

DUKE POWER COMPANY

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February 29, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

- References: 1) Letter from W. H. Owen (Duke Power Company) to
W. J. Dircks (NRC), dated September 19, 1983
- 2) Letter from H. R. Denton (NRC) to W. H. Owen
(Duke Power Company), dated October 17, 1983
- 3) Letter from H. B. Tucker (Duke Power Company)
to H. R. Denton (NRC), dated November 18, 1983

Dear Mr. Denton:

References 1 and 3 informed the NRC that Duke Power Company was evaluating the technical feasibility and potential benefits of eliminating postulated pipe breaks in the Pressurizer Surge Lines from the structural design basis of the Catawba Nuclear Station. As a result of efforts by Westinghouse, the NRC, and Duke Power, we have concluded that it is technically feasible to eliminate these postulated pipe breaks. In accordance with the statement in Reference 2 that applications related to the leak-before-break pipe failure concept will be permitted prior to the NRC completing all of the changes in regulatory requirements, this letter is submitted.

Duke Power hereby requests NRC approval for application of the "leak-before-break" concept to the Catawba Nuclear Station to eliminate postulated pipe breaks in the Pressurizer Surge Lines from the plant structural design basis. A specific plant applicability report is included as Enclosure A (5 copies) to this letter. Because of the proprietary nature of this report, Enclosure A has been provided only to the addressee and Mr. James P. O'Reilly of the NRC. A non-proprietary version of the specific plant applicability report is included as Enclosure B (5 copies) and has been provided to others on the attached distribution list.

As Enclosure A contains information proprietary to Westinghouse Electric Corporation, it is supported by the attached letter (Attachment 1) and affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in

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paragraph (b)(4) of Section 2.790 of the Commission's regulations. Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.790 of the Commission's regulations. Correspondence with respect to the proprietary aspects of the Application for Withholding or the supporting Westinghouse affidavit should reference CAW-84-13, and should be addressed to R. A. Wiesemann, Manager, Regulatory and Legislative Affairs, Westinghouse Electric Corporation, P. O. Box 355, Pittsburgh, Pennsylvania 15230.

Implementation of the leak-before-break concept on the Pressurizer Surge Lines will have the following effects on the structural design for Catawba Nuclear Station:

- 1) Eliminate the need to postulate circumferential and longitudinal pipe breaks in the Pressurizer Surge Lines.
- 2) Eliminate the need for associated pipe whip restraints and jet deflectors for the Pressurizer Surge Lines and eliminate the requirement to design for the structural effects associated with Pressurizer Surge Line pipe breaks including jet impingement.
- 3) Eliminate the need to consider dynamic effects and loading conditions associated with previously postulated Pressurizer Surge Line pipe breaks. These effects include blowdown loads, jet impingement loads, and sub-compartment pressurization.

Employment of the leak-before-break concept would not eliminate pipe breaks in the Pressurizer Surge Lines from consideration as a design basis for environmental qualification activities. The applicable crack sizes and resultant flows from the leak-before-break analysis will be used when subcompartment pressurization data are revised.

The impact on important design aspects of implementing leak-before-break on Catawba Nuclear Station has been evaluated by Duke Power and is summarized in Attachment 2. A list of affected pipe whip restraints is provided in Attachment 3. Duke Power has also evaluated the potential cost savings and operational benefits that result from the elimination of postulated pipe breaks in the Pressurizer Surge Lines. A summary of the potential benefits which can be realized specifically from the elimination of these pipe breaks for Catawba Unit 2 is provided in Attachment 4. Note that these benefits total at least \$1.7 million and involve an estimated 216 man-rem dose reduction over the life of Unit 2. There is sufficient reason and justification, in our view, to demonstrate that a net gain in overall plant safety can be achieved by deleting these Pressurizer Surge Line breaks and associated pipe whip restraints and jet deflectors. Implementation of the leak-before-break concept will thus be cost effective as well as technically justifiable while resulting in improved overall plant safety.

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Enclosure C consists of the revised Catawba FSAR pages associated with the elimination of Pressurizer Surge Line breaks, and it will be included in a future revision to the FSAR. This current request is for implementation on Unit 2 only; Duke Power will submit additional information prior to implementation on Unit 1.

Construction completion of the Pressurizer Surge Line pipe whip restraints and jet deflectors at Catawba Nuclear Station Unit 2 is on hold pending an NRC ruling on this proposal. In order to realize the maximum advantage from the elimination of Pressurizer Surge Line ruptures, we request a decision by April 30, 1984.

If I can be of further assistance, or if a meeting with the Staff is deemed beneficial for a final resolution of this matter, please contact me.

Very truly yours,

H.B. Tucker / HBT

Hal B. Tucker

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Attachments

cc: Mr. James P. O'Reilly, Regional Administrator
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