same mode of containment failure would be similar to PWR's.

Release categories (PWR 6 and 7) comprising the "melt-through" category, have a relatively long time after initiation of the accident before release occurs (10-12 hours), long "continuous" release durations (10 hours), and relatively small fractions of core radioisotope inventories released. In contrast, release categories (PWR 1 through 5) comprising the "atmospheric" release category, are assigned short times after initiation of the accident before release occurs (2-5 hours), short "puff" release durations (0.5-4 hours), and larger release fractions of core inventories (11).

The mean projected whole-body and thyroid doses at various distances from a reactor accident site to a person located outdoors for the "melt-through" release categories can be calculated from the data in the RSS (16). These are shown in Figures 1.1-1 and 1.1-2 for the whole-body and thyroid gland. These show exposures from pathways of importance early in an accident. The food pathway is not shown. These doses are relatively low because of the release of only small fractions of core radioisotope inventories in "melt-through" reactor accidents. The term "sheltering factor," or SF, referred to in the figures is the ratio of the dose with shelter to that without shelter. Shelter here means an ordinary building not a specially constructed fallout shelter. Projected thyroid doses are about an order of magnitude greater than whole-body doses. Mean thyroid doses are calculated for an exposed adult. The mean thyroid dose for children ages 1-10 would be about twice as high. At 1 mile the projected mean whole-body dose is about 1.5 rem and the thyroid dose is about 25 rem for this release category of nuclear power reactor accidents.

Figures 1.1-3 and 1.1-4 present the mean projected whole-body and thyroid doses versus distance for "atmospheric" release category accidents. Projected thyroid doses are 20 to 50 times the projected whole-body doses. At 100 miles downwind from a reactor accident, the projected mean whole-body dose is somewhat less than 2 rem, while the mean projected thyroid dose is about 100 rem. At 10 miles, these doses are 140 and 2000 rem respectively.

inhaled can be substantially reduced, will also not provide much protection. Only thyroid blocking (or evacuation with very small delay times) can provide large reductions in the projected dose to the thyroid from this category of nuclear power plant accidents.

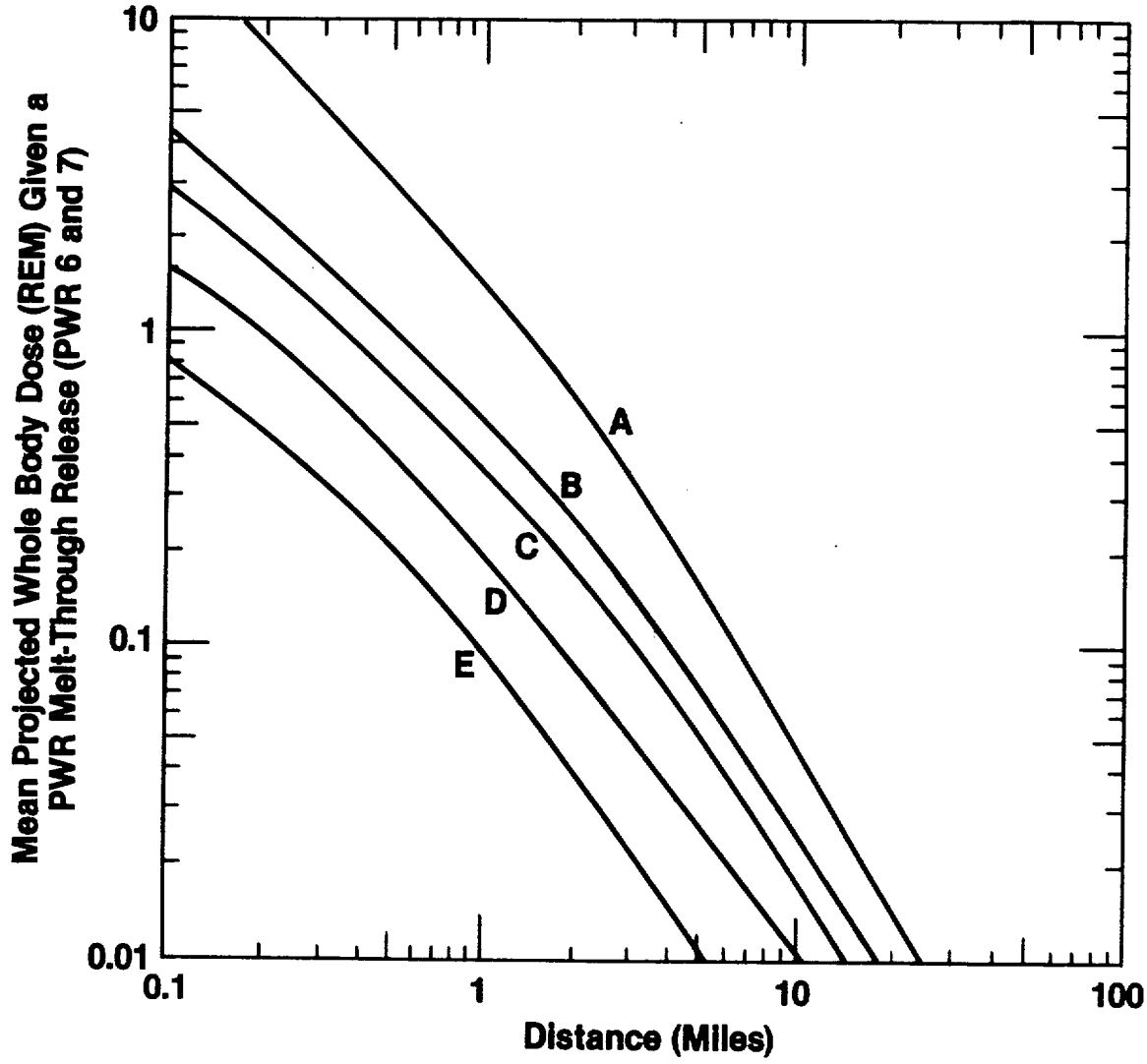

Figure 3.5-8 Conditional mean projected whole-body dose versus distance for sheltering and evacuation strategies. Projected doses are conditional on a PWR "melt-through" release (PWR 6 and 7) (from Reference 102).

Curve A Individual located outdoors without protection. SF's (1.0, 0.7). 1-day exposure to radionuclides on ground.

Curve B Sheltering, SF's (0.75, 0.33), 6-hour exposure to radionuclides on ground.

Curve C Sheltering, SF's (0.5, 0.08), 6-hour exposure to radionuclides on ground.

Curve D Evacuation, 5-hour delay time, 10 mph.

Curve E Evacuation, 3-hour delay time, 10 mph.

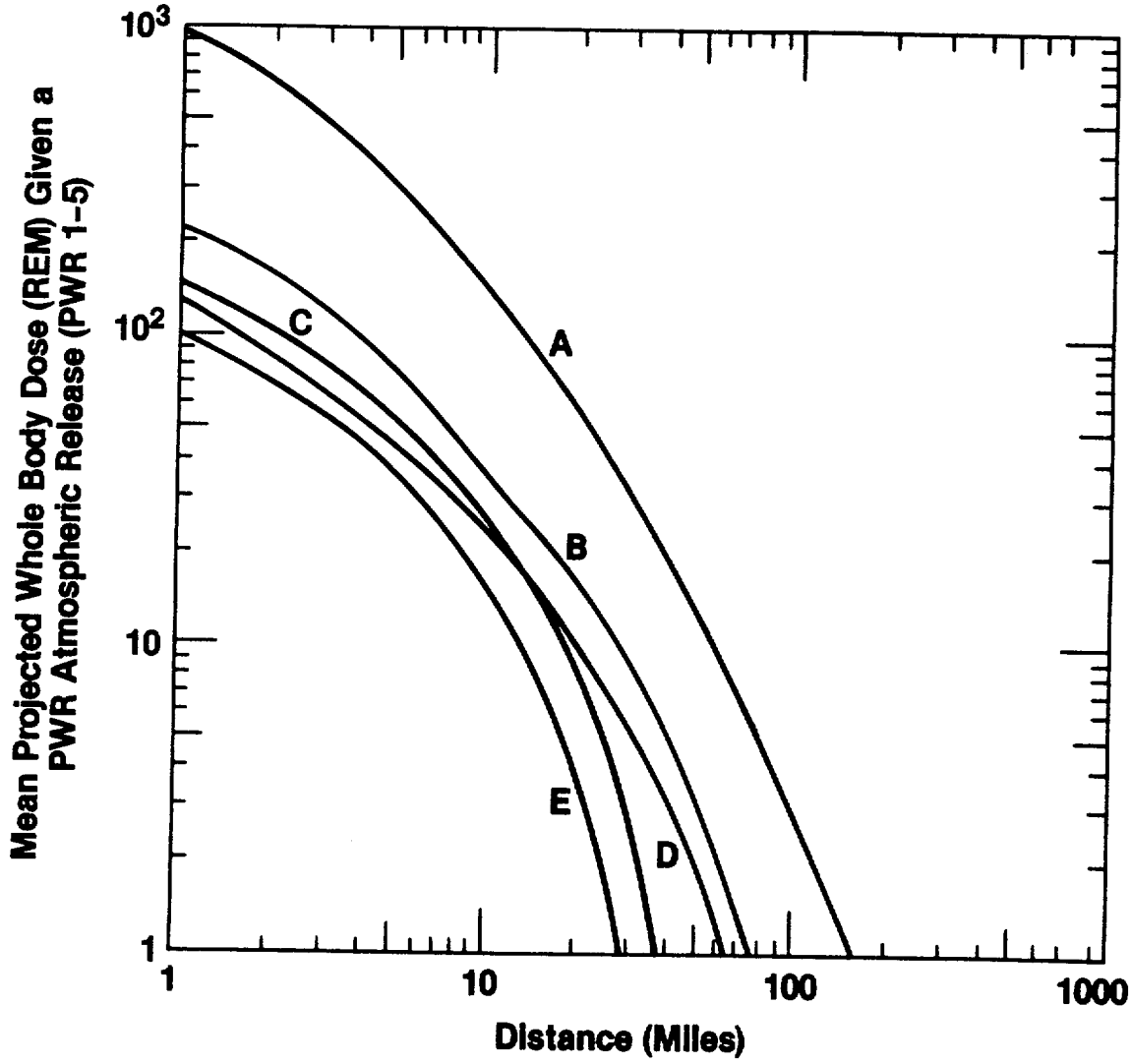

Figure 3.5-10 Conditional mean projected whole-body dose versus distance for sheltering and evacuation strategies. Projected doses are conditional on a PWR "atmospheric" release (PWR 1-5) (from Reference 102).

Curve A Individual located outdoors without protection. SF's (1.0, 0.7). 1-day exposure to radionuclides on ground.

Curve B Sheltering, SF's (0.75, 0.33), 6-hour exposure to radionuclides on ground.

Curve C Evacuation, 5-hour delay time, 10 mph.

Curve D Sheltering, SF's (0.5, 0.08), 6-hour exposure to radionuclides on ground.

Curve E Evacuation, 3-hour delay time, 10 mph.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT COMPANY	)	Docket No. 50-400-LA
(Shearon Harris Nuclear Power Plant)	)	ASLBP No. 99-762-02-LA

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Applicant's Response to BCOC's Late-Filed Environmental Contentions" were served on the persons listed below by U.S. mail, first class, postage prepaid, and by electronic mail transmission, this 3rd day of March, 2000.

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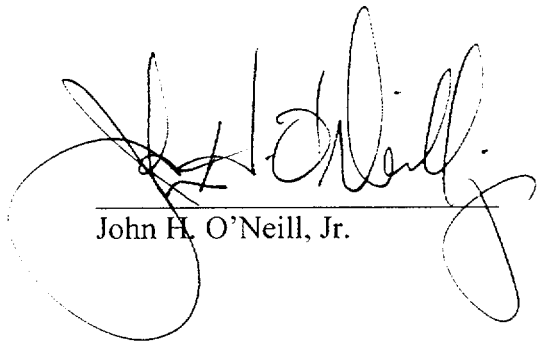

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