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October 16, 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

Dear Mr. Denton:

On September 19 and 21, and October 2, 1984, Duke Power Company requested that exemptions to 10 CFR 50, Appendix A, GDC 1, 2 and 4 and Appendix J, Paragraph III.D.2(b)(ii) as granted in Facility Operating License NPF-24 be extended for varying periods of time. In accordance with 10 CFR 51.41, attached is Duke Power's evaluation of environmental impacts of the requested exemptions.

It is our conclusion that for each requested exemption no significant hazards consideration is involved, each exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), and therefore, pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with granting of these exemptions.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

ROS:slb

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
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NRC Resident Inspector
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Attachment 1

Duke Power Company
Catawba Nuclear Station

Proposed Exemption to 10 CFR 50, Appendix J
Evaluation of Environmental Impacts

Description of Requested Exemption

On June 25, 1984 Duke requested a change to the Catawba Unit 1 Draft Technical Specification 4.6.1.3.6 related to test requirements for the containment personnel air locks. The requested change involved an exemption to paragraph III.D.2(b)(ii) of 10 CFR 50, Appendix J.

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

> "Air locks 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, i.e., Pa=14.7 psig, 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 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.

It is therefore concluded that the proposed approach of substituting 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 is acceptable 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 still be met.

Environmental Impacts

The proposed exemption grants the substitution of an airlock seal test for an airlock pressure test while the reactor is in a shutdown or refueling mode. With Appendix J, the increment of environmental impact is related solely to the potential increased probability of containment leakage during an accident. This could lead to higher offsite and control room doses. However, this potential increase is very small, due to the added seal leakage tests and the protection against excessive leakage afforded by the other tests required by Appendix J.

As discussed above, performance of an overall air lock leakage test requires at least 6 hours per air lock during which access through the air lock is prohabited. Any access and agress to lower containment during testing of the lower air lock will involve climbing through the emergency hatch between upper and lower containment. This would result in more contaimination in the upper containment which would usually be cleaner than the lower containment. Similarly access to the upper containment while testing the upper air lock would require passing through lower containment where radiation levels would be higher, thus increasing radiation exposure to personnel and increasing contamination in the upper containment.

With respect to non-radiological effluents, the personnel air locks play no role in mitigrating the consequences of events leading to non-radiological effluent releases.

Conclusion

It is concluded that there are no adverse radiological or non-radiological environmental impacts associated with the requested exemption. A significant radiological benefit however would accured as a result of lower plant personnel radiation exposures.

Attachment 2

Duke Power Company
Catawba Nuclear Station

Proposed Exemption to 10 CFR 50, Appendix A, GDC-1
Evaluation of Environmental Impacts

Description of Requested Exemption

On July 13, 1984, Duke Power Company requested an exemption from certain requirements of 10 CFR 50, Appendix A, General Design Criteria (GDC) 1, as such related to fuel load and precritical testing activities. By letter dated October 26, 1983, Duke proposed to upgrade the pressurizer PORV's and steam generator PORV's to safety-related in order to comply with the requirements of BTP RSB 5-1, that cold shutdown can be achieved from the Control Room using only safety-related equipment. In order to allow sufficent time to implement these modifications, Duke requested that the modifications be installed during the first refueling outage for the unit.

GDC-1 requires inpart-

> "Structures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed."

In order to mitigate the effects of a steam generator tube rupture, diverse means have been provided to circulate, cool, and depressurize the Reactor Coolant System to the Residual Heat Removal (RHR) System entry conditions. Those functions may be achieved through the use of condenser dump valves, steam generator PORV's, pressurizer PORV's, high-pressure auxiliary pressurizer spray and/or normal pressurizer spray. Not all of the equipment is currently safety-related. The steam generator PORV's are safety-grade valves with non safety-grade pneumatic operators, and can be operated locally to permit plant cooldown. The high-pressure auxiliary pressurizer spray has been upgraded to safety-grade. The pressurizer PORV's are safety-grade valves with non safety-grade pneumatic operators.

Environmental Impact

The consequences of a steam generator tube rupture are discussed in Section 15.6.3 of the Catawba FSAR. Therefore operation of Catawba Unit 1 during the first cycle is addressed by the current FSAR analysis. Granting of the proposed exemption would not result in an increase in the amount of effluents that may be released offsite. The proposed upgrade of the pressurizer PORV's and steam generator PORV's would facilitate the operator's response to a steam generator tube rupture event.

With respect to non-radiological effluents, the pressurizer PORV's and steam generator PORV's play no role in mitigating the consequences of events leading to non-radiological effluent releases.

Conclusion

It is concluded that there are no adverse radiological or non-radiological environmental impacts associated with the requested exemption.

Attachment 3

Duke Power Company
Catawba Nuclear Station

Proposed Exemption to 10 CFR 50, Appendix A, GDC-2 and -4 Evaluation of Environmental Impacts

Description of Requested Exemption

On July 11, 1984, Duke requested a partial exemption from the requirements of 10 CFR 50, Appendix A, General Design Criteria (GDC) 4 for the fuel load and precritical phase of the Catawba Unit 1 startup because all seismic qualification issues had not been resolved for the solid-state protection system. The Staff reviewed this request and determined that exemption to GDC-2 and GDC-4 were required.

By letter dated October 2, 1984, Duke proposed to take the following actions:

1. Prior to exceeding 5% power-
   a) The bolt through the existing electrical isolation one-piece fiberglass bushing will be tightened to "snug tight" (as defined in the AISC Manual) and then tightened an additional ½ turn.
   b) The field mounting will be revised to ensure a "snug fit", i.e., suitable shims will be placed between the bottom of the cabinet and the electrical isolation glastic pad to eliminate gaps and provide a uniform bearing condition.

2. A seismic test will be performed utilizing a generic mounting scheme with a glastic pad and fiberglass bushing for electrical isolation to verify the acceptability of the existing mounting. This test would be completed by July, 1985.

Therefore, final resolution of the qualification of the solid-state protection system involves a confirmatory seismic test and an exemption to GDC-2 and GDC-4 was requested until the test is completed.

Environmental Impact

Based on the proposed cabinet mounting scheme discussed above, there is reasonable assurance that the solid-state protection system will be capable of performing its intended safety function in the event of a seismic occurance. The proposed exemption would not result in a change to any accident currently evaluated in the Catawba FSAR.

With respect to non-radiological effluents, the solid-state protection system plays no role in mitigating the consequences of events leading to non-radiological effluent releases.

Conclusion

It is concluded that there are no adverse radiological or non-radiological environmental impacts associated with the requested exemption.