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10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Joseph M. Farley Nuclear Plant
Request to Revise Technical Specifications
10 CFR 50, Appendix J, Option B

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby proposes changes to the Farley Nuclear Plant (FNP) Unit 1 and Unit 2 Technical Specifications (TS). The proposed changes reflect implementation of 10 CFR 50, Appendix J, Option B. This submittal includes the request to revise the TS and the implementation plan as required by Option B.

SNC has determined that this submittal represents a Cost Beneficial Licensing Action (CBLA), in that the implementation of this request can result in a savings of approximately ten million dollars over the life of the plant based on industry cost estimates. SNC requests that this revision be approved by October 1, 1996 in order for the change to be implemented during the FNP Unit 2 11th refueling outage in the Fall of this year. SNC will implement the proposed license amendment within 30 days of NRC issuance.

Enclosure 1 provides the background, description and safety basis for the proposed changes. Enclosure 2 details the bases for SNC's determination that the proposed changes do not involve a significant hazards consideration nor significantly affect the quality of the environment. Enclosure 3 includes SNC's 10 CFR 50, Appendix J, Option B, implementation plan. Enclosure 4 provides page change instructions and revised TS and TS Bases pages for incorporating the proposed changes. Enclosure 5 provides the corresponding marked-up TS and TS Bases pages.

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In accordance with the requirements of 10 CFR 50.91 the designated State official will be sent a copy of this letter and all applicable enclosures.

The information provided herein is true to the best of my knowledge and belief. If you have any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

DM Morey

Dave Morey

Sworn to and subscribed before me this 20th day of June, 1996.

Carol Louise Taylor
Notary Public

My Commission Expires: June 24, 1997

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Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation and Environmental Assessment
3. 10 CFR 50, Appendix J, Option B, Implementation Plan
4. Page Change Instructions and Revised TS Pages
5. Marked-up TS and TS Bases Changes

cc: Mr. S. D. Ebneter, Region II Administrator
Mr. B. L. Siegel, NRR Senior Project Manager
Mr. T. M. Ross, FNP Sr. Resident Inspector
Dr. Donald E. Williamson, State Department of Public Health

Enclosure 1

Joseph M. Farley Nuclear Plant
Request to Revise Technical Specifications:

Basis for Change Request

Enclosure 1

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Request to Revise Technical Specifications:

Basis for Change Request

Background

The containment leakage rate testing program required by 10 CFR 50 Appendix J includes performance of an Integrated Leakage Rate Test (ILRT) or Type A test, and Local Leakage Rate Tests (LLRTs) or Type B and C tests. The Type A test measures overall leakage rate of the reactor containment. The Type B test detects leakage paths and measures leakage for certain containment penetrations. The Type C test measures containment isolation valve leakage rates.

Appendix J testing requirements ensure leakage through the containment, as well as systems and components penetrating containment, does not exceed the allowable leakage rate values specified in the TS or the associated Bases. Compliance with Appendix J testing requirements ensures the containment configuration is structurally sound and capable of limiting leakage to the rates assumed in the safety analysis. These requirements also ensure an adequate containment boundary is maintained during and after an accident by minimizing potential leakage paths to the environment, thereby assuring the containment function assumed in the safety analysis is maintained.

On September 12, 1995, the NRC approved issuance of a revision to 10 CFR 50 Appendix J which became effective on October 26, 1995. The NRC added Option B, "Performance-Based Requirements," to allow licensees to voluntarily replace the prescriptive testing requirements of 10 CFR 50 Appendix J with testing requirements based on both the overall leakage rate performance and the performance of individual components.

Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995 was developed as a method acceptable to the NRC staff for implementing Option B. Regulatory Guide 1.163 specifies an extension in Type A test frequency from three tests in ten years to at least one test in ten years based upon two consecutive successful tests. Type B tests may be extended up to a maximum interval of ten years based upon two consecutive successful tests and Type C tests may be extended up to a maximum interval of five years based upon two consecutive successful tests.

Regulatory Guide 1.163 endorses Nuclear Energy Institute (NEI) 94-01 Revision 0 dated July 26, 1995, " Industry Guideline for Implementing Performance-Based Option of 10CFR50 Appendix J", with some exceptions. NEI 94-01 endorses ANSI/ANS - 56.8 - 1994, "Containment System Leakage Testing Requirements," for detailed descriptions of the technical methods and techniques for performing Types A, B, and C tests with some exceptions.

On November 2, 1995, the NRC transmitted a set of TS changes, based on the Improved TS model, to the Nuclear Energy Institute to serve as a model for licensees to develop plant specific TS in preparing amendment requests to implement Option B. Although FNP has not yet incorporated the full Improved TS model, the proposed changes to incorporate 10 CFR 50, Appendix J, Option B, requirements were prepared and customized to be consistent with the NRC - approved model TS.

Enclosure 1
Request to Revise Technical Specifications:
Basis for Change Request

Description of Change

SNC proposes changes to the FNP TS in order to permit implementation of 10 CFR 50, Appendix J, Option B. The TS are being changed to establish and reference a "Containment Leakage Rate Testing Program". The program will be added to the Administrative Controls portion of the TS. The new Specification 6.16, Containment Leakage Rate Testing Program, includes the definition of P_a and L_a and specifies the leak rate acceptance criteria for Type A, B, and C tests and air locks. This specification commits that the program will be in accordance with Regulatory Guide 1.163 dated September 1995.

The only currently approved exemption to 10 CFR 50, Appendix J for FNP allows relief from the requirement in Paragraph III D.2(b)(ii), which states, "Air Locks opened during periods when containment integrity is not required by the plant's TS shall be tested at the end of such period at not less than P_a." This exemption from testing is allowed if the airlock surveillance is within its 6 month frequency and no maintenance has been done on the air lock that could affect the air lock sealing capability. The exemption, currently noted in TS 4.6.1.3.b.2, is being replaced by the Containment Leakage Testing Program requirements. The new program requirements are in compliance with 10 CFR 50, Appendix J, Option B and NRC Regulatory Guide 1.163 which provide the desired flexibility; therefore, the exemption is no longer needed.

A requirement to perform a periodic visual inspection of exposed accessible interior and exterior surfaces of containment has been added.

Duplicative details between these specifications and the 10 CFR 50, Appendix J regulations are being deleted. Other details not recommended for inclusion by the NRC - approved model TS are being moved to the Containment Leakage Rate Testing Program.

A mark-up of each unit's TS sections affected by the proposed changes is included in enclosure 5 .

Safety Assessment

The effect of increasing containment leakage rate testing intervals has been evaluated by the Nuclear Energy Institute using the methodology described in NUREG-1493, "Performance-Based Containment Leak-Test Program," and historical representative industry leakage rate testing data. The results of this evaluation, as published in NEI 94-01, Revision 0, are that the increased safety risk corresponding to the extended test intervals is small and compares well to the guidance of the NRC's safety goal. ILRTs have been demonstrated to be of limited value in detecting significant leakages from penetrations and isolation valves. The containment leak rate data and component performance history at FNP are consistent with the conclusions reached in NUREG-1493 and NEI 94-01. Therefore, the proposed license amendments adopting a performance-based approach for verification of leakage rates for isolation valves, containment penetrations, and the containment overall will continue to meet the regulatory goal of providing an essentially leak-tight containment boundary (10 CFR 50, Appendix A, GDC 16), and will provide an equivalent level of safety as the current requirements.

The revised TS will continue to maintain the allowable leak rate (L_a) as the overall containment leakage rate acceptance criterion. In addition, a requirement to perform a periodic general visual inspection of the containment is part of the performance-based leakage testing program.

As supported by the findings of NUREG-1493, the percentage of leakages detected only by ILRTs is small (only a few percent) and Type B and C leakage tests are capable of detecting more than 97 percent of containment leakages. During plant startup following testing in accordance with the Containment Leakage Rate Testing Program, the leakage rate acceptance criteria for the combined Type B and C tests is conservatively limited to less than or equal to 0.60 L_a to account for possible degradation between tests.

In conclusion, implementing the 10 CFR 50, Appendix J, Option B requirements for performance-based leakage testing at FNP does not impact plant safety margins.

Enclosure 2

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Request to Revise Technical Specifications:

10 CFR 50.92 Evaluation and Environmental Assessment

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Proposed Changes

The proposed changes incorporate 10 CFR 50, Appendix J, Option B, requirements into the FNP Technical Specifications (TS) in accordance with NRC Regulatory Guide 1.163, Revision 0 dated September 1995, "Performance-Based Containment Leak-Test Program" R.G. 1.163 endorses Nuclear Energy Institute (NEI) 94-01, Revision 0, dated July 26, 1995, "Industry Guideline for Implementing Performance Based Option of 10 CFR 50 Appendix J" with certain exceptions.

10 CFR 50.92 Evaluation

Southern Nuclear Operating Company (SNC) has reviewed the proposed TS changes and determined they do not involve a significant hazards consideration based on the following:

1. The proposed changes do not involve a significant increase in the probability of consequences of an accident previously evaluated. The proposed changes provide a mechanism within the TS for implementing a performance-based leakage rate test program which was promulgated by the revision to 10 CFR 50 to incorporate Option B to Appendix J. The proposed changes do not involve any physical or operational changes to structures, systems or components. The proposed TS Limiting Conditions for Operation (LCO) are consistent with 10 CFR 50, Appendix J requirements and are equivalent to the current LCO requirements. The current safety analyses and safety design basis for the accident mitigation functions of the containment, the airlocks, and the containment isolation valves are maintained. Since the allowable containment leakage is still maintained within the analyzed limit assumed in the accident analyses, there is no adverse effect on either onsite or offsite dose consequences. Furthermore, containment leakage is not an accident initiator. Therefore, these changes will not increase the probability or consequences of an accident previously evaluated.

2. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously analyzed. The proposed changes do not involve any physical or operational changes to structures, systems or components. No new failure mechanisms beyond those already considered in the current plant safety analyses are introduced. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously analyzed.

3. The proposed changes do not involve a significant reduction in the margin of safety. Extending Type A, B, and C test intervals from those currently provided in the TS to those provided for in 10 CFR 50 Appendix J, Option B slightly increases risk due to an increased likelihood of containment leakage corresponding to the increased testing intervals. However, this is somewhat compensated by the corresponding risk reduction benefits received from the reduction in component cycling, stress, and wear associated with the increased intervals. When considering the total integrated risk, which includes all analyzed accident sequences, the additional risk associated with increasing test intervals is negligible.

   The NRC letter to NEI dated November 2, 1995, recognizes that changes similar to the proposed changes at FNP are required to implement Option B of 10 CFR 50, Appendix J. In NUREG-1493, "Performance-Based Containment Leak-Test Program," dated September 1995, which forms the basis for the Appendix J revision, the NRC concludes that adoption of performance-based test intervals for Appendix J testing will not significantly reduce the margin of safety. The containment leak rate data and component performance history at FNP are consistent with the conclusions reached in NUREG-1493 and NEI 94-01. Thus, the proposed license amendments do not involve a significant reduction in a margin of safety and will continue to support the regulatory goal of ensuring an essentially leak-tight containment boundary.

Environmental Assessment

The proposed changes will have no significant impact on the environment. The proposed change does not involve a significant hazards consideration as discussed in the preceding section. The proposed change does not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. No new containment boundary changes or changes to existing containment boundary systems are proposed. There is no increase in the consequences of any previously evaluated accidents. Implementation of a performance-based containment leakage rate testing approach will allow test intervals to be based on system and component performance. Therefore, the increased test intervals that are permitted under this program are expected to decrease cumulative occupational exposure of employees conducting ILRTs and LLRTs. In conclusion, the proposed changes will have no significant impact on the environment.

Enclosure 3

Joseph M. Farley Nuclear Plant
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10 CFR 50, Appendix J, Option B, Implementation Plan

Enclosure 3

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10 CFR 50, Appendix J, Option B, Implementation Plan

General

Southern Nuclear Operating Company (SNC) intends to implement the requirements of 10 CFR 50, Appendix J, Option B shortly following issuance of the requested license amendments. 10 CFR 50 Appendix J, Option B states:

"Specific guidance concerning a performance based leakage test program, acceptable leakage-rate test methods, procedures, and analyses that may be used to implement these requirements and criteria are provided in Regulatory Guide 1.163."

FNP's leakage rate testing program will be in compliance with 10 CFR 50, Appendix J, Option B and Regulatory Guide 1.163 prior to implementation of the TS amendments. Regulatory Guide 1.163 endorses NEI 94-01 with certain exceptions. NEI 94-01 further endorses ANSI/ANS-56.8-1994 for details describing how the testing should be performed with certain exceptions. In addition, SNC intends to maintain the option to continue using the BN-TOP-1, "Testing Criteria for Integrated Leak - Rate Testing of Primary Containment Structures for Nuclear Power Plants," Revision 1, November 1972" method for performing Type A tests.

Procedures and Documentation

The procedures for the containment leakage rate testing program will follow the requirements and contain the performance criteria for the Types A, B, and C testing. The procedures will also contain the description of the record keeping and methodology to establish test intervals for equipment and components in the containment leakage rate testing program.

The results of Type A, B, and C tests will be documented to show that performance criteria for leakage rates are met. Comparison with previous results will be documented to show that the test intervals established are adequate. These records will be available for inspection at the plant site. Failed tests will be reported in accordance with the existing 10 CFR 50.72 and 10 CFR 50.73 requirements.

Interval Extensions

If data justifying the extension of a Type B or C test interval have not been evaluated, the test interval will continue to be every refueling cycle. Any Type B and C tests conducted after amendment implementation will utilize ANSI/ANS-56.8 methodology.

In some instances FNP's Inservice Testing Program references the use of Appendix J testing requirements to meet ASME Code valve exercising or closure test requirements. If Appendix J testing methodology is utilized to satisfy these ASME Code test requirements, the test interval in these cases will be determined by the ASME Code criteria and not the Appendix J Option B interval extension criteria.

Enclosure 3
Request to Revise Technical Specifications:
10 CFR 50, Appendix J, Option B, Implementation Plan

NEI Guideline Clarifications

Sections 8.0 and 10.2 of NEI 94-01 recommend that the combined as-found leakage rates (Type B and C tests) determined on a Minimum Pathway Leakage Rate (MNPLR) basis for all penetrations be < 0.60 L_a when containment integrity is required. The TS requirement is that the overall leakage rate be ≤ ! The TS acceptance criterion is a reflection of the safety analysis assumptions. As an added conservatism, the measured leakage rates are further limited to ≤ 0.60 L_a during performance of tests to account for possible degradation of the containment leakage barriers between leakage tests. Therefore, SNC considers the 0.60 L_a to be a performance limit, not a TS operability limit.

NEI 94-01 and ANSI/ANS-56.8-1994 indicate that for a two barrier pathway, the Maximum Pathway Leakage Rate (MXPLR) is the measured leakage through the worst of the two isolation valves. If a penetration is isolated by use of one closed and deactivated automatic valve, closed manual valve, or blind flange, SNC considers the MXPLR of the isolated penetration to be the measured leakage through the closed isolation device for purposes of satisfying the as-left leakage acceptance criteria.

NEI 94-01 Section 10.2.2.1 which addresses containment airlock test intervals states, "Door seals are not required to be tested when containment integrity is not required, however they must be tested prior to reestablishing containment integrity." SNC's position is that testing would not be required if a plant shutdown occurs, no containment entry is made, and airlock testing is otherwise current.