Docket No. 50-336
B15377

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Containment Building Design Pressure and Temperature
Safety Assessment

November 1995

Millstone Nuclear Power Station, Unit No. 2
Proposed Revision to Technical Specifications
Containment Building Design Pressure and Temperature
Safety Assessment

Background

In the J. F. Opeka letter to the U.S. NRC, dated January 13, 1993, Northeast Nuclear Energy Company (NNECO) provided a revised response to Inspection and Enforcement Bulletin (IEB) 80-04. This response was submitted subsequent to October 18, 1991, when a reportable condition was identified during a reanalysis of a Main Steam Line Break (MSLB) event. It was discovered that certain assumptions made in the earlier MSLB analyses were nonconservative with respect to power level, break size, and single active failure. When more restrictive assumptions were used, it was concluded that design limits for containment pressure and temperature may have been exceeded. Subsequent modifications and reanalysis have been performed and are described in detail in our letter dated January 13, 1993. Additionally, in the letter NNECO concluded that the peak containment pressure is less than the containment design pressure of 54 psig and that the peak containment atmosphere temperature is 426°F, noting that the Technical Specification limit of 289°F, specified for the containment building temperature, is exceeded for only a short period of time by the containment atmosphere temperature, therefore the building temperature never exceeds 289°F. As a result, NNECO committed to clarify Technical Specification 5.2.2 and to update the Bases sections affected by the recent MSLB analysis.

Description of Proposed Change

The proposed amendment will clarify the reactor containment building temperature as "an equilibrium liner temperature," and the affected Bases will be updated to reflect the most recent MSLB analysis. The changes to the Bases primarily reflect that the limiting event affecting containment temperature and pressure now includes the MSLB in addition to a Loss of Coolant Accident (LOCA).

Safety Assessment

The proposed changes in Bases 3/4.6.1.4 and 3/4.6.1.6 are to include the MSLB accident in addition to the LOCA accident as the limiting transients in the determination of the peak containment internal pressure and to document that the limiting containment peak pressure is due to a MSLB event. This reflects the revised MSLB containment analysis, recently submitted and approved by the NRC. The proposed changes in Basis 3/4.6.1.5 are to clarify the

requirements of "containment air temperature and the design temperature." These changes are to the Bases only except Section 5.2.2 which adds "an equilibrium liner" to clarify that the 289°F is really the liner temperature rather than an air temperature limit. Analysis has been performed to demonstrate that the equilibrium liner temperature used to demonstrate containment integrity remains bounding even with the revised LOCA and MSLB air temperature profiles.

These changes clarify the Bases for the technical specification requirements. Its purposes are simply to include recent results in the Bases and to prevent any possible misinterpretation of the requirements.

Attachment 2

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Containment Building Design Pressure and Temperature
Determination of No Significant Hazards Consideration

November 1995

**Proposed Revision to Technical Specifications
Containment Building Design Pressure and Temperature
Determination of No Significant Hazards Consideration**

Pursuant to 10CFR50.92, Northeast Nuclear Energy Company (NNECO) has reviewed the proposed changes to clarify the containment building temperature limit and update the Bases affected by the recent main steam line break analysis. NNECO concludes that these changes do not involve a significant hazards consideration since the proposed change satisfies the criteria in 10CFR50.92(c). That is, the proposed changes do not:

- **Involve a significant increase in the probability or consequences of an accident previously evaluated.**

  These changes are clarifications that are administrative in nature. The changes only incorporate the revised containment analysis as approved by the NRC. There are no hardware changes and no change to the functioning of any equipment which could affect any operational modes or accident precursors. Therefore, there is no way that the probability of previously evaluated accidents could be affected.

  There are no hardware modifications associated with these changes and no change to the functioning of any equipment which could affect radiological releases. The safety analysis of the plant is unaffected by the changes. Therefore, there is no effect on the consequences of previously evaluated accidents.

- **Create the possibility of a new or different kind of accident from any accident previously evaluated.**

  These changes are clarifications that are administrative only. There are no hardware changes and no change to the functioning of any equipment which could introduce new or unique operational modes or accident precursors. Therefore, there is no possibility of an accident of a new or different type than previously evaluated.

- **Involve a significant reduction in a margin of safety.**

  These changes are clarifications that are administrative in nature. They do not increase or decrease any plant operating requirements or limits. Therefore, they have no effect on any safety analysis and no impact on the margin of safety.

Attachment 3

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Containment Building Design Pressure and Temperature
Marked-up Pages

November 1995

CONTAINMENT SYSTEMS

BASES

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that the containment peak pressure does not exceed the design pressure of 54 psig during LOCA MSLB or LOCA conditions.

The maximum peak pressure is obtained from a LOCA MSLB event ~~is 53.8 psig~~. The limit of 2.1 psig for initial positive containment pressure will limit the total pressure to less than the design pressure and is consistent with the accident analyses.

3/4.6.1.5 AIR TEMPERATURE

The limitation on containment air temperature ensures that the containment ~~peak~~ air temperature does not exceed the ~~design temperature of 289°F during LOCA conditions~~ worst case combined LOCA/MSLB air temperature profile and the liner temperature of 289°F. The containment air and liner temperature limits ~~is~~ are consistent with the accident analyses.

3/4.6.1.6 CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment vessel will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the vessel will withstand the ~~maximum~~ design pressure of ~~53.8~~ 54 psig in the event of a ~~LOCA~~ LOCA or MSLB. The measurement of containment tendon lift off force, the visual and metallurgical examination of tendons, anchorages and liner and the Type A leakage tests are sufficient to demonstrate this capability.

The surveillance requirements for demonstrating the containment's structural integrity are in compliance with the recommendations of Regulatory Guide 1.35 "Inservice Surveillance of Ungrouted Tendons in Prestressed Concrete Containment Structures."

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 54 psig and ~~a~~ an equilibrium liner temperature of 289°F.

PENETRATIONS

5.2.3 Penetrations through the reactor containment building are designed and shall be maintained in accordance with the original design provisions contained in Section 5.2.8 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 217 fuel assemblies with each fuel assembly containing 176 rods. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.5 weight percent of U-235.

CONTROL ELEMENT ASSEMBLIES

5.3.2 The reactor core shall contain 73 full length and no part length control element assemblies. The control element assemblies shall be designed and maintained in accordance with the original design provisions contained in Section 3.0 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 4.2.2 of the FSAR with allowance for normal degradation pursuant of the applicable Surveillance Requirements,

b. For a pressure of 2500 psia, and

c. For a temperature of 650°F except for the pressurizer which is 700°F.

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Attachment 4

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Containment Building Design Pressure and Temperature
Retyped Version of Current Technical Specifications

November 1995

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 54 psig and an equilibrium liner temperature of 289°F. |

PENETRATIONS

5.2.3 Penetrations through the reactor containment building are designed and shall be maintained in accordance with the original design provisions contained in Section 5.2.8 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 217 fuel assemblies with each fuel assembly containing 176 rods. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.5 weight percent of U-235.

CONTROL ELEMENT ASSEMBLIES

5.3.2 The reactor core shall contain 73 full length and no part length control element assemblies. The control element assemblies shall be designed and maintained in accordance with the original design provisions contained in Section 3.0 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 4.2.2 of the FSAR with allowance for normal degradation pursuant of the applicable Surveillance Requirements,

b. For a pressure of 2500 psia, and

c. For a temperature of 650°F except for the pressurizer which is 700°F.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that the containment peak pressure does not exceed the design pressure of 54 psig during MSLB or LOCA conditions.

The maximum peak pressure is obtained from a MSLB event. The limit of 2.1 psig for initial positive containment pressure will limit the total pressure to less than the design pressure and is consistent with the accident analyses.

3/4.6.1.5 AIR TEMPERATURE

The limitation on containment air temperature ensures that the containment air temperature does not exceed the worst case combined LOCA/MSLB air temperature profile and the liner temperature of 289°F. The containment air and liner temperature limits are consistent with the accident analyses.

3/4.6.1.6 CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment vessel will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the vessel will withstand the design pressure of 54 psig in the event of a LOCA or MSLB. The measurement of containment tendon lift off force, the visual and metallurgical examination of tendons, anchorages and liner and the Type A leakage tests are sufficient to demonstrate this capability.

The surveillance requirements for demonstrating the containment's structural integrity are in compliance with the recommendations of Regulatory Guide 1.35 "Inservice Surveillance of Ungrouted Tendons in Prestressed Concrete Containment Structures."