



Public Service of New Hompshire

March 18, 1986

New Hampshire Yankee Division

SBN- 970 T.F. B7.1.3

United States Nuclear Regulatory Commission Washington, DC 20555

Attention:

Mr. Vincent S. Noonan, Project Director

PWR Project Directorate No. 5

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

Subject:

Seabrook Station Fire Protection Program

Dear Sir:

Pursuant to the Staff's request, we have reviewed our previously submitted (Reference (b)) 10CFR50, Appendix R Comparison. Enclosed please find, as Attachment 1, the revised and updated comparison to Appendix R.

Also enclosed are Attachments 2 and 3. Attachment 2 provides deviations from 10CFR50, Appendix R, as well as BTP APCSB 9.5-1, Appendix A. Attachment 3 provides deviations from the requirements of the National Fire Protection Association (NFPA) Code and Underwriters' Laboratory (UL) listing. Included in Attachment 3 is a revision to FSAR Section 9.5.1.1 associated with the requested NFPA/UL deviations. This revision to Section 9.5.1.1 will be incorporated into the FSAR by a future amendment.

We request that the acceptability of the above referenced Comparison to Appendix R and the deviations identified in Attachments 2 and 3 be reflected in the next supplement to Seabrook Station's SER.

Very truly yours.

John DeVincentis, Director Engineering and Licensing

Attachments

cc: Atomic Safety and Licensing Board Service List 8603210143 860318 PDR ADDCK 05000443 F PDR 13002

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Comparison to Appendix R to 10CFR50, Fire Protection Program For Operating Nuclear Power Plants

REFERENCES

- (1) Seabrook Station Final Safety Analysis Report.
- (2) Seabrook Station Fire Protection Program Evaluation and Comparison to BTP 9.5-1, Appendix A.
- (3) Seabrook Station Fire Protection of Safe Shutdown Capability (10CFR50, Appendix R).
- (4) SSFP Seabrook Station Fire Protection Program Manual, Revision 2.
- (5) SBN-328 Letter from PSNH to NRC, dated September 20, 1982.
- (6) SBN-369 Letter from PSNH to NRC, dated November 12, 1982.
- (7) SBN-762 Letter from PSNH to NRC, dated February 8, 1985.
- (8) SBN-799 Letter from PSNH to NRC, dated May 31, 1985.
- (9) SBN-904 Letter from PSNH to NRC, dated December 2, 1985.
- (10) SBN-932 Letter from PSNH to NRC, dated January 24, 1986.

A review of 10CFR50, Appendix R was made of Seabrook's design and the Fire Protection Program. The results of that review are as follows:

Section II.A, Fire Protection Program

We comply with this section. See Reference (2), Pages F13/15, Reference (4).

Section II.B, Fire Hazard Analysis

We comply with this section. See Reference (2), in total, and Reference (3).

Section II.C, Fire Prevention Features

We comply with this section. Deviations are noted in the Section III review.

Section II.D, Alternative or Dedicated Shutdown Capability

We comply with this section. Deviations are noted in the Section III review.

Section III.A, Water Supplies for Fire Suppression Systems

We comply with this section.

Section III.B, Sectional Isolation Valves

We comply with this section.

Comparison to Appendix R to 10CFR50, Fire Protection Program For Operating Nuclear Power Plants

Section III.C, Hydrant Isolation Valves

We comply with this section.

Section III.D, Manual Fire Suppression

We comply with this section, except for a deviation listed in Attachment 2, Deviation 15.

Section III.E, Hydrostatic Hose Tests

We will comply with this section.

Section III.F, Automatic Fire Detection

We do not fully comply with this section. References (5) through (11) identify deviations to detection.

Section III.G, Fire Protection of Safe Shutdown Capability

We comply with this section subject to the exemptions requested in Reference (3) which were submitted in References (9), (10), and (11). Further deviations will be submitted in the areas of structural steel fire protection.

Section III.H, Fire Brigade

We will comply with this section.

Section III.I, Fire Brigade Training

We will comply with this section.

Section III.J, Emergency Lighting

We will comply with this section except for a deviation provided in Reference (10).

Section III.K, Administrative Controls

We comply with this section. Program will be in effect upon plant operation.

Section III.L, Alternative and Dedicated Shutdown Capability

We comply with this section subject to any exceptions noted in References (9) and (10).

Comparison to Appendix R to 10CFR50, Fire Protection Program For Operating Nuclear Power Plants

Section III.M, Fire Barrier Cable Penetration Seal Qualification

Cable penetration seal qualification meets the requirements of this section except for those listed in Attachment 2, Deviation 14. Further deviations will be submitted.

Section III.N, Fire Doors

We will comply with the intent of this section.

Section III.O, Oil Collection System for Reactor Coolant Pump

We comply with this section except as noted in Reference (7).

Appendix R/Appendix A Deviation

REFERENCES

- (1) SBN-904; Letter from PSNH to NRC, dated December 2, 1985.
- (2) SBN-932; Letter from PSNH to NRC, dated January 24, 1986.

Deviation Nos. 1 Through 7

See Reference (1), Attachment A.

Deviation Nos. 8 Through 12

See Reference (2), Attachment 2.

Deviation No. 13

A deviation is requested from the requirement that Fire Suppression Systems should be installed to protect charcoal filters in accordance with Regulatory Guide 1.52. An analysis was conducted to determine the maximum temperatures for the following filters: EAH-F-9, 69, FAH-F-41, 74, PAH-F-16, CAP-F-40, CAH-F-8, and CBA-F-38 due to decay heat. The results indicated that the temperatures do not reach the desorption or ignition level without air flow across the filters.

It is our contention that this deviation is justified based on our assertion that no fire would result from a loss of air flow across any of our charcoal filters.

Deviation No. 14

A deviation is requested from the BTP APCSB 9.5-1, Appendix A, Paragraph D.1(J) requirement, that penetrations in fire rated barriers be sealed with a material having a fire resistance of three hours. This request is for the bus duct penetrations in the east wall of the nonessential Switchgear Room and the bus duct penetrations in the north wall of the Turbine Building.

Nonessential Switchgear Room - East Wall:

Aluminum bus duct penetrates the east three-hour fire rated wall of the nonessential Switchgear Room (Fire Area CB-F-1A-A) to the Turbine Building (Fire Zone TB-F-1A-Z). There are full wall seals (eight inches) around the ducts where they penetrate the fire wall. There are no internal fire seals in the ducts. Aluminum bus duct requires an 18-inch thick internal and external seal to have a three-hour fire rating with the material used. Steel bus duct would require a five-inch thick seal. There is an area-wide detection system in the nonessential Switchgear Room and an area sprinkler system on the Turbine Building side of the wall.

Appendix R/Appendix A Deviation

We believe that the installation of three-hour fire rated seals in these wall penetrations, with a Fire Detection System on one side of the wall and a sprinkler system on the other, will not enhance plant fire safety.

Turbine Building - North Wall:

Aluminum bus duct penetrates the north three-hour fire rated exterior wall of the Turbine Building to the transformer yard area. There are full wall (eight-inch) seals around the ducts where they penetrate the fire wall. There are no internal fire seals in the ducts. Aluminum bus duct requires an 18-inch thick internal and external seal to have a three-hour fire rating with the material used. Steel bus duct would require a five-inch thick seal. There is an area sprinkler system on the turbine side of the wall. Each of the transformers on the exterior side of the wall have a deluge system on them and they are approximately 28-feet from the wall.

We believe that the installation of three-hour fire rated seals in these wall penetrations would not enhance plant fire safety.

Deviation No. 15

A deviation from the requirements of Appendix R, 10CFR50, Section III.D manual fire suppression that requires "standpipe and hose systems shall be installed so that at least one effective hose stream will be able to reach any location that contains or presents an exposure fire hazard to structures, systems, or components important to safety." This request is for the cooling tower, east main steam and feedwater enclosure, service water pumphouse, and the intake and discharge structures.

The primary means of manual fire fighting for these areas is portable fire extinguishers and the secondary is a fire hose from the hose houses provided at the fire hydrants near these locations. We believe that the substitution of a fire hose from a fire hydrant hose house from the standpipe system, is an acceptable deviation.

Deviation No. 16

A deviation from the requirements of Appendix R of 10CFR50, Section III.F, that fire detection be installed in all areas of the plant that contain or present an exposure hazard to safe shutdown or safety-related systems or components, and the National Fire Protection Association (NFPA) standard on automatic fire detectors - NFPA 72E requirement for smoke detectors above the suspended ceiling, is requested for the Control Room.

The Control Room is manned full-time and there is full area smoke detection at the ceiling level and detection in the Main Control Room console. In the ceiling space there is HVAC duct and metal jacketed lighting cable (Type ALS). This cable has an aluminum sheath which is not a combustible material. There are no other cables located in the ceiling space.

Appendix R/Appendix A Deviation

We believe that the lack of combustibles above the ceiling with area detection below the Control Room ceiling provides a suitable level of fire detection. This deviation will not decrease the fire safety of the plant.

Deviations from National Fire Protection Association (NFPA) Code/Underwriter's Laboratory (UL) Listing

Section 9.5.1.1 from Seabrook's FSAR states:

The Fire Protection Systems have been designed using the general guidelines of the following codes and standards:

- (a) American Nuclear Insurers (ANI) Specifications for Fire Protection of New Plants.
- (b) National Fire Protection Association (NFPA) and ANS Codes as Listed in Table 9S-1.
- (c) Uniform Building Code (UBC).

The following are deviations from NFPA:

1. Low Point Drain Valves in Sprinkler Systems

Most of the low point drain valves, used throughout the sprinkler systems, do not meet NFPA 13, Section 3-14 since they are not UL listed. These drain valves, United Brass Series 125 S Globe Valves, have all the same characteristics as United Brass UL listed valves, except for the flow characteristics. Since these valves are only used as low point drains, the flow characteristics are not of a concern. The use of non-UL listed valves in this application is acceptable.

2. The test flow meter for Fire Pumps 1-FP-P-20A, 20B, and 20C does not meet NFPA 20:

NFPA 20 states that the test flow meter must be capable of up to 175% of rated pump capacity. The pumps have a rated capacity of 1,500 gpm. One hundred seventy-five percent (175%) of this is 2,625 gpm, but the flow meter is only capable up to 2,600 gpm.

These pumps will only be tested to a maximum 150% of their rated capacity which is well within the range of the flow meter. The capacity of the flow meter is also only 1% lower than what is required by code.

Because of the above stated reasons, the test flow meter is acceptable.

3. Audible evacuation alarms do not meet NFPA 72A:

NFPA 72A, Section 2-5.4, "Distribution of Evacuation Signals," states that fire alarm systems provided for evacuation of occupants shall have one or more audible alarms on each floor divided by a fire wall. Areas of the plant which are protected by preaction sprinkler systems do not have audible alarms throughout the area for the evacuation of occupants. However, if there is a fire problem, the Control Room will receive an alarm from the area detection and/or the water flow alarm valves on the sprinkler systems. Plant operating personnel and the fire brigade will be immediately dispatched to the area in question.

Deviations from National Fire Protection Association (NFPA) Code/Underwriter's Laboratory (UL) Listing

Because of this reason, lack of the audible alarms within the fire area is acceptable.

The areas which do not have audible alarms throughout the area include the Fuel Oil Day Tank Rooms, the Mechanical Room on El. 51'-6", the Diesel Generator Rooms, and the Fuel Oil Storage Rooms in the Diesel Generator Building, the Turbine Building, El. 25' in the PAB, the electrical tunnels Trains A and B, the cable spreading area in the Control Building, and the extruder/evaporator area, the metering pump area, and the turntable/conveyor belt area in the Waste Process Building.

4. Fire tanks were not built to AWWA Standards as required by NFPA 22, but instead, to API 650.

The requirements for a tank built to American Petroleum Institute Standard 650, for storage of petroleum, are more stringent than the requirements in AWWA Standards for water tanks. The tanks are, therefore, acceptable.

 HVAC fans do not shut down upon detection of smoke as required by NFPA 90A.

For safety-related ventilation systems, there is a conflict between the nuclear safety-related HVAC System and NFPA 90A. It is necessary to keep the ventilation system operational (depending on area heat loads). This is especially true for a ventilation system serving multiple areas. If a damper in a branch duct for one fire area closes due to fire in its respective fire area, it is necessary to continue operating fans to provide cooling air to other areas served. This design philosophy is also applied to nonsafety-related HVAC Systems at Seabrook.

Seabrook Station relies on area detection for early warning of fire problems. These problems will alarm in the Control Room. Plant operating personnel will take immediate action to determine the magnitude of the fire problem and will, at that time, decide if it is necessary to shut down fans.

For these reasons, not shutting down the fans is an acceptable deviation.

Sprinklers for area coverage over the PCCW pumps in the PAB El. 25', do not strictly meet NFPA 13.

Due to severe congestion at the ceiling and the thickness of the beams at the ceiling, several sprinklers over the PCCW pumps could not be located in strict accordance with NFPA 13, Section 4.3.

The ceiling beams, extending down to 42 inches from the ceiling, do not physically allow sprinkler location to meet Table 4-2.4.b in NFPA 13. The sprinklers are, however, placed in the beam pockets to compensate for the obstruction of the spray patterns due to the beams. There are also

Deviations from National Fire Protection Association (NFPA) Code/Underwriter's Laboratory (UL) Listing

areas in the PAB in which the ceiling is heavily congested with supplementary steel, supports, and conduits not allowing the sprinklers to meet the maximum distance from the ceiling criteria in NFPA 13. In these cases, the sprinklers were placed in the best location possible to allow for complete coverage of the floor. For the above reasons, the locations of the sprinklers are an acceptable deviation.

7. Fire protection booster pump does not meet NFPA 20:

Per Branch Technical Position APCSB 9.5-1, Appendix A, Position C3(d) - A backup to the normal Fire Protection System was provided for the standpipes servicing safety equipment in the event of a Safe Shutdown Earthquake (SSE). A permanent connection between one train of service water and the Fire Protection System (safety-related area standpipe) is provided with a booster pump to supply the required pressure.

The fire protection booster pump is an Aurora Series 350, stainless steel pump that is not UL listed, nor FM approved. The pump controller is a nonautomatic (manual) controller which includes a local on-off push button with status lights. There is a gate valve and a pressure gauge in both the suction and discharge lines to the pump. A relief valve is located at the pump discharge. An orifice plate is located in a test line connecting the suction and discharge of the pump so that pump flow may be tested. A permanent flow meter is not being provided, but there are connections for a portable flow meter.

One requirement in NFPA 20 is that fire pumps shall be listed for fire protection. Even though the FP booster pump is not UL/FM, it has similar characteristics to a UL/FM pump. UL/FM pumps, however, are made from cast iron which cannot be seismically qualified. The FP booster pump is made from stainless steel and, therefore, can be seismically qualified.

NFPA 20 also requires that fire pumps shall have an automatic controller which would start the pump upon a low pressure reading. The pump is also required by NFPA 20 to have remote reading. The pump is also required by NFPA 20 to have remote alarm and signal devices at a point of constant attendance to indicate such items as that the controller has operated into a motor running condition and loss of line power on the line side of the motor starter. NFPA 20 also requires to galvanize or paint the suction pipe to prevent tuberculation.

The FP booster pump is not, however, the main fire pump. It is a small (150 gpm) backup fire pump which only supplies the standpipe (hose reel) systems in certain areas of the plant in the unlikely event that SSE damages the normal fire protection supply. The plant operating personnel will be immediately dispatched to the FP booster pump to open the isolation valve between the Service Water System and the Fire Protection System, and to start the pump. Due to these circumstances, an automatic controller is not necessary. The alarms required by NFPA 20 are also not needed since plant operating personnel will be at the pump if there is a

Deviations from National Fire Protection Association (NFPA) Code/Underwriter's Laboratory (UL) Listing

problem with it. Since tuberculation is also not seen as being a problem due to the limited use of the pump, lining of the suction piping is not required.

For these reasons, the deviations stated above are acceptable.

Equipment in the Fire Protection Systems, except as noted in the FSAR, conforms to the standards of the NFPA, and is Underwriter's Laboratory (UL) listed and/or Factory Mutual (FM) approved. The following is a deviation from UL listed:

1. Teflon used to enhance closure of UL listed fire damper:

A teflon coating has been applied to the blade guide flange of the fire dampers to improve their closure characteristics under flow. Although the dampers are not tested with the teflon coating, this coating will not prevent the dampers from meeting the test requirements of UL 555. In the damper closure part of the test, the dampers were tested under no flow conditions. The untested, per UL, teflon modification allows the damper to close under a flow condition.

UL 555 under "Corrosion Protection," allows after a damper is tested the use of epoxy or alkyd-resin type or other outdoor paint in the surface of the damper. Since the teflon coating is, in essence, the same as a paint coating, it will not affect the rating of the damper. The use of teflon on fire dampers is acceptable.

NOTE: To reflect these deviations, where applicable in the FSAR, see revised excerpt of Section 9.5.1.1 included herewith.

9.5 OTHER AUXILIARY SYSTEMS

9.5.1 Fire Protection System

9.5.1.1 Design Bases

The plant fire protection system is a non-safety-related system designed to detect and alarm, control and extinguish fires that may occur. To accomplish this end, the concept of defense in depth is a criterion for design. This concept, applied to fire protection, aims at a balanced program which will:

- Prevent fires from starting. a.
- Detect fires quickly, and quickly suppress those that occur, b. thus limiting their damage.
- Design and locate plant equipment such that if a fire occurs and burns for a long time, despite a. and b., that essential plant activities will still be performed.
- Ensure that neither inadvertent operation nor failure of a d. system will induce a failure of any safety-related system.

The guidance provided by APCSB BTP 9.5-1 and its Appendix A and 10 CFR 50 Appendix R is utilized in meeting the design basis.

The fire protection systems have been designed using the general guidelines of the following codes and standards:

- American Nuclear Insurers (ANI) Specifications for Fire Protection of New Plants.
- b. National Fire Protection Association (NFPA) and ANS Codes as listed i. Table 9.5-1. - Replace with INSERT A
- Uniform Building Code (UBC).

Equipment in the fire protection systems, except for the fire tank heating systems and the hydrant isolation valves, conforms to the standards of the National Fire Protection Association, and its Underwriter's Laboratory (UL) listed and/or Factory Mutual approved, exceptions are required for specific conditions such as seismic requirements, etc.

For a listing of unusually hazardous materials which will be used onsite and which could present unexpected fire hazards or could complicate firefighting activities, refer to Table 9.5-10.

9.5.1.2 System Description

Fire Prevention

The plant fire protection system utilizes design aspects which employ separation criteria, non-combustible material, fire

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MAR 17 1986

Docket No. 30-19947

License No. 29-20586-01

Nuodex, Inc.
ATTN: Mr. Robert Weedon
Plant Manager
40 Nixon Lane
Edison, New Jersey 08837

Gentlemen:

Subject: Inspection No. 30-19947/85-01

This refers to your letter dated January 24, 1986, in response to our letter dated January 7, 1986, providing us with your proposed corrective and preventive actions for violations based on the results of our inspection on November 26, 1985.

Please be advised that, when applying for an amendment to your license naming Michael L. Catalfano as the individual responsible for your radiation protection program and Mr. James C. Fargione as the person who will supervise the use of licensed material, it will be necessary to describe the training and experience of these individuals. The enclosed regulatory guide is provided for your assistance in preparing this application.

Please respond to this office within thirty days of the date of this letter with a written statement providing the following information:

- the date the amendment application to your license will be submitted; and
- (2) corrective steps which will be taken to avoid future violations.

We will continue review of your proposed corrective and preventive actions upon receipt of the above.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By: John D. Kinneman

John D. Kinneman, Chief Nuclear Materials Safety Section A

Enclosure: NRC 313, Nonportable Gauging Devices Guide

OFFICIAL RECORD COPY

RL NUODEX - 0001.0.0

03/12/86

RETURN ORIGINAL TO REGION I



cc: Public Document Room (PDR) Nuclear Safety Information Center (NSIC) State of New Jersey

bcc:
Region I Docket Room (w/concurrences)

RI:DRSS L.M. Tripp/bc 3/15/86 RI:DRSS Kinneman 3/13/86

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RL NUODEX - 0001.1.0 03/12/86



40 Nixon Lane Edison, New Jersey 08837 (201) 287-5000

January 24, 1986

Mr. John D. Kinneman Chief, Nuclear Materials Safety Section A Division of Radiation Safety and Safeguards U.S. Nuclear Regulatory Commission, Region I 631 Park Avenue King of Prussia, PA 19406

Dear Sir:

RE: Docket No. 030-19947; License No. 29-20586-01; Inspection No. 030-19947/85/01

This is in response to your letter of January 7, 1986, concerning the above referenced inspection. We have investigated the violations cited in your letter and determined the following:

- Nuodex's application, dated January 24, 1983, designates Mr. James J. Pardini as Radiation Protection Officer. During 1985, Mr. Pardini was transferred to another position within Nuodex. His duties, including that of Radiation Protection Officer, were assumed by Mr. Michael L. Catalfano.
- 2. Condition 12 of License No. 29-20586-01 states that licensed material be used under the supervision of Mr. James J. Pardini or Mr. Alfred E. Smith. Upon Mr. Pardini's transfer, his duties, including supervision of licensed material, were assumed by Mr. Michael L. Catalfano. Mr. Smith left Nuodex's employ in 1985. His duties, including supervision of licensed material, were assumed by Mr. James C. Forgione.

Because of an administration oversight, Nuodex has not yet moved to amend License No. 29-20586-01 to reflect these personnel changes. Those actions necessary to expedite the license will be undertaken immediately.

We emphasize that the above described personnel changes did not result in any lapse in the continuing radiation protection program. Please advise as to the proper procedure for updating this license. Thank you for your assistance.

Very truly yours,

NUODEX INC.

Robert W. Weeden

Lalud Willeder

Director of Operations

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