Filed: November 1, 1982

RELATED CORRESPONDENCE

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

before the

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al.	)	Docket Nos. 50-443 OL 50-444 OL
(Seabrook Station, Units 1 & 2)	)	

APPLICANTS' ANSWERS TO
"NECNP FIRST SET OF INTERROGATORIES
AND REQUEST FOR DOCUMENTS
TO APPLICANTS ON CONTENTIONS
I.A.2, I.B.1, I.B.2, and I.C."

Pursuant to 10 CFR § 2.7406, the Applicants hereby respond to the "NECNP First Set of Interrogatories and Request for Documents to Applicants on Contentions I.A.2, I.B.1, I.B.1, and I.C," served on them by mail on October 13, 1982.

D503

GENERAL MATTERS

1. Definitions. The Applicants object to so much of the definition "identify" as is set forth in paragraph 2 under "Instructions for Use" as purports to require the Applicants to set forth the content of documents identified, inasmuch as, since NECNP has requested (or may request) production of identified documents for inspection and copying, an attempt to summarize or duplicate the contents of the document in an answer to an interrogatory is a patently unreasonable and bootless waste of time and effort.

The Applicants object to so much of the same definition as calls for "the present custodian . . . of any and all copies of the document" on the grounds that most of the documents to be identified are published documents and all have been widely circulated, with the result that this request would be unreasonably burdensome and probably impossible to respond to and that the information called for is not relevant to any admitted contention within the meaning of 10 CFR § 2.740(b)(1).

The Applicants object to the definitions contained in paragraph 3 and 4 under the heading "Instructions

for Use" on the grounds that these appear to be incomprehensible and not to be related to any of the interrogatories actually propounded.

2. Production of Documents. The Applicants will make the documents for which production is called for available for inspection and copying at one or more appropriate places at a time to be mutually agreed upon by counsel for NECNP and the Applicants.

SPECIFIC INTERROGATORIES

Interrogatory No. 1

Question:

1. What is the Applicants' position with respect to NECNP Contention I.A.2.? State all facts and opinions and identify and provide access to all documents on which that position is based.

Answer:

All Class 1E electric valve operators installed inside the containment at Seabrook comply with the requirements of Regulatory Guide 1.73 [Rev. 0 (1/74) which endorses IEEE 382-1974] and 1.89 [Rev. 0 (11/74) which endorses IEEE 323-1974]. Compliance with the above Regulatory Guides demonstrates conformance to GDC 4 for Class 1E electric valve operators installed inside containment. Documentation for electric valve operatores is maintained as discussed in the FSAR Section 3.11 (B).3 (Qualification Test Results). At the present time the documentation files are at UE&C's Philadelphia Offices.

Interrogatory No. 2

Question:

2. Identify all individuals whom Applicants expect to call as witnesses with respect to NECNP Contention I.A.2., and identify all documents on which the

Applicants expect to rely at the hearing with respect to this contention.

Answer:

Applicants have not yet determined which, if any, witnesses they will call with respect to this contention.

Interrogatory No. 3

Question:

3. Describe the location, function, and purposes of all electric valve operators installed inside containment.

a. For each electric valve operator, state its function in the event of a loss of coolant accident (LOCA).

b. For each such electric valve operator, state its purpose or function, if any, in preventing a LOCA.

c. For each such electric valve operator, describe the degree, if any, and the manner in which it contributes to the safety of the facility.

d. Identify those electric valve operators installed inside the containment that Applicants consider to be "safety related."

e. Identify those electric valve operators installed inside the containment that Applicants to do not consider to be "safety related." Of those, state which ones Applicants consider to be "important to safety." In each case, explain why Applicants do not consider the electric valve operator to be "safety related" or "important to safety" if they do not. [Footnotes omitted.]

Answer:

Table I.A.2-3, attached, provides the descriptive information requested above for all electric valve operators (motor and solenoid valve operators) installed inside the containment. Note that no distinction was made between "safety related" and "important to safety." Therefore, both of these categories are encompassed in the table designation "safety related."

Interrogatory No. 4

Question:

4. Identify all electric valve operators installed inside the containment that Applicants believe are required to comply with Criterion 4 of 10 CFR Part 50, Appendix A.

a. Identify those electric valve operators installed inside the containment that Applicants believe are not required to comply with GDC 4. In each case, explain why compliance is not required.

Answer:

The valves designated as "safety related" on Table I.A.2-3 (response to Interrogatory 3) comply with Criterion 4 of 10 CFR Part 50, Appendix A. The valves on the subject table listed as "not safety related" serve no safety function and are not required to comply with GDC 4. For the reasons why compliance is not

required, see the entry entitled "reason not safety related" on the subject table.

Interrogatory No. 5

Question:

5. Identify all electric valve operators installed inside the containment that Applicants classify as Class IE equipment, as the term is used in the preamble to the proposed rule on environmental qualification, 47 Fed. Reg. 2876, 2877 (January 20, 1982).

a. Identify any additional electric valve operators installed inside the containment that Applicants believe would be governed by PR 10 CFR 50.49 (C), Id. at 2878.

b. If Applicants have prepared the list that would be required by PR 10 CFR 50.49(d), or if Applicants have developed a similar list of electrical equipment that must be environmentally qualified, identify and provide a copy of all documents in the possession or control of Applicants or their agents, contractors, or employees, that analyze or discuss the scope of the requirements of GDC 4 with respect to environmental qualification or that in any way discuss the issue of environmental qualification.

Answer:

We have not reviewed our equipment for compliance with the referenced proposed rule. It should be noted that this proposed rule was revised in April, 1982.

Interrogatory No. 6

Question:

6. Is it Applicants' position that all safety related electric valve operators installed inside the containment comply with GDC 4?

a. Is it Applicants' position that all safety related electric valve operators installed inside the containment comply with the Division of Operating Reactors' "Guidelines for Evaluating Environmental Qualification of Class IE Electrical Equipment in Operating Reactors" ("DOR Guidelines")?

b. Is it Applicants' position that all safety related electric valve operators installed inside the containment comply with NUREG-0588?

Answer:

As indicated in the response to Interrogatory 1 (I.A.2), all Class 1E electric valve operators installed inside containment arein full compliance with GDC 4. The documentation described in Response 1 (I.A.2) will show compliance with Regulatory Guides 1.73 and 1.89 and GDC 4.

a) Safety-related electric valve operators installed inside containment comply with the DOR Guidelines.

b) Safety-related electric valve operators installed inside containment comply with NUREG-0588.

Interrogatory No. 7

Question:

7. Identify each safety related electric valve operator installed inside the containment that does not comply with the DOR Guidelines or NUREG-0588.

a. For each such electric valve operator, state whether Applicants believe it complies with GDC 4 and justify that position in light of the noncompliance with the DOR Guidelines and NUREG-0588.

Answer:

None.

Interrogatory No. 8

Question:

8. Answer Questions 6 and 7 with respect to electric valve operators installed inside the containment that Applicants consider to be "important to safety."

Answer:

Seabrook Station categories all electric equipment either as Class 1E (safety-related) or non-Class 1E (non-safety-related).

Interrogatory No. 9

Question:

9. It is Applicants' position that compliance with IEEE Standards 382-1972 and 323-1974 constitutes compliance with GDC 4?

Answer:

See response to Interrogatory 1 (I.A.2).

Interrogatory No. 10

Question:

10. Identify the suppliers from which Applicants have obtained or will obtain the electric valve operators installed inside the containment that Applicants believe assert comply with IEEE 323-1974. Explain how such commercially available equipment can comply with IEEE 332-1974 when the Commission stated in CLI-80-21 that there was at that time no commercially available equipment that complies with IEEE 323-1974.

Answer:

All Class 1E electric valve operators installed inside containment are listed in the Class 1E Equipment List, Appendix 3H of the FSAR. The Class 1E Equipment List provides the manufacture of the equipment.

In the last sentence of Page 13 of CLI-80-21 [11 NRC at 715], it states that, "but apparently no such connectors are now commercially available . . . ." This comment only pertained to electrical connectors. At the time CLI-80-21 was issued, there were electric valve operators environmentally qualified to the requirements of IEEE 323-1974 and 382-1974.

Interrogatory No. 11

Question:

11. Have Applicants undertaken any examination of the Three Mile Island accident in order to determine how the knowledge gained from that accident affects actions that may be required to comply with GDC 4 or otherwise to assure that equipment is adequately qualified to withstand the effects of an accident? If so, identify and provide access to all documents related to any such examination or study. In addition, identify all actions of any sort taken by Applicants as a result of the TMI accident with respect to the issue of environmental qualification.

Answer:

The Applicants did not undertake any examination of the Three Mile Island accident specifically for environmental qualification.

In the area of environmental qualification the accident at Three Mile Island had no significant effect except for radiation source terms. Since the accident, we have completed a recirculating fluid radiation dose study.

Interrogatory No. 12

Question:

12. Identify the parameters of the accident environment for which the electric valve operators installed inside the containment have been qualified.

a. Explain the basis for that choice of accident environment parameters. For each parameter, explain how it differs from the accident

environment that existed during and after the accident at Three Mile Island Unit 2.

Answer:

The environmental parameters for normal, abnormal and accident conditions are provided in the Service Environment Chart, Figure 3.11 (B).1 of Section 3.11 of the FSAR.

a. The bases for the accident environment provided in the Service Environment Chart are discussed in Section 3.11 (B) of the FSAR.

Interrogatory No. 13

Question:

13. Describe specifically how it was determined that the electric valve operators in question could survive the accident environment identified in response to Question 12.

a. Identify and provide access to all documents reflecting testing or calculations done for the purpose of making this determination or otherwise relied upon or referred to in connection with making this determination.

Identify and describe any actual environmental conditions that were created for test purposes and to which electric valve operators were subjected. In each case, identify the length of time that the electric valve operators were subjected to the simulated accident environment. Where and when were these tests performed? In each case, how many electric valve operators were tested? Of those, how many were of the same design as those to be used at Seabrook?

Answer:

The Seabrook environmental qualification program is discussed in detail in Section 3.11 (B) of the FSAR.

a. See response to Interrogatory 1 (I.A.2) for documentation.

Interrogatory No. 14

Question:

14. State the length of time that Applicants contend the electric valve operators installed inside the containment will remain environmentally qualified and capable of withstanding the effects of an accident should one occur.

a. Explain the basis for this statement.

b. Identify all documents on which Applicants rely or to which they have referred in making this statement.

c. Identify all tests or studies of any sort of which the Applicants are aware in which any electrical equipment has been examined after more than one year of use to determine whether it is still environmentally qualified.

Answer:

The qualified life of Class 1E electric equipment is stated in the appropriate equipment test report.

(a, b, c) The environmental qualification program is presented in detail in Section 3.11 of the FSAR. The documentation for equipment environmental qualification is maintained as

indicated in our response to Interrogatory 1 (I.A.2).

Interrogatory No. 15

Question:

15. State the length of time after an accident has occurred that Applicants contend the electric valve operators installed inside the containment will continue to withstand the effects of an accident and perform effectively after an accident has occurred and they have been subjected to the accident environment.

a. Explain the basis for this statement.

b. Identify all documents on which Applicants rely or to which they have referred in making this statement.

Answer:

a) & b) The safety-related electric equipment that is required to withstand the effects of the accident environment will do so for a minimum of one year. The detailed environmental qualification test results will be maintained as indicated in our response to Interrogatory 1 (I.A.2).

Interrogatory No. 16

Question:

16. Describe specifically how the effects of aging of the equipment and cumulative radiation exposure have been considered in determining both whether the electric valve operators installed inside the containment are environmentally qualified and whether

they will remain environmentally qualified for the life of the plant.

Answer:

The effects of aging and radiation exposure are addressed in the specific equipment tests during environmental qualification. For a complete description of our environmental qualification program see Section 3.11 of the FSAR.

Interrogatory No. 17

Question:

17. Have the Applicants prepared the analysis that would be called for by PR 10 CFR 50.49(j) to assure safe reactor operation pending full compliance with all environmental qualification requirements? If so, please identify and provide access to that document and all documents on which it is based, to which it refers, or that are otherwise related to it.

Answer:

The Applicants have not performed an analysis in response to the proposed rule.

Interrogatory No. 18

Question:

18. What is the Applicants' position with respect to NECNP Contention I.B.1? State all facts and opinions and identify and provide access to all documents on which that position is based.

a. Identify all individuals whom Applicants expect to call as witnesses with respect to NECNP Contention I.B.1., and identify all documents on

which Applicants expect to rely at the hearing with respect to this contention.

Answer:

It is Seabrook's position that the requirements of GDC 4 and GDC 34, relative to residual heat removal, have been satisfied, in that, safety-related systems or applicable safety-related portions of systems, which are essential to perform or support the function of residual heat removal, have been provided.

It should be noted that in addition to these systems, there are other systems which can be used to perform or support various portions of the residual heat removal process. The use of these other systems is provided for economic and/or operational flexibility considerations. These systems are not considered essential to the residual heat removal process and, therefore, need not be safety grade. For example: dumping steam to the condensers via the Turbine Steam Dump System during a normal plant cool down is an efficient method of residual heat removal. Additionally, this method may be cost-effective in that the condensed steam can be re-used as Feedwater to continue the process. However, the Turbine Steam Dump

System is not an essential system, may not always be the most desirable system to accomplish residual heat removal, nor might always be available.

In consideration of this, the Seabrook design incorporates a group of systems or portions of systems which are considered essential and which can be used for residual heat removal and which will be available during and following all normal operations, anticipated operational occurrences and design basis accident conditions.

a. Applicants have not yet determined which, if any, witnesses they will call with respect to this contention.

Interrogatory No. 19

Question:

19. Identify all systems that perform the function or are required in order to perform the function of residual heat removal under any circumstances. For each system, explain how and under what circumstances it performs or contributes to the function of residual heat removal.

Answer:

As stated in the response to Interrogatory 18, there are a number of various systems which could be used to perform or support various portions of the

residual heat removal process. However, in responding to this Interrogatory, only those systems or portions of systems which are essential to perform or support the residual heat removal process, and which satisfy the requirements of GDC 4 and GDC 34, will be addressed.

In defining the process of residual heat removal, Seabrook considers not only the heat removal process while maintaining the plant in a hot shutdown condition, but also heat removal necessary to cool the plant down to a cold shutdown condition. In order to perform this process of cool down and removing residual reactor core decay heat, four basic functions must be performed: 1) heat removal, 2) depressurization, 3) flow circulation, and 4) reactivity control. The following lists each of the systems and under what circumstances it performs or contributes to achieving these basic functions for residual heat removal:

1. Reactor Coolant System (RCS)

Operating under natural circulation, with at least 2 of the 4 steam generators acting as heat sinks, the Reactor Coolant System transfers the residual reactor core decay heat from the fuel to the steam generators.

RCS pressure control and eventual depressurization is accomplished utilizing the pressurizer power-operated relief valves.

2. Main Steam System (MS)

Utilizing either the steam generator code safety valves or the steam generator atmospheric relief valves, heat (steam) is vented from the steam generators to atmosphere to effect residual heat removal.

3. Emergency Feedwater System (EFW)

The Emergency Feedwater System supplies makeup water to the steam generators from the condensate storage tank. This makeup water is necessary to replenish the steam generator inventory as steam is ventedto the atmosphere.

4. Chemical and Volume Control System (CVCS)

Portions of the Chemical and Volume Control System including the boric acid tanks, refueling water storage tank, charging pumps and the High Pressure Injection System are utilized to provide the necessary makeup water to the RCS as the RCS water inventory contracts during cooldown. Additionally, this system provides the reactivity control by the addition of concentrated

boric acid to maintain the required shutdown margin during plant cooldown.

5. Residual Heat Removal System (RHR)

As the RCS temperatures approach the cold shutdown condition, the Residual Heat Removal System is placed into operation and takes over the function of heat removal for long-term core cooling.

6. Primary Component Cooling Water System (PCCW)

The Primary Component Cooling Water System acts as the heat sink for residual core decay heat during RHR System operation. Additionally, the PCW System provides cooling for various components performing or supporting the residual heat removal process such as the charging pump lube oil coolers.

7. Reactor Coolant Pump Thermal Barrier Cooling SystemThe Reactor Coolant Pump Thermal Barrier Cooling System provides cooling to the reactor coolant pump seal area to assure proper seal functionability.

8. Service Water System (SW)

The Service Water System acts as the plant's ultimate heat sink in transferring residual reactor core decay heat to the Atlantic Ocean. To perform this function, the SW System provides cooling to the PCCW

System. Additionally, the SW System provides cooling for the emergency diesel generators should their use be required due to a loss of off-site power.

For the remote occurrence of a seismic event of sufficient magnitude to collapse and block the intake and discharge tunnels between the plant and the Atlantic Ocean, the Seabrook design includes a seismically qualified cooling tower. For this occurrence, the Service Water System automatically transfers to tower operation with the cooling towers acting as the ultimate heat sink.

9. Emergency Diesel Generator System (EDG)

In the event of a loss of off-site power, redundant emergency diesel generators automatically start and provide electric power for all equipment necessary to accomplish the residual heat removal process.

10. Area Ventilation Systems

To assure equipment cooling and personnel habitability, the following Area Ventilation Systems are provided:

a) Control Building Ventilation System

b) EFW Pump House Ventilation System

c) Containment Enclosure Ventilation System

d) Primary Auxiliary Building Ventilation System

e) Emergency Diesel Generator Building Ventilation System

f) SW Pump House Ventilation System

g) Cooling Tower Equipment Rooms Ventilation System

It should be noted that not all portions of the above listed systems are required to perform the residual heat removal function. For example, not all portions of the CVCS or Primary Auxiliary Building Ventilation System need to be operable. However, those portions of the systems which are essential to perform or support the function of residual heat removal are:

a) Safety grade,

b) Will accomplish function assuming a single active failure,

c) Seismically qualified,

d) Environmentally qualified,

e) Redundant,

f) Can be powered from either off-site or on-site electrical power, and

g) Can be controlled from either the Control Room or locations outside the Control Room.

Recent changes in systems and equipment design have been made to accomplish the above. The FSAR is being revised to reflect the new design.

Interrogatory No. 20

Question:

20. Is it the Applicants' position that a system that performs the function of residual heat removal or that is required in order to perform that function is not, by virtue of that fact, safety related?

Answer:

It is Seabrook's position that the applicable portions of the systems identified in the response to Interrogatory 19, which are essential to perform or support the function of residual heat removal, are safety related. Other systems which could be utilized to perform or support the function of residual heat removal, or non-applicable portions of the systems identified in the response to Interrogatory 19, need not be classified as safety related unless that system or portion of a system is required to perform or support some other safety function.

Interrogatory No. 21

Question:

21. Is it the Applicants' position that a system that performs the function of residual heat removal or that is required in order to perform that function, is not, by virtue of that fact, important to safety?

Answer:

Whereas, as stated in the response to Interrogatory 20, the systems or portions of systems identified and essential to perform or support the function of residual heat removal are safety related, implicit is the fact that these systems are also "important to safety."

Interrogatory No. 22

Question:

22. If it is Applicants' position that the fact that a system performs the function of residual heat removal or is required in order to perform that function does not, by itself, render the system either safety related or important to safety such that it must be environmentally qualified pursuant to GDC 4, do Applicants believe that there is any system or situation in which the function of heat removal by itself renders the system subject to GDC 4 and requires that it be environmentally qualified?

a. Identify all such systems.

b. Explain the principle that distinguishes some heat removal functions from others for the purpose of environmental qualification.

Answer:

It is Seabrook's position that the applicable portions of the systems identified in the response to Interrogatory 19, which are essential to perform or support the function of residual heat removal, and which, as stated in the response to Interrogatory 20, are safety related, are required to be environmentally qualified pursuant to GDC 4, and, in fact, are so qualified. Other systems or portions of systems which could be utilized to perform or support the function of residual heat removal need not be environmentally qualified for this purpose.

a. None - other than those essential systems or portions of systems identified in response to Interrogatory 19.

b. Because many various systems could be utilized to perform or support the function of residual heat removal, not all systems, but only those considered essential, need to be environmentally qualified.

Interrogatory No. 23

Question:

23. For each system identified pursuant to Question 18, state whether the Applicants believe all or part of the system is safety related.

a. Where the Applicants believe all or part of a system to be safety related, identify those parts of the system the Applicants believe to be safety related.

b. Where the Applicants believe all or part of a system is note safety related, identify those parts that Applicants believe are not safety related and state the justification for that position. Identify and provide access to all documents relied upon by Applicants in reaching that position or otherwise related to the issue of environmental qualification of the equipment in question.

Answer:

In responding to this interrogatory, it must be noted that all systems identified in the response to Interrogatory 19 contain some portions or some equipment which is not considered safety related. However, these non-safety-related portions or equipment are not essential for the performance or support of the residual heat removal process. For example: while the majority of the Emergency Feedwater System is considered safety related, the recirculatin piping which is sued for periodic pump testing, andis normally isolated, is not essential for the performance of

residual heat removal and, as such, is not considered safety related. The same applies for various instrumentation and controls which are non-essential for residual heat removal.

The FSAR system P&I Diagrams identify the portions of the various systems which are classified as Safety Class 1, 2, or 3. All of these classifications are considered safety related.

a. In describing the portions of those systems identified in the response to Interrogatory 19 which are safety related, reference will be made to specific FSAR P&I Diagrams, the basic flowpath will be described, and specific components essential for the performance or support of the residual heat removal function will be identified.

1. Reactor Coolant System

FSAR Figure 5.1-1, Sheets 1-6

The basic flowpath through the system runs from the reactor vessel through the loop piping and includes the reactor vessel, steam genertors and reactor coolant pump casings. Included also is the pressurizer. Additional components essential for residual heat removal include 2 groups of

pressurizer heaters, the Pressurizer Power-Operated Relief Valves (PORVs) and the PORV block valves. Essential instrumentation includes THot and TCold temperatures, pressurizer level and RCS pressure.

2. Main Steam System

FSAR Figure 10.3-1, Sheet 1

The basic flowpath runs from the steam generators through the main steam lines up to the Main Steam Insolation Valves (MSIVs) and the MSIV bypass valves. Also included is the steam supply to the turbine-driven emergency feedwater pump. Essential components include the MSIVs, the code safety valves, the atmospheric relief valves and the steam supply valves to the turbine-driven emergency feedwater pump. Essential instrumentation includes steam generator level and pressure.

3. Emergency Feedwater System

FSAR Figures 6.8-1, 10.4-4 Sheet 1, 10.4-5

The basic flowpath runs from the condensate storage tank to the EFW pumps through the EFW discharge piping to the Main Feedwater System piping downstream of the Main Feedwater isolation

valves, through the Main Feedwater piping to the steam generators. Essential components include the condensate storage tank, the EFW pumps and the EFW flow control valves. Essential instrumentation includes EFW flow rate.

4. Chemical and Volume Control System

FSAR Figures 6.2-77, 6.3-1 Sheet 2, 9.3-14, and 9.3-16

The basic flowpaths are from either the Refueling Water Storage TAnk (RWST) or the Boric Acid Tank (BAT) through the centrifugal charging pumps, through the Boron Injection TAnk (BIT) and the high pressure injection lines into the RCS cold legs. Essential equipment includes the RWST, the BAT, the centrifugal charging pumps, the BIT and the BIT isolation valves. Essential instrumentation includes the BAT level instrumentation.

5. Residual Heat Removal System

FSAR Figures 5.4-10, 6.3-1 Sheet 1

The basic flowpath is from the RCS hot leg, through the RHR pumps, the RHR heat exchangers and returning back to the RCS cold leg. Essential

equipment includes the RHR hot leg suction valves, the RHR pumps and the RHR heat exchangers. No RHR instrumentation is considered essential.

6. Primary Component Cooling Water System

FSAR Figures 9.2-2 Sheets 1 and 2, 9.2-3 Sheets 1 and 2

The basic flowpath runs from the PCCW pump through the PCCW/SW heat exchangers to the supply headers for the charging pump lube oil coolers, containment enclosure ventilation coolers, RHR pumps coolers, RHR heat exchangers, and the RCP Thermal Barrier Cooling System coolers. From each of these coolers, flow is returned to the PCCW pumps' suction. In addition to the above listed components, the PCCW heat tank, and the PCCW outlet valves from the RHR heat exchanger are considered essential equipment. No PWWC instrumentation is considered essential.

7. Reactor Coolant Pump Thermal Barrier Cooling System

FSAR Figures - not available at this time.

The basic flowpath through this system is from the RCP thermal barrier cooling pumps through both

the A Train and B Train PCCW/Thermal Barrier Cooling System heat exchangers to the four RCP thermal barrier coolers and then returning to the RCP thermal barrier cooling pumps' suction. The essential equipment in this system consists of the pumps, heat exchangers and the head tank. No instrumentation in this system is considered essential.

8. Service Water System

FSAR Figures 9.2-1 Sheet 1 and 2

The basic flowpath for the SW System is from the intake transition structure (which connects to the Atlantic Ocean via the intake tunnel) to the SW Pump House, through the SW pumps to the SW discharge heders, through the PCCW and EDG jacket water coolers, to the discharge headers which return to the discharge transition structures (and eventually, the Atlantic Ocean via the discharge tunnel). For cooling tower operation the SW cooling tower pumps take a suction on the cooling tower basin, discharge to the SW pumps' discharge headers, through the above-mentioned coolers to the discharge headers which return to the cooling tower

instead of the discharge transition structure. Essential equipment in the SW System includes the SW pump, SW cooling tower pumps, cooling tower fans, PCCW heat exchangers, EDG jacket water cooler heat exchangers and the following valves: SW-V2, 22, 29, 3[illegible], 4, 5, 15, 16, 17, 18, 74, 76, 19, 20, 23, 34, 25, 26, 27, 54, 55, and 56. Essential instrumentation includes the SW pump discharge pressure switches utilized for automatic tower activation.

9. Area Ventilation Systems

a) Control [illegible]g Ventilation System (CBA)

The CBA System can be broken down into subsystems, each servicing individual areas such as the Control Room, Switchgear Rooms, Battery Rooms, etc. Each subsystem will be identified individually.

1) Control Room Supply and Cooling (CBA)

For flowpaths, see FSAR Section 9.4.1 and FSAR Figure 9.4-1. Essential equipment includes FN-27A & B, FN-16A & B, FN-14A & B, AC-3A & B and dampers DP-127, 129, and 131.

2) 4 KV Switchgear and Battery Room Ventilation (CBA)

For flowpaths see FSAR Section 9.4.10 and FSAR Figure 9.4-10. Essential equipment includes fans FN-19, 20, 21A & B, 32, 33 and dampers DP-24A, B, C, D, E & F, 56, 57A & B, 58, 139, 148, 161, 162, 132, 133, 134, 135, 136, 138, 158, 59A & B, 150, 151, 152, 153, 154, 155, 156, 157, 137, 146, 322, 323, 141, 142, 143, 144, 145, 147, 159, and 160.

b) EFW Pump House Ventilation System (EPA)

For flowpaths, see FSAR section 9.4.11 and FSAR Figure 9.4-11. Essential equipment includes fans FN-47A & B and dampers DP-61A & B.

c) Containment Enclosure Ventilation System (EAH)

For flowpaths, see FSAR Section 9.4.6 and 6.5.1 and FSAR Figures 9.4-2, 9.4-3, and 6.5-2, 6.5-3 & 6.5-4. Essential equipment includes fans FN-4A & B, 5A & B, and 31A & B, AC-2A & B and dampers EAH-DP-25A & B, 29A & B, 30A & B, 37A & B, 167, 168, 169, 170, 171, 306, 183, 307, and 179 and also PAH-DP-35A & B and 36A & B.

d) Primary Auxiliary Building Ventilation System (PAH)

For flowpaths, see FSAR Section 9.4.3 and FSAR Figure 9.4-2. Essential equipment includes fans FN-42A & B and dampers DP-43A & B and 44A & B.

e) Emergency Diesel Generator Building Ventilation System (PAH)For flowpaths, see FSAR Section 9.4.8 and FSAR Figure 9.4-8. Essential equipment includes fans FN-25A & B and 26A & B and dampers DP-15A & B, 16A & B, 163, 164, 165, and 166.

f) Service Water Pump House Ventilation System (SWA)

For flowpaths, see FSAR Section 9.4.13 and FSAR Figure 9.4-12. Essential equipment includes fans FN-38A & B and 40A & B and dampers DP-60A & B, 63A & B, 39A & B, and 45A & B.

g) Cooling Tower Ventilation System (SWA)

For flowpaths, see FSAR Section 9.4.14 and FSAR Figure 9.4-14. Essential equipment includes fans FN-63, 64, 65, 66, 70 & 71 and dampers DP-65, 66, 189, 190, 67, and 68.

b. Other portions of the above systems which were not specifically identified are not essential for the performance or support of the residual heat removal function and, therefore, do not need to be classified as safety related for that purpose.

Interrogatory No. 24

Question:

24. For each system identified pursuant to Question 17 and not identified pursuant to Question 22(a), state whether Applicants believe all or part of the system is important to safety.

a. Where the Applicants believe all or part of a system to be important to safety, identify those parts of the system that Applicants believe to be important to safety.

b. Where the Applicants believe all or part of a system is not important to safety, identify those parts that Applicants believe are not important to safety and state the justification for that position. Identify and provide access to all documents relied upon by Applicants in reaching that position or otherwise related to the issue of environmental qualification of the equipment in question.

Answer:

Whereas, as stated in the response to Interrogatory 20, that systems or portions of systems essential for the performance or support of the residual heat removal function are safety related, and, as stated in the response to Interrogatory 21, that these systems or

portions of systems are also important to safety, the response to this Interrogatory is the same as that provided for Interrogatory 23.

Interrogatory No. 25

Question:

25. Have the Applicants undertaken any examination of the accident at Three Mile Island in order to determine which systems that perform or contribute to the function of residual heat removal should be environmentally qualified in order to comply with GDC 4 or for any other reason? If so, please identify all individuals involved and identify and provide access to all documents related to such examination.

Answer:

The Applicants have undertaken no such examination of events at Three Mile Island.

Interrogatory No. 26

Question:

26. Identify the parameters of the accident environment for which systems that perform or contribute to the residual heat removal function have been qualified.

a. Explain the basis for that choice of accident environment parameters. For each parameter, explain how it differs from the accident environment that existed during and after the accident at Three Mile Island Unit 2.

Answer:

See Response to Interrogatory 12 (I.A.2).

Interrogatory No. 27

Question:

27. Describe specifically how it was determined that systems that perform or contribute to the residual heat removal function in question could survive the accident environment identified in response to Question 26.

a. Identify and provide access to all documents reflecting testing or calculations done for the purpose of making this determination or otherwise relied upon or referred to in connection with making this determination.

Identify and describe any actual environmental conditions that were created for test purposes and to which systems that perform or contribute to the residual heat removal function were subjected. In each case, identify the length of time that the systems that perform or contribute to the residual heat removal function were subjected to the simulated accident environment. Where and when were these tests performed? In each case, how many heat removal systems were tested? Of these, how many were of the same design as those to be used at Seabrook?

Answer:

See Response to Interrogatory 13 (I.A.2).

Interrogatory No. 28

Question:

28. State the length of time that Applicants contend the systems that perform or contribute to the residual heat removal functions will remain environmentally qualified and capable of withstanding the effects of an accident should one occur.

a. Explain the basis for this statement.

b. Identify all documents on which Applicants rely or to which they have referred in making this statement.

c. Identify all tests or studies of any sort of which the Applicants are aware in which any electrical equipment has been examined after more than one year of use to determine whether it is still environmentally qualified.

Answer:

See Response to Interrogatory 14 (I.A.2).

Interrogatory No. 29

Question:

29. State the length of time that after an accident has occurred, Applicants contend the systems that perform or contribute to the residual heat removal function will continue to withstand the effects of an accodent and perform effectively after an accident has occurred and they have been subjected to the accident environment.

a. Explain the bais for this statement.

b. Identify all documents on which Applicants rely or to which they have referred in making this statement.

Answer:

See Response to Interrogatory 15 (I.A.2).

Interrogatory No. 30

Question:

30. What is the Applicants' position with respect to NECNP Contention I.B.2? State all facts and opinion and identify and provide access to all documents on which that position is based.

a. Identify all individuals whom Applicants expect to call as witnesses with respect to NECNP Contention I.B.2., and identify all documents on which Applicants expect to rely at the hearing with respect to this contention.

Answer:

See Response to Interrogatories 14 (I.A.2) and 15 (I.A.2).

Interrogatory No. 31

Question:

31. Is it the Applicants' position that structures, systems, and components governed by GDC 4 must be able to accommodate the effects of and be compatible with the environmental conditions associated with loss of coolant accidents throughout the operating lifetime of the plant?

a. If not, state how long the Applicants believe that structures, systems, and components governed by GDC 4 must be able to accommodate the effects of and be compatible with the environmental conditions associated with loss of coolant accidents. If the response is different depending upon the structure, system, or component in question, provide the specific information. In each case, explain the basis for the Applicants' position and identify and provide access to all documents referred to in reaching that position or otherwise relevant to the issue.

b. If so, identify all structures, systems, and components governed by GDC 4 that Applicants contend comply with that requirement. In each case, explain the basis for that contention and describe in detail the methodology employed to determine whether the structure, system, or component complies with the requirement that it remain environmentally qualified throughout the operating lifetime of the reactor.

Answer:

It is the Applicant's position that safety-related structure systems and components are able to accommodate the effects of and be compatible with the environmental conditions associated with loss-of-coolant accidents throughout the operating life of the plant.

a. Not applicable.

b. All mechanical safety systems and components are detailed in Section 3.9(B) of the FSAR.

All Class 1E safety-related systems and components are identified in Appendix 3A of the FSAR.

All systems and components have their operating lifetime determined during the design of the system and reflected in related specifications. Certified reports for the respective components are submitted by the vendors furnishing such. Each report is reviewed accordingly, at which operating lifetime is addressed.

The equipment qualification data packages contain all the information relative to methodology employed to determine qualification.

Interrogatory No. 32

Question:

32. To the extent that Applicants contend that structures, systems, or components will remain in compliance with GDC 4 and environmentally qualified for any period of time less than the operating lifetime of the plant, explain the basis for that contention and describe in detail the methodology employed to determine that the structure, system, or component will remain environmentally qualified for the time period in question.

Answer:

Where a specific system or component is environmentally qualified for a period of time less than the operating lifetime of the plant (as identified by the equipment qualification data package), said components are incorporated in a surveillance and maintenance program or subjected to on-going qualification in accordance with paragraph 5.5 of IEEE Standard 323-1974, IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations.

Interrogatory No. 33

Question:

33. Have the Applicants made any effort to determine how long after a LOCA begins and an accident environment is created structures, systems, and components governed by GDC 4 will remain capable of accommodating the effects of and continue to be compatible with the environmental conditions associated with a LOCA? If so, please describe that effort,

identify and provide access to all relevant documents, and state the conclusions reached by Applicants concerning this question. Explain the basis for each such conclusion.

Answer:

See response to Interrogatory 15 (I.A.2).

Interrogatory No. 34

Question:

34. Is it the Applicants' position that they need not establish that structures, systems, or components governed by GDC 4 will remain environmentally qualified for any period of time once an accident begins? If not, for what period of time do the Applicants contend they must show that structures, systems, and components governed by GDC 4 will remain environmentally qualified once an accident begins?

Answer:

It is the Applicants' position that all structures, systems, or components that are required to be operational are qualified to remain operational for the time required to perform their safety function.

Interrogatory No. 35

Question:

35. What is the Applicants' position with respect to NECNP Contention I.C.? State all facts and opinions and identify and provide copies of all documents on which that position is based.

a. Identify all individuals whom Applicants expect to call as witnesses with respect to NECNP Contention I.C., and identify all documents on which Applicants expect to rely at the hearing with respect to this contention.

Answer:

The Ventilating System for the emergency feedwater pumphouse, including electrical cable, instrumentation andcontrol components, is safety-related and environmentally qualified. The redundantly powered ventilation fans are Seismic Category I, Safety Class 3, with Class 1E motors. Each fan motor is powered from a separate ESF power source. The system redundant exhaust air dampers are controlled by Seismic Category I, safety-related pneumatically-operated actuators with Class 1E solenoid valves. In the event of a failure of the air supply, both dampers will fail open, insuring, in conjunction with the fans, a continuous supply of ventilation air to the area. Further details of the Ventilation System are contained in FSAR Section 9.4.11.

Essential instrumentation and controls for the Emergency Feedwater Pumphouse Ventilation System are Class 1E.

The heating system is not required to support operation of the emergency feedwater pumphouse. Therefore, this portion of the HVAC System is not safety related. (See FSAR Sections 6.8 and 9.4.11).

a. Applicants have not yet determined which, if any, witnesses they will call with respect to this contention.

Interrogatory No. 36

Question:

36. Identify all components of the HVAC system for the emergency feedwater pumphouse.

a. Describe the function of each component in the event of a LOCA.

b. Identify and describe all components that Applicants believe must be environmentally qualified pursuant to GDC4. In each case, state whether the Applicants contend that the component is environmentally qualified and the basis for that conclusion.

c. Identify and describe all components that Applicants believe are not required to be environmentally qualified pursuant to GDC 4. Identify and provide access to all documents that support this conclusion, or that otherwise related to the issue of whether the component in question should be environmentally qualified.

Answer:

See response to Interrogatory 35 for identification of the components of the Emergency Feedwater Pumphouse HVAC System.

a. The Ventilation System is required to operate whenever the Emergency Feedwater System is operating. FSAR Table 15.0.6 identifies those

upset conditions which require emergency feedwater operation. See FSAR Section 9.4.11 which describes the operation of the Ventilation System.

b. All Class 1E components of the Emergency Feedwater Ventilation System are listed and identified in the Class 1E equipment list. All suchcomponents are environmentally qualified. The qualification data packages provide the basis and justification for the qualifiedlife.

c. As stated in response to Interrogatory 35, the heating system is not required to support the operation of the emergency feedwater pumphouse and, therefore, all equipment associated with the heating system is not required to be environmentally qualified.

Signa_ _s

As to Answers:

I, Wendell P. Johnson, being first duly sworn, do depose and say that the foregoing answers are true, expect insofar as they are based on information that is available to the Applicants but not within my personal knowledge, as to which I, based on such information, believe them to be true.

Wendell P. Johnson

Sworn to before me this
day of October, 1982:

Notary Public
My Commission expires: August 5, 1988

As to Objections:

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CERTIFICATE OF SERVICE

I, Robert K. Gad III, one of the attorneys for the Applicants herein, hereby certify that on November 1, 1982 I made service of the within "Applicants' Answer to 'NECNP First Set of Interrogatories and Request for Documents to Applicants on Contentions I.A.2, I.B.1, and I.C.'" by mailing copies thereof, postage prepaid, to:

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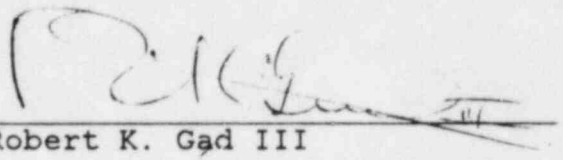

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