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January 21, 1986

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

Attention: Mr. B. J. Youngblood, Project Director
PWR Project Directorate No. 4

Re: Catawba Nuclear Station, Unit 2
Docket No. 50-414

Dear Sir:

On July 30, 1985, Duke Power Company (Duke) requested that certain exemptions previously granted for Catawba Unit 1 also be granted for Catawba Unit 2. Five exemptions were identified along with references to previous SER discussions. It was also noted that each of the requested exemptions, except for the exemption to Appendix E, were granted for Catawba Unit 1 in accordance with the Commission decision on Shoreham, CLI-84-8 and 10 CFR 50.12a. On December 12, 1985, the NRC published (50 FR 50764) a Final Rule which modified the criteria for granting exemptions. The purpose of this letter is to address the revised criteria under which the NRC would grant the requested exemptions for Catawba Unit 2.

Attachments 1 through 5 discuss each of the requested exemptions and identify the special circumstances deemed to exist pursuant to Part 50.12(a)(2).

Based on the previous submittals, the Staff's SER discussion and the attached justifications, it is our conclusion that each of the requested exemptions is authorized by law, will not present an undue risk to the public health and safety and are consistent with the common defense and security.

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My July 30, 1985 letter also requested that exemptions to GDC-4 and 10 CFR 70.24 previously granted in the Catawba Unit 2 Construction Permit (CPPR-117) and the Special Nuclear Materials License (SNM-1949), respectively be carried over to the operating license for Catawba Unit 2. The request to extend the exemption to 10 CFR 70.24 was rescinded by letter dated December 17, 1985.

Very truly yours,

Hal B. Tucker

ROS:slb

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

NRC Resident Inspector
Catawba Nuclear Station

HAL B. TUCKER, being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this application; and that all statements and matters set forth therein are true and correct to the best of his knowledge.

Hal B. Tucker

Hal B. Tucker, Vice President

Subscribed and sworn to before me this 21st day of January, 1986.

Linda L. Kessler

Notary Public

My Commission Expires:

May 1, 1989

LINDA L. KESSLER
NOTARY PUBLIC
MECKLENBURG COUNTY, N.C.

Attachment 1
Completion of Ice Loading

Applicable Regulations:

10 CFR 50, Appendix A, GDC-16, -38 and -50

References:

(1) SSER-3, Section 6.2.1

(2) July 13, 1984 Letter from H. B. Tucker to H. R. Denton

Description:

It is expected that ice loading, ice weighing and reinstallation of ice condenser components will not be complete prior to fuel load. These items will be complete prior to Reactor Coolant System temperatures exceeding 200 degrees F (Mode 4) as required by the proposed Technical Specifications. As the Technical Specifications have historically recognized, this type of pressure suppression system is not required to be operable when there is insufficient stored energy in the Reactor Coolant System to challenge containment integrity. Furthermore, the time period in question relates to a period in which the unit will have no fission product inventory, and thus the radiological consequences of any containment failure due to design basis accidents would be non-existent.

Special Circumstances:

Based on the above discussion, special circumstances described by Part 50.12(a)(2)(ii) exist in that application of the regulations in the particular circumstances is not necessary to achieve the underlying purpose of the rule, in that the ice condenser will be declared operable in accordance with the Technical Specifications.

Attachment 2
Testing of Air Locks

Applicable Regulation:

10 CRF 50, Appendix J

References:

(1) SSER-3, Section 6.2.6

(2) SSER-4, Section 6.2.6

(3) Letter dated July 11, 1984 from A. C. Thies to H. R. Denton

(4) Letter dated July 13, 1984 from W. H. Owen to H. R. Denton

(5) Letter dated September 19, 1984 from H. B. Tucker to H. R. Denton

Description:

Paragraph III.D.2(b)(ii) of Appendix J states:

> "Airlocks opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods at not less than Pa".

Whenever the plant is in cold shutdown (Mode 5) or refueling (Mode 6), containment integrity is not required. However, if an air lock is opened during Modes 5 and 6, paragraph III.D.2(b)(ii) of Appendix J requires that an overall air lock leakage test at not less than Pa be conducted prior to plant heatup and startup (i.e., entering Mode 4). The existing air lock doors are so designed that a full pressure test of an entire air lock can only be performed after strongbacks (structural bracing) have been installed on the inner door. Strongbacks are needed since the pressure exerted on the inner door during the test is in a direction opposite to that of the accident pressure direction. Installing strongbacks, performing the test, and removing strongbacks requires at least 6 hours per air lock (there are 2 air locks) during which access through the air lock is prohibited.

If the periodic 6-month test of paragraph III.D.2(b)(i) of Appendix J and the test required by paragraph III.D.2(b)(iii) of Appendix J are current, no maintenance has been performed on the air lock, and the air lock is properly sealed, there should be no reason to expect the air lock to leak excessively just because it has been opened in Mode 5 or Mode 6.

Therefore, Duke proposes to substitute the seal leakage test of paragraph III.D.2(b)(iii) for the full pressure test of paragraph III.D.2(b)(ii) of Appendix J when no maintenance has been performed on an air lock. Whenever maintenance has been performed on an air lock, the requirements of paragraph III.D.2(b)(ii) of Appendix J would be met. The NRC found this to be an acceptable alternative for Catawba Unit 1 as discussed in References 1 and 2.

Special Circumstances:

Based on the above discussion, special circumstances described by Part 50.12(a)(2) ii and iii, exist in that application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule in that Duke has proposed an acceptable alternative test method that accomplishes the intent of the regulation. Compliance would result in undue hardship that is significantly in excess of those contemplated when the regulation was adopted and that is significantly in excess of those incurred by others similarly situated in that plant startup is delayed and unnecessary personnel radiation exposures are incurred while performing an overall airlock leakage test. Also, the same exemption has been previously approved for similar units (Catawba 1 and McGuire 1 and 2).

Attachment 3
Venting and Draining of Lines for Type A Tests

Applicable Regulation:

10 CFR 50, Appendix J

References:

(1) SSER-3, Section 6.2.6

(2) Letter dated April 5, 1984 from H. B. Tucker to H. R. Denton

(3) Letter dated July 11, 1984 from A. C. Thies to H. R. Denton

(4) Letter dated July 17, 1984 from W. H. Owen to H. R. Denton

Description:

During a Type A test (integrated leak rate test), certain lines inside containment are maintained in a vented and drained condition, as required by Appendix J to 10 CFR Part 50, so that the containment isolation valves in these lines will be exposed to the containment atmosphere and tested as to their leak tight integrity. The lines chosen for venting and draining are those which may potentially be in that condition during an accident (e.g., through rupture) and whose isolation valves would become potential containment air leak paths. Table 6.2.4-1 of the Catawba FSAR identifies those penetrations that would be vented and drained during a Type A test. For a certain group of these penetrations, it is Duke's position that venting and draining are not appropriate, and would give excessive Type A test results.

The containment penetrations identified in Table 1 are those which have a "reverse" check valve bypassing the inside containment isolation valves, in order to provide post-accident overpressure protection, and which have "process" containment isolation valves receiving a sealing fluid from the Containment Valve Injection Water System. The "process" containment isolation valves are not required to be vented to containment atmosphere during the Type A test because they receive a fluid seal and are not potential containment air leak paths. The "reverse"check valves cannot be excluded from the venting and draining requirement on this basis since they are not assured of receiving the fluid seal. In order to properly drain and vent the "reverse" check valves, the "process" containment isolation valves must also be drained and vented. In addition, the fluid seal system to the "process" containment isolation valves must be isolated to assure that the "reverse" check valves remain exposed to containment atmosphere. As a result, air leakage through the "process" containment isolation valves would be improperly accounted for.

In order to exclude leakage through "process" containment isolation valves which receive a sealing fluid, Duke proposes not to drain or vent the penetrations listed in Table 1 during Type A testing. Recognizing that the "reverse" check valves are a potential leak path, Duke proposes to add the leakage rate for the "reverse" check valves as determined by their Type C test results to the leakage determined by the Type A test. Because Type C testing is performed with air at virtually the same pressure as a full pressure Type A test, this method will include the leakage which would be expected if it were possible to vent and drain the "reverse" check valves while maintaining the fluid seal on the "process" containment isolation valves.

The NRC found Duke's proposed test method to be an acceptable alternative to the requirements of Appendix J as discussed in Reference 1.

Special Circumstances:

Based on the above discussion, special circumstances described by Part 50.12(a)(2) ii and iii exist in that application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule in that Duke has proposed an acceptable alternative test method that accomplishes the intent of the regulation. Compliance would result in undue hardship that is significantly in excess of those contemplated when the regulation was adopted and that is significantly in excess of those incurred by others similarly situated in that Duke has made a good faith effort to improve the design of Catawba based on problems identified at the McGuire Nuclear Station. Duke would have to expend significant resources to bring Catawba into full compliance with Appendix J and these modifications would not enhance the level of safety presently attained by Catawba. Also, this exemption was previously granted on Catawba Unit 1.

Table 1

Exempted Penetrations

Item # (Note 1)	Press. Valves	Penetration Function	"Reverse Check Valve"
07	NV89A, 91B	RCP Seal Water Return	NV90
45	WL805A, 807B	NCDT Pump Disch.	WL806
46	WL867A, 869B	VUCDT	WL868
47	WL825A, 827B	Con't Floor Sump Pumps	WL321
48	WLA24, WLA21	S/G Drain Pump	WLA22
63 (Note 2)	KC424B, 425A	Component Cooling Return	KC279
68	RN484A, 487B	Lower Con't Return Hdr.	RN485
70	RN429A, 432B	Upper Con't Return Hdr.	RN430

1. Item number provides cross-reference with Catawba FSAR Table 6.2.4-1

2. This penetration is an addition to these noted in Table 6.1 of SSER-3.

Attachment 4
Testing of Penetration Bellows

Applicable Regulation:

10 CFR 50, Appendix J

References:

(1) SER, Section 6.2.6

(2) SSER-3, Section 6.2.6

(3) Letter dated July 11, 1984 from W. H. Owen to H. R. Denton

(4) Letter dated July 13, 1984 from W. H. Owen to H. R. Denton

Description:

As discussed in References 1 and 2, Duke has used dual ply bellows on all containment penetration assemblies for piping systems containing "hot" fluids that cannot be pressurized to leak accident pressure for local leak rate testing. The Catawba mechanical penetrations are a second generation Duke Power Company design. Stiffening of the inner ply to better resist increased test pressures would cause engineering compromises contrary to the overall design requirements. Modified designs to increase this test pressure are not practical, are not necessary, and would not enhance plant safety.

As an alternative to testing the penetration bellows at full pressure, Duke proposes to vent the space between the bellows to the annulus during the containment integrated (Type A) leakage tests. Following completion of the Type A tests, each dual ply bellows assembly would be subjected to a low-pressure test of the space between the bellows to demonstrate the integrity of both bellows. At the completion of this test, all test connections would be closed, except for the main steam and feedwater penetration outer bellows test connections, which would remain open and vented to the annulus. This alternative test method was approved by the NRC in Reference 1.

Special Circumstances:

Based on the above discussion, special circumstances described by Part 50.12(a)(2) ii and iii exist in that application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule in that Duke has proposed an acceptable alternative test method that accomplishes the intent of the regulation. Compliance would result in undue hardship that is significantly in excess of those contemplated when the regulation was adopted and that is significantly in excess of

those incurred by others similarly situated in that Duke has made a good faith effort to improve the design of bellows for mechanical penetrations. Modifications to allow full compliance with Appendix J would cause engineering compromises contrary to overall design requirements, would require the expenditure of significant resources, and would not enhance plant safety. Also this exemption was previously granted on Catawba Unit 1.

Attachment 5
General Office Participation in Annual Drills

Applicable Regulation:

10 CFR 50, Appendix E

References:

(1) SSER-4, Section 13.3

(2) Letter dated October 3, 1984 from H. B. Tucker to H. R. Denton

(3) Letter dated January 1, 1984 from D. G. Eisenhut to H. B. Tucker

Description:

In accordance with the requirements of 10 CFR 50, Appendix E, Duke conducts annual emergency preparedness exercises at the Oconee, McGuire and Catawba Nuclear Stations. These exercises would include activation of the Crisis Management Center (CMC) at each station during each event.

In Reference 2, Duke requested a partial exemption from paragraph IV.F of Appendix E, insofar as it may require the active participation of all CMC personnel for the Catawba Nuclear Station annual exercise. As a result, CMC personnel would participate in these exercises to the same degree as each station staff, that is, one exercise per calendar year.

In Reference 3, the NRC granted a similar exemption request for the Oconee and McGuire Nuclear Stations. The requested exemption was found acceptable by the NRC as discussed in Reference 1.

Special Circumstances:

Based on the above discussion, special circumstances described by Part 50.12(a)(2) ii and iii exist in that application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule in that Duke has proposed an acceptable alternative that accomplishes the intent of the regulation. Compliance would result in undue hardship that is significantly in excess of those contemplated when the regulation was adopted and that is significantly in excess of those incurred by others similarly situated in that not granting this exemption for Catawba 2 would place Duke in a situation different from a typical one-station/site nuclear utility insofar as the annual training provided to corresponding personnel. This exemption was previously approve for Catawba-1, McGuire and Oconee.