ATTACHMENT 2

To

Letter from C.R. Steinhardt (WPSC)

to

Document Control Desk (NRC)

Dated

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Proposed Amendment 124

Affected TS Pages

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TS 3.15-1 and 3.15-2

TS B3.15-1 and B3.15-2

TS 4.15-1

TS B4.15-1

3.15 STEAM EXCLUSION SYSTEM

APPLICABILITY

Applies whenever the reactor coolant temperature is > 350°F.

OBJECTIVE

To ensure that steam exclusion boundaries remain intact when the reactor coolant temperature is > 350°F.

SPECIFICATION

a. Steam Exclusion System

1. Whenever the reactor coolant temperature is > 350°F, the following conditions must be satisfied:

   A. Both trains of steam exclusion actuation logic and the associated steam exclusion dampers shall be OPERABLE, except as allowed by TS 3.15.a.2 and TS 3.15.a.3.

   B. All other non-damper steam exclusion boundaries such as doors, walls, hatches, etc, shall be in place and OPERABLE, except as allowed by TS 3.15.a.2 and TS 3.15.a.3.

2. Whenever the reactor coolant temperature is > 350°F, the following conditions of inoperability may exist for the specified time interval:

   A. Two redundant steam exclusion dampers, two trains of steam exclusion actuation logic or any non-redundant steam exclusion damper may be inoperable for 12 hours. If OPERABILITY is not restored, one of the following three actions shall be completed within 1 additional hour:

   - Close at least one steam exclusion damper in each affected duct, or
   - Provide an alternate steam exclusion boundary in each affected duct, or
   - Provide an analysis to demonstrate the acceptability of the opening.

   B. One train of steam exclusion actuation logic may be inoperable for 72 hours. If after 72 hours operability is not restored, one steam exclusion damper in each affected duct shall be closed within 1 additional hour.

C. One of two redundant steam exclusion dampers may be inoperable for 72 hours. If after 72 hours operability is not restored, one of the two redundant steam exclusion dampers shall be closed within 1 additional hour.

D. Non-redundant steam exclusion boundaries such as doors, walls, hatches, etc. may be inoperable for 12 hours. If OPERABILITY is not restored within 12 hours, one of the following two actions shall be completed within 1 additional hour:

- Provide an alternate steam exclusion boundary, or
- Provide an analysis to demonstrate the acceptability of the opening.

3. If any of the conditions stated in TS 3.15.a.2.A through TS 3.15.a.2.D cannot be met, then within 1 hour action shall be initiated to:

- Achieve HOT STANDBY within the next 6 hours.
- Achieve HOT SHUTDOWN within the following 6 hours.
- Achieve and maintain the reactor coolant temperature < 350°F within an additional 12 hours

4. A change in operational MODES or conditions is acceptable with inoperable steam exclusion actuation logic train(s) or steam exclusion boundaries.

BASIS

A steam exclusion boundary is defined as any damper, door, hatch, wall or electrical/mechanical penetration which provides a pathway for steam into a defined steam exclusion area. Opening a steam exclusion boundary while the reactor coolant system temperature is > 350°F could result in a compromise to equipment not qualified for operation in a steam environment. Short term maintenance activities (under 12 hours) as well as normal access/egress are common and acceptable practices which open or defeat steam exclusion boundaries for short periods of time.

The definition of a Steam Exclusion Train is limited to the temperature sensors, actuation logic, actuators to control damper position, and the dampers themselves. A failed temperature sensor may be considered OPERABLE provided its output is replaced with a simulated high temperature signal.

Calculations conclude that the core damage frequency for a high energy line break outside of containment with a non-redundant steam exclusion boundary open is 2.57E-8 per 12-hour period. Further conservative assumptions of one non-redundant steam exclusion boundary being open 12 hours per day, 5 days per week, 52 weeks per year results in a core damage frequency of 6.68E-6 per year. This analysis was conservatively calculated taking minimal credit for mitigating the accident, and is considered to be an acceptable level of risk on an annual basis.

An analysis may be performed to support the opening or defeating of steam exclusion boundaries. When such an analysis is performed, it should consider the opening size and the equipment potentially affected, and it should demonstrate that a high energy line break outside of containment will not result in an environment that could cause required equipment to become inoperable.

Calculations conclude that the core damage frequency for a high energy line break outside of containment with one of two redundant steam exclusion boundaries open is 4.62E-10 per 72-hour period. Further conservative assumptions of one of two redundant steam exclusion boundaries being open 24 hours per day, 5 days per week, 52 weeks per year results in a core damage frequency of 4.00E-8 per year. This analysis was conservatively calculated taking minimal credit for mitigating the accident, and is considered to be an acceptable level of risk on an annual basis.

Non-redundant steam exclusion boundaries are defined as dampers, doors, hatches, walls, electrical/mechanical penetrations, etc. that do not have at least one additional barrier to prevent a pathway for steam into a defined steam exclusion area. Analysis shows that allowing a non-redundant steam exclusion boundary to be open or inoperable for up to 12 hours results in an acceptable level of risk.

Acceptable alternate steam exclusion boundaries include blank flanges and other barriers which will prevent the flow of steam from a high energy line break outside of containment into a steam exclusion area. Also, stationing a person able to restore an opened or defeated steam exclusion boundary to full operability constitutes an acceptable alternate steam exclusion boundary.

A change in operational MODES or conditions is acceptable with inoperable steam exclusion train(s) or steam exclusion boundaries provided the appropriate LIMITING CONDITIONS FOR OPERATION are met.

4.15 STEAM EXCLUSION SYSTEM

APPLICABILITY

Applies to testing and surveillance requirements of the steam exclusion system described in TS Section 3.15.

OBJECTIVE

To verify the ability of the steam exclusion damper system to close upon the designated signal.

SPECIFICATION

a. Steam Exclusion System Surveillance Testing

1. Each resistance temperature detector temperature loop for the steam exclusion system shall be calibrated once each REFUELING cycle not to exceed 18 months.

2. The logic of each steam exclusion train shall be tested for OPERABILITY at least once each REFUELING cycle not to exceed 18 months.

3. A system test of the steam exclusion system shall be performed at least once each REFUELING cycle not to exceed 18 months. The test shall include a simulated system actuation and verification of damper position.

BASIS

The steam exclusion system serves to protect specific areas of tho plant from steam intrusion after a high energy line break.

Each resistance temporature detector temperature loop for the steam exclusion system shall be calibrated each REFUELING cyclo not to exceed 18 months. This calibration verifies that each temperature loop actuates within its acceptance range and verifies the proper conversion of resistance temperature detector resistance to output current.

Steam exclusion train logic shall be tested onco each REFUELING cycle not to exceed 18 months. This test shall verify that various cembinations of simulated high temperature signals cause the steam exclusion system actuation logic to generate an actuation signal.

A system test of the steam exclusion system shall be performed at least once each REFUELING cycle net to exceed 18 months. This tost will verify the ability of the system's dampers to properly close with a simulated system actuation signal.