UNITED STATES NUCLEAR REGULATORY COMMISSION

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-400

NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE AND PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION AND OPPORTUNITY FOR HEARING

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-63 issued to Carolina Power & Light Company (the licensee) for operation of Shearon Harris Nuclear Power Plant, Unit 1, located in Wake and Chatham Counties, North Carolina.

The amendment request dated February 22, 1989 was previously noticed (54 FR 15823, April 19, 1989). The licensee's request of February 22, 1989, proposed to have separate residual heat removal (RHR) flow rate Technical Specifications (TS) when the refueling cavity was full of water and when the water level was at or below the reactor vessel flange. The separate RHR flow regimes were to allow a reduced flow rate when the water level was lowered to the reactor vessel flange level or below to avoid possible cavitation and subsequent damage to the RHR pump. The licensee's amendment request established no minimum flow rate when the water level was at or below the reactor vessel flange.

During the course of the review, the staff determined that the reduction of flow rate for water level at the vessel flange or below needed to be bounded since the RHR flow has a mitigating mixing function in the boron

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dilution accident. Potential boron dilution accidents are precluded by administratively controlling valves in lines to unborated water sources. As a further precaution, should the controls on the unborated water sources fail or be ignored, sufficient RHR flow is necessary for thorough mixing so the boron dilution event proceeds as slowly as possible. Slow progression of the boron dilution event provides maximum time for operator discovery and correction. This matter was discussed with the licensee and after further evaluation on June 7, 1989, the licensee supplemented their original request by proposing a reduced flow rate limit of 900 gpm or greater when the water level was at or below the reactor vessel flange. It was determined that a renotice and No Significant Hazards Consideration (NSHC) would be required. The licensee submitted the NSHC and supporting analysis by letter dated August 22, 1989. The reduced flow rate limit provides both a reduction of RHR pump cavitation potential and additional assurance that proper mitigation of the boron dilution event exists.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the request for amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed 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.

As required by 10 CFR 50.91(a), the licensee has provided the following no significant hazards consideration determination:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated. The existing requirement of Specification 3/4.9.8.2 that at least one RHR loop be in operation ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor vessel below 140°F as required in Mode 6, and (2) sufficient coolant circulation is maintained through the core to minimize the effect of a boron dilution incident and prevent boron stratification. The Mode 6 minimum flow limit of 2500 gpm was established to alleviate the potential for boron stratification under refueling conditions. However, achieving 2500 gpm flow rate at the reduced water levels of mid-loop operation could cause cavitation and eventual damage of the RHR pumps. Boron stratification is only a concern with the large volumes of water present when the refueling cavity is filled. Sufficient mixing exists, even at low RHR flow rates, to preclude boron stratification when the water level is below the reactor vessel flange. For the boron dilution event, administrative controls to isolate potential sources of non-borated water from the reactor, established in Technical Specification 3/4.9.1, prevent a boron dilution event while in Mode 6. However, even if a boron dilution event is assumed to occur, an evaluation has been completed which demonstrates that an RHR flow rate of 900 gpm provides sufficient mixing of the RCS volume used in the Mode 6 boron dilution analysis and that the existing FSAR analysis remains valid.

   Since boron stratification is not a concern at reduced RCS water inventories and since the minimum RHR flow of 900 gpm is sufficient to ensure adequate mixing for a postulated boron dilution event, the proposed revision to reduce the minimum flow limit to 900 gpm when the RCS water level is below the reactor vessel flange does not significantly increase the probability or consequences of an accident previously evaluated.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed amendment splits the existing surveillance requirement into two separate surveillances. The first, Surveillance Requirement 4.9.8.2.1, is applicable when the RCS water level is at or above the reactor vessel flange and maintains the 2500 gpm minimum flow limit. The second, Surveillance Requirement 4.9.8.2.2, is applicable when the RCS water level is below the reactor vessel flange and requires that one RHR loop be verified in operation and circulating reactor coolant at a flow rate greater than or equal to 900 gpm at least once

per 12 hours. As stated above, the proposed amendment does not involve any physical changes, additions, modifications, or deletions to existing equipment or systems. Therefore, the proposed amendment cannot create the possibility of a new or different kind of accident.

3. Reducing the minimum RHR flow limit from 2500 gpm to 900 gpm when the RCS water level is below the reactor vessel flange does not involve a significant reduction in the margin of safety. As stated above, the Mode 6 minimum flow limit of 2500 gpm was established to alleviate the potential for boron stratification under refueling conditions. Boron stratification is only a concern with the large volumes of water present when the refueling cavity is filled. Sufficient mixing exists, even at low RHR flow rates, to preclude boron stratification when the water level is below the reactor vessel flange. For the boron dilution event, administrative controls to isolate potential sources of non-borated water from the reactor, established in Technical Specification 3/4.9.1, prevent a boron dilution event while in Mode 6. However, even if a boron dilution event is assumed to occur, an evaluation has been completed which demonstrates that an RHR flow rate of 900 gpm provides sufficient mixing of the RCS volume used in the Mode 6 boron dilution analysis and that the existing FSAR analysis remains valid. Since the boron stratification is not a concern at reduced RCS water inventories and since the minimum RHR flow of 900 gpm is sufficient to ensure adequate mixing for a postulated boron dilution event, the proposed amendment does not result in a significant reduction in the margin of safety.

Therefore, based on the above considerations, the Commission has made a proposed determination that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination. The Commission will not normally make a final determination unless it receives a request for a hearing.

Written comments may be submitted by mail to the Regulatory Publications Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and should cite the publication date and page number of this FEDERAL REGISTER

notice. Written comments may also be delivered to Room P-223, Phillips Building, 7920 Norfolk Avenue, Bethesda, Maryland, from 7:30 a.m. to 4:15 p.m. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. The filing of requests for hearing and petitions for leave to intervene are discussed below.

By October 26, 1989, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written petition for leave to intervene. Request for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. 20555 and at the Local Public Document Room located at Cameron Village Regional Library, 1930 Clark Avenue, Raleigh, North Carolina 27605. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR §2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be

permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendments under consideration. The contention must be one which, if proven, would

entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the request for amendment involves no significant hazards consideration, the Commission may issue the amendment and make it effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If a final determination is that the amendment involves significant hazards consideration any hearing held would take place before the issuance of any amendment.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish a notice of issuance and provide for opportunity for a hearing after

issuance. The Commission expects that the need to take this action will occur very infrequently.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C., by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 325-6000 (in Missouri 1-(800) 342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to Elinor G. Adensam: (petitioner's name and telephone number), (date petition was mailed), (plant name), and (publication date and page number of this FEDERAL REGISTER notice). A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and to R. E. Jones, General Counsel, Carolina Power & Light Company, P. O. Box 1551, Raliegh, North Carolina 27602.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board designated to rule on the petition and/or request, that the petitioner has made a substantial showing of good cause for the granting of a late petition and/or request. That determination will be based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated August 22, 1989, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. 20555 and at the Local Public Document Room located at

Dated at Rockville, Maryland, this 21st day of September, 1989

FOR THE NUCLEAR REGULATORY COMMISSION

Orignal signed by

Ronnie Lo, Acting Director
Project Directorate II-1 Division of
Reactor Projects - I/II Office of
Nuclear Reactor Regulation

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