PSNH

SEABROOK STATION
Engineering Office

February 8, 1985

Public Service of New Hampshire

SBN- 762
T.F.: B7.1.2

New Hampshire Yankee Division

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

Attention: Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

References:
(a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) PSNH Letter SBN-248, dated April 1, 1982, "Seabrook Station Fire Protection Program", J. DeVincentis to F. J. Miraglia
(c) PSNH Letter SBN-429, dated January 21, 1983, "Open Item Responses", J. DeVincentis to G. W. Knighton
(d) PSNH Letter SBN-714, dated September 14, 1984, "Seabrook Station Fire Protection of Safe Shutdown Capability (10CFR50, Appendix R); Revision 1", J. DeVincentis to G. W. Knighton

Subject: Seabrook Station Fire Protection Program; 10CFR50, Appendix R Deviation Request

Dear Sir:

In Reference (d), we submitted our Revision 1 to the "Seabrook Station Fire Protection of Safe Shutdown Capability (10CFR50, Appendix R) Report". Subsequent to that submittal, we have identified two additional deviations to the requirements of Appendix R. Justification for these deviations is offered herein.

We have attached, for the staff's review, the following two proposed deviations:

I. Attachment A. Reactor Coolant Pump Lube Oil Collection System Deviation
II. Attachment B. RWST Area Deviation in the form of marked-up Tabulation 3.1.4.55 of Fire Protection of Safe Shutdown Capability Report. This will be included in the next revision to the report.

Attachment C is FSAR Section 9.5.1.3 marked-up to provide a description of the Reactor Coolant Pump Lube Oil Collection System. This will be included in a future FSAR Amendment.

The contents of the proposed deviations have been discussed with the staff, and we expect that these deviations will be incorporated into a future supplement to the SER.

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Should you have any questions regarding the proposed deviations, please do not hesitate to contact us.

Very truly yours,

John DeVincentis, Director
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Attachment

cc: Atomic Safety and Licensing Board Service List

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ATTACHMENT A

REACTOR COOLANT PUMP LUBE OIL COLLECTION SYSTEM DEVIATION

Description

Seabrook Station has four reactor coolant pumps per Unit. The seismically designed lube oil collection system for these pumps has been designed with two collection tanks. Two pumps drain to each tank. Each of the two tanks has been sized to contain 125% of the oil inventory of one pump. Therefore, each tank will not protect against the consequence of simultaneous failure of the two reactor coolant pumps for which it collects oil. This design does not meet the guidance on interpretation of Section III.0, "Oil Collection Systems for Reactor Coolant Pump", as delineated in IE Information Notice No. 84-09, Lessons Learned from NRC Inspection of Fire Protection Safe Shutdown Systems (10CFR50, Appendix R).

Justification

The NRC staff position on the capacity of a reactor coolant pump oil collection system which meets Section III.0 of Appendix R to 10CFR50 is:

> One or more tanks need to be provided with sufficient capacity to collect the total lube oil inventory from all reactor coolant pumps draining to the container.

Each Seabrook Station reactor coolant pump contains approximately 240 gallons of oil. Each collection tank has a capacity of 320 gallons. The tanks were sized to hold the entire inventory of one pump plus 25%. However, if the lube oil systems for two pumps were to fail simultaneously, there would be an excess of 160 gallons of oil per tank. In order to contain this excess oil, a seismically designed dike will be built around the tank. The tanks and their dikes are located such that the excess oil does not present a fire hazard to any safety-related equipment. Additionally, there is no ignition source near the diked area.

We believe this design is a suitable alternative to that required in Section III.0 of Appendix R, and this deviation will not decrease the fire safety of the plant.

ATTACHMENT B

TABULATION 3.1.4.55

TANK FARM (RWST)

FIRE AREA: TF-F-1-0

A. EQUIPMENT AND CABLES LOCATED IN THE FIRE AREA

	Train A			Train B	
Description	Equip.	Cable	Description	Equip.	Cable
Valve CS-LCV-112D	X	X	Valve CS-LCV-112E	X	X

B. ANALYSIS

The tank farm refueling water storage tank (RWST) area contains redundant valves CS-LCV-112D and CS-LCV-112E for the lines to the charging pumps to provide make-up to the reactor coolant system when going to cold shutdown.

The tank farm RWST area is approximately 65 ft long by 48 ft wide by 60 feet high with a concrete dike 22 ft above the grade Elevation 20'-0". There are no in situ combustibles in the area. All cables, including safe shutdown cables, are routed in conduit. The closest tray to the Train B conduits has a horizontal separation of 20' with an intervening concrete dike. The redundant valves are separated by approximately 2 ft.

Insert a

The main control room does not have to be evacuated for a fire in this area and other than the RWST valves, no safe shutdown equipment is affected by a fire in this area.

Insert b

Valves CS-LCV-112D and CS-LCV-112E are required to be operated for Safe Shutdown. However, these valves are not needed for at least 8 hours into the event and can be opened manually, if required. Based on the length of time before manual operation is required, no emergency lighting is provided.

C. EVALUATION

Deviations from Appendix R, Paragraph III. G.2 separation requirements and

The Safe Shutdown requirements are satisfied.

~~A deviation from the~~ Appendix R, Paragraph III. J. emergency lighting requirements exists in the tank farm. ~~This~~ These deviation ~~is~~ are justified based on the above analysis and our assertion that additional modifications would not enhance fire protection safety.

ATTACHMENT B

Tabulation 3.1.4.55

Insert a - Because the area is surrounded completely by the 22 ft. dike, there is no traffic through the area, and no build-up of trash. The most likely place for a fire to occur would be in the valve motors themselves. The position of the RWST valves are monitored by three electrically independent circuits. The primary means of indication is the valve position lights located on the main control board and powered by the valve control ciruit. Secondary indication is provided by valve open and valve closed monitoring lights on the control board. Addtionally, the computer monitors the valve position and alarms on valve not fully closed. Fire induced failures that cause repositioning of valve will be evidenced by a status change of the indicating light circuits. Failures which result in loss of power will also be indicated by an absence of indication on the main control board.

Insert b - Valve position indication is provided in the Control Room. Valves CS-LCV-112D and CS-LCV-112E are required to be operated for safe shutdown. However, they are no required for at least 8 hours, and can be opened manually if required.

l. All fire protection systems in areas containing safe shutdown equipment are preaction systems to preclude inadvertent system trip. Piping in the safe shutdown equipment areas is seismically supported. Drains are provided in these areas to convey any fire protection water away from the fire zone. 53

m. The status of all fire detection circuits is provided at the control console in the control room and on a local control panel. Alarm, detector malfunction, or detector removal are annunciated for operator action. 53

n. The plant communication system is available to alert personnel of a fire, its location, and remedial action required. 53

insert a

o. A failure modes and effects analysis for the systems and components is described in Table 9.5-4.

9.5.1.4 Inspection and Testing Requirements

a. Preoperational Testing

1. Automatic systems (wet pipe sprinkler, preaction sprinkler, deluge water spray) are inspected and tested using the general guidelines of NFPA-13 and 15. 53

2. Yard piping, standpipes and hose stations (excluding the hoses) are hydrostatically tested to a pressure of 200 psig for a period of 2 hours using the general guidelines of NFPA-13 and 14. Fire hoses will be tested and maintained using the general guidelines of NFPA-198.

3. Fire pump field acceptance tests are performed using the general guidelines of NFPA-20.

4. Halon 1301 systems are tested and inspected using the general guidelines of NFPA-12A.

5. Final inspection and tests of completed installations are made in the presence of the ANI representative. 53

b. Surveillance

Inspection of fire protection equipment will be made with filled out reports reviewed by the fire protection engineer and filed for examination by an ANI representative. 53

ATTACHMENT C

FSAR Section 9.5.1.3

Insert a - p. The reactor coolant system has four reactor coolant pumps. The seismically designed lube oil collection system for these pumps has been designed with two collection tanks. Two pumps drain to each tank. Each of the two tanks has been sized to contain 125% of the oil inventory of one pump. A seismically designed dike has been provided around each tank. Each tank in combination with its associated dike has been sized to contain the entire inventory of two pumps. The tanks and the dikes have been located such that the excess oil does not present a fire hazard to any safety-related equipment. Additionally, there is no ignition source near the diked area.