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SBN-470
T.F.B 7.1.2

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. George W. Knighton, Chief
Licensing Branch 3
Division of Licensing

Reference: (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444

Subject: Open Item Response (SRP 6.2.8; Containment Systems Branch)

Dear Sir:

We have enclosed responses to the following open items:

NRC Branch	SRP Section	Comments
CSB	6.2.8	Containment Isolation Dependability; Containment Isolation Setpoint Essential/Non-Essential Penetrations TMI Item II.E.4.2 (Revised)
CSB	6.2.8	Containment Water Level; TMI Item II.F.1.2 (Revised)

The enclosed responses will be incorporated in OL Application Amendment 49.

Very truly yours

YANKEE ATOMIC ELECTRIC COMPANY

John DeVincentis
Project Manager

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JDeV/smh

cc: Atomic Safety and Licensing Board Service List

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6.2.8 TMI Action Plan Requirements

II.E.4.2

We have reduced the setpoint for containment isolation Phase A (Hi 1) from 5 psig (the value in the Standard Technical Specifications) to 4.3 psig, the minimum practical. The setpoint was calculated as follows:

Maximum expected containment pressure during normal operation, Note 1	1.5 psig
+ Margin between maximum expected pressure and the minimum setpoint. Note 2	1.0 psig
+ Channel statistical allowance. Note 3	1.8 psig
= Nominal Setpoint	4.3 psig

Note 1 The maximum expected pressure is obtained from the Service Environment Chart (FSAR Figure 3.11 (B)-1). The Seabrook value is slightly higher than the maximum pressure at other PWRs since the Seabrook containment will be normally pressurized to about 0.5 psig and a continuous Integrated Leak Rate Test (ILRT) performed to provide early detection of problems with containment integrity.

Note 2 From NUREG 0737 Item II.E.4.2, Clarification 6.

Note 3 From the Protection System Setpoint Study

Instrument span	60 psig
X Channel statistical allowance (%)	X 3 %
= Channel statistical allowance (psig)	1.8 psig

6.2.8 II.E.4.2

BACKGROUND

The subject table provides additional information responding to NUREG-0737 clarification of TMI Action Plan Requirements, Section II.E.4.2. The table indentifies essential/nonessential systems penetrating Seabrook Plant Unit 1 containment and a selection basis for the essential systems. The purpose of this table is to address the containment isolation dependability.

DEFINITIONS

1) Essential - Systems penetrating the containment which are necessary to mitigate the consequences of an accident.

2) Nonessential - Systems penetrating the containment which provide auxiliary service functions for operation of the plant, and are not required for mitigation of accidents.

Penetration	Essential (E) Nonessential (NE)	System	Selection Basis
X-1	E	Main Steam - SG E 11A	Decay Heat Removal
X-2	E	Main Steam - SG E 11B	Decay Heat Removal
X-3	E	Main Steam - SG E 11C	Decay Heat Removal
X-4	E	Main Steam - SG E 11D	Decay Heat Removal
X-5	E	Feedwater - SG E 11A	Decay Heat Removal
X-6	E	Feedwater - SG E 11B	Decay Heat Removal
X-7	E	Feedwater - SG E 11C	Decay Heat Removal
X-8	E	Feedwater - SG E 11D	Decay Heat Removal
X-9	NE	RHR Pump Suction - HL #1	
X-10	NE	RHR Pump Suction - HL #4	
X-11	E	RHR To Safety Injection	Low Pressure Injection
X-12	E	RHR To Safety Injection	Low Pressure Injection
X-13	E	RHR To Safety Injection	Hot Leg Injection
X-14	E	Containment Bldg. Spray	Containment Spray
X-15	E	Containment Bldg. Spray	Containment Spray
X-16	NE	Containment On-Line Purge	
X-17	NE	Hydrogenated Vent Hdr.	
X-18	NE	Containment On-Line Purge	
X-19	NE	Spare	
X-20	NE*	Primary Component Cooling Water	Desirable for Some Accidents; Isolate on Hi-2 Containment Pressure
X-21	NE*	Primary Component Cooling Water	Desirable for Some Accidents; Isolate on Hi-2 Containment Pressure
X-22	NE*	Primary Component Cooling Water	Desirable for Some Accidents; Isolate on Hi-2 Containment Pressure
X-23	NE*	Primary Component Cooling Water	Desirable for Some Accidents; Isolate on Hi-2 Containment Pressure
X-24	E	SI From Boron Injection Tk. and Charging Pumps	High Pressure SI
X-25	E	SI, High Head	Medium Pressure SI

Penetration	Essential (E) Nonessential (NE)	System	Selection Basis
X-26	E	SI, High Head	Medium Pressure SI
X-27	E	SI, High Head	Medium Pressure SI
X-28	NE	Seal Water to RC Pump 1A	
X-29	NE	Seal Water to RC Pump 1B	
X-30	NE	Seal Water To RC Pump 1C	
X-31	NE	Seal Water to RC Pump 1D	
X-32	NE	RC PRN TK To Primary DRN TK	
X-33	NE	Chemical and Volume Control	
X-34	NE	Floor Equipment Drain	
X-35	NE*	RCS Sampling	Required for Post-Accident Sampling Manual Bypass Operation
X-35	NE	SI Test	
X-36	NE	Demineralized Water	
X-36	NE	Nitrogen Gas	
X-36	NE	Reactor Makeup Water	
X-37	NE	Letdown HY	
X-37	NE	RCP Seal Water Return	
X-38	NE*	Combustion Gas Control	May Be Required for Purging Following Some Accident-Manual Operation
X-38	NE	Fire Protection	
X-39	NE	Refueling Cavity Purification	
X-40	NE	Nitrogen to PRT	
X-40	NE	PRT Gas Sample	
X-41	NE	Spare	
X-42	NE	Spare	
X-43	E	Press. Protection Containment	Containment Monitoring
X-44	NE	Spare	
X-45	NE	Spare	
X-46	NE	Spare	
X-47	E	Press. Protection	Containment Monitoring
X-48	NE	Spare	
X-49	NE	Spare	
X-50	E	Press. Protection	Containment Monitoring
X-51	NE	Spare	
X-52	E	Containment Air Sample	Containment Monitoring
X-53-56		(Numbers Not Used)	
X-57	E	Press. Protection	Containment Monitoring
X-57	NE*	Post-Accident Sampling	Required for Post-Accident Sampling Using Manual Bypass
X-58	NE	Spare	
X-59	NE	Spare	
X-60	E	Containment Recirc. Sump CBSTK-10B	Containment Spray and SI Recirculation
X-61	E	Containment Recirc. Sump CBSTK-10A	Containment Spray and SI Recirculation
X-62	NE	Fuel Transfer Tube	

Penetration	Essential (E) Nonessential (NE)	System	Selection Basis
X-63	NE	Steam Generator Blowdown E11A	
X-64	NE	Steam Generator Blowdown E11B	
X-65	NE	Steam Generator Blowdown E11C	
X-66	NE	Steam Generator Blowdown E11D	
X-67	NE	Service Air	
X-68	NE	Spare	
X-69	NE	Spare	
X-70	NE	Spare	
X-71	NE*	Combustible Gas Control	Required for H_2 Post-Accident Sampling
X-71	NE	Component Cooling Water	
X-72	NE*	Combustible Gas Control	Required for H_2 Post-Accident Sampling
X-72	NE	Component Cooling Water	
HVAC-1	NE	Containment Air Purge Supply	
HVAC-2	NE	Containment Air Purge Exhaust	

* Although these systems are nonessential, they are valuable in accident monitoring and control

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indication/recording time constants. This results in a time constant of 2.3 seconds for indication and 3.2 seconds for recording. The adequacy of this response is justified in Exhibit 480.22-1.

b. Containment Water Level Instrumentation

(The five points shown below address the five clarification points of Page II.F.1-16 of NUREG-0737.)

1. The Seabrook design for containment water level complies with this requirement. Refer to clarification 3. for a discussion of the narrow range qualification.

2. ~~The indicated range of 0-6 foot adequately covers the maximum calculated capacity of 340,000 gallons above the (-)26 foot elevation.~~

3. ~~Narrow range water level monitors are provided in the containment drainage sumps. This instrumentation provides the operator with information on operational leakage inside the containment, and is not required to operate in an accident environment. Design of the instrumentation meets the intent of NUREG-0737 (see clarification 1.) by satisfying the specification for the normal operating environment including expected transients. Adequate design features ensure continuous availability of this instrumentation during operation. Operability of the instrumentation is addressed in the Technical Specifications.~~

see INSERT A (next page)

4. This requirement is not applicable to Seabrook.

5. The ±5% accuracy of the wide range level monitors provided in FSAR Table 7.5-1 is adequate for the intended function. Justification is provided as follows:

   a. The accuracy results in a water capacity uncertainty of approximately 27,000 gallons.

   b. The capacity of the RWST (between the Tech Spec limit and the Recirc. Setpoint) is in excess of 325,000 gallons. Of this capacity, approximately 127,000 gallons would fill open cavities below (-)26 elevation, leaving a minimum capacity of 198,000 gallons above the (-)26 elevation only considering the RWST capacity.

   c. In light of b., the uncertainty of a. will become negligible well before the recirculation phase is entered.

Full span of the wide range level instrument corresponds to approximately 665,000 gal. The level instrument will adequately monitor the maximum liquid volume in the containment of approximately 601,000 gal.

6.2.8

Insert A

The narrow range water level monitors are not required to operate after their respective sumps have been flooded as their function is to monitor operational leakage. They will only be exposed to a mild environment as any leakage that would cause a harsh environment would flood their sumps and would be detectable by the wide range (recirculation) sump level indicators and instruments monitoring the containment atmosphere.

The narrow range containment sump level instrumentation will be covered by the maintenance/surveillance for equipment that is located in a mild environment. This ongoing verification of the ability of the equipment to operate in the required environmental conditions meets the requirements of IEEE 323-1974 as endorsed by Regulatory Guide 1.89, Rev. 0 as interpreted by the Standard Review Plan, NUREG 0800, p. 3.11-5.

The narrow range level instruments will be operable after an operating basis earthquake (OBE) as recommended by Regulatory Guide 1.45.