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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

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 THIRD SET OF INTERROGATORIES AND
REQUESTS FOR DOCUMENTS TO APPLICANTS ON
CONTENTIONS I.A.2., I.B.1., I.B.2.,
and I.C."

Pursuant to 10 CFR § 2.740b, the Applicants hereby
respond to "NECNP Second Set of Interrogatories and
Requests for Documents to Applicants on Contentions
I.A.2., I.B.1., I.B.2., and I.C.," served on them by
mail on January 7, 1983.

DS03

SPECIFIC INTERROGATORIES

Interrogatory No. 1

Question:

Explain the difference between the terms "safety related" and "Class 1E."

Answer:

Class 1E applies to the electrical portion of safety-related equipment.

Interrogatory No. 2

Question:

Identify all reactor components which are safety related but not Class 1E.

Answer:

There are no safety-related electrical reactor components that are not Class 1E.

Interrogatory No. 3

Question:

Identify all reactor components which are Class 1E but not safety related.

Answer:

There are no Class 1E reactor components which are not safety related.

Interrogatory No. 4

Question:

How does the environmental qualification of valve operators identified by Applicants in Table 1.A.2-3 as safety related and Class 1E differ from the environmental qualification of valves which are Class 1E but not safety related?

Answer:

There is no difference in the environmental qualification of these valves.

Interrogatory No. 5

Question:

In light of the discrepancy between Table I.A.2-3, which distinguishes safety related valves from Class 1E valves, please revise your answer to Interrogatory 8 of NECNF First Set of Interrogatories on Contention I.A.2, I.B.1, I.B.2, and I.C., which equates them. In addition, revise answers to all other interrogatories where the terms "Class 1E" and "safety related" cannot be used interchangeably.

Answer:

The four (4) valves identified in Table 1.A.2-3 as being Class 1E and non-safety related were originally considered safety related. Due to system design changes the valves no longer perform a safety-related function. However, they were purchased as safety-related/Class 1E valves. Since they are still powered from a Class 1E power source, the Class 1E designation

is retained to ensure the integrity of the Class 1E power supply. We consider our answers to Contentions I.A.2, I.B.1, I.B.2, and I.C correct since they discuss the environmental qualification of the equipment and these valves comply with the same qualification standards as all the other Class 1E valves.

Interrogatory No. 6

Question:

Are Applicants currently preparing an environmental qualification report for the NRC Staff? If the answer is yes, please respond to the following questions:

- a) Describe the scope of the report.
- b) Describe the degree to which the report is completed.
- c) Identify all individuals involved in the preparation of the report and their place of employment.
- d) On what date will Applicants submit the report to the NRC Staff?

Answer:

Our environmental qualification report will be part of the FSAR. See Section 3.11 for a description of information that will be available.

Interrogatory No. 7

Question:

What is the basis for classification of equipment as "safety related?"

a) Describe in detail the process by which Applicants determine whether a particular piece of equipment or system at the Seabrook plant is safety related.

b) Have Applicants employed any probabilistic risk assessments or other studies at Seabrook to determine what equipment or systems should be considered safety related? If so, please identify and describe them.

Answer:

See Applicant's response to Interrogatory 1 of NECNP's second set of interrogatories.

- a. Early in the design of Seabrook Station the various systems were reviewed and a determination was made as to which systems were to be safety-related and which were not. This determination was made based on the definition of "safety related" provided in response to NECNP's second set of interrogatories. As detailed engineering progressed on the safety-related systems a determination of the safety classification of the individual component was made based on the same definition of safety related.

- b. No probabilistic risk assessments or other studies have been performed by the Applicant to determine what equipment or systems should be safety related. The response to Interrogatory I.A.2 #7a describes in detail the process by which Applicants determine whether a particular piece of equipment or system at the Seabrook plant is safety related.

Interrogatory No. 8

Question:

At page 3.11(B)-1 of the FSAR, Applicants state that all Class 1E instrumentation and electrical equipment required to operate during and subsequent to a design basis event is defined according to IEEE-308-1971. Does Applicants' list of Class 1E electrical equipment and instrumentation also meet the definition of IEEE-308-1980? If not, state the reasons and list any additional pieces of equipment which would be included under the definition of IEEE-308-1980.

Answer:

We consider the definition of Class 1E to be the same in both editions of the standard for the purpose of classifying safety-related electrical equipment.

Interrogatory No. 9

Question:

Please identify and provide access to Applicants' Inservice Testing Program for pumps and valves.

Answer:

The Inservice Testing Program for pumps and valves is under development. As stated in a letter from J. DeVincentis to G.W. Knighton dated November 17, 1982, the Inservice Testing Program for pumps and valves will be submitted to the NRC within six months of the anticipated date for commercial operation. This letter was issued to the ASLB Service List and is also available in the Public Docket Room. As stated in this letter, FSAR Section 3.9(B).6 and FSAR Tables 3.9(B)-22 and 3.9(B)-23 will provide the basis for the Inservice Testing Program.

Interrogatory No. 10

Question:

Describe the differences between qualifications of safety grade electrical equipment and qualification of safety grade mechanical equipment.

Answer:

IEEE 323-1974 and various other IEEE standards applicable to specific electrical equipment (such as IEEE-383 for "Qualification of Cable") are used as guidance for the qualification of safety grade electrical equipment.

ASME Boiler and Pressure Vessel Code, Section 3 is used for guidance for the qualification of safety grade mechanical equipment.

Interrogatory No. 11

Question:

Describe in detail the recirculating fluid radiation dose study identified by Applicants in response to Interrogatory 11, NECNP First Set of Interrogatories on Contentions I.A.2, I.B.1, I.B.2., and I.C.

- a) What was the date of the study and who prepared it?
- b) What were the results of the study?
- c) What impact did the study have on equipment qualification at Seabrook?
- d) Did Applicants submit the study to the NRC for review?

Answer:

- a. The study was completed on April 28, 1982 by United Engineers and Constructors, Inc.
- b. The study contains maps and tables which define the design basis post-LOCA radiation environment outside the containment.
- c. The study provided dose specifications against which the qualification doses for safety-related equipment could be reviewed.

- d. The study has been submitted to the NRC on 1/21/83 by letter SBN-425.

Interrogatory No. 12

Question:

Identify all high pressure decay heat removal systems relied upon by Applicants at Seabrook.

- a) Which or what parts of the above-identified systems are safety grade, and which are not safety grade?
- b) Which of the above-identified systems are considered essential to the residual heat removal process?

Answer:

The Applicant is uncertain as to what is meant by "high pressure" as used in the above question. In general terms, the steam generator and the Emergency Feedwater System can be considered "high pressure decay heat removal systems," while the Residual Heat Removal System can be considered "low pressure." Obviously, the Reactor Coolant System would have to be considered "high pressure" for at least the initial portion of the decay heat removal process.

- a. The steam generator and the Main Steam System up to and including the main steam isolation valves are safety grade as is the Emergency Feedwater System and, of course, the Reactor Coolant System.

In the design of these systems, and in any safety grade system, numerous pieces of non-safety grade equipment are utilized to provide non-safety-related functions or information for purposes of testing, local operator information, maintenance, operational flexibility or system performance enhancement. For example, the steam generator atmospheric relief valves are Safety Class 2 valves. Their operators are safety-related and powered from safety-related power sources. Safety-related electrical controls are provided to operate these valves from either the main control board or the remote shutdown panels. However, these valves also utilize a non-safety-related control circuit which automatically operates the valves at a pre-determined pressure to prevent unnecessary operation of the code safety valves. This control function is not necessary, but it enhances the system operability and reliability. The design of the controls assures that the safety-related portions of the controls always override the non-safety-related portions such that failure of the non-safety-related portions will not prevent

operation of the valves if needed for a safety-related function.

Another example is in the Emergency Feedwater System. A non-safety-related recirculation path from the pumps' discharge back to the condensate storage tank is provided for periodic pump flow testing. During normal operation, this recirculation path is isolated from the safety-related portions of the system by locked closed, safety-related valves. This recirculation path is not required for the system to perform its safety-related function.

In the Reactor Coolant System, the reactor coolant pumps are safety-related because they form a part of the Reactor Coolant System pressure boundary. However, the motors for these pumps are non-safety-related because the reactor coolant flow via the pumps is not required for the process of residual heat removal. Natural circulation flow provides the safety-related function associated with residual heat removal.

The system utilized to perform the process of residual heat removal contain many sections and

components which are not safety related. In each case, the design is such that the particular section or piece of equipment is not essential for the system to perform its safety function nor will its failure inhibit the system from performing that safety-related function.

The safety-related portions of the various systems utilized to perform residual heat removal are identified on the system's P&ID's in the FSAR. The listing of safety-related electrical components can be found in FSAR Appendix 3H.

- b. The applicable portions of the Reactor Coolant System, Main Steam System (up to and including the main stem isolation valves) and the Emergency Feedwater System are all considered essential for the residual heat removal process. All essential equipment and components within these systems are safety related.

Interrogatory No. 13

Question:

Identify the normal and emergency operating procedures for residual heat removal at Seabrook.

Answer:

The normal and emergency operating procedures for residual heat removal are presently being developed. They will be completed and available for review no later than three months prior to fuel loading.

Interrogatory No. 14

Question:

On page 22 of the Applicants' Answers to NECNP First Set of Interrogatories on Contentions I.A.2., I.B.1., I.B.2., and I.C., Applicants state that "not all portions of the above listed systems are required to perform the residual heat removal function." Please clarify to what systems that statement refers. For each system, list those portions which are required to perform the residual heat removal function; and list those portions which are not required to perform the residual heat removal function.

Answer:

Each system discussed in the response to Interrogatory 19 (Reference: First Set of Interrogatories on Contentions I.A.2, I.B.1, I.B.2 and I.C) is comprised of numerous components/piping.

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.

All portions of the systems that do not fall into one of the above categories are not required for residual heat removal. Some examples are vent, drain, inservice test and sample lines which are used for startup and maintenance. This also applies to instrumentation taps that are used during system balancing.

See also the response to Interrogatory I.B.1, Question 12.

Interrogatory No. 15

Question:

Have Applicants performed any probabilistic risk assessments to determine all systems which may be required to remove heat from the core in an accident? If so, please identify and provide access to them.

Answer:

No probabilistic risk assessments have been performed by the Applicants to determine all systems which may be required to remove heat from the core during an accident, however these systems are being analyzed as part of the Seabrook Station PRA which is scheduled to be completed in October, 1983.

Interrogatory No. 16

Question:

Do Applicants have written surveillance and maintenance programs for environmentally qualified equipment at Seabrook?

a) Do these programs encompass all environmentally qualified equipment?

b) Identify all such equipment for which no surveillance and maintenance plans exist.

c) Identify and provide access to all maintenance and surveillance plans for safety grade/Class 1E equipment and systems.

Answer:

Seabrook Station will have a surveillance and maintenance program that includes environmentally qualified equipment.

a. The program will encompass all environmentally qualified equipment.

b. There will be none.

- c. The maintenance and surveillance plans will be developed three months prior to fuel load.

Interrogatory No. 17

Question:

In answer to Interrogatory 6 of NECNP Second Set of Interrogatories on Contentions I.A.2., I.B.1., I.B.2., and I.C., Applicants state that safety systems are qualified to a duration of one year. Do Applicants' surveillance and maintenance programs provide for yearly inspection and replacement of equipment?

a) If not, please identify the components for which a longer inspection interval is provided, and state the interval.

b) Identify all safety/Class 1E components for which no surveillance is provided after the first year of operation.

Answer:

The surveillance and maintenance program now in preparation will be provide the periodic surveillance, maintenance and testing recommended by the equipment manufacturers.

- a. Component maintenance and surveillance shall not exceed the manufacturers recommended intervals.
- b. There will be none.

Interrogatory No. 18

Question:

Is the alarm which notifies the operator of freezing temperatures in the emergency feedwater pumphouse qualified to operate under freezing temperatures? If so, to what temperatures is it qualified?

Answer:

The low temperature alarm switches that monitor the emergency feedwater pumphouse are specified and designed to operate over the temperature range of 30 to 110°F.

Interrogatory No. 19

Question:

Has any analysis been performed at Seabrook to determine whether cold winter temperatures may render essential equipment inoperable? If so, please identify those studies and describe their results.

Answer:

A building heat loss calculation was performed for the Emergency Feedwater Pumphouse based on an inside temperature of 50°F with a winter outside temperature of 0°F and a 12 mph wind. The design heating capability of the system includes a 10% safety margin in addition to the calculated heat loss. Two 100% capacity unit heaters are furnished, one will be a

standby spare. A low temperature alarm is provided to alert the operator of system inoperability.

Furthermore, administrative procedures will require an operator to visit the Emergency Feedwater Pumphouse once per shift, as a minimum, to verify equipment availability. A separate emergency procedure will require an operator to check the Emergency Feedwater Pumphouse after a seismic disturbance. This type of monitoring will allow the operator to take appropriate action in the event of a heating system and temperature alarm failure.

Interrogatory No. 20

Question:

What procedures and instrumentation are provided to alert the operator of the need to monitor temperatures in the emergency feedwater pumphouse and to inform the operator when corrective action is necessary?

Answer:

Emergency feedwater pumphouse temperature alarms, high and low, are actuated by EPA-TSH-5434 and EPA-TSL-5434. The operators will take corrective action on receipt of the alarm or when abnormal temperature is noted by the operator as part of the inspection tours of the plant performed once a shift.

Interrogatory No. 21

Question:

Are the temperature sensor, the alarm, and the heating system for the emergency feedwater pumphouse attached to an emergency power system? Please describe the power source for these systems.

Answer:

A description of the Emergency Feedwater Pumphouse Heating and Ventilation System is provided in FSAR Section 9.4.11. As stated in the FSAR, the heating system has no safety functions and as such the heaters are powered from non-safety-related power sources. The low temperature switch is wired to the station computer to provide a low temperature alarm. The station computer and its power supplies have been described in letter SBN 268, dated May 4, 1982.

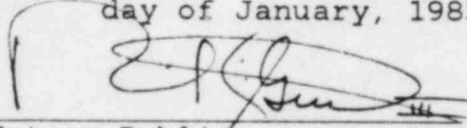
Signatures

As to Answers:

I, Wendell P. Johnson, being first duly sworn, do depose and say that the foregoing answers are true, except 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 January, 1983:


Notary Public

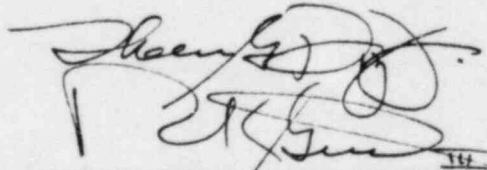
My Commission expires: _____

ROBERT K. GAD, III

NOTARY PUBLIC

My Commission Expires Sept. 5, 1985

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CERTIFICATE OF SERVICE

I, R. K. Gad III, one of the attorneys for the Applicants herein, hereby certify that on January 29, 1983, I made service of the within "Applicants' Answers to 'NECNF Third Set of Interrogatories and Request for Documents to Applicants or Contentions I.A.2, I.B.1, I.B.2, and I.C.'", by mailing copies thereof, postage prepaid, to:

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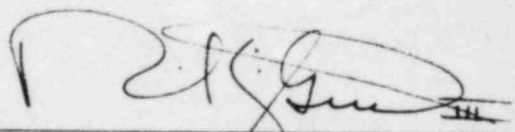
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