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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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

NRC STAFF BRIEF IN RESPONSE TO
COMMISSION ORDER OF FEBRUARY 14, 2001

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February 28, 2001

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

NRC STAFF BRIEF IN RESPONSE TO COMMISSION ORDER OF FEBRUARY 14, 2001

INTRODUCTION

On December 22, 2000, the Board of Commissioners of Orange County (Orange County) filed a pleading entitled "Orange County's Petition for Review and Request for Immediate Suspension and Stay of the NRC Staff's No Significant Hazards Determination and Issuance of License Amendment for Harris Spent Fuel Pool Expansion" (Orange County's Petition). On February 14, 2001, the Commission issued a Memorandum and Order summarily rejecting Orange County's petition for review, seeking more information from the NRC Staff (Staff) regarding its no significant hazards consideration (NSHC) determination and directing the licensee, Carolina Power & Light Company (CP&L), not to store any spent fuel under the license amendment.

In accordance with the Commission's order, the Staff hereby files its brief and supporting affidavit containing additional information and views regarding its final NSHC determination. As discussed in detail below, the Staff's NSHC determination meets the standards of 10 C.F.R. § 50.92(c) and the criteria of "Final Procedures and Standards on No Significant Hazards Considerations," 51 Fed. Reg. 7744, 7753-55 (1986). In addition, there are no special circumstances that warrant the exercise of Commission discretion to review the Staff's NSHC determination.

BACKGROUND

The following background is relevant to the issues raised by the Commission. This matter arises from a license amendment request by CP&L to expand fuel pool capacity at the Shearon Harris Nuclear Power Plant, by placing two existing fuel pools into service. On December 15, 1999, the Staff issued an Environmental Assessment and Finding of No Significant Impact. 64 Fed. Reg. 71514 (1999). On December 21, 2000, the Staff issued the final Determination of No Significant Hazards and the requested license amendment.¹ On December 22, 2000, Orange County filed its petition for review and request for stay. On January 8, 2001, the Staff and CP&L each filed responses to Orange County's petition for review and request for stay. On February 14, 2001, the Commission issued its Memorandum and Order directing the Staff to provide additional information and views. Specifically, the Commission directed the staff to file a brief addressing the NSHC criteria contained in "Final Procedures and Standards on No Significant Hazards Considerations" (1986 Rulemaking),² the "severe accident question,"³ and any other aspect of the NSHC determination the Staff believes should be addressed. CLI-01-07, slip op. at 5. The Commission further indicated that it would be interested in "a summary of any quantitative data that underlie the

¹ Letter from Richard Laufer, NRR, to James Scarola, CP&L, Shearon Harris Nuclear Power Plant, Unit 1 - Issuance of Amendment Re: Expansion of Spent Fuel Storage Capacity, December 21, 2000 (attached as Exhibit 3 to "NRC Staff Opposition to Orange County's Petition for Review and Request for Immediate Suspension and Stay of the NRC Staff's No Significant Hazards Determination and Issuance of License Amendment for Harris Spent Fuel Pool Expansion And Request for Expedited Consideration," January 8, 2001) (Safety Evaluation or SE).

² 51 Fed. Reg. 7744, 7753-55 (1986).

³ The Commission observed that the Staff's NSHC determination "does not explicitly address . . . [Orange] County's expression of concern about a severe accident." CLI-01-07, slip op. at 5. The severe accident of concern is the seven-step sequence proffered by Orange County, consisting of: 1) a degraded core accident; 2) containment failure or bypass; 3) loss of all spent fuel cooling and makeup systems; 4) extreme radiation doses precluding personnel access; 5) inability to restart any pool cooling or makeup systems due to extreme radiation doses; 6) loss of most or all pool water through evaporation; and 7) initiation of an exothermic oxidation reaction in pools C and D. See LBP-00-19, 52 NRC, 85, 95 (2000).

staff's NSHC determinations on accident probability, accident consequences and margins of safety." *Id.*

DISCUSSION

This brief will address the following issues: the Staff, in issuing the NSHC determination in this case, met the criteria of 10 C.F.R. § 50.92(c) and those discussed in the 1986 Rulemaking; severe accidents are not evaluated in making NSHC determinations; NSHC determinations are based on qualitative determinations, not quantitative data; this case is distinguishable from *Pacific Gas & Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1 (1986); and there are no special circumstances that warrant the exercise of the Commission's discretion to review the Staff's NSHC determination in this case.

A. The 1986 No Significant Hazards Considerations Criteria.

The Commission has asked whether the Staff's NSHC determination complies with 10 C.F.R. § 50.92. The Staff submits that it has fully complied with the Commission's regulation.

Section 189a(2)(A) of the Atomic Energy Act, as amended in 1983, [Pub. L. 97-415, January 4, 1983], permits the Commission to "issue and make immediately effective any amendment to an operating license . . . upon a determination by the Commission that such amendment involves no significant hazards considerations, notwithstanding the pendency before the Commission of a request for a hearing from any person. Such amendment may be issued and made immediately effective in advance of the holding and completion of any required hearing." Atomic Energy Act of 1954, as amended (AEA), 42 U.S.C. § 2239(a)(2)(A). As mandated by Congress, the Commission promulgated regulations implementing the statutory requirements. "Standards for Determining Whether License Amendments Involve No Significant Hazards Considerations," Final Rule, 51 Fed. Reg. 7744 (1986); Interim Final Rule, 48 Fed. Reg. 14864 (1983). The criteria and standards for determining no significant hazards are found in the

Commission's regulations in 10 C.F.R. § 50.92 and in the statement of considerations accompanying the 1986 Rulemaking. 10 C.F.R. § 50.92(c) provides that a final no significant hazards considerations determination may be made if the operation of the facility in accordance with the amendment would not: "(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Involve a significant reduction in a margin of safety."

In 1983, the Commission published an Interim Final Rule regarding the standards for making the NSHC determination. "Standards for Determining Whether License Amendments Involve No Significant Hazards Considerations," Interim Final Rule, 48 Fed. Reg. 14864 (1983). The Statement of Considerations contained a brief history of the statutory requirements, the case law and prior Staff practice. *Id.* at 14864-67. The Commission noted that the rule codified long-standing Staff practice with regard to the standards for making a NSHC determination and the examples of amendments likely or unlikely to involve significant hazards considerations. 48 Fed. Reg. at 14867. *See also* 51 Fed. Reg. at 7745-46. The Commission emphasized that the standards for NSHC and the examples are "merely screening devices for a decision about whether to hold a hearing before as opposed to after an amendment is issued and [can] not be said to prejudge the Commission's final public health and safety decision to issue or deny the amendment request." *Id.* at 14869. *See also Yankee Atomic Electric Company* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 204 n.7 (1998); *Diablo Canyon*, CLI-86-12, 24 NRC 1, 6 n. 3 (1986); *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), LBP-90-6, 31 NRC 85, 90-91(1990). The Commission stated further that there was no intrinsic safety significance to the NSHC standard. 48 Fed. Reg. at 14865. In responding to a comment that the three standards of 10 C.F.R. § 50.92(c) were unclear, the Commission said:

It is the Commission's considered judgment that the standards have been and will continue to be useful in making the necessary reviews. Moreover, the Commission believes that the standards when used together with the examples will enable it to make the requisite decisions.

48 Fed. Reg. at 14867. The examples referred to by the Commission "were samples of precedents with which the Staff was familiar; they were representative of certain kinds of circumstances; however they did not cover the entire range of possibilities; nor did they cover every facet of a particular situation." *Id.* at 14867. Reracking of spent fuel pools was not included among the list of examples likely to involve a significant hazards consideration. *Id.* at 14869. Instead, the Commission directed the Staff to prepare a report reviewing NRC experience to date with respect to spent fuel pool expansion reviews, and providing a technical judgment on the basis of which a spent fuel pool expansion amendment may or may not pose a significant hazards consideration. *Id.*

1. The No Significant Hazards Considerations and Spent Fuel Pools

In March of 1986, the Commission published the final rule. 51 Fed. Reg. 7744. In the Statement of Considerations accompanying the final rule, the Commission addressed the three NSHC standards and four criteria specifically relating to spent fuel pool reracks.⁴ The Commission

⁴ These criteria are:

No Significant Hazards Considerations Standards: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Involve a significant reduction in a margin of safety.

Spent Fuel Pool Expansion Criteria: (1) The storage expansion method consists of either replacing existing racks with a design which allows closer spacing between stored spent fuel assemblies or placing additional racks of the original design on the pool floor if space permits; (2) The storage expansion method does not involve rod consolidation or double tiering; (3) The Keff of the pool is maintained less than or equal to 0.95; and (4) No new technology or unproven technology is utilized in either the construction process or the analytical techniques necessary to justify the expansion.

restated its earlier position that the standards for NSHC and the examples of amendments likely or unlikely to involve significant hazards considerations are “merely screening devices for a decision about whether to hold a hearing before as opposed to after an amendment is issued and [can] not be said to prejudge the Commission’s final public health and safety decision to issue or deny the amendment request.” 51 Fed. Reg. at 7749. The Commission stated:

It is important to bear in mind as one reads this background statement and the final regulations that there is no intrinsic safety significance to the “no significant hazards consideration” standard. Neither as a notice standard nor as a standard about when a hearing may be held does it have a substantive safety significance. Whether or not an action requires prior notice or a prior hearing, no license and *no amendment may be issued unless the Commission concludes that it provides reasonable assurance that the public health and safety will not be endangered and that the action will not be inimical to the common defense and security or to the health and safety of the public. . . .* In short, the “no significant hazards consideration” standard is a procedural standard which governs whether an opportunity for a prior hearing must be provided before action is taken by the Commission,51 FR 7746 (emphasis supplied).

The “no significant hazards consideration determination” is procedural; that is, it determines whether a license amendment may be issued prior to completion of a hearing. It is not a determination of the merits of the amendment request. Prior to the issuance of any amendment, whether before or after the completion of a hearing, the Staff, as it has done in this case, fully evaluates the merits of the request and makes its health and safety findings.

a. The Spent Fuel Pool Expansion Criteria

In responding to comments on the interim final rules, the Commission discussed spent fuel pool rerackings and whether they should be considered amendments that pose significant hazards considerations. The Commission relied upon an evaluation performed by the Staff, based upon its experience with 96 reracking amendments, and the result of a contractor’s study. *Id.* at 7754. The staff’s analysis of NSHC, supported by the contractor’s study, provided insight into whether significant hazards, as contemplated by the regulation, exist. The Staff concluded that a license

amendment request to expand the storage capacity of a spent fuel pool is not likely to involve significant hazards considerations if certain conditions are met:

- (1) The storage expansion method consists of either replacing existing racks with a design which allows closer spacing between stored spent fuel assemblies or placing additional racks of the original design on the pool floor if space permits,
- (2) The storage expansion method does not involve rod consolidation or double tiering,
- (3) The Keff of the pool is maintained less than or equal to 0.95, and
- (4) No new technology or unproven technology is utilized in either the construction process or the analytical techniques necessary to justify the expansion.

Id. The Staff further concluded that if a spent fuel expansion satisfied the above criteria, then it met the three standards of 10 C.F.R. § 50.92(c). *Id.* at 7755-54. Finally, the Staff stated that applications that did not fall into the above categories would be evaluated on a case-by-case basis to determine whether they involve significant hazards considerations. *Id.* at 7755. The Commission accepted the Staff's judgment and added spent fuel pool expansions, as limited by the four criteria, to the list of examples not likely to involve significant hazard considerations. *Id.*

In the instant case, as demonstrated in the affidavit of Richard J. Laufer (Laufer Affidavit) filed in support of this brief, the Staff analyzed CP&L's amendment application against the above criteria and determined that the criteria were met. No new technology or unproven technology was utilized (Laufer Aff. at ¶¶ 9-12), the Keff of the pool will be maintained less than or equal to .95 (*Id.* at ¶ 8), and neither rod consolidation nor double tiering is involved (*Id.* at ¶ 7). As to the first criterion, the Staff evaluated the CP&L's proposal to place the two existing pools in service and determined that, under the specific facts presented, the proposal was comparable to replacing existing racks with higher density racks. *Id.* at ¶ 6. Therefore, the Staff concluded, based upon experience with license amendments, specifically, spent fuel pool expansions, and engineering

judgment, that the instant amendment request met the four criteria specified in the list of examples of license amendments considered not likely to involve significant hazards considerations.

b. The No Significant Hazards Consideration Standards

In promulgating the final NSHC rule, the Commission accepted the Staff's generic technical evaluation of whether or not increasing spent fuel storage capacity meets the three standards of 10 C.F.R. § 50.92(c), as follows. 51 Fed. Reg. at 7754-55.

1. Does increasing capacity by permitting closer spacing or installation of new racks significantly increase the probability or consequences of accidents previously evaluated? Both the Staff and its contractor concluded that it did not. *Id.* at 7754.

2. Does increasing capacity create the possibility of a new or different kind of accident from any previously analyzed? Neither the Staff nor its contractor identified any new accidents as a result of reracking to allow closer spacing. *Id.*

3. Does increasing capacity significantly reduce a margin of safety? Again, neither the Staff nor its contractor identified any significant reduction in a margin of safety. *Id.* On this point, the Staff stated that an expansion

may result in a minor increase in pool temperatures by a few degrees, but this heat load increase is generally well within the design limitations of the installed cooling systems. In some cases it may be necessary to increase the heat removal capacity by relatively minor changes in the cooling system, i.e., by increasing a pump capacity. But in all cases, the temperature of the pool will remain below design values. The small increase in the total amount of fission products in the pool is not a significant factor in accident considerations. The increased storage capacity may result in an increase in the pool reactivity as measured by the neutron multiplication factor (Keff). However . . . as long as the maximum neutron multiplication factor was less than or equal to 0.95, then any change in the pool reactivity would not significantly reduce a margin of safety regardless of the storage capacity of the pool.⁵

⁵ The Staff's statement is relevant to the instant case, where Orange County has raised the increased heat load as an issue. Orange County's Petition at 10. The heat load issues were
(continued...)

Id.

In the instant case, as detailed in the Laufer affidavit, the Staff evaluated the CP&L license amendment request against the three standards in 10 C.F.R. § 50.92(c). The Staff determined that the license amendment did not involve a significant increase in the probability or consequences of an accident previously evaluated. The accidents previously evaluated which might be affected by the amendment are those evaluated in the FSAR, as discussed in the Laufer Affidavit at ¶¶ 14-21.⁶ The Staff's determination is complete and based upon the previously analyzed accidents.

The Staff determined that the license amendment did not create the possibility of a new or different kind of accident from any previously evaluated. Laufer Aff. at ¶¶ 22-24. Orange County has contended that the seven-step sequence is a new or different accident not previously evaluated which will be created by the amendment to the license. Therefore, they argue, a final NSHC determination cannot be made. The Staff disagrees for the following reasons. First, the seven-step severe accident sequence is beyond the scope of the NSHC determination. As discussed below, the Staff, in keeping with long-standing application of 10 C.F.R. § 50.92, does not consider severe accidents in its NSHC determinations. Second, even if the seven-step severe accident sequence were within the scope, it is not a new accident which may be created by the granting of the amendment under consideration. There is nothing inherent in the activation of pools C & D that would make the sequence more likely to occur. In fact, Orange County's witness, Dr. Thompson,

⁵(...continued)

fully addressed in the Staff's SE at section 3.2. See *e.g.* Laufer Aff. at ¶¶ 20, 29. The fact that it is not specifically addressed in the section addressing the public comments should not affect the Commission's decision whether to exercise its discretion in this matter.

⁶ Although the Commission rejected Orange County's Petition for Review, the Staff notes that in that pleading, Orange County admits that the Staff's conclusion as to consequences of a loss of spent fuel cooling is acceptable as to design-basis accidents, but asserts that the Staff should have considered the consequences of a severe beyond design-basis accident. Orange County's Brief at 10-11. But, the severe accident sequence was not previously evaluated and is not a part of the design basis for the Harris spent fuel pools. In addition, as discussed later in this brief, severe accidents are not relevant to NSHC determinations.

in his declaration supporting Orange County's Petition, states that activation of pools C & D "would not significantly alter the probability of a pool fire at Harris." Thompson Declaration at ¶ 7.

The creation of a new or different accident was discussed in *San Luis Obispo Mothers for Peace v. NRC*, 799 F. 2d. 1268 (9th Cir. 1986). That case, however, is distinguishable from the instant case. In that case, the licensee was seeking an amendment to, among other things, replace spent fuel racks that were anchored to the pool with free standing racks. *San Luis Obispo*, 799 F.2d at 1269. The Court found that the Intervenors had identified a possible new accident not previously analyzed created by the change from anchored to free-standing racks, *i.e.* the possibility that during an earthquake, the racks would collide with the pool walls or each other, increasing the risk of a nuclear reaction in the pools. *Id.* at 1270. In the instant case, there is nothing inherent in the license amendment creating the possibility of the seven-step sequence. Thus, no accidents have been identified as being created as a result of this amendment.⁷ Therefore, the amendment does not create the possibility of a new or different kind of accident not previously evaluated. And, standard 2 of 10 C.F.R. § 50.92 is met.⁸

The Staff determined that the license amendment did not involve a significant reduction in a margin of safety. Laufer Aff. at ¶¶ 25-29.

⁷ As indicated in the Laufer Affidavit, CP&L initially analyzed a heavy load drop as a new accident, but concluded that, because heavy load drop was analyzed in conjunction with spent fuel pool B, it was not a new or different accident not previously evaluated; and, therefore, was not relevant to the second standard. Laufer Aff. at ¶ 22. The Staff also concluded that it was not a new or different accident. *Id.*

⁸ As to Orange County's insistence that severe accidents must be analyzed for a NSHC determination, Orange County has provided no support for its assertion that severe accidents must be addressed. Moreover, as discussed below, the Staff does not evaluate severe accidents in making NSHC determinations, nor is such evaluation required by the Commission's regulations, the AEA or NEPA.

Based on the Staff's extensive experience with license amendments, experience in making NSHC determinations and engineering judgment, the Staff determined that the instant amendment request presented no significant hazards considerations.

As demonstrated in the foregoing discussion and in the Staff's affidavit, the Staff's NSHC determination meets the standards of 10 C.F.R. § 50.92(c), and the criteria in the 1986 Rulemaking. Therefore, it is a valid NSHC determination and need not be reviewed by the Commission.

B. The Severe Accident Question

The Commission has directed the Staff to discuss the severe accident question raised by Orange County. Orange County complained that the NSHC determination is deficient because it does not consider its seven-step severe accident sequence. Orange County's Petition at 11-17. The Staff submits that the seven-step sequence is beyond the scope of the NSHC and that the requirements of 10 C.F.R. § 50.92(c) have been met in making the NSHC determination. There are several reasons why the severe accident is not relevant to the Staff's NSHC determination. First, the Staff does not consider, nor is it required to consider, severe accidents in its NSHC determinations. There is nothing in the 1986 Rulemaking that suggests that severe accidents should be considered. In general, severe accidents are not required to be analyzed in connection with license amendments. Except in limited circumstances, licensing requirements are based on design basis events, not on severe accidents. In those areas where the Commission has determined that severe accidents should be analyzed for a licensing action, such requirements have been addressed in regulatory requirements or regulatory guidance.⁹ There are no such

⁹ For example, the Station Blackout Rule, 10 C.F.R. § 50.63.

regulatory requirements or guidance regarding the inclusion of severe accident analysis for NSHC.¹⁰

10 C.F.R. § 50.92 provides:

In determining whether an amendment to a license or construction permit will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses or construction permits to the extent applicable and appropriate.

Severe accidents are not generally considered in reviewing applications for operating licenses. The “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants,” NUREG-0800, June 1987, as a general rule, does not consider severe accidents; nor does it consider accidents that are not credible.

Nor, as pointed out by CP&L, is consideration of severe accidents mandated by the Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants, 50 Fed. Reg. 32138, 32144 (1985). See “Carolina Power & Light Company’s Response to Orange County’s December 22, 2000, Filing,” (January 8, 2001) at 9-10 n. 31.

Second, even if the Staff was required to address severe accidents in connection with NSHC, the seven-step sequence advanced by Orange County would not have been considered due to its extremely low probability (2E-07).¹¹ It is, in fact, not a credible event, as demonstrated

¹⁰ Notwithstanding that the Commission may be examining severe accidents or may consider beyond design-basis accidents in other contexts, areas where the Commission does not require the consideration of beyond design-basis accidents are not affected by such consideration. “[T]he existence of ongoing research into beyond design-basis accidents . . . does not undercut the reasonableness of the Commission’s view that such accidents nonetheless remain highly improbable and therefore beyond NEPA’s mandate.” *Pacific Gas & Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-880, 26 NRC 449, 459 (1987), citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C.Cir. 1984) *aff’d en banc*, 789 F.2d 26, *cert denied*, 479 U.S.923 (1986).

¹¹ See “Affidavit of Gareth W. Parry, Stephen F. Lavie, Robert L. Palla And Christopher Gratton in Support of NRC Staff Brief and Summary of Relevant Facts, Data And Arguments Upon Which The Staff Proposes to Rely at Oral Argument on Environmental Contention EC-6,” (“Staff (continued...)”)

in the Staff Affidavit of 11/20/00. Such low frequency precludes any requirement that the sequence be considered under the Atomic Energy Act or NEPA.

Finally, there is nothing inherent in the spent fuel expansion sought by CP&L that creates Orange County's seven-step severe accident. As discussed above, it is not an accident previously evaluated, nor is it a new or different accident. As conceded by Orange County, the amendment will not increase the probability of the accident. The accident of concern, in addition to being highly unlikely, is more in the nature of a generic issue not pertaining to the unique characteristics of the Harris plant. In fact, there is nothing unique about the Harris spent fuel pools that affect the probability of the severe accident sequence. As such, it is not appropriate for consideration in a site-specific NSHC determination. As stated in the Policy Statement on Severe Reactor Accidents,

Individual licensing proceedings are not appropriate forums for a broad examination of the Commission's regulatory policies relating to evaluation, control and mitigation of accidents more severe than the design basis (Class 9). . . . The Commission believes that considerations which go beyond that to the possible need for safety measures to control or mitigate severe accidents . . . should not be addressed in case-related safety hearings.

50 Fed. Reg. at 32145. Such issues are more appropriately raised in the context of a petition for rulemaking or other existing methods for generic issue resolution. *See Id.* at 32144.

The Staff does not consider severe accidents in making its NSHC determinations. There are no regulatory or statutory provisions that require the consideration of severe accidents. Therefore, severe accidents are beyond the scope of the NSHC determination.

¹¹(...continued)
Affidavit of 11/20/00") attached as Exhibit 2 to "NRC Staff Opposition to Orange County's Petition for Review and Request for Immediate Suspension and Stay of the NRC Staff's No Significant Hazards Determination and Issuance of license Amendment for Harris Spent Fuel Pool Expansion," January 8, 2001.

C. Quantitative Data

The Commission has asked the Staff to provide a summary of any quantitative data that underlie the staff's NSHC determinations on accident probability, accident consequences and margins of safety.

As demonstrated in the Laufer Affidavit, the NSHC determination is a qualitative assessment based on engineering judgment and not a quantitative evaluation. Quantitative analyses were not, in the Staff's view, contemplated by the Commission at the time 10 C.F.R. § 50.92(c) was promulgated. The Staff has always used a deterministic approach in making its NSHC determinations, analyzing qualitative factors. Although several quantitative analyses were performed by the Staff in connection with the litigation before the Licensing Board,¹² there were no quantitative analyses performed specifically in the preparation and analysis of the NSHC determination.

D. Other Aspects

In this case, the hearing concerning the merits of the safety issues has been completed and the Licensing Board has found no genuine and substantial issue of material fact that would require an evidentiary hearing determined the safety issues in favor of CP&L. LBP-00-12, 51 NRC 247 (2000). The hearing related to the merits of the one environmental issue is still pending, but the pendency of that matter has no bearing on the NSHC determination. The issuance of the license amendment prior to resolution of the environmental contention does not violate NEPA. Although such violation was alleged in Orange County's Petition, no support for this assertion was provided. In fact, it is not a valid objection. Where all the safety issues have been heard and resolved, the

¹² The quantitative analyses included the analysis of the misplacement of an entire rack of spent fuel, Affidavit of Anthony Ulses in Support of the NRC Staff's 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, January 4, 2000, and in the Staff's analysis of the probability of the occurrence of the seven-step accident sequence, Staff Affidavit of 11/20/00.

pendency of NEPA issues for hearing before a licensing board does not prevent issuance of a license amendment. See *Philadelphia Electric Co.* (Limerick Generating Station, Unit 2), CLI-89-17, 30 NRC 105, 110 (1989). In that case, the safety issues concerning the issuance of a full power operating license had been fully heard and resolved. Only the NEPA issues remained pending before the licensing board, as a result of a remand from the Court of Appeals. *Id.* at 107-110. In deciding that the full power license could be issued, the Commission said: "The instant case is unusual in that, while all contested safety issues have been fully heard and resolved, NEPA issues remain pending for hearing before the Licensing Board. . . .However, NEPA itself does not always require resolution of all contested environmental issues and completion of the entire NEPA review process before the license can issue." *Id.* at 110 (citation omitted). The Staff submits that, based on *Limerick*, where all the safety issues have been heard and resolved, the pendency of NEPA issues for hearing before the Licensing Board does not, in this instance, prevent issuance of the license amendment. The case for issuing the instant license amendment is more compelling in that it concerns the issuance of a license amendment, not an initial operating license, and because the only issue remaining is whether the Staff must prepare an EIS based on an extremely low probability, remote and speculative, severe accident sequence.¹³ As discussed above, severe accidents are not considered in NSHC.

The issuance of the NSHC determination does not violate NEPA. The NSHC determination is procedural, under the AEA, and concerns safety issues. NEPA considerations should not affect the issuance of the NSHC determination. Since, as discussed above, an amendment can issue even if NEPA issues are pending before a licensing board, the issue of whether the Staff has to prepare an EIS to consider a remote and speculative accident scenario should not affect the staff's

¹³ Because the matter pending before the Licensing Board is being heard pursuant to subpart K, the issue to be decided is whether Orange County has met *its* burden of demonstrating the existence of a genuine and substantial issue of material fact regarding whether its seven-step sequence is not remote and speculative.

authority to issue a NSHC and license amendment, once it has made its NSHC determination and has made its findings that there is reasonable assurance that the public health and safety will not be endangered and that the action will not be inimical to the common defense and security or to the health and safety of the public. The merits of the safety issues relevant to the analysis of the license amendment request were addressed in the Staff's SE. These were the same safety issues raised by Orange County in its comments on the proposed no significant hazards determination.¹⁴ Moreover, the Staff prepared and published an Environmental Assessment and concluded that the amendment did not involve a significant impact on the quality of the human environment.

The Staff addressed the public comments on the proposed NSHC in its SE in support of the issuance of the license amendment. Laufer Aff. at ¶¶ 30-32. Orange County's comments on the NSHC determination were considered by the Staff. In addition, two of the issues raised in the NSHC comments were litigated on the merits in the Subpart K proceeding and found by the presiding Licensing Board to have no merit. 51 NRC 247. The issues raised were also addressed in the Staff's SE. Specifically, the CCW heat load issue was fully discussed in sections 3.2.2.2, 3.2.2.3 and 5.2 of the SE. SE at 11-14. The other safety issues raised - criticality and inadequate quality assurance - were fully explored in the Subpart K proceeding and in the Staff's SE. SE at 4 - 7, 23 - 36. In addition, all the submissions in support of the Subpart K proceeding, including the Staff's analysis of the two safety contentions and the Staff's position regarding the pending environmental contention, are referenced in the SE.

Finally, the Staff notes that the posture and substance of this case is quite different from the situation addressed in *Diablo Canyon*. In that case, the Staff issued the NSHC determination and the requested amendment while the safety/technical issues under the AEA were still pending before the ASLB. *Diablo Canyon*, CLI-86-12, 24 NRC 1. In the instant case, the technical/safety

¹⁴ "Orange County's Comments in Opposition to No Significant Hazards Determination and Conditional Request for a Stay of Effectiveness," February 12, 1999.

issues under the AEA have been decided on the merits by the Licensing Board. The only remaining issue before the Licensing Board is whether the staff should be required to prepare an EIS based upon Orange County's low probability, seven-step severe accident sequence. Therefore, the considerations attendant to the Diablo Canyon case are not applicable here, where the hearing on the safety issues has been completed and the Licensing Board's final decision on the merits of those issues has been issued.

E. There are No Special Circumstances Warranting the Exercise of the Commission's Discretion

In *Diablo Canyon*, the Commission found special circumstances in "Congress' special concerns about significant hazards considerations for spent fuel pool license amendments and the Court of Appeals' questioning of the Staff's no significant hazards consideration finding." *Diablo Canyon*, CLI-86-12, 24 NRC at 5, n.2. No such special circumstances exist in this case. Orange County's petition for review of the NSHC in the Court of Appeals does not affect that consideration. There are no other special circumstances that should cause the Commission to exercise its discretion to review the Staff's NSHC determination in this case. The Staff has complied with the letter and spirit of both the substantive and procedural requirements of the Commission's regulations.

CONCLUSION

For the foregoing reasons, the Staff respectfully submits that the Commission should not exercise its discretion to review the Staff's NSHC determination in this case. There are no special circumstances warranting the exercise of discretion in this matter.

Respectfully submitted,

Susan L. Uttal */RA/*
Counsel for NRC staff

Dated in Rockville, Maryland
this 28th day of February, 2001.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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

AFFIDAVIT OF RICHARD J. LAUFER
IN SUPPORT OF NRC STAFF RESPONSE TO COMMISSION
MEMORANDUM AND ORDER (CLI-01-07)

I, Richard J. Laufer, having first been duly sworn, do hereby state as follows:

1. My name is Richard J. Laufer. I am employed as a Project Manager in Project Directorate II - Section 2, Division of Licensing Project Management in the Office of Nuclear Reactor Regulation (NRR). I serve as the NRR focal point for my assigned facility, currently the Shearon Harris Nuclear Power Plant (HNP). I am the principal point of contact for NRR with the Region and the licensee for those activities related to HNP. I have been an NRR Project Manager since July 1993, and have been assigned to HNP since February 1999. A statement of my professional qualifications is attached. (Attachment 1).

2. I prepared the final no significant hazards consideration (NSHC) determination associated with the issuance of Amendment No. 103 to Facility Operating License NPF-63 for HNP dated December 21, 2000 (AMD 103). AMD 103 was issued in response to Carolina Power & Light Company's (CP&L's) license amendment application dated December 23, 1998, as supplemented. In its application, CP&L

proposed placing spent fuel pools (SFPs) C and D in service by completing the component cooling water (CCW) and SFP cooling and cleanup system piping (Alternative Plan) and placing high density racks in the pools.

3. The purpose of this affidavit is to provide information to support the NRC Staff's (Staff) brief in response to the Commission's Memorandum and Order (CLI-01-07) dated February 14, 2001, related to the Staff's final no significant hazards consideration (NSHC) determination associated with AMD 103.

4. In preparing the final NSHC determination associated with AMD 103, I referred to several documents including the "Final Procedures and Standards on No Significant Hazards Considerations," (51 FR 7753-55, 1986) (Final Procedures and Standards); the HNP Final Safety Analysis Report (FSAR); the licensee's proposed NSHC determination submitted with its December 23, 1998, license amendment application; the staff's Safety Evaluation (SE) prepared to support AMD 103; several precedent amendments for spent fuel pool reracks; and the comments that were received in response to the Staff's proposed NSHC determination published on January 13, 1999 (64 FR 2237).

5. The Final Procedures and Standards provide four criteria associated with requests to expand the storage capacity of spent fuel pools. If a request meets these four criteria then the request is considered not likely to involve significant hazards considerations. The four criteria were addressed by the licensee on page 8 of Enclosure 2 to its December 23, 1998 license amendment application. These four criteria, although not explicitly discussed in the staff's final NSHC determination, were

also considered by the Staff in the Harris case. As described in the following paragraphs, the Staff concluded that the four criteria were met.

6. Criterion 1: “The storage expansion method consists of either replacing existing racks with a design which allows closer spacing between stored spent fuel assemblies [high density racks] or placing additional racks of the original design on the pool floor if space permits.”

Regarding this criterion, the Staff evaluated the specific proposals in the Harris application. Placing high density racks in spent fuel pools (SFPs) C and D is comparable to replacing existing racks with high density racks. As described in the SE Sections 2.0 and 3.2, the design of SFPs C and D was the same as for SFPs A and B, but due to the cancellation of the additional HNP units, racks were not installed in these pools and the pools were not put in service. Therefore, adding high density racks to the previously unracked SFPs C and D is comparable to replacing racks of the original design (had they been installed before the cancellation of the other HNP units) with high density racks. Therefore, this criterion was met.

7. Criterion 2: “The storage expansion method does not involve rod consolidation or double tiering.”

The licensee’s December 23, 1998, license amendment application and its supplements does not request the use of rod consolidation or double tiering for storing spent fuel, nor does the SE evaluate such storage techniques. Therefore, this criterion was met.

8. Criterion 3: "The Keff of the pool is maintained less than or equal to 0.95."

Section 3.1 of the SE states that "The NRC acceptance criterion for subcriticality is that the effective multiplication factor (k-eff) in the spent fuel storage racks when fully flooded by unborated water shall be no greater than 0.95, including uncertainties at a 95 percent probability, 95 percent confidence level (95/95) under all conditions." Section 3.1 concludes that "Based on the review described above, the staff finds that the criticality aspects of the proposed storage capacity expansion for HNP spent fuel pools C and D are acceptable and meet the requirements of GDC [General Design Criteria] 62 for the prevention of criticality in fuel storage and handling." Therefore, this criterion was met.

9. Criterion 4: "No new technology or unproven technology is utilized in either the construction process or the analytical techniques necessary to justify the expansion."

The HNP amendment request is comparable to a spent fuel pool rerack request; the staff has reviewed numerous rerack requests for other nuclear plants. The construction process and analytical techniques used in the HNP case were not new or unproven (as described in the paragraphs 9 - 11 below); therefore this criterion was met. In reaching this conclusion, the Staff considered the construction process and analytical techniques associated both with placing SFPs C and D in service and with the design and construction of the spent fuel racks.

10. The Staff determined that no new or unproven technology was being used in the construction process and analytical techniques associated with placing SFPs C and D in service. As described in Section 3.2 of the SE, the design of SFPs C and D was the same as for SFPs A and B which are currently in service. No new or unproven

technology is being used to complete the piping systems for SFPs C and D. The differences from the original design (e.g., using Unit 1 Component Cooling Water (CCW) system) do not involve new or unproven technology. The Staff evaluated the design differences in Section 3.2 of the SE and found them acceptable. As for the analytical techniques used, the Staff's review of the licensee's heat load calculations associated with storing spent fuel in SFPs C and D is described in Sections 3.2.2.2 and Section 3.2.2.3 of the SE. In addition to reviewing the licensee's calculations, the Staff also performed independent evaluations to verify the licensee's results. As stated in, Section 3.2.2.2 of the SE, "The staff performed an independent heat-up evaluation to ensure the licensee's results were conservative." Also, as stated in Section 3.2.2.3 of the SE, "The staff has performed an audit calculation of these results, and found that the analyses were conservatively based on a lower density and mass flow of the CCW volumetric flow rate of 4874 gpm." The licensee's calculations and the Staff's independent calculations did not use new or unproven technology.

11. As described in Section 3.1 of the SE, the reactivity aspects of the spent fuel racks were reviewed using the CASMO-3 two-dimensional transport theory code and the MCNP-4A Monte Carlo code. As stated in Section 3.1 of the SE, "These codes are widely used for the analysis of fuel rack reactivity and have been benchmarked against results from numerous critical experiments." Additionally, Section 3.1 of the SE states, "The staff concludes that the analysis methods used are acceptable and capable of predicting the reactivity of the HNP storage racks with a high degree of confidence."

12. The Staff evaluated the structural and material aspects of the spent fuel racks in Sections 3.4 and 3.5 of the SE. In Section 3.4, with respect to the design of the

spent fuel rack modules, the Staff concludes that “The analysis and design are in compliance with current licensing basis set forth in the FSAR and applicable provisions of the SRP [Standard Review Plan], and are, therefore, acceptable.” In Section 3.5, with respect to the materials used in the spent fuel storage racks, the Staff concluded that “These materials used in the Holtec racks have a history of in-pool usage. They are compatible with the spent fuel assemblies and the SFP environment. Therefore, they are acceptable for use in this application....[T]he materials used in the new spent fuel racks are acceptable....No new or unproven technology was used in the design or construction of the spent fuel storage racks, therefore this criterion was met.

13. In addition to addressing the 1986 NSHC criteria described above, the Commission, in CLI-01-07, requested that the Staff address Orange County’s severe accident question, and any other aspect of the NSHC determination that would benefit from elaboration; in particular a summary of any quantitative data that underlie the staff’s NSHC determination on accident probability, accident consequences, and margins of safety. The following paragraphs describe the process used in addressing each of the three standards of 10 CFR 50.92 for the final NSHC determination; and addresses the information requested in CLI-01-07 where applicable.

FIRST STANDARD

14. In evaluating the first standard of 10 CFR 50.92, “involve a significant increase in the probability or consequences of an accident previously evaluated,” the accidents the licensee considered in its amendment application were compared with the accidents associated with fuel handling described in the HNP FSAR. The fuel handling accidents analyzed in the HNP FSAR Chapter 15, “Accident Analyses,” are: (1) a fuel

handling accident (FHA) (i.e., dropped fuel assembly) inside containment; (2) a FHA in the fuel handling building (FHB); (3) a spent fuel cask drop into the new or spent fuel pool; and (4) a spent fuel cask drop onto a flat surface. (FSAR Section 15.7.4 and 15.7.5) A FHA inside containment is not applicable to the Harris case since AMD 103 did not affect the handling of fuel inside containment. A FHA accident in the FHB was considered; in addition to a dropped fuel assembly, the FSAR also evaluated fuel handling drop accidents involving fuel handling tools. The analysis found that the dropped fuel assembly was the worst case and bounded the other scenarios (FSAR page 15.7.4-5) The HNP cask handling crane is physically prohibited by mechanical stops from traveling over the new and spent fuel pools or any unprotected safety related equipment. Therefore a cask or heavy load drop accident into a SFP is not credible at HNP (FSAR page 15.7.5-1). A cask drop outside of the SFPs would not be affected by the changes made by AMD 103 and was therefore not re-evaluated. Based on a review of the licensee's amendment application, the HNP FSAR, and the Staff's SE, it was determined that consideration of the four previously evaluated accidents for the first standard (a spent fuel assembly drop in a SFP; a loss of SFP cooling; a seismic event; and a misloaded fuel assembly) were appropriate.

15. The next step was to determine if placing SFPs C and D in service would result in a significant increase in the probability of the previously evaluated accidents. Clearly the probability of a seismic event is independent of any of the changes made in AMD 103. The probability of a loss of SFP cooling will also not significantly increase as a result of AMD 103. The cooling system for SFPs C and D is of the same design as that already in service for SFPs A and B. As stated in the SE Section 3.2.2.1, "In

general, most of the FPCCS [fuel pool cooling and cleanup system] supporting pools C and D was built to the design reviewed by the staff in NUREG-1038 [Safety Evaluation Report related to the operation of Shearon Harris Nuclear Power Plant, Units 1 and 2].” The differences between the system design of NUREG-1038 and that proposed for AMD 103 were reviewed by the Staff in the SE Section 3.2.2.1 and found acceptable. These system design differences will not significantly increase the probability of a loss of SFP cooling.

16. For the fuel handling accidents (dropped or misloaded fuel assemblies), the probability is primarily influenced by the procedures and equipment used for handling the fuel; the number of fuel moves is not limited. Since the procedures and equipment used for moving fuel in SFPs C and D will be essentially the same as those currently in use for SFPs A and B, the probability will not significantly increase. Several commenters stated that since HNP was more than doubling its fuel storage capacity that this increased number of assemblies would result in significantly more fuel moves and, therefore, a significant increase in the probability of a fuel handling accident. However, since the probability of a fuel handling accident is controlled by using qualified operators, equipment and procedures and not by minimizing the number of evolutions, increasing the number of fuel handling evolutions will not result in a significant increase in the probability of a fuel handling accident.

17. The first standard also addresses whether the action involves a significant increase in the consequences of accidents previously evaluated. As discussed in the final NSHC determination, the staff evaluated the four previously evaluated accidents in

various sections of the SE and concluded for all cases that the consequences of previously evaluated accidents would not significantly increase.

18. A fuel handling accident is discussed in the SE Section 3.3 which concludes, "The staff accepts the licensee's finding that, based on the load drop analyses, the integrity of the fuel and the SFP would be maintained if an FA [fuel assembly] or a spent fuel storage rack is dropped." Structural damage from a FHA is primarily dependent on the mass of the falling object and the drop height. Since these parameters are not changed by AMD 103, the consequences of a FHA will not significantly increase. The radiological dose at the exclusion area boundary will not be increased from those previously considered, since the pertinent fuel parameters remain unchanged. The radiological consequences of the FHA are discussed in the SE Section 3.6.3, which states, "The staff agrees that the bounding scenario for the postulated fuel handling accident in the FHB does not change due to the addition of storage racks in SFPs C and D. Therefore, the inputs and assumptions for the dose consequences analysis do not change, and the current fuel handling accident dose assessments in the HNP FSAR remain bounding." Therefore, the radiological consequences of a FHA will not significantly increase as a result of AMD 103.

19. As described in the final NSHC determination, the consequences of a fuel misloading/mislocation event was discussed in the SE Section 3.1. In its evaluation, the Staff found that it is possible to postulate events which could lead to an increase in reactivity, however, for such events, credit may be taken for the presence of soluble boron in the pool water. The negative reactivity credited to the boron more than offsets the reactivity addition caused by credible accidents. While most of the determinations for this

standard are qualitative, there was quantitative data developed for fuel misloading events in support of the “NRC Staff Brief and Summary of Relevant Facts, Data and Arguments Upon Which the Staff Proposes to Rely at Oral Argument on Technical Contention 2 and 3,” dated January 4, 2000. The affidavit of Anthony Ulises filed with the staff’s brief describes a calculation that Mr. Ulises performed showing that if an entire spent fuel storage rack were misloaded, the spent fuel pools would remain subcritical. Therefore, the consequences of a fuel misloading/mislocation will not significantly increase.

20. The Staff evaluated a loss of spent fuel pool cooling in SE Section 3.2.2.2, which states: “The licensee also provided the results of heat up calculations to determine the time-to-boil should a loss of all forced cooling occur ...The staff performed an independent heat-up evaluation to ensure the licensee’s results were conservative ...Given the decay load in SFPs C and D will be limited to 1Mbtu/hr, the staff agrees that sufficient time is available for plant operators to take mitigating actions prior to pool boiling.” Since the operators will still have sufficient time to take mitigating action prior to pool boiling, the AMD 103 changes will not increase the consequences of a loss of spent fuel pool cooling.

21. The Staff evaluated the consequences of a design basis seismic event as discussed in the SE Section 3.4.4, which states, “(b)ased on the review and evaluation of CP&L’s submittals, the Staff concludes that CP&L’s structural analysis and design of the spent fuel rack modules is acceptable and that the SFP structures are adequate to withstand the effects of the applicable loads, including that of the SSE [safe shutdown earthquake]. The analysis and design are in compliance with current licensing basis set

forth in the FSAR and applicable provisions of the SRP [Standard Review Plan] and are, therefore, acceptable.” Since the SFP structures will withstand the effects of the SSE, the spent fuel will continue to be protected. Therefore, the consequences of a design basis seismic event will not significantly increase as a result of AMD 103.

SECOND STANDARD

22. The second standard of 10 CFR 50.92 involves determining whether the action will “create the possibility of a new or different kind of accident from any previously evaluated.” The licensee conservatively addressed a spent fuel rack drop in SFPs C and D during rack installation as a possible new accident. However, since the procedures and equipment for installing racks in SFPs C and D are similar to those the licensee used in installing additional racks in SFP B, the licensee concluded that it was not a new or different kind of accident. The Staff reviewed the licensee’s handling of heavy loads in Section 3.3 of the SE. The Staff concluded that “The reliability of the crane coupled with the design, testing and inspection of the crane, the lifting rig and other lifting devices will enable the licensee to handle safely the racks and other heavy loads during the rack installation process.” Since the licensee will be using the same equipment and procedures for installing racks in SFPs C and D as was used in SFPs A and B, AMD 103 does not create the possibility of a new or different kind of accident from any accident previously evaluated.

23. This finding is consistent with 51 FR 7754, which states that “The staff, as well as SAI, have not identified any new categories or types of accidents as a result of reracking to allow closer spacing for the fuel assemblies.” It is also consistent with other reracking amendments.

24. Severe accidents are not addressed in a final NSHC determination. Even if they were, the AMD 103 changes will not create the possibility that Orange County's postulated seven step severe accident will occur. Theoretically, although the staff considers the sequence highly unlikely as demonstrated in the "Affidavit of Gareth W. Parry, Stephen F. LaVie, Robert L. Palla, and Christopher Gratton In Support of NRC Staff Brief and Summary of Relevant Facts, Data and Arguments Upon Which The Staff Proposes to Rely at Oral Argument on Environmental Contention EC-6 dated November 20, 2000, the postulated scenario could happen with the existing configuration in SFPs A and B, and therefore would not be considered in the second standard.

THIRD STANDARD

25. The third standard of 10 CFR 50.92 involves determining whether the action will "involve a significant reduction in the margin of safety." With regard to this standard, "the intent is to compare the safety margin before the amendment to that which would exist after the amendment to determine whether *that* amendment would significantly reduce the margin." *See* 51 FR at 7752.

26. For this standard, the margin of safety was considered in three areas (1) material, mechanical and structural considerations; (2) nuclear criticality considerations; and (3) thermal-hydraulic and pool cooling considerations. As described in the final NSHC determination and supported by various SE sections, the Staff determined that no margins of safety would be significantly reduced by AMD 103. This finding is consistent with the findings in the Statement of Considerations for the regulations at 51

FR 7754, which states that “Neither the staff nor SAI have identified significant reductions in safety margins due to increasing the storage capacity of spent fuel pools.”

27. The material, mechanical and structural considerations for this standard were discussed in the SE Section 3.4 and 3.5. Section 3.4 .4 states, “The analysis and design are in compliance with current licensing basis set forth in the FSAR (ref. 13) and applicable provisions of the SRP (ref. 14), and are, therefore, acceptable.” Section 3.5.3 states that “the staff finds that the materials utilized in the fabrication of the spent fuel racks manufactured by Holtec are compatible with the SFP environment at HNP. The type of degradation exhibited by the racks does not affect their neutron-absorbing capability. The Staff concluded, therefore, that the materials used in the new spent fuel racks are acceptable.” Since the analysis and design are in compliance with the current licensing basis, AMD 103 does not involve a significant reduction in the margin of safety with respect to the material, mechanical and structural considerations.

28. The criticality aspects for this standard were evaluated in SE Section 3.1, which states : “The NRC acceptance criterion for subcriticality is that the effective multiplication factor (k -eff) in the spent fuel pool storage racks when fully flooded by unborated water shall be no greater than 0.95, including uncertainties at a 95 percent probability, 95 percent confidence level (95/95) under all conditions.” On the basis of their review, the staff determined that the analysis methods used met this criterion. Therefore, the criticality aspects for AMD 103 are within the current margins of safety. Thus, AMD 103 does not involve a significant reduction in the margin of safety with respect to the criticality aspects.

29. The thermal-hydraulic and pool cooling aspects for this standard were evaluated in the SE Section 3.2 which states, "The staff reviewed the documentation and agrees with the licensee that there is sufficient thermal margin in the CCW and ESW systems to maintain the bulk fuel pool coolant temperature in all SFPs within their design limits assuming an additional decay heat load of 1 Mbtu/hr in SFPs C and D, and assuming a single active failure." Since the bulk fuel pool coolant temperature will remain below the design limits, AMD 103 does not involve a significant reduction in the margin of safety with respect to the thermal-hydraulic and pool cooling aspects.

PUBLIC COMMENTS

30. The NRC Staff published its proposed NSHC determination related to CP&L's December 23, 1998, amendment application for public comment on January 13, 1999 (64 FR 2237). The Notice stated that: "Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination." Several comments were received in response to the staff's notice. These comments were considered by the staff as described in the SE Section 5.0.

31. Since the final NSHC determination was included as part of the SE (Section 4.0), the relevant public comments that were already addressed as part of the hearing or still being addressed in the hearing process were not addressed again in the SE Section 5.0, "Public Comments." The SE Section 1.2, provided a background on the hearing and referenced all applicable filings.

32. Because it would not be considered in a final NSHC determination, the postulated severe accident was not addressed in the final NSHC determination associated with AMD 103. Although, the Staff notes that, Orange County's comments

related to its postulated severe accident were also included as a late-filed Environmental Contention filed on January 31, 2000 (SE ref. 35). The NRC staff provided its response to this contention on March 3, 2000 (SE ref. 38). The ASLB admitted this contention, in part, on August 7, 2000 (SE ref. 44). The NRC staff filed written testimony related to this contention on November 20, 2000 (SE ref. 47). Since the NRC staff response to Orange County's postulated severe accident were incorporated by reference into the SE Section 1.2, and since severe accidents are not considered in NSHC determinations, the postulated severe accident was not addressed in the final NSHC determination associated with AMD 103.

33. The foregoing statements made by me are true and correct to the best of my knowledge, information and belief.

/RA/

RICHARD J. LAUFER

Sworn and Subscribed before me
this 28th day of February, 2001.

/RA/

Elva Bowden Berry

Notary Public

My commission expires
December 1, 2003

Richard J. Laufer

Experience:

2/99 - Present: NRC Project Manger - Shearon Harris Nuclear Power Plant

Serve as the Headquarters Focal Point for Information and Communication on all issues concerning the Shearon Harris Nuclear Power Plant. Maintain frequent communication with the resident inspectors, the regional staff, and the licensee. Participate in all significant licensee meetings in the region and on-site. Serve as Back-up Project Manager (PM) for another plant in the Project Directorate (currently H.B. Robinson).

Prepare and coordinate the numerous documents generated to support the licensing activities of the assigned plant. These documents include license amendments and exemptions and their associated environmental assessments and Federal Register Notice, Task Interface Agreement Responses, controlled correspondence, and numerous letters to the licensee associated with closing out Generic Letters, relief requests, and requests for additional information.

Coordinate, participate, and manage meetings and briefings by ensuring that the appropriate NRC contacts are informed, that meeting notices are prepared, and by preparing an accurate and concise meeting summary in a timely manner.

2/98 - 2/99: NRC Project Manager - Duane Arnold Energy Center

7/93 - 2/98: NRC Project Manager - Kewaunee Nuclear Power Plant

2/93 - 7/93: NRC Project Engineer - Division of Reactor Projects

5/89 - 2/93: NRC Operator Licensing Examiner - Operator Licensing Branch

- Certified NRC Operator Licensing Examiner on Westinghouse pressurized water reactors and non-power reactors

3/86 - 5/89: Engineering Division Officer on Navy nuclear submarine (SSBN 658)
(Qualified as Engineering Officer of the Watch, Engineering Duty Officer)

Training:

1/90 Completed NRC's Westinghouse Technology Full Series Course

5/84- 3/86: Navy nuclear power training

Education:

5/84: B.S. Degree in Systems Engineering; U. S. Naval Academy, Annapolis, MD

Hearing Experience:

Provided an affidavit in support of “NRC Staff Brief and Summary of Relevant Facts, Data and Arguments Upon Which the Staff Proposes to Rely at Oral Argument on Technical Contention 2 and 3,” dated January 4, 2000.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF BRIEF IN RESPONSE TO COMMISSION ORDER OF FEBRUARY 14, 2001" in the above-captioned proceeding have been served on the following through deposit in the NRC's internal mail system, or by deposit in the NRC's internal mail system, with copies by electronic mail, as indicated by an asterisk, or by deposit in U.S. Postal Service as indicated by double asterisk, with copies by electronic mail as indicated this 28TH day of January, 2001:

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