

50-413



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 3, 1995

Mr. David L. Rehn  
Vice President, Catawba Site  
Duke Power Company  
4800 Concord Road  
York, South Carolina 29745

SUBJECT: NOTICE OF CONSIDERATION OF AMENDMENTS - CATAWBA NUCLEAR STATION,  
UNIT 1 (TAC NO. M90991)

Dear Mr. Rehn:

The Commission has requested the Office of the Federal Register to publish the enclosed "Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for Hearing."

This notice relates to your application for amendment dated November 29, 1994, as supplemented January 12 and 27, 1995, requesting renewal for Catawba Unit 1 Cycle 9 operation of the steam generator tube inspection bobbin probe voltage-based interim plugging criteria that had been previously approved for Cycle 8. Approval of this amendment will preclude unnecessary plugging or repairing tubes by sleeving due to the occurrence of outer diameter initiated stress corrosion cracking (ODSCC) at the tube support plate elevations in the Catawba Unit 1 steam generators. The interim plugging criteria approved for Cycle 8 and contained in the draft Generic Letter 94-XX, "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking," can be summarized as follows:

Flaw indications with a bobbin coil voltage less than or equal to 1.0 volt can remain in service without further action. For flaw indications in excess of 1.0 volt but less than 2.7 volts, the tube can remain in service provided an RPC inspection of the indication does not detect ODSCC or any other degradation mode. Crack indications above 2.7 volts will be plugged or repaired by sleeving, and do not require RPC confirmation.

This amendment request reflects the "Requested Actions: for a licensee that chooses to implement a steam generator tube interim plugging criteria, as stated in the draft NRC Generic Letter, 94-XX "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking."

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Mr. David L. Rehn

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The changes being proposed to the Technical Specification (TS) do not alter the interim plugging criteria currently stated in the TS which was approved and utilized during Cycle 8. The primary change to the TS is to incorporate the guidance of draft Generic Letter 94-XX, "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking," which will allow removal of the cycle-specific limitation currently in the TS.

Sincerely,

ORIGINAL SIGNED BY:

Robert E. Martin, Senior Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-413

Enclosure: Notice

cc w/encl: See next page

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Mr. David L. Rehn

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The changes being proposed to the Technical Specification (TS) do not alter the interim plugging criteria currently stated in the TS which was approved and utilized during Cycle 8. The primary change to the TS is to incorporate the guidance of draft Generic Letter 94-XX, "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking," which will allow removal of the cycle-specific limitation currently in the TS.

Sincerely,



Robert E. Martin, Senior Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-413

Enclosure: Notice

cc w/encl: See next page

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UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANY, ET AL.DOCKET NO. 50-413NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-35 issued to Duke Power Company (the licensee) for operation of the Catawba Nuclear Station, Unit 1, located in York County, South Carolina.

The proposed amendment request would propose the renewal for Catawba Unit 1 Cycle 9 operation of the steam generator tube inspection bobbin probe voltage-based interim plugging criteria that had been previously approved for Cycle 8. Approval of this amendment will preclude unnecessary plugging or repairing tubes by sleeving due to the occurrence of outer diameter initiated stress corrosion cracking (ODSCC) at the tube support plate elevations in the Catawba Unit 1 steam generators. The interim plugging criteria approved for Cycle 8 and contained in the draft Generic Letter 94-XX, "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking," can be summarized as follows:

Flaw indications with a bobbin coil voltage less than or equal to 1.0 volt can remain in service without further action. For flaw indications in excess of 1.0 volt but less than 2.7 volts, the tube can remain in service provided an RPC inspection of the indication does not detect ODSCC or any other degradation mode. Crack indications above 2.7 volts will be plugged or repaired by sleeving, and do not require RPC confirmation.

This amendment request reflects the "Requested Actions: for a licensee that chooses to implement a steam generator tube interim plugging criteria, as

stated in the draft NRC Generic Letter, 94-XX "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking."

The changes being proposed to the Technical Specification (TS) do not alter the interim plugging criteria currently stated in the TS which was approved and utilized during Cycle 8. The primary change to the TS is to incorporate the guidance of draft Generic Letter 94-XX, "Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking," which will allow removal of the cycle-specific limitation currently in the TS.

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 amendment request 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 its analysis of the issue of no significant hazards consideration, which is presented below:

- 1) Operation of Catawba Unit 1 in accordance with the proposed license amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

A single tube rupture is not anticipated during operation of Catawba Unit 1. Based on the existing data base, the limiting RG [Regulatory

Guide] 1.121 criterion for tube burst capability of 3 times normal operating differential is satisfied with 3/4" diameter tubing with bobbin coil indications with signal amplitudes less than 4.54 volts, regardless of the indicated depth measurement. This structural limit is based on a lower 95% prediction bound of the data and using LTL material properties. A 1.0 volt plugging criteria compares favorably with the structural limit considering the previously calculated growth rates for ODSCC within the Catawba Unit 1 steam generators. Assuming a voltage increase of 0.4 volts, and adding a 14% NDE uncertainty of 0.14 volts (90% cumulative probability) to the interim plugging criteria [IPC] of 1.0 volt results in an EOC [end-of-cycle] voltage of approximately 1.6 volts. This end of cycle voltage compares favorably with the Structural Limit of 4.54 volts. The applicability of assumed growth rates for each cycle of operation will be confirmed prior to return to power of Catawba Unit 1. A similar structural margin is anticipated for subsequent cycles.

In addition, for an EOC voltage structural limit of 4.54 volts, applying the 40% growth allowance and the 14% NDE uncertainty results in a margin between the structural limit and the alternate repair limit (2.7 volts), which is well within the structural limit. This repair limit will be applied for IPC implementation to repair bobbin indications greater than 2.7 volts independent of RPC confirmation of the indication.

Concerning SLB [steamline break] leakage in support of implementation to the interim plugging criteria, it will be determined whether the distribution of cracking indications at the tube support plate intersections at the end of a cycle are projected to be such that primary to secondary leakage would result in site boundary doses within the pertinent 10 CFR 100 limits. The SLB leakage rate calculation methodology... will be used to calculate End of Cycle SLB leakage. Based on EOC 8 projections, it is calculated that leakage during a postulated SLB event at the EOC 8 will be limited to approximately 1.61 gpm which is shown to result in acceptable dose consequences. [An] SLB leakage of 17.5 gpm in the faulted loop results in dose consequences which are less than the pertinent 10 CFR 100 limits. Similar results are expected for subsequent cycles and confirmation of leak rates will be performed prior to placing the [s]team generators in service.

Therefore, renewal of the proposed 1.0 volt interim plugging criteria does not adversely affect steam generator tube integrity and results in acceptable dose consequences. The proposed amendment does not result in any increase in the probability or consequences of an accident previously evaluated within the Catawba Unit FSAR [Final Safety Analysis Report].

- 2) The proposed license amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Renewal of the proposed steam generator tube interim plugging criteria does not introduce any significant changes to the plant design basis.

Use of the criteria does not provide a mechanism which could result in an accident outside of the region of the tube support plate elevations - no ODSCC is occurring outside the thickness of the tube support plates. Neither a single or multiple tube rupture event would be expected in a steam generator in which the plugging criteria has been applied (during all plant conditions).

Upon application of the interim plugging criteria, no primary to secondary leakage during normal operation is anticipated during all plant conditions due to degradation at the tube support plate elevations in the Catawba Unit 1 steam generators. However, additional conservatism is built into the existing operating leakage limit with regard to protection against the maximum permissible single crack length which may be achieved during operation due, in large part, to the potential occurrence of through-wall cracks at locations other than the tube support plate intersections.

Application of the 1.0 volt interim steam generator tube plugging criteria at Catawba Unit 1 is not expected to result in tube burst during all plant conditions during operation. Tube burst margins are expected to meet RG 1.121 acceptance criteria. The limiting consequence of the application of the interim plugging criteria is a potential for SLB leakage. The methodology for calculating SLB leak rate uses a voltage-to-leakage correlation and this methodology has previously been reviewed and approved by the NRC. The SLB leakage value will be confirmed to be less than allowable levels prior to return to power of Catawba Unit 1. No unacceptable leakage is anticipated at normal operating or RCP locked rotor conditions.

Therefore, as the existing tube integrity criteria and accident analyses assumptions and results will continue to be met, the proposed license amendment does not create the possibility of a new or different kind of accident from any previously evaluated.

- 3) The proposed license amendment does not involve a significant reduction in [a] margin of safety.

The use of the voltage based bobbin probe interim tube support plate elevation plugging criteria at Catawba Unit 1 is demonstrated to maintain steam generator tube integrity commensurate with the criteria of Regulatory Guide 1.121. [Regulatory Guide] 1.121 describes a method acceptable to the NRC staff for meeting GDCs [General Design Criteria] 14, 15, 31, and 32, by reducing the probability or the consequences of steam generator tube rupture. This is accomplished by determining the limiting conditions of degradation of steam generator tubing, as established by inservice inspection, for which tubes with unacceptable cracking should be removed from service. Implementation of the bobbin probe voltage based interim tube plugging criteria of 1.0 volt is supplemented by enhanced eddy current inspection guidelines to provide consistency in voltage normalization, a 100% eddy current inspection at the tube support plate elevations, and rotating pancake coil inspection requirements for the larger indications left in service to characterize

the principle degradation as ODSCC. Even under the worst case conditions, the occurrence of ODSCC at the tube support plate elevations is not expected to lead to a steam generator tube rupture event during normal or faulted plant conditions.

Based on the analyses for Cycle 8, the expected leakage values and the leakage conditions required to be confirmed during accidents creating high differential pressures across the steam generator tubes (e.g, SLB), dose analysis confirm the maximum permissible leakage will result in offsite dose consequences within the guideline values. [An] MSLB accident with assumed leakage growth in the faulted generator results in the EAB and LPZ doses remaining within 10% of the 10 CFR 100 values of 25 Rem whole body and 300 Rem thyroid for the accident-initiated iodine spike, and 10 CFR 100 values for the pre-accident iodine spike.

The distribution of crack indications at the tube support plate elevations will be confirmed to result in acceptable primary to secondary leakage during all plant conditions and that radiological consequences are not adversely impacted.

Renewal of the tube support plate elevation plugging criteria for operation at Catawba Unit 1 will decrease the number of tubes which must be repaired by sleeving or taken out of service by plugging. The installation of steam generator tube plugs reduce the RCS flow margin. Thus, implementation of the alternate plugging criteria will maintain the margin of flow that would otherwise be reduced in the event of increased tube plugging.

Based on the above, it is concluded that the proposed license amendment request does not result in a significant reduction in margin with respect to plant safety as defined in the Final Safety Analysis Report or any Bases of the plant Technical Specifications.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine 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.

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 in the FEDERAL REGISTER 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.

Written comments may be submitted by mail to the Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and should cite the publication date and page number of this FEDERAL REGISTER notice. Written comments may also be delivered to Room T-6 D22, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By March 13, 1995 , 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 request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition 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, NW., Washington, DC, and at the local public document room located at the York County Library, 138 East Black Street, Rock Hill, South Carolina. 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 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 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 amendment 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 amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

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

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, DC 20555, Attention: Docketing and Services Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. Where petitions are filed during the last 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) 248-5100 (in Missouri 1-(800) 342-6700). The Western Union operator should be given Datagram Identification Number N1023 and the following message addressed to Herbert N. Berkow: 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, DC 20555, and to Mr. Albert Carr, Duke Power Company, 422 South Church Street, Charlotte, North Carolina, attorney for the licensee.

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 presiding Atomic Safety and Licensing Board that the petition and/or request should be granted 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 November 29, 1994, as supplemented January 12 and 27, 1995, which are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the York County Library, 138 East Black Street, Rock Hill, South Carolina.

Dated at Rockville, Maryland, this 3rd day of February 1995.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Robert E. Martin, Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation