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Docket Nos. 50-348
50-364

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

Joseph M. Farley Nuclear Plant
Request for NRC Concurrence With
Technical Specification Bases Change

Gentlemen:

This letter forwards a change to the Technical Specification Bases for the Joseph M. Farley Nuclear Plant Units 1 and 2. The change corrects an inconsistency between Technical Specification Bases B 3/4.6.1.4 "Internal Pressure" and the accident analysis as documented in FSAR Section 6.2.

Technical Specification Bases B 3/4.6.1.4 currently states that the maximum peak pressure expected following a LOCA event is 45 psig. However, the containment peak post-LOCA accident pressure as documented in FSAR Section 6.2 is 48 psig assuming zero initial containment pressure. The 48 psig peak pressure has been previously reviewed and accepted by the NRC in a Safety Evaluation Report dated May 2, 1975. The proposed change will correct this inconsistency between the Technical Specifications Bases and the FSAR.

Enclosure 1 describes the change to be made to the Bases B 3/4.6.1.4 and also provides the basis for the change. Enclosure 2 provides an evaluation that demonstrates this change does not involve an unreviewed safety question as defined by 10 CFR 50.59. Enclosure 3 contains the marked-up and typed Technical Specification Bases change.

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Southern Nuclear Operating Company requests a timely review and issuance of the proposed Bases change by the NRC.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

J. D. Woodard

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Enclosures

cc: Mr. S. D. Ebneter
Mr. G. F. Wunder
Mr. G. F. Maxwell

ENCLOSURE 1

JOSEPH M. FARLEY NUCLEAR PLANT
TECHNICAL SPECIFICATION BASES CHANGE

BASIS FOR PROPOSED CHANGE

Proposed Change

The proposed Technical Specification Bases change will revise the wording to accurately reflect the current containment internal pressure values. Specifically, the proposed changes involves revising the second paragraph of Bases B 3/4.6.1.4. The second paragraph would read as follows:

> "The maximum peak pressure expected to be obtained from a LOCA event is 48 psig. Even with an initial positive pressure of up to 3 psig, the maximum containment pressure will remain below the design limit of 54 psig."

This proposed change will revise Technical Specification Bases B 3/4.6.1.4 to be consistent with the "accident analysis" as documented in FSAR Section 6.2.

Basis

There is an inconsistency between the current Technical Specification Bases B 3/4.6.1.4 and FSAR Section 6.2 regarding the peak containment pressure caused by the design basis accident (DBA). The double-ended rupture of the reactor coolant pump suction (i.e., LOCA) results in the highest containment pressure (ref: Farley SER 6.2, FSAR 6.2.1.3.3.C). The Technical Specification Bases references the maximum peak pressure during a LOCA event as 45 psig while FSAR Figure 6.2-39 and current design basis calculations identify the design basis accident peak pressure as 48 psig. LOCA containment pressure calculations done in the mid 70's presented the value of the peak pressure as slightly less than 45 psig while later calculations have yielded a peak pressure of 48 psig. The calculated peak pressure of 48 psig was confirmed acceptable by the NRC in the Safety Evaluation Report dated May 2, 1975. Each time these analyses were performed using an initial condition of 0 psig. The proposed bases change will revise B 3/4.6.1.4 in order to establish consistency between the "accident analysis" documented in the FSAR and the Technical Specification Bases.

ENCLOSURE 2

JOSEPH M. FARLEY NUCLEAR PLANT
TECHNICAL SPECIFICATION BASES CHANGE

SAFETY EVALUATION

BACKGROUND

Technical Specification Bases B 3/4.6.1.4 discusses internal pressure as it relates to the design basis accident. According to Bases B 3/4.6.1.4 of the Technical Specifications, "The limitations on containment internal pressure ensure that 1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the outside atmosphere of 3.0 psig and 2) the containment peak pressure does not exceed the design pressure of 54 psig during accident conditions." Technical Specification Bases B 3/4.6.1.4 currently states that the maximum peak pressure expected to be obtained during a design basis accident is 45 psig. This value is based on an initial containment pressure of 0 psig. However, with an initial containment pressure of 0 psig for the design basis containment accident pressure analysis, the FSAR and the current design basis calculations have identified the peak pressure as 48 psig. The proposed Technical Specification Bases change will revise current Technical Specification Bases B 3/4.6.1.4 in order to attain consistency with the current design bases and the "accident analysis" documented in the FSAR.

REFERENCES

1. Joseph M. Farley Nuclear Plant Unit 1 Technical Specifications, Appendix A to License No. NPF-2.

2. Joseph M. Farley Nuclear Plant Unit 2 Technical Specifications, Appendix A to License No. NPF-8.

3. "Joseph M. Farley Nuclear Plant Unit 1 and Unit 2 Final Safety Analysis Report Update," Docket Nos. 50-348 and 50-364.

4. "Safety Evaluation Report by the Office of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission, in the matter of Alabama Power Company Joseph M. Farley Nuclear Plant Units 1 and 2 Docket Nos. 50-348 and 50-364," NUREG-75/034 dated May 2, 1975.

5. "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," (NUREG-0800), June 1987 Edition.

6. "Safety Evaluation Report related to the operation of Joseph M. Farley Nuclear Plant - Unit 2 Docket No. 50-364," Supplement 6, Appendix B dated 3/31/81.

7. "Guidelines for 10 CFR 50.59 Safety Eva[illegible]," (NSAC 125), Final Report June 1989.

There is an inconsistency between the current Technical Specification Bases B 3/4.6.1.4 and FSAR Section 6.2 regarding the containment peak pressure caused by the design basis accident. Analyses that were done in the mid 70's yielded a value of slightly less than 45 psig while later calculations have documented a containment accident pressure of 48 psig. The Technical Specification Bases references the containment peak pressure caused by the design basis accident (LOCA) as 45 psig while the FSAR and the current design basis calculations reference the design basis accident peak pressure as 48 psig. The calculated peak pressure of 48 psig was confirmed as acceptable by the NRC in the Safety Evaluation Report (SER) dated May 2, 1975 as compared to 54 psig. Based on NRC review of this method of containment pressure analysis, it was concluded that the containment system functional design is in accordance with General Design Criteria (GDC) 16 and 50 of 10 CFR 50, Appendix A. Technical Specification Bases B 3/4.6.1.4 currently states that the initial positive containment pressure, 3 psig, allowed by Specification 3.6.1.4 is combined with the peak accident pressure which is 45 psig (total peak pressure is 48 psig). The addition of 3 psig is a conservative comparison to ensure the design pressure is not exceeded. This comparison continues to ensure that the containment peak pressure does not exceed the design pressure of 54 psig during accident conditions. The proposed Technical Specification Bases change will revise B 3/4.6.1.4 in order to establish consistency between the Technical Specification Bases and the FSAR.

Technical Specification 4.6.1.2 references containment ILRT pressure Pa as 48 psig. This is in accordance with the FSAR and current design basis calculations and with 10 CFR 50, Appendix J definition of Pa. Pa is defined in 10 CFR 50 Appendix J as the calculated peak containment internal pressure related to the design basis accident. The design basis accident per FSAR 6.2.1.3.3 is referenced as the double ended pump suction guillotine (DEPSG) with minimum emergency safety features (ESF); the result yields the peak containment pressure. This is consistent with the development of Pa at other plants. There is no requirement in Appendix J to assume the maximum containment initial pressure of 3 psig allowed by the Technical Specification when determining Pa. In addition, current FSAR Table 6.2-3 lists 14.7 psia (0 psig) as an initial condition of the containment post-accident pressure response analysis. The NRC has consistently accepted use of FSAR analyses for determining Pa. Therefore, the Technical Specification Bases change will not affect the containment ILRT pressure Pa of 48 psig.

This Technical Specification Bases change will not affect the Environmental Qualification (EQ) Program as well. As in the case of determining Pa, it is not required to use the maximum allowable normal containment pressure (3 psig) as an initial condition for developing EQ containment pressure versus time graphs. Section 1.1 of NUREG-0588 states that, "The time-dependent temperature and pressure curves established for the design of the containment structure and found acceptable by the staff may be used for the environmental qualification of equipment." For FNP, the design

basis containment pressure curve, which is presented in FSAR Figure 6.2-1 and accepted by the NRC in their Safety Evaluation Report (SER) Supplement 6, Appendix B dated March 31, 1981, uses 0 psig as the initial condition. As indicated above, FSAR Table 6.2-3 also lists 14.7 psia (0 psig) as an initial condition of the containment post-accident pressure response analysis. Therefore, the Technical Specification Bases change will not affect the EQ Program.

CONCLUSIONS

The proposed change corrects an inconsistency between the Technical Specification Bases and the FSAR. The containment peak pressure expected to be obtained from a LOCA event of Technical Specification Bases B 3/4.6.1.4 will be changed from 45 psig to 48 psig. Even with an initial positive pressure of up to 3 psig, the maximum containment peak pressure will not exceed the design pressure of 54 psig. There is no requirement to assume the maximum containment normal pressure of 3 psig allowed by the technical specifications when determining Pa for containment ILRT according to the definition of Pa in 10 CFR 50, Appendix J. The use of 0 psig for the design basis containment accident pressure analysis is consistent with current FSAR Table 6.2-3 which lists 14.7 psia (0 psig) as an initial condition of the containment post-accident pressure response analysis. As in the case of containment ILRT pressure Pa, the EQ Program is not affected. For FNP, the design basis containment pressure curve, which is presented in FSAR 6.2-1, uses 0 psig as the initial condition. NRC acceptance of FNP's design basis containment pressure analysis is documented in Section 6.2.1 of the FNP SER. Therefore, the proposed change to the Technical Specification Bases B 3/4.6.1.4 will not reduce the margin of safety.

Accordingly, it can be concluded that the proposed change to Technical Specification Bases B 3/4.6.1.4 does not result in an unreviewed safety question as determined by 10 CFR 50.59. This conclusion is based on:

1. The probability of occurrence of an accident previously evaluated in the FSAR will not increase. There are no physical changes to the plant, and no new failure mechanisms have been introduced. No design limitations have been exceeded. Therefore, the probability of occurrence of an accident previously evaluated in the FSAR has not increased.

2. The consequences of an accident previously evaluated in the FSAR will not increase. All containment pressure results from design basis LOCA analyses have been evaluated against the containment design pressure of 54 psig. Since the LOCA analysis and Pa presented in the FSAR will not change as a result of the proposed Technical Specification Bases change, the dose predictions presented in the FSAR remain bounding. There are no physical changes to the plant, and no new failure mechanisms have been introduced. Therefore, the consequences of an accident previously evaluated in the FSAR have not increased.

3. The probability of occurrence of a malfunction of equipment important to safety previously evaluated in the FSAR will not increase. There are no physical changes to the plant, and no new failure mechanisms have been introduced. No malfunctions of equipment other than those currently assumed in the FSAR are expected as a result of the revision to the Technical Specification Bases. Therefore, the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the FSAR has not increased.

4. The consequences of a malfunction of equipment important to safety previously evaluated in the FSAR will not increase. Since the LOCA analysis and Pa presented in the FSAR will not change due to the proposed Technical Specification Bases change, the dose predictions presented in the FSAR remain bounding. Also, no malfunctions of equipment other than those currently assumed in the FSAR are expected due to the revision to the Technical Specification Bases. Therefore, the consequences of a malfunction of equipment important to safety previously evaluated in the FSAR have not increased.

5. The possibility of an accident of a different type than any previously evaluated in the FSAR will not be created. All original design and performance criteria continue to be met, and no new failure modes have been defined for any system, component, or piece of equipment as a result of the proposed Technical Specification Bases change. There are no physical changes to the plant, and no new single failure mechanisms have been introduced. Therefore, the possibility of an accident of a different type than any previously evaluated in the FSAR has not been identified or created.

6. The possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR will not be created. All original design criteria continue to be met, and no new failure modes have been defined for any system, component, or piece of equipment as a result of the proposed Technical Specification Bases change. There are no physical changes to the plant and no new single failure mechanisms have been introduced. Therefore, the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR has not been identified or created.

7. The margin of safety as defined in the basis for any Technical Specification will not be reduced. In accordance with the definition of margin of safety in Section 3.8 of NSAC 125, "Guidelines for 10 CFR 50.59 Safety Evaluations", this margin of safety is the difference between the basis for the acceptability of the pressure resistance capability of the containment design and the containment overpressure failure point. Since the peak LOCA containment pressure will under no circumstances exceed 54 psig, the margin of safety as defined in the Bases for any Technical Specification has not been reduced.

Therefore, the proposed change to the Technical Specification Bases that correctly states the design basis accident peak pressure value during a LOCA event does not involve an unreviewed safety question.