

December 28, 1982

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.

(Seabrook Station, Units 1 and 2)

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Docket Nos. 50-443 OL  
50-444 OL

"RESPONSE OF THE NRC STAFF TO NECNP'S FIRST SET OF  
INTERROGATORIES AND REQUEST FOR DOCUMENTS ON CONTENTIONS I.A.2.,  
I.V., II.B.1-5, II.C., II.D., II.F., II.G., II.I, AND II.L - II.N."

The NRC staff hereby file its responses to the first set of  
interrogatories filed by NECNP.

CONTENTION I.A.2

INTERROGATORY 1

What is the NRC staff's 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.

RESPONSE

The Applicants have not yet made their environmental qualification  
submittal to the NRC. Until these materials are submitted by the  
Applicant and reviewed by the Staff, the Staff cannot respond further at  
this time. Upon completion of the Staff review, this interrogatory will  
be updated.

INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as  
witnesses with respect to NECNP Contention I.A.2., and identify all

DESIGNATED ORIGINAL

Certified By

*[Signature]*

documents on which the NRC staff expects to rely at the hearing with respect to this contention.

#### RESPONSE

The Staff has not determined whom it will call as a witness. The principal reviewer regarding the qualification of electric valve operators is Harold Walker. The principal documents used, or to be used in his review are NUREG-0588 and its references as well as Applicants' environmental qualification submittal.

#### INTERROGATORY 3

Does the NRC Staff know the location, function, and purpose of all electric valve operators installed inside the containment? If so, describe the location, function, and purpose of each. If not, identify those electric valve operators inside containment for which the NRC staff has determined location, function, and purpose, and provide that information in each case. Answer (a)-(e) with respect to all electric valve operators for which the NRC Staff has determined location, function, and purpose:

- 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 the NRC staff considers to be "safety related."<sup>1/</sup>
- e. Identify those electric valve operators installed inside the containment that the NRC Staff does not consider to be "safety related." Of those, state which ones the NRC Staff considers to be "important to safety."<sup>2/</sup> In each case, explain why the NRC Staff does not consider the electric valve operator to be "safety related" or "important to safety" if they do not.

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<sup>1/</sup> The term "safety related" has the same meaning throughout these Interrogatories as it does in the Introduction to Appendix B to 10 C.F.R. Part 50.

<sup>2/</sup> The term "important to safety" has the same meaning throughout these Interrogatories as it does in the Introduction to Appendix A to 10 C.F.R. Part 50.

RESPONSE

Generally, yes, although this knowledge may be the combined knowledge of more than one reviewer. As to the answer to 3(e), see the response to Interrogatories 4-8.

The Staff objects to the remainder of this interrogatory which seeks a listing and description of the location, function, and purpose of each electric valve operator inside containment. In addition, for each such electric valve operator, a further listing of this function in the event of, or in preventing a loss of coolant accident, and its safety function is also requested.

Controlling Commission precedent regarding discovery against the Staff has been clearly set forth in Pennsylvania Power and Light Company (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 323. (footnote omitted):

Discovery again the Staff is on a different footing. With limited exceptions, Commission regulations make staff documents that are relevant to licensing proceedings routinely available in the NRC Public Document Room. 10 CFR 2.790(a). The contemplation is that these "should reasonably disclose the basis for the Staff's position," thereby reducing any need for formal discovery. Reflective of that policy, the Rules of Practice limit documentary discovery against the Staff to items not reasonably obtainable from other sources, 10 CFR 2.744; require a showing of "exceptional circumstances" to depose Staff personnel, 10 CFR 2.720(h) and 2.740a(j); and allow interrogatories addressed to the Staff only "where the information is necessary to a proper decision in the case and not obtainable elsewhere." See 10 CFR 2.720(h)(2)(ii). In addition, the licensing board's advance permission is needed to depose Staff members or to require the Staff to answer written interrogatories. Ibid.

The Staff therefore objects to the remainder of this interrogatory on two grounds. First, NECNP has not demonstrated that the requested information is not available from other sources contrary to the requirements of 10 C.F.R. §§ 2.744 and 2.720. The requested information

should be readily available from the Applicant. Second, NECNP has not demonstrated that the requested information is necessary to a proper decision in this proceeding as required by 10 C.F.R. § 2.720(h)(2)(ii).

INTERROGATORY 4

Identify all electric valve operators installed inside the containment that the NRC Staff believes are required to comply with Criterion 4 of 10 C.F.R. Part 50, Appendix A.

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

INTERROGATORY 5

Identify all electric valve operators installed inside the containment that the NRC Staff classifies 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 the NRC Staff believes would be governed by PR 10 C.F.R. 50.49(c), Id. at 2878.

INTERROGATORY 6

Is it the NRC staff's position that all safety related electric valve operators installed inside the containment comply with GDC 4?

a. Is it the NRC staff's 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 the NRC staff's position that all safety related electric valve operators installed inside the containment comply with NUREG-0588?

INTERROGATORY 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 the NRC staff believes it complies with GDC 4 and justify that position in light of the noncompliance with the DOR Guidelines and NUREG-0588.

#### INTERROGATORY 8

Answer Interrogatory 6 and 7 with respect to electric valve operators installed inside the containment that the NRC staff considers to be "important to safety."

#### RESPONSE

These interrogatories (4-8) cannot be answered prior to the Staff's environmental qualification review which awaits Applicant's submittal. The Staff will update this response when the Staff review is completed. However, the Staff reserves the right to object to portions of these interrogatories at that time.

#### INTERROGATORY 9

Is it the NRC staff's position that compliance with IEEE Standards 382-1972 and 323-1974 constitutes compliance with GDC 4?

#### RESPONSE

The environmental qualification requirements and standards for electrical equipment for Seabrook are delineated in NUREG-0588 Category I and its references. IEEE Standards 382-1972 and 323-1974 are included in NUREG-0588's references.

#### INTERROGATORY 10

Identify the parameters of the accident environment for which the NRC staff believes the electric valve operators installed inside the containment must be 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.

INTERROGATORY 11

Describe specifically how the NRC staff has determined that the electric valve operators in question could survive the accident environment identified in response to Interrogatory 10.

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.

b. Identify and describe any actual environmental contentions 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. When and where were these tests performed? In each case, how many were of the same design as those to be used at Seabrook.

INTERROGATORY 12

State the length of time that the NRC staff believes the electric valve operators installed inside the containment must 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 the NRC staff relies or to which it has referred in making this statement.

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

INTERROGATORY 13

State the length of time after an accident has occurred that the NRC staff believes 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 the NRC staff relies or to which it has referred in making this statement.

INTERROGATORY 14

Describe specifically how the NRC staff has considered the effects of aging of the equipment and cumulative radiation exposure in determining whether electric valve operators installed inside the containment are environmentally qualified for the life of the plant.

RESPONSE

The Staff response to these interrogatories (10-14) is the same as the response to Interrogatories 4-8.

CONTENTION I.B.1

INTERROGATORY 15

What is the NRC staff's 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.

RESPONSE

The Staff disagrees with NECNP Contention I.B.1. as it relates to GDC 34. Based on our review of the Seabrook FSAR, we conclude that the Seabrook design meets GDC 34 since a system is available to transfer fission product decay heat and other residual heat from the reactor core at a rate such that specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary are not exceeded, and suitable interconnections, leak detection, and isolation capabilities are provided to assure that for onsite electric power system operation, and for offsite electric power system operation, the system safety function can be accomplished assuming a single failure.

The components required to achieve the above safety function include steam generators, main steam isolation valves, safety valves, atmospheric steam dump valves, the emergency feedwater system, condensate storage system, the station service water system, the ultimate heat sink, and

their associated instrumentation, control, and power supply systems. The above systems, components and their associated supporting systems are designed to safety related standards. These systems are sufficient to provide a safety related path from hot standby to cold shutdown.

The turbine valves, main feedwater and condensate systems, condenser steam dump valves, condenser, and circulating water system, which are normally used during orderly plant shutdown to remove decay heat, are not required to be safety related.

The above Staff position is based on the following list of documents:

1. 10 C.F.R. 50, Appendix A
2. SRP 5.4.7, 9.2.1, 9.2.2, 9.2.5, 10.3.1, and 10.4.9
3. Seabrook FSAR
4. Regulatory Guides 1.26 and 1.29
5. NRC Staff SER Sections 5.4.7, 9.2.1, 9.2.2, 9.2.5, 10.3.1, and 10.4.9

The Staff has not yet received Applicants' environmental qualification submittal, and thus has no position on whether the residual heat removal system complies with GDC 4.

#### INTERROGATORY 15a

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.B.1., and identify all documents on which the NRC staff expects to rely at the hearing with respect to this contention.

#### RESPONSE

The witnesses from the NRC staff who will respond to NECNP Contention I.B.1 have not been identified. The Staff reviewers relative

to this issue are R. Anand, C. Liang and H. Walker. The documents on which the NRC staff expects to rely at the hearing with respect to this contention are not final but include the list of documents provided in the Staff response to Interrogatory 15 above.

#### INTERROGATORY 16

Identify all systems that the NRC staff understands 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.

#### RESPONSE

During normal plant shutdown when nonsafety related equipment and offsite power are available, the decay heat removal function is performed by using the main feedwater system, the condenser steam dump system and circulating water system. During plant emergency shutdown, assuming offsite power and nonsafety related equipment are not available, the heat is transferred from the core by natural circulation with the steam generator as the heat sink.

To achieve this, the safety related steam generator power operated atmospheric relief valves are used to vent vaporized secondary coolant. Secondary coolant makeup is provided via the Emergency Feedwater System (EFWS) from the seismic Category I tornado missile protected condensate storage tank. The minimum volume which will be required to be available in the tank is sufficient to accommodate a four hour period at hot standby plus a cooldown to less than 350°F at which point the residual heat removal (RHR) system can be utilized and the EFWS is no longer



required. When the steam generators are being used as the reactor heat sink during the cooldown to 350°F, a single failure of any active component does not render all steam generators ineffective as a heat sink. Either of the two emergency feedwater pumps has sufficient capacity to provide for all steam generator makeup requirements.

Reactor Coolant System (RCS) depressurization is accomplished by the combination of RCS contraction due to the cooldown or opening one of the two safety related pressurizer power operated relief valves (PORVs). The discharge is directed to the pressurizer relief tank where it is condensed and cooled.

The depressurization process is integrated with the cooldown process to maintain the RCS within normal pressure-temperature limits. Just before initiating RHR cooling at 350°F, the RCS is depressurized to less than 400 psig.

The second stage of the cooldown is from 350°F to cold shutdown. During this stage, the RHR system is brought into operation. Circulation of the reactor coolant is provided by the RHR pumps, and the heat exchangers in the RHR system serve as the means of heat removal from the RCS. In the RHR heat exchangers, the residual heat is transferred to the component cooling water system which ultimately transfers the heat to the service water system and the ultimate heat sink.

The RHR system is a fully redundant system. Each RHR subsystem includes one RHR pump and one RHR heat exchanger. Each RHR pump is powered from a different emergency bus and each RHR heat exchanger is served from a different component cooling water system loop. The

component cooling water and service water systems associated with the RHR system are designed and built to safety related standards.

If any component in one of the RHR subsystems were rendered inoperable as the result of a single failure, cooldown of the plant could still be achieved by using the remaining operable subsystem of the RHR system.

INTERROGATORY 17

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

RESPONSE

It is the NRC staff's position that systems which perform the function of residual heat removal during normal plant operating conditions are not necessarily safety related.

The NRC requires that there be redundant residual heat removal paths which rely only on safety related structures, systems and components. Such paths, as discussed in response to interrogatories 15 and 16, have been identified for the Seabrook station.

INTERROGATORY 18

Is it the NRC staff's 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?

RESPONSE

It is the NRC staff's position that systems that perform the function of residual heat removal during all plant operating conditions are considered to be systems important to safety.

INTERROGATORY 19

If it is the NRC staff's 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, does the NRC staff believe that there is any system or situation in which the Staff believes are not important to safety and state the justification for that position. Identify and provide access to all documents relied upon by the NRC staff in reaching that position or otherwise related to the issue of environmental qualification of the equipment in question.

RESPONSE

As discussed in response to interrogatories 17 and 18 above, systems required to perform the function of residual heat removal are either important to safety or safety related.

INTERROGATORY 22

Identify the parameters of the accident environment for which the NRC staff believes systems that perform or contribute to the residual heat removal function must be qualified.

RESPONSE

The accidents and parameters considered in environmental qualification of safety-related electrical equipment are identified in NUREG-0588 Category I.

INTERROGATORY 22a

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.

RESPONSE

The identified parameters are those that are postulated to exist as a result of a design basis accident (DBA) as specified in NUREG-0588. By observing the parameters identified in NUREG-0588, the difference between those parameters and the accident environment that existed during and after the accident at Three Mile Island Unit 2 can be determined. That determination is left to New England Coalition on Nuclear Power (NECNP).

INTERROGATORY 23

Describe specifically how the NRC staff has determined that systems which perform or contribute to the residual heat removal function could survive the accident environment identified in response to Question 16.

RESPONSE

The Staff has not yet received Applicants' environmental qualification submittal. Until the submittal is received and reviewed, the Staff cannot make the determination identified in the interrogatory.

INTERROGATORY 23a

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

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

#### RESPONSE

To date the NRC staff has not received an equipment environmental qualification (EEQ) submittal(s) from Seabrook Nuclear Station Units 1 and 2. Consequently, documents reflecting postulated accident conditions and test conditions are not available at this time. However, the documentation requirements and the test conditions that the Applicant is required to meet are specified in NUREG-0588. When an EEQ submittal is provided to the NRC it will also be available in the Public Document Room at 1717 H. Street N.W., Washington, D.C.

#### INTERROGATORY 24

State the length of time that the NRC staff believes that systems which perform or contribute to the residual heat removal function must remain environmentally qualified and capable of withstanding the effects of an accident should one occur.

#### RESPONSE

As delineated in NUREG-0588, the length of time that safety-related electrical equipment must remain environmentally qualified is equal to the time that the accident conditions is postulated to exist plus a margin to account for uncertainties. For further details see NUREG-0588.



INTERROGATORY 24a

Explain the basis for this statement.

RESPONSE

The basis is the requirements of NUREG-0588.

INTERROGATORY 24b

Identify all documents on which the NRC staff relies or to which it has referred in making this statement.

RESPONSE

The Commission Memorandum and Order (CLI-80-21) dated May 24, 1980 and NUREG-0588 and its references.

INTERROGATORY 24c

Identify all tests or studies of any sort of which the NRC staff is aware in which any residual heat removal equipment has been examined after more than one year of use to determine whether it is still environmentally qualified.

RESPONSE

The NRC staff is not aware of any such test or studies.

INTERROGATORY 25

State the length of time after an accident has occurred that the NRC staff believes that systems which perform or contribute to the residual heat removal function 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.

RESPONSE

The NRC staff believes that safety-related electrical equipment qualified in accordance with the requirements of NUREG-0588, will continue to function acceptably for the time period(s) specified in NUREG-0588 for that equipment.

INTERROGATORY 25a

Explain the basis for this statement.

RESPONSE

NUREG-0588.

INTERROGATORY 25b

Identify all documents on which the NRC staff relies or to which it has referred in making this statement.

RESPONSE

The Commission Memorandum and Order (CLI-80-21), NUREG-0588 and it's references.

CONTENTION I.B.2

INTERROGATORY 26

What is the NRC staff's position with respect to NECNP Contention I.B.2? State all facts and opinions and identify and provide access to all documents on which that position is based.

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

RESPONSE

The Applicants have not yet made their environmental qualification submittal to the NRC. Until this submittal is reviewed, the NRC staff has no position on Contention I.B.2.

a. The Staff has not yet determined who it will call as a witness. The principal reviewer in this area is Harold Walker. The principal documents used in his review are NUREG-0588 and its references and Applicants' environmental qualification submittal.

INTERROGATORY 27

Is it the NRC staff's 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 NRC staff believes 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 NRC staff's 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 the NRC staff contends 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.

RESPONSE

The Staff requires that all structures, systems, and components governed by GDC 4 be qualified throughout the life of the plant.

Equipment with a qualified life less than the entire life of the plant must either be replaced or requalified at the end of its qualified life.

See the answer to Interrogatories 4-8 for Contention I.A.2.

#### INTERROGATORY 28

To the extent that the NRC staff contends 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.

#### RESPONSE

See the answer to Interrogatories 4-8 for Contention I.A.2.

#### INTERROGATORY 29

Has the NRC staff 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 at Seabrook? If so, please describe that effort, identify and provide access to all relevant documents, and state the conclusions reached by the NRC staff concerning this question. Explain the basis for each such conclusion.

#### RESPONSE

See the answer to Interrogatories 4-8 for Contention I.A.2.

#### INTERROGATORY 30

Is it the NRC staff's position that neither it nor the Applicants need 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 does the NRC staff

contend that structures, systems, and components governed by GDC 4 must be shown to remain environmentally qualified once an accident begins?

RESPONSE

No. Structures, systems, and components governed by GDC 4 must be qualified for differing periods of time, depending upon the individual structure, system, or component.

CONTENTION 1.C

INTERROGATORY 31

What is the position of the NRC staff with respect to NECNP Contention I.C? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The NRC staff does not agree with NECNP Contention I.C. It is the Staff position that the portions of the HVAC system which provide the functions of cooling and ventilation for the EFW pumphouse are safety related and are required to be environmentally qualified. This subsystem ensures that the pump room temperature will be less than the maximum temperature at which the EFW pumps and their associated electrical equipment are assured of remaining functional. The portions of the HVAC system that provide heating to the pumphouse are not required to function in order for the EFW pumps to maintain their safety function. Once the EFW pumps are operating, its own heat generation will protect the equipment in the pumphouse from freezing. Furthermore, a low temperature



alarm will alert the operator to a potential freezing situation and corrective action can be taken to prevent freezing. Therefore, the heat subsystem is not required to be designed to safety related standards.

The following are the documents on which the above stated position is based:

- 10 C.F.R. 50 Appendix A
- General Design Criteria 2, 4 and 5
- Regulatory Guides 1.26 and 1.29
- SRP Section 9.4.5
- Seabrook FSAR
- NRC Safety Evaluation Report

INTERROGATORY 31a.

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

RESPONSE

The NRC staff witness who will respond to NECNP Contention I.C. has not been identified. The staff reviewer relative to this issue is R. Anand. The documents on which the NRC staff expects to rely at the hearing with respect to the contention have not been finally determined, but may include those documents listed in response to Interrogatory 31.

INTERROGATORY 32

Identify and describe all components of the HVAC system for the emergency feedwater pumphouse that the NRC staff believes must be environmentally qualified pursuant to GDC 4. In each case, state whether the NRC staff knows whether the component is environmentally qualified and the source of and basis for that knowledge.

RESPONSE

The following is a list of components of the HVAC system for the EFW pumphouse which are required to be designed to safety related standards and must, therefore, be environmentally qualified:

1. Two full sized ventilation supply fans and motors
2. Supply and exhaust dampers
3. The electric control and power supply system associated with the components listed in 1 and 2 above.
4. Heating system alarms.

The Applicant has not yet submitted information to enable the Staff to determine whether this equipment is acceptably environmentally qualified. This response will be updated after that submittal and the Staff review thereof.

INTERROGATORY 32a.

Identify and describe all components that the NRC staff believes are not required to be environmentally qualified pursuant to GDC 4. In each case, provide the justification for this conclusion. Identify and provide access to all documents that support this conclusion, that the NRC staff referred to in reaching this conclusion, or that otherwise relate to the issue of whether the component in question should be environmentally qualified.

RESPONSE

The Staff has no requirement that the Applicant identify the environmental qualification (if any) of equipment which is not important to safety which may share a common enclosure with equipment which is important to safety unless there is a potential that failure of the equipment not important to safety could impair a safety function.

CONTENTION I.D.1

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.D.1? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

In FSAR, Amendment 44, dated February 1982, the Applicant established the following position on pg. 1.8 - 57:

"PSNH intends to implement Regulatory Guide 1.150 at the Seabrook Site, for the preservice inspection of the reactor vessels. PSNH recognizes and agrees with the intent of the Regulatory Guide. PSNH, however, believes that the implementation of certain items within the Reg. Guide are not viable with the current state of technology. PSNH will monitor the progress of inspection requirements with regard to near surface resolution, midplane flaw detection, and sizing criteria, and perform what it believes is current state of technology exams for the PSI of the Seabrook vessels. These exams will implement the Regulatory Guide as the state of technology allows. We will develop specific plans for the implementation of Regulatory Guide 1.150, consistent with the development of the PSI plan, which is scheduled to be submitted by 1/1/83."

The preservice examination of the reactor vessel must be performed prior to issuance of the Operating License. An inservice examination must be performed during the first 10-year inspection interval, usually at the end of the interval. The NRC staff will evaluate the Applicant's degree of compliance with Regulatory Guide 1.150 after the Preservice Inspection (PSI) Program is submitted for review. The NRC staff will implement the applicable regulatory requirements based on 10 C.F.R. 50.55a(g) for the examination of the reactor vessel at the time of the Seabrook inservice examination.

INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.D.1, and identify all documents on which the Staff expects to rely at the hearing with respect to this contention.

RESPONSE

The specific witnesses that will address the subject of the contention have not been identified. All documents have not been identified; however, Regulatory Guide 1.150 should be included. The principle reviewers on the subject of Regulatory Guide 1.150 are W. S. Hazelton, C. Y. Cheng, and M. R. Hum of the Materials Engineering Branch, NRR.

INTERROGATORY 3

Identify the provisions of Reg. Guide 1.150 with which Applicants comply.

RESPONSE

The Applicants have indicated that they intend to implement Regulatory Guide 1.150 at the Seabrook Site for the preservice inspection of the reactor vessels. The NRC staff finds this position acceptable. However, the NRC staff also recognizes that some provisions of Regulatory Guide 1.150 may be ambiguous and other provisions may be beyond the state of the art. The Staff will seek to clarify this in the next revision of Regulatory Guide 1.150.

INTERROGATORY 4

Identify the provisions of Reg. Guide 1.150 with which Applicants do not comply. State the NRC staff's position with respect to these items of noncompliance.

RESPONSE

After reviewing the PSI program, the NRC staff will report its conclusions on the adequacy of the reactor vessel examination in the SSER.

INTERROGATORY 5

Does the NRC staff consider that inservice testing of reactor vessel welds is necessary to satisfy General Design Criterion 1 of Appendix A to 10 C.F.R. Part 50? State the reasons supporting this position and provide access to all relevant documents.

RESPONSE

No; however, if Applicants do not provide for inservice testing as called for in Reg. Guide 1.150, the Applicants must demonstrate the adequacy of their alternative methods in satisfying the requirements of GDC 1.

INTERROGATORY 6

Does the NRC staff believe that inservice testing of reactor vessel welds is necessary to provide a reasonable assurance that the Seabrook facility can be operated safely? State the reasons supporting this position and provide access to all relevant documents.

RESPONSE

Yes. The NRC regulations 10 C.F.R. Part 50, Paragraph 50.55a(g), require that a preservice and inservice inspection of the reactor vessel be performed to ensure an acceptable level of quality and safety.



INTERROGATORY 7

Describe all alternative means of testing reactor vessel welds which have been proposed by Applicants in lieu of compliance with Reg. Guide 1.150. State the NRC staff's position with regard to the adequacy of each alternative measure to satisfy the requirements of General Design Criterion 1, and state the justification for each such position.

RESPONSE

The Applicant has not identified or proposed specific items of noncompliance. See response to Interrogatory 4.

INTERROGATORY 8

Describe all tests that have been conducted on reactor welds at Seabrook and the results of those tests.

RESPONSE

The Applicants have not submitted the report which describes all tests that have been conducted on reactor vessel welds to the Staff for review. When the Staff has received the report and completes the review, we will report our conclusions on the adequacy of the reactor vessel examination in a SSER.

INTERROGATORY 9

Identify all reactors at which preservice inspection of reactor vessel welds is accepted as an alternative to inservice testing.

RESPONSE

The Staff reviewers are not presently aware of any reactors where the requirement to perform an inservice examination of a reactor vessel was satisfied by only performing a preservice examination.

INTERROGATORY 10

Identify any instances in which flaws or defects in reactor vessel welds have been discovered after such preservice inspection was completed or during operation of a reactor, and describe the cause and effect of the flaw or defect. Identify the reactors at which such flaws or defects were discovered.

RESPONSE

Under clad cracks have been detected in certain PWR vessels as reported in Generic Activity A-49. Regulatory Guide 1.150 references instances of flaws detected during fabrication and preservice examination. The document NUREG-0619 entitled "BWR Nozzle and Control Rod Drive Return Line Cracking" describes other experience on detection of service-induced flaws.

INTERROGATORY 11

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.D.1.

RESPONSE

- A. ASME Boiler and Pressure Vessel Code, Section 11, Division 1, "Rules for Inservice Inspection of Nuclear Power Plant Components."
- B. 10 C.F.R. Part 50.

C. Reg. Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations."

D. NUREG-0619, "BWR Nozzle and Control Rod Drive Return Line Cracking."

E. NUREG-0606, "Unresolved Safety Issues Summary."

These documents should be available in the PDR. If not, access can be arranged.

CONTENTION I.D.2

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.D.2? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The Staff disagrees with NECNP Contention I.D.2. The Staff's position is that Applicants have met the requirements of GDC 21 in that they have shown conformance to the provisions of Regulatory Guide 1.22 (See answer to Interrogatory 3, infra).

INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.D.2., and identify all documents on which the Staff expects to rely at the hearing with respect to this contention.

RESPONSE

The individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.D.2. are not known at this time. The ICSB reviewer for Seabrook is Robert W. Stevens, Jr.

The documents upon which the Staff expects to rely have not been finally determined, but should include those documents delineated in Item 13 below. In addition, the NRC staff plans to rely on the final Seabrook Safety Evaluation Report which is not yet issued.

INTERROGATORY 3

Identify the provisions of Reg. Guide 1.22 with which Applicants comply and state why they comply.

RESPONSE

Based on an audit review, the NRC staff believes that the Seabrook design complies with all the provisions of R.G. 1.22 (Safety Guide 22, 2/17/72) which includes the staff position as it relates to the requirements of GDC 21. Compliance with R.G. 1.22 (Safety Guide 22, 2/17/72) provides a basis which is used by the NRC staff re: specific plant designs. Based on the recommendation of R.G. 1.22 (Safety Guide 22, 2/17/72), the applicant has provided information showing that the Seabrook design permits testing of protection systems to the maximum extent possible while the plant is at power. Where actuated equipment is not to be tested during reactor operation, as allowed by Regulatory Position D.4 of R.G. 1.22 (Safety Guide 22, 2/17/72), the applicant has provided justification in FSAR Sections 1.8 and 7.1.2.5.

#### INTERROGATORY 4

Identify the provisions of Reg. Guide 1.22 with which Applicants do not comply. State the Staff's position with respect to these items of noncompliance.

#### RESPONSE

The Applicant has shown compliance with all the provisions of R.G. 1.22 (Safety Guide 22, 2/17/72). See Interrogatory 3 response.

#### INTERROGATORY 5

Does the NRC staff consider that Reg. Guide 1.22 requires testing at power of the twelve functions described in Applicants' FSAR at page 1.8-9? State the reasons supporting your answer for each of the twelve functions.

a. For any of the twelve functions which the Staff believes must be tested at power, state whether the Applicants have justified the omission or employed a sufficient alternative means of assuring the operability of the function. Describe in detail the justification or alternative method offered, the Staff's position with respect to each, and the basis for each such Staff position.

#### RESPONSE

No. The Applicant has provided information in FSAR Sections 1.8 and 7.1.2.5 justifying (as recommended by Regulatory Position D.4 of R.G. 1.22 or Safety Guide 22, 2/17/72) why each protection function described in FSAR Section 1.8 should not be tested during reactor operation.

#### INTERROGATORY 6

Does the NRC Staff believe that testing at power of the twelve functions listed at FSAR page 1.8-9 is required to assure safe operation of the Seabrook nuclear facility? State the reasons supporting your answer for each of the twelve functions.

RESPONSE

No. For reasons supporting this answer see the response to Interrogatory 5 above.

INTERROGATORY 7

Does the NRC Staff believe that General Design Criteria 20 and 21 require testing at power of the twelve functions? State the reasons supporting your answer for each of the twelve functions.

RESPONSE

No. The Staff position as it relates to the requirements of GDC 20 and GDC 21 is delineated in R.G. 1.22 (Safety Guide 22, 2/17/72). Specifically, Regulatory Position D.4 of R.G. 1.22 (Safety Guide 22, 2/17/72) provides guidance on actuated equipment that is not tested while the plant is at power. As stated in the item 5 response, the applicant has provided information supporting the Seabrook design as it relates to the subject staff position.

INTERROGATORY 8

Does the NRC staff believe that Task II.D.1. of NUREG-0737 requires testing at power of any of the twelve functions listed at FSAR 1.8-9? For each of the twelve functions, state the reasons supporting your answer.

RESPONSE

No. Task Action Item II.D.1 of NUREG-0737 requires a one-time qualification test of reactor coolant system relief and safety valves



under expected operating conditions for design basis transients and accidents and does not require periodic testing of these valves. The NRC staff concludes that this task action item is not related to and thus, does not affect the testing of the protection functions listed in FSAR Section 1.8.

#### INTERROGATORY 9

Describe the NRC staff's understanding of the rationale supporting the requirement for testing of protection functions at power.

#### RESPONSE

The Staff position as spelled out in R.G. 1.22 (Safety Guide 22, 2/17/72) and R.G. 1.118 gives the rationale which supports the requirement for testing of protection functions at power.

#### INTERROGATORY 10

Describe the NRC staff's understanding of what constitutes "compelling" reasons for not testing protection systems at power, as the term is used in Reg. Guide 1.22.

#### RESPONSE

Regulatory Position D.4 of R.G. 1.22 (Safety Guide 22, 2/17/72) defines what is meant by "compelling" reasons for not testing actuated equipment while the plant is at power.

INTERROGATORY 11

Define the term "practicable" as it is used in Reg. Guide 1.22, Regulatory Position 4.a. State whether the twelve protection systems identified at FSAR page 1.8-9 meet the terms of Regulatory Position 4.a.

RESPONSE

The term "practicable," as used in R.G. 1.22 (Safety Guide 22, 2/17/72), means that the applicant should determine whether it is feasible to actuate protection equipment during full power operation without adversely affecting the safety or operability of the plant. Judgement on the part of the applicant is required to determine which actuated equipment should not be tested at power and, as called for by Regulatory Position D.4 of R.G. 1.22 (Safety Guide 22, 2/17/72), the applicant must provide information to the NRC staff to justify why testing should not be required at power.

The Seabrook applicant has supplied documentation showing that the protection functions identified in FSAR Section 1.8 meet the terms of the subject position.

INTERROGATORY 12

Define "acceptably low probability" as the term is used in Regulatory Position 4.b, including numerical standards. Provide access to all documents relied upon in support of this position. State whether Applicants have met the terms of Regulatory Position 4.b.

RESPONSE

The phrase "acceptably low probability" means the Applicant should use qualitative engineering judgment to determine that the protection system will not fail to initiate the operation of actuated equipment

during reactor operation. The applicant has supplied information showing that the Seabrook design meets the terms of Regulatory Position 4.b of R.G. 1.22 (Safety Guide 22, 2/17/72). For documentation, see response to Interrogatory 13.

#### INTERROGATORY 13

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.D.2.

#### RESPONSE

- A. Regulatory Guide 1.22 (Safety Guide 22, 2/17/72), "Periodic Testing of Protection Actuation Functions."
- B. Regulatory Guide 1.118, "Periodic Testing of Electric Power and Protection Systems."
- C. Appendix A to 10 C.F.R. Part 50.
- D. NUREG-0737, "Clarification of TMI Action Plan Requirements."
- E. Seabrook FSAR.

Items A through E above are available in the Public Document Room (PDR).

#### CONTENTION I.D.3

##### INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.D.3? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The Staff disagrees with NECNP Contention I.D.3. The Staff does not require that the Reactor Coolant Pressure Boundary Leakage Detection Systems meet the requirements of General Design Criterion 21 as it is not part of the reactor protection system.

The Staff considers compliance with the Regulatory Positions of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems" as meeting the requirements of GDC 30.

The Applicant has demonstrated compliance with all Regulatory Positions of Regulatory Guide 1.45 except Position C.5.

The Applicant has not yet provided enough information to establish conformance with Position C.5. The Staff will review this information when submitted and report its findings as to its acceptability in a supplement to the Staff's Seabrook SER.

INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.D.3, and identify all documents on which the Staff expects to rely at the hearing with respect to this contention.

RESPONSE

The individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.D.3 have not been identified. The Staff reviewer for the Seabrook leakage detection system is R. Anand.

During the Seabrook hearing on this contention, the documents that the Staff will rely on has not been determined, but will include those documents delineated in response to Question 12.

INTERROGATORY 3

Identify the provisions of Reg. Guide 1.45 with which Applicants' reactor coolant pressure boundary leakage detection system complies.

RESPONSE

See response to Interrogatory 1.

INTERROGATORY 4

Identify the provisions of Reg. Guide 1.45 with which Applicants' reactor coolant pressure boundary leakage detection system does not comply. Describe any justifications or alternatives offered by Applicants for failure to comply with the Reg. Guide. State whether such justifications or alternatives are acceptable to the Staff and why.

RESPONSE

See response to Interrogatory 1.

INTERROGATORY 5

Identify the provisions of IEEE-279-71 with which the Applicants' reactor coolant pressure boundary leakage detection system complies.

RESPONSE

The Staff does not require that reactor coolant pressure boundary leakage detection systems comply with the provisions of IEEE-279-71.

INTERROGATORY 6

Identify the provisions of IEEE-279-7-1971 with which Applicants' reactor coolant pressure boundary leakage detection system fails to comply. Describe any justifications or alternatives to compliance with IEEE-279-1971 offered by Applicants. State whether such justifications or alternatives are acceptable to the Staff and why.

RESPONSE

See response to Interrogatory 5.

INTERROGATORY 7

Is it the NRC staff's position that Reg. Guide 1.22 requires testing of the reactor coolant pressure boundary leakage detection system at power? If so, state what provisions of Reg. Guide 1.22 Applicant comply with. State which provisions Applicants' leakage detection system does not comply with, and describe any justifications or alternatives to compliance which have been offered by Applicants. State whether such justifications or alternatives are acceptable to the Staff and why.

RESPONSE

No. The Staff does not require that the leakage detection systems comply with the provisions of Regulatory Guide 1.22 since these systems are not considered reactor protection systems.

INTERROGATORY 8

Describe all leakage detection instruments which the NRC staff believes should be tested at power and state the reasons supporting that position, including reference to regulations, Reg. Guides, and IEEE standards.



RESPONSE

The Staff requirements for testing leakage detection instrumentation at power which are applicable to Seabrook are given in the Westinghouse Standard Technical Specifications which have been reviewed and approved by the Staff. The Applicant has proposed the use of these technical specifications for the Seabrook station.

INTERROGATORY 9

Is it the Staff's position that compliance with Reg. Guide 1.45 is necessary to satisfy General Design Criterion 30 or to provide a reasonable assurance that a nuclear facility to operated safely? State the reasons supporting your position.

RESPONSE

The Staff does not require compliance with a Regulatory Guide. Regulatory Guide 1.45 contains the following footnote which states the Staff position:

Regulatory Guides are issued to describe and make available to the public methods acceptable to the AEC (NRC) Regulatory staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the Staff in evaluating specific problems or postulated accidents, or to provide guidance to Applicants. Regulatory Guides are not substitutes for regulations and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission.

INTERROGATORY 10

Is it the Staff's position that compliance with IEEE-279-1971 is necessary to satisfy General Design Criterion 30 or to provide a reasonable assurance that a nuclear facility can be operated safely? State the reasons supporting your position.

RESPONSE

The Staff does not require the compliance with IEEE-279-1971 in order to satisfy GDC 30 since the leakage detection system is not a protection system.

INTERROGATORY 11

Is it the Staff's position that compliance with Reg. Guide 1.22 is necessary to satisfy General Design Criterion 20 and 21 and/or to provide a reasonable assurance that a nuclear facility can be operated safely? State the reasons supporting your position.

RESPONSE

The Staff does not require that the leakage detection system comply with the requirements of GDC 20 or GDC 21 (see response to Question 1). Therefore, compliance with Regulatory Guide 1.22 is not "necessary."

INTERROGATORY 12

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.D.3.

RESPONSE

The documents on which the NRC staff relied in preparing the response to these interrogatories are listed below:

1. 10 CFR Part 50, Appendix A, Criterion 2
2. 10 CFR Part 50, Appendix A, Criterion 30
3. Regulatory Guides 1.29 and 1.45
4. Standard Review Plan NUREG-0800
5. Seabrook FSAR
6. Staff's Safety Evaluation Report on Seabrook

CONTENTION I.D.4

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP I.D.4? State all facts and opinions and identify and provide access to all documents which support that position.

RESPONSE

NECNP Contention I.D.4 states, in part, that "the Applicants have not complied with GDC 21 in that the applicants indicate compliance with an outdated standard, IEEE Standard 338-1975, which has been superseded by IEEE 338-1977."

Criterion 18 of Appendix A to 10 CFR 50 encompasses the Criterion 21 testability requirement for the electric portion of the protection system. In regard to Criterion 18, the Applicant has stated, in Section 8.1.5.2 of the Seabrook FSAR, that the electric power systems are in conformance with IEEE Standard 338-1975. In addition, by letter to the NRC dated November 12, 1982, the Applicant has stated that the Seabrook design meets the requirements of IEEE Standard 338-1977. Based on these statements, the performance of periodic testing for electric power systems at Seabrook will follow the design and operational criteria of both IEEE Standards 338-1975 and 338-1977. Therefore, it is the Staff's position that the Seabrook electric power system design meets the requirements of Criterion 18 and the testability requirement of GDC 21.

The NRC staff position with respect to periodic testing of protection systems as required by GDC 21 is delineated in Regulatory Guide (R.G.) 1.118, "Periodic Testing of Electric Power and Protection

Systems" and R.G. 1.22 (Safety Guide 22, 2/17/72), "Periodic Testing of Protection System Actuation Functions." The Seabrook design is currently under review for compliance with the recommendations of R.G. 1.118. This issue will be addressed in the final Safety Evaluation Report which is presently being developed.

NECNP Contention I.D.4 further states, in part, that "the Applicants improperly assert that they do not comply with IEEE 338-1975 whenever the standard states that an action should be taken or a requirement should be met. All the provisions of the IEEE standard should be treated as mandatory unless the Applicants can show an alternative means of achieving the same level of safety."

Requirements of IEEE Standard 338-1975 and 338-1977 are indicated in the standards by the verbs "shall" and "must" and the recommendations are indicated by the verb "should." The Staff treats the requirements of the standards as mandatory unless the Applicants can show an alternative means of achieving the same level of safety. In regard to recommendations of the standard, the Staff disagrees with the contention that they should also be treated as mandatory. If the Applicants elect to not follow the recommendation of the standards, it is the Staff's position that the exceptions be described with justification in the FSAR. The acceptability of the justification will be based on the Staff's assessment of the significance to safety of a particular deviation from the guidance, and will be reported in the SER.

INTERROGATORY 2

Identify all individuals whom the Staff expects to call as witnesses with respect to NECNP Contention I.D.4 and identify all documents on which the Staff expects to rely at the hearing respecting this contention.

RESPONSE

The individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.D.4 are not known at this time. The principal Staff reviewer in this area for electric power system design is John L. Knox; the principal reviewer for instrumentation and controls is Robert W. Stevens, Jr.

Although all documents, as of this date, have not been identified, those documents will include the Staff's Seabrook Safety Evaluation Report and the Applicant's Final Safety Analysis Report.

INTERROGATORY 3

Identify all systems the Staff believes must comply with GDC 18, GDC 21, 10 C.F.R. § 50.55a, and Criterion XI of Appendix B to 10 C.F.R. Part 50, which require periodic testing of electric power and protection systems.

RESPONSE

There is no standard, specific list which exists that identifies all systems that must comply with GDC 18, GDC 21, 10 C.F.R. 50.55a, and Criterion XI of Appendix B to 10 C.F.R. Part 50. In general, the NRC staff requires that electric power and protection systems as defined in the scope of IEEE 279 and IEEE 308 be periodically tested. Power and protection systems can vary from plant-to-plant. It is the Applicant's responsibility to determine what plant-specific systems fall into the

IEEE 279 and IEEE 308 categories and the staff's responsibility to review those systems.

INTERROGATORY 4

Identify all differences between IEEE Standard 338-1975 and IEEE Standard 338-1977.

RESPONSE

There is no specific, formal list which exists that identifies all the differences between IEEE 338-1975 and IEEE 338-1977. That information is available to NECNP by comparing and contrasting the Standards.

INTERROGATORY 5

Explain why the NRC has recommended in Regulatory Guide 1.118 that the requirements and recommendations contained in IEEE Standard 338-1977 be supplemented in the ways stated in Regulatory Guide 1.118. For each such NRC recommended supplement describe the additional recommendation or requirement and the reason for its adoption.

RESPONSE

The additional NRC recommendations or requirements to IEEE Standard 338-1977 are described in Regulatory Guide 1.118 Revision 2 and have been adopted with the objective of providing additional clarification and conservatism to the recommendation or requirements included in the Standard.



INTERROGATORY 6

Is it the NRC staff's position that Applicants are in compliance with Regulatory Guide 1.118? Identify all provisions of Regulatory Guide 1.118 with which Applicants do not comply. State whether such noncompliance is acceptable to the Staff, and explain the reasons for this determination.

RESPONSE

The Seabrook design is currently under review for compliance with the recommendations of R.G. 1.118. This issue will be addressed in Sections 7.3.2 and 8.3.3.5 of the final Safety Evaluation Report which is presently being developed.

INTERROGATORY 7

Identify each alternative method Applicants have proposed to comply with NRC requirements in those instances where it does not comply with the recommended method of compliance presented in Regulatory Guide 1.118. For each alternative, state whether it is acceptable to the NRC staff, and describe the reasons supporting the Staff's determination.

RESPONSE

The Seabrook design is currently under review for compliance with the recommendations of R.G. 1.118. This issue will be addressed in Sections 7.3.2 and 8.3.3.5 of the final Safety Evaluation Report which is presently being developed.

INTERROGATORY 8

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.D.4.

RESPONSE

- A. Regulatory Guide 1.118, "Periodic Testing of Electric Power and Protection Systems," Revisions 1 and 2.
- B. Appendix A to 10 C.F.R. Part 50.
- C. Seabrook FSAR.
- D. IEEE Standard 279-1971.
- E. IEEE Standard 308-1974.
- F. IEEE Standards 338-1975 and 1977.

CONTENTION I.F.

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.F? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The Staff disagrees with NECNP Contention I.F. The Applicant on pages 1.8-4 and 8.1-6 of the FSAR indicates conformance with Regulatory Guide 1.9 with the exception of position C14 of Revision 2 and position C5 of Revision 1. Neither position C5 nor C14 address qualification testing requirements of IEEE 323-1974.

IEEE 323 qualification testing is the subject of position C6 of Revision 1 and position C5 of Revision 2 of Regulatory Guide 1.9. Since the Applicant has not specifically indicated exception to these positions in the FSAR, the Staff interprets that the Applicant has indicated compliance with this Section 5.4 of 387 and these positions. Further,

the Applicant in Section 8.1.5.2 of the FSAR specifically indicates conformance of electric power systems to IEEE Standard 323-1974. Diesel generators are a part of electric power systems and are, thus, subject to the requirements of IEEE Standard 323-1974.

#### INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.F., and identify all documents on which the Staff expects to rely at the hearing with respect to this contention.

#### RESPONSE

Staff witnesses as of this date have not been selected; however, John L. Knox has been assigned to review the Seabrook electric power systems design with respect to its compliance with acceptance criteria outlined in Section 8 of the NRC Standard Review Plan.

Although all documents, as of this date, have not been identified, the documents will include the Staff's Seabrook Safety Evaluation Report and the Applicants Final Safety Analysis Report.

#### INTERROGATORY 3

Describe the tests which must be conducted by an Applicant to comply with IEEE 323-1974 regarding environmental qualification of diesel generator units.

#### RESPONSE

See Section 6 of IEEE 323-1974.

INTERROGATORY 4

State whether or not Applicants have at Seabrook complied with IEEE 323-1974, regarding environmental qualification of diesel generator units.

RESPONSE

The Staff cannot answer this question until it receives and reviews Applicants' environmental qualification submittal.

INTERROGATORY 5

Identify all tests conducted by Applicants in order to environmentally qualify the diesel generator units at Seabrook. State the results of all such tests.

RESPONSE

See the response to Interrogatory 4.

INTERROGATORY 6

If the Applicants have not complied with IEEE 323-1974 describe any justifications offered by Applicants for noncompliance and any alternative method by which Applicants intend to meet the requirements of GDC 17. State the Staff's position as to whether such justification or alternative is adequate to meet the requirements of GDC 17.

RESPONSE

The Applicants have indicated compliance without exception.

INTERROGATORY 7

Is it the Staff's position that a license Applicant must comply with IEEE 323-1974 in order to meet the requirements of General Design Criterion 17 and/or to provide a reasonable assurance that a nuclear

facility can be operated safely? State the reasons supporting your answer.

RESPONSE

The Applicant has indicated compliance with the guidelines of 323-1974 in the FSAR. The details, as to how the Seabrook design meets the guidelines, are reviewed by the Equipment Qualification Branch as part of their primary review responsibility for SRP Section 3.11. See SRP Section 3.11.

INTERROGATORY 8

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.F.

RESPONSE

The Applicant's Final Safety Analysis Report, Regulatory Guides 1.9 and 1.89, IEEE Standards 323-1974 and 387-1977, and General Design Criteria of Appendix A to 10 C.F.R. 50 were used in preparing the response to the interrogatories.

CONTENTION I.G.

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.G? State all facts and opinions and identify and provide access to all documents which support that position.

RESPONSE

The Staff's environmental qualification review for Seabrook will include a review of the wide-range pressure instruments in question. The Staff has not yet received Applicants' environmental qualification submittal and thus has no position on the contention at this time.

INTERROGATORY 2

Identify all individuals whom the Staff expects to call as witnesses with respect to NECNP Contention I.G. and identify all documents on which the Staff expects to rely respecting this contention.

RESPONSE

The Staff has not determined who its witnesses will be on this contention. The principal Staff reviewer is Harold Walker. The principal documents he will rely upon in his review include, as of this time Applicants' environmental qualification submittal and NUREG-0588 and its references.

INTERROGATORY 3

State all information the NRC currently possesses about deficiencies in Westinghouse-supplied wide range pressure instruments and/or malfunctioning of such instruments, and describe how it applies to the Seabrook reactor. Provide copies of all documents relating to such deficiencies and malfunctioning.

RESPONSE

The only information of which the Staff reviewer is aware is I&E Notice 82-11 and the submittal from Westinghouse that prompted the



notice. This information is not considered applicable to Seabrook for the reasons set forth in the response to Interrogatory 4.

#### INTERROGATORY 4

Describe all corrective actions the NRC is requiring of Westinghouse, Licensees and Applicants for operating licenses to compensate for the problems identified in IE Information Notice No. 82-11. Identify all corrective measures that will be required at Seabrook.

#### RESPONSE

No corrective actions as such will be required for Seabrook. The wide-range pressure instruments at Seabrook will be reviewed by the Staff to determine their compliance with the qualification requirements of NUREG-0588. Corrective action taken at other plants are not relevant to Seabrook. The Staff objects to the remainder of this interrogatory. The Staff has answered the interrogatory as regards corrective action at Seabrook. The Staff objects to the attempt to inquire generally into the response of all licensees, Applicants and Westinghouse in response to IE Information Notice 82-11, a notice not applicable to Seabrook. First, the interrogatory goes well beyond the scope of the admitted contention, which is limited to "the RCS wide range pressure instruments being utilized at Seabrook . . . ." As such, the interrogatory is not relevant to the matters in controversy as identified by the pending officer. See 10 C.F.R. § 2.720(h)(1). Second, the Staff objects to the interrogatory inasmuch as gathering and compiling relevant information, for an I and E Bulletin that does not apply to Seabrook, may constitute the performance of a study and/or analysis which it is

not required to do for a party seeking discovery. Houston Lighting & Power Co. (South Texas Project, Units 1 & 2), LBP-80-11, 11 NRC 477, 418 (1980); See also Susquehanna, supra., ALAB-613, 12 NRC 317 at 334 (1980). Finally, the Staff objects to the remainder of the interrogatory as not being demonstrated to be necessary for a proper decision on the admitted contention, or in the proceeding as required by 10 C.F.R. § 2.720(h)(2)(ii).

#### INTERROGATORY 5

Describe the operating history of Westinghouse-supplied wide range pressure instruments and/or malfunctioning of such instruments at operating plants. For any problem identified during the operation of a plant, identify the corrective action taken to remedy the problem.

#### RESPONSE

The Staff objects to this interrogatory for the same reasons as stated immediately above in responses to Interrogatory 4. As explained in the response to Interrogatory 4, the Staff will review Applicants' submittal to determine compliance with NUREG-0588. The response to this interrogatory may well require a lengthy study. Moreover, there has been no contention admitted encompassing "the operating history of Westinghouse . . . instruments". Finally, it has not been demonstrated that this information is necessary to a proper decision on the admitted contention or in this proceeding.

INTERROGATORY 6

Identify all NRC requirements the Applicants must meet to ensure that Westinghouse-supplied wide range pressure instruments will not endanger the public health and safety.

RESPONSE

See NUREG-0588 and I&E Notice 82-11. The Staff objects to the remainder of this interrogatory for the reasons stated in response to Interrogatories 4 and 5.

INTERROGATORY 7

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.G.

RESPONSE

I&E Notice 82-11 and NUREG-0588.

CONTENTION I.I.

INTERROGATORY 1

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

RESPONSE

The Staff position is that NECNP Contention I.I. is moot, in that the Applicants have identified and will environmentally qualify a path to cold shutdown. See the response to Interrogatory 16 under Contention I.B.1.

INTERROGATORY 2

Identify all individuals whom the Staff expects to call as witnesses with respect to NECNP Contention I.I. and identify all documents on which the NRC Staff expects to rely at the hearing with respect to this contention.

RESPONSE

The Staff has not yet determined who its witnesses will be on this contention. The relevant Staff reviewers are C. Liang and Harold Walker.

INTERROGATORY 3

Identify the Staff's position on whether or not Applicants are required to satisfy Reg. Guide 1.139 and the requirements of IE Bulletin 79-01 B, Supp. 3. If not, explain why not.

INTERROGATORY 4

State whether or not the Staff position is that Applicants are required to demonstrate one environmentally qualified path to cold shutdown. State the reasons supporting your position.

INTERROGATORY 5

State the Staff's position with respect to the question of whether license applicants are required to environmentally qualify all equipment necessary to bring the plant to cold shutdown.

If the Staff does not require all such equipment to be environmentally qualified, explain and justify that position.

INTERROGATORY 6

State whether the Staff requires that all equipment necessary to bring the reactors to cold shutdown must be safety-grade. In each case

where the equipment is not required to be safety-grade, explain and justify that position.

#### RESPONSE

See response to Interrogatory 1. For Interrogatories 5 and 6, Applicants will qualify all the equipment needed for one path to cold shutdown; the Staff does not believe that more than one path need be qualified.

#### INTERROGATORY 7

Define the safe hot standby condition of Seabrook. Define the hot shutdown condition of Seabrook. Define the cold shutdown condition for Seabrook.

#### RESPONSE

The definitions for these conditions are contained in Table 1.1 of the Westinghouse Standard Technical Specifications which will be used at Seabrook. Hot Standby has a  $K_{eff} < 0.99$  and an average coolant temperature ("ACT")  $\geq 350^{\circ}\text{F}$ . Hot shutdown has a  $K_{eff} < 0.99$  and an ACT between  $350^{\circ}\text{F}$  and  $200^{\circ}\text{F}$ . Cold shutdown has a  $K_{eff} < 0.99$  and an ACT  $\leq 200^{\circ}\text{F}$ .

#### INTERROGATORY 8

State whether or not the Staff believes Applicants have adequately demonstrated that the plants can be maintained in a hot standby or hot shutdown condition longer than 36 hours by use of the auxiliary feedwater system or residual heat removal system. If so, explain and/or describe how.

RESPONSE

The question as phrased is unclear. The Staff requires that the residual heat removal system become operational in less than 36 hours. An analysis submitted by the Applicants shows that the switchover from auxiliary feedwater to residual heat removal can be made within 13 hours.

INTERROGATORY 9

Identify any outstanding requests for information by the NRC Staff to the Applicants with respect to this issue of achieving safe shutdown. In each case, describe the requests and any partial or complete answer by Applicants to such request.

RESPONSE

None.

INTERROGATORY 10

Identify and describe all systems, components and structures Applicants have told the NRC Staff will be used to bring the Seabrook plants to a safe shutdown condition.

RESPONSE

This information will be contained in Section 5.4.7 of the SER.

INTERROGATORY 11

Identify and provide any NRC Staff evaluation of the test results conducted for Applicants' safe evaluation of the test results conducted for Applicants' safe shutdown system.

RESPONSE

This information will be contained in Section 5.4.7 of the SER.



INTERROGATORY 12

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.I.

RESPONSE

Seabrook FSAR.

Seabrook SER.

I&E Bulletin 79-01 B.

CONTENTION I.L

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.L? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The Staff disagrees with NECNP Contention I.L. The Staff's position is that Applicants have provided for a direct indication of PORV positions and, therefore, have complied with Item II.D.3 of NUREG-0737. Documents on which this position is based are Letter (SBN-342) from Public Service Co. of New Hampshire to NRC dated October 14, 1982, and Seabrook Safety Evaluation Report, Section 7.5.2.

INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.L., and identify all

documents on which the Staff expects to rely at the hearing with respect to this contention.

#### RESPONSE

The individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.L are not known at this time. The principal reviewer in this area for Seabrook is Robert W. Stevens, Jr.

During the Seabrook hearing on this contention, the NRC staff has not determined upon what documents it will rely, but such documents may include those delineated in item 5. below. In addition, the NRC staff plans to rely on the final Seabrook Safety Evaluation Report (SER) which is currently being developed.

#### INTERROGATORY 3

Does the NRC staff believe that the use of acoustic accelerometers satisfies the requirements of NUREG-0737, Task II.D.3? State the reasons for your answer and identify all supporting documents.

#### RESPONSE

This question does not apply to the power operated relief valves since the Staff has recently been informed (October 1982) by the applicant that limit switches are to be used to monitor the PORVs for position indication.

#### INTERROGATORY 4

Is the NRC staff aware of circumstances under which acoustic accelerometers could not be relied upon to give an accurate indication of valve position? Identify and describe those circumstances.

RESPONSE

Same as that for item 3 above.

INTERROGATORY 5

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.L.

RESPONSE

A. NUREG-0737, "Clarification of TMI Action Plan Requirements."

B. Letter (SBN-342) From Public Service Co. of New Hampshire to NRC dated October 14, 1982.

The above documents are available in the Public Document Room (PDR).

CONTENTION I.M

INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention I.M.? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

With respect to the NECNP Contention I.M. the Staff's positions are set forth in Section 9.5.1 of the Seabrook SER which will be published soon.

The NECNP Contention I.M. is based on the Applicant's Fire Protection System Evaluation and Comparison to Branch Technical Position

APCSB 9.5-1 Appendix A transmitted to the NRC by letter dated August 30, 1977. By letter dated April 1, 1982 the Applicant transmitted an updated Fire Protection System Evaluation and Comparison to Branch Technical Position APCS 9.5-1 Appendix A and an evaluation of the Seabrook Station Units 1 and 2 Safe Shutdown Capability (10 C.F.R. 50 Appendix R). This information supersedes the August 1977 information.

#### INTERROGATORY 2

Identify all individual whom the NRC staff expects to call as witnesses with respect to NECNP Contention I.M., and identify all documents on which the Staff expects to rely at the hearing with respect to this contention.

#### RESPONSE

The Staff has not determined who its witnesses will be. The principal Staff reviewer in this area is John Stang.

The Staff has not determined upon what documents it will rely, but included may be the following:

- Applicants FSAR
- Applicants Fire Protection Program Evaluation and Comparison to BTP APCS 9.5-1 Appendix A April 1982 transmitted to the NRC by letter dated April 1, 1982.
- Applicants Fire Protection of Safe Shutdown Capability (10 C.F.R. 50 Appendix R) April 1982 transmitted to the NRC by letter dated April 1, 1982.
- NUREG-0800 Section 9.5-1, July 1981.

- Seabrook SER (NUREG-0896) Section 9.5.1.
- Appendix A to BTP APCSB 9.5-1.
- Appendix R to 10 C.F.R. 50.

### INTERROGATORY 3

It is the Staff's position that under the Commission's order in CLI-80-21, 11 NRC 707, 718 (1980), and Commission's regulations, the revision of 10 CFR 50.48 and Appendix R to 10 C.F.R. Part 50, published November 19, 1980, at 45 FR 76602, and Appendix A to Branch Technical Position 9.5-1 of the Standard Review Plan constitute Commission requirements for compliance of the Seabrook plant with General Design Criterion 3 of Appendix A to 10 C.F.R. Part 50? Please state your reasons if you answer this question in the negative.

### RESPONSE

The Staff's position as stated in the Commission Memorandum and Order (CLI-80-21) is that conformity to the combined guidance contained in 10 C.F.R. 50.48 and Appendix R to 10 C.F.R. 50 and in Appendix A to BTP APCSB 9.5-1 demonstrates compliance with GDC 3 of Appendix A to 10 C.F.R. 50. BTP CMEB 9.5-1 (July 1981) incorporates all these guidelines into one document. The Staff uses these guidelines to determine compliance with the Fire Protection Program of a plant. Seabrook has been evaluated to those guidelines.

Applicants may propose alternatives to the guidelines. The Staff reviews these alternatives to ensure that an acceptable level of safety is provided.

INTERROGATORY 4

Identify all provisions of 10 C.F.R. 50.48 and Appendix R with which Applicants are not in compliance, and describe the reasons and justifications offered by Applicants for noncompliance. State whether such reasons and justifications are acceptable to the NRC staff and why or why not. For each standard, identify the measures which must be taken to bring the plant into compliance.

RESPONSE

In the fire protection SER, the Staff will evaluate differences and deviations from the acceptable guidelines. In the Seabrook SER, not yet prepared, deviations from the guidelines will be identified and evaluated.

INTERROGATORY 5

Identify all provisions of Appendix A to BTP 9.5-1 with which Applicants are not in compliance, and describe the reasons and justifications offered by Applicants for noncompliance. State whether such reasons and justifications are acceptable to the NRC staff and why or why not. Describe the measures which must be taken to bring the plant into compliance with BTP 9.5-1.

RESPONSE

In the fire protection SER, the Staff will evaluate differences and deviations from the acceptable guidelines. In the Seabrook SER, deviations from the guidelines will be identified and evaluated.

INTERROGATORY 6

Identify and provide access to any and all documents generated in preparation for or as a result of the meeting on fire protection between PSNH and the NRC staff on March 10, 1982, relating to a comparison of PSNH's fire protection system and 10 C.F.R. Part 50, Appendix R.



#### RESPONSE

The documents generated in preparation for and as a result of the meeting between PSNH and the NRC staff on March 10, 1982, relating to a comparison of PSNH's fire protection system and 10 C.F.R. Part 50, Appendix R are as follows:

- Memorandum from L. L. Wheeler, Project Manager for F. J. Miraglia, Chief, LB No. 3; Subject: Meeting Notice (PSNH) with NRC CMEB to review fire protection requirements, dated March 2, 1982.
- Letter dated May 11, 1982 from the Applicant; Subject: Meeting notes on the March 10, 1982 meeting between the Staff and the Applicant.

Since the March 10, 1982 meeting, the Applicant has transmitted by letter dated April 1, 1982, an updated comparison of the fire protection program with the guidelines contained in Appendix A to BTP APCSB 9.5-1 and the technical requirements of Appendix R to 10 C.F.R. 50. The Staff has evaluated this information in Section 9.5.1 of the Seabrook SER.

#### INTERROGATORY 7

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.M.

#### RESPONSE

The Staff relied upon the following documents in preparing the responses to the interrogatories regarding Contention I.M.

- Applicants FSAR

- Applicants Fire Protection Program Evaluation and Comparison to BTP APCSB 9.5-1.
- Appendix A April 1982 transmitted to the NRC by letter dated April 1, 1982.
- Applicants Fire Protection of Safe Shutdown Capability (10 C.F.R. 50 Appendix R) April 1982 transmitted to the NRC by letter dated April 1, 1982.
- NUREG-0800 Section 9.5-1, July 1981.
- Seabrook SER (NUREG-0896) Section 9.5.1.
- Appendix A to BTP APCSB 9.5-1.
- Appendix R to 10 C.F.R. 50.

CONTENTION I.N

INTERROGATORY 1

What is the Staff's position with respect to NECNP Contention I.N? State all facts and opinions and identify and provide access to all documents which support that position.

RESPONSE

As of this point in time, the Staff agrees with NECNP's Contention I.N. inasmuch as the Applicant has not yet submitted a solid waste disposal program for Staff review. Refer to the Seabrook SER for documentation of this position.

INTERROGATORY 2

Identify all individuals whom the Staff expects to call as witnesses with respect to NECNP Contention I.N., and identify all documents on

which the Staff expects to rely at the hearing respecting this contention.

RESPONSE

The NRC witness on this contention will be John J. Hayes, Jr. The documents he will rely on have not been finally determined, but will include the Seabrook FSAR and SER, and the Standard Review Plan 11.4 "Solid Waste Management Systems."

INTERROGATORY 3

Describe all components of a radioactive waste management system which must comply with the requirements of GDC 60, and Criteria 1 and 2 of Appendix A to 10 C.F.R. Part 50.

RESPONSE

The components of a solid radwaste system which must comply with the requirements of GDC 60 and Criteria 1 and 2 of Appendix A to 10 C.F.R. Part 50 are described in Regulatory Guide 1.143 "Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed In Light-Water-Cooled Nuclear Power Plants."

INTERROGATORY 4

Describe the NRC staff's position as to the acceptable level of radiation to which operating and maintenance personnel may be exposed from the radwaste management system of any nuclear plant.

RESPONSE

The Staff's position as to the acceptable levels of radiation to which personnel may be exposed from any system or operation of a nuclear plant, including the radwaste management system, are those levels of radiation, commensurate with occupancy times, such that workers will not exceed the exposure limits, as set forth in 10 C.F.R. 20.101 and 103, and that all occupational exposure will be as low as is reasonably achievable. The manner in which this is achieved will be described in Chapter 12 of the Seabrook Safety Evaluation Report.

INTERROGATORY 5

Describe the NRC staff's position as to the acceptable level of radiation to which the general public may be exposed from the radwaste management system of any nuclear plant.

RESPONSE

The Staff's position as to the acceptable levels of radiation to which the general public may be exposed from any system or operation of a nuclear power plant, including the radwaste management system, are those levels of radiation in unrestricted areas and of radioactivity in effluents to unrestricted areas as set forth in 10 C.F.R. 20, "Standard for Protection Against Radiation". In addition to the Radiation Protection Standards of 10 C.F.R. 20, there are set forth in 10 C.F.R. 50.36 license requirements that all releases of radioactive materials to unrestricted areas be as low as reasonably achievable (ALARA). Appendix I of 10 C.F.R. 50 provides the numerical guidance on dose-design objectives for light-water-reactors (LWR) to meet this ALARA requirement. In summary the dose-design objectives are applied by NRC staff as follows:

1. 3 mrem/yr to the total body or 10 mrem/yr to any organ from all pathways of exposure from liquid effluents from each reactor;
2. 10 mrad/yr gamma radiation or 10 mrad/yr beta radiation air dose from gaseous effluents near ground level -- and/or 5 mrem/yr to the total body or 15 mrem/yr to the skin from gaseous effluents from each reactor; and
3. 15 mrem/yr to any organ from all pathways of exposure from airborne effluents that include the radioiodines, carbon-14, tritium and radioactive material in particulate form from each reactor.

Examples of site-specific dose assessment calculations showing conformance with these limits for the Seabrook Station are described in Appendix D of the Final Environmental Statement related to the operation of the Seabrook Station.

#### INTERROGATORY 6

Describe the solid waste management systems at McGuire, Comanche Peak, and Byron/Braidwood. Describe the operating histories of these solid waste management systems.

#### RESPONSE

The solid waste management systems at McGuire, Comanche Peak, and Byron/Braidwood are described in separate documents, under the docket number of each proceeding, and should be available in the Commission's PDR at 1717 H Street. The Staff objects to the remainder of the interrogatory. First, the information requested does not appear to be relevant to the admitted contentions or issues. See 10 C.F.R. § 2.740(h)(1). Secondly, NECNP



has not demonstrated that this information is necessary to a proper decision in this proceeding in violation of 10 C.F.R. § 2.720(h)(2)(ii). Third, the requested information may be available not only from the PDR but from the licensees of said plants. Thus, NECNP has failed to demonstrate that the requested information is not available from other sources in violation of 10 C.F.R. § 2.720(h)(2)(ii). Fourth, the request may necessitate an independent study, not now in existence, which is not proper discovery. South Texas, supra., 11 NRC 477 (1980); Susquehanna, supra., ALAB-613, 12 NRC 317, 334 (1980).

INTERROGATORY 7

State the Staff's estimate of the annual volume of solid waste produced by plants of the size of the Seabrook units.

RESPONSE

A plant, the size of the Seabrook Units, would produce on the order of 25,000 ft<sup>3</sup> of solidified waste per reactor per year.

INTERROGATORY 8

State the Staff's position as to the reliability, operability and availability of the Applicants' proposed use of one solid waste management system for waste produced from the two Seabrook units.

RESPONSE

Since the Applicant has not proposed a solid radwaste system the Staff cannot assess the reliability, operability and availability of the



system because the mode of operation and the system itself is presently unknown.

INTERROGATORY 9

State the Staff's position on the minimum requirements which Applicants' quality assurance program for the radioactive waste management system must meet.

RESPONSE

The solid radwaste for Seabrook must meet the quality assurance requirements of Regulatory Guide 1.143, or provide an equivalent level of protection.

INTERROGATORY 10

Did Applicants submit an earlier solid waste disposal plan which was rejected by the Staff? If so, describe the reasons for its rejection and the Staff's requirements for a new system.

RESPONSE

The Applicant did not submit an earlier solid waste disposal plan which was rejected by the Staff.

INTERROGATORY 11

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.N.

RESPONSE

The documents utilized in preparing responses to these interrogatories regarding Contention I.N were Regulatory Guide 1.143, Seabrook FSAR, Seabrook SER, and "Low-Level Solid Radioactive Waste Generation Rates at Light Water Nuclear Power Plants."

CONTENTION I.U.

INTERROGATORY 1

What is the NRC Staff's position with respect to NECNP Contention I.U? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The Staff has not yet completed its review of the Applicants' program for meeting GDC 4 with respect to potential turbine missiles. Hence, the Staff has reached no position concerning NECNP Contention I.U. It is the Staff's view that the NRC objective for protecting safety-related structures, systems, and components is best accomplished by emphasizing turbine reliability in turbine missile reviews. When the Staff review of potential turbine missile effects is completed for Seabrook, the response to this interrogatory will be updated.

INTERROGATORY 2

Identify all individuals whom the NRC Staff expects to call as witnesses with respect to NECNP Contention I.U., and identify all documents on which the Staff expects to rely at the hearing with respect to this contention.

RESPONSE

The Staff has not yet determined whom it will call as witnesses, but the Staff reviewer in this area is John O. Schiffgens.

INTERROGATORY 3

Describe all categories of turbine failures the Staff considers in determining whether an applicant has met GDC 4 so as to protect adequately safety-related structures, system, and components against low-trajectory missiles resulting from turbine failure.

RESPONSE

There are basically two modes of turbine failure that can result in the ejection of missiles and the subsequent production of unacceptable damage to safety related systems: (a) A turbine can experience a "design speed" failure, i.e., one which consists of failure of the turbine disk material at approximately the rated operating speed; or (b) A turbine can experience a "destructive overspeed" failure, i.e., one which is due to failure of the overspeed protection system. The review process emphasizes the evaluation of the missile generation probability for each of these failure modes.

INTERROGATORY 4

Describe the analysis the Staff employs to determine the total probability of unacceptable damage to safety-related structures, systems, and components from low-trajectory missiles, including all formulas used for the Staff's analysis.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 5

Describe all alternative analyses, of which the Staff is aware but did not use, to determine the total probability of unacceptable damage to safety-related structures, systems and components from low-trajectory missiles, including alternative values or formulas for  $P_1$ , the rate of turbine failure in events per year;  $P_2$  or the conditional probability that a missile will strike a specified target;  $P_3$  or the conditional probability that the missile will cause damage to the target that may lead to unacceptable consequences if the target is hit; and  $P_4$  or the probability in events per year of unacceptable damage from a turbine failure.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 6

Define "unacceptable consequence" or "unacceptable damage" as those terms are used in your analysis.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 7

Describe in detail turbine failures caused by design overspeed failures; caused by destructive overspeed failures; and caused by stress corrosion. For each cause of turbine missile failure, state the circumstances under which the failure can occur, including the operating speed of the turbines; the materials which may increase or decrease the probability of such failures; the possible harmful consequences resulting from each such failure; the root cause of each such failure; and the corrective measures available, if any, to mitigate or avoid the problem.

RESPONSE

The Staff considers the following articles to contain good descriptions of turbine missile failures, and their causes and consequences:

Bush, S.H., "Probability of Damage to Nuclear Components," Nuclear Safety, Vol. 14, No. 3, May-June, 1973, p. 187; and  
Bush, S.H., "A Reassessment of Turbine Generator Failure Probability," Nuclear Safety, Vol. 19, No. 6, Nov.-Dec., 1978, p. 681.

INTERROGATORY 8

Identify each system which must be protected from turbine missiles.

RESPONSE

Revision 1 of RG 1.117 describes a method for identifying those structures, systems, and components of light-water-cooled reactors that should be protected from the effects of either the Design Basis Tornado or Turbine Missiles (i.e., for identifying safety-related structures, systems, or components).

INTERROGATORY 9

State the standard employed by the NRC Staff to determine if the probability of damage due to low-trajectory turbine missile failures is acceptably low.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 10

Describe the methods by which the design overspeed failure rate of turbines may be reduced, and identify all documents which support this view.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 11

Describe all methods which may reduce the destructive overspeed failure rate of turbines and identify all documents which support this view.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 12

Describe the current investigation conducted by the NRC staff regarding turbine valve failure modes, and identify the status of the investigation and all documents relating to the investigation.

RESPONSE

The Staff is not currently investigating turbine valve failure modes apart from the normal inquiry involved in the review of proprietary reports submitted to the NRC by turbine manufacturers, describing their models and methods for calculating the probability of generating turbine missiles. (See Response to Interrogatory 1).



INTERROGATORY 13

Describe the staff's evaluation, in terms of reducing the probability of damage to safety-related components, systems, and structures, from turbine missile failures of the various methods of protecting such systems, components and structures including the following:

- a. exclusion of the systems from the low-trajectory hazard zone;
- b. placement of the systems far enough away from the turbine missile so that the probability of its being struck by a turbine missile is less than  $10^{-3}$ ;
- c. placement of essential systems;
- d. separation of redundant equipment;
- e. strike and damage analyses of turbine valve reliability;
- f. improvements in turbine valve reliability;
- g. improved in-service inspection programs;
- h. change in placement of nuclear plants on site vis-a-vis each other.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 14

Describe any information the Staff has available concerning the impact of large irregularly-shaped missiles similar to turbine missiles on steel or reinforced concrete structures.

RESPONSE

For the latest information on the impact of turbine missiles on steel or concrete barriers the staff recommends review of the Electric Power Research Institute (EPRI) Turbine Missile Research Program (G. Sliter, Program Coordinator).

INTERROGATORY 15

Describe all formulas of which the NRC Staff is aware that can be used to determine the impact effects of missiles on concrete structures or steel structures.

RESPONSE

For a description and evaluation of these formulas, the Staff recommends review of the EPRI Turbine Missile Research Program (G. Sliter, Program Coordinator).

INTERROGATORY 16

Describe the Staff's analysis of the residual velocity of a missile after perforation.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 17

Evaluate whether or not, whenever an applicant proposes to protect a safety-related system by a barrier or barriers, the protection is sufficient so that no missile can compromise the final barrier protecting the system. Describe the Staff's evaluation for each and every such system protected by a barrier.

RESPONSE

See Response to Interrogatory 1.

INTERROGATORY 18

Identify all studies the NRC or its contractors have conducted on the probability of turbine failure due to stress corrosion and the root

cause(s) of stress corrosion cracking, and all documents relating to these studies.

RESPONSE

Neither the NRC nor its contractors have performed studies of the probability of turbine failure due to stress corrosion. However, the staff and a contractor are currently reviewing proprietary reports submitted to the NRC by a turbine manufacturer describing the manufacturer's models and methods for calculating the probability of generating turbine missiles. Reviews of these reports are scheduled for completion within a year. The staff will report on these reviews when they are completed.

INTERROGATORY 19

Identify all studies within the possession or control of the NRC or its contractors relating to turbine disc cracking and necessary inspection of turbines due to possible turbine disc cracking.

RESPONSE

The proprietary reports mentioned above (See Response to Interrogatory 1) relate turbine inspection to disc cracking and the probability of generating turbine missiles. The following are significant technical papers, reports, and letter which relate to turbine disc cracking and the need for inservice rotor inspection:

Kalderon, D. "Steam Turbine Failure at Hinkley Point A," Proc. Instr. Mech. Engrs., Vol. 186, 31/72, 1973, p. 3-11.

Hodge, J.M. and Mogfoed, I.L., "UK Experience of Stress Corrosion Cracking in Steam Turbine Discs," Proc. Instr. Mech. Engrs., Vol. 193, 1979, p. 93.

Roberts, B.W. and Greenfield, P., "Stress Corrosion of Steam Turbine Disc and Rotor Steels," Corrosion - NACE, Vol. 35, No. 9, Sept. 1979, p. 402.

Clark, W.G., Seth, B.B., and Shaffer, D.H., "Procedures for Estimating the Probability of Steam Turbine Disc Rupture from Stress Corrosion Cracking," Joint ASME/IEEE Power Gen. Conf., Oct. 1981, St. Louis, Mo.

Weeks, J.R., "Stress Corrosion Cracking in Turbine Rotors in Nuclear Powered Reactors," BNL-NUREG 22689-R, June 1978.

Goldberg, A., Albertson, S.L., and Fedrick, I.A., "Characterization and Evaluation of a Turbine Disc Section Containing a Service Crack," ICID-18699, NUREG/CR-1912, Feb. 1981.

Letter, S.A. Varga (NRC) to F. Vaccaro (Westinghouse), and attached SER, "Criteria for Low Pressure Nuclear Turbine Disc Inspection," Aug. 26, 1981.

#### INTERROGATORY 20

State the cause of turbine failure the NRC Staff considers most significant, if any, and how the importance of this stated cause of turbine failure is incorporated in its analyses of the probability of damage to safety-related systems, components, and structures from turbine missiles.

#### RESPONSE

See Response to Interrogatory 1.

#### INTERROGATORY 21

Identify and provide access to any and all documents in the NRC Staff's position relating to turbine integrity and failure, and the generation and effects of low-trajectory missiles.

RESPONSE

The Staff objects to this interrogatory. The category of requested documents which encompasses "any and all documents in the NRC Staff's possession relating to turbine integrity and failure, and the generation and effects of low-trajectory missiles" not only for Seabrook but for any plant is too broad to be reasonable. A response to such a document request may well include virtually all documents, nor privileged, of the Seabrook reviewer(s) in this area and of the reviewing branch(es). As aforementioned, the governing Commission precedent is Pennsylvania Power and Light Company, supra, p. 3, which restricts discovery against the Staff to documents not available from other sources, and information not obtainable elsewhere. As pointed out in Pennsylvania Power and Light Company, supra, the Staff's documents are published and made available in the PDR. Moreover, the Commission has stated, regarding discovery requests directed towards the Staff, that "It shall be an adequate response to any discovery request to state that the information or document requested is available in the public compilation and to provide sufficient information to locate the document or information." Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), CLI-79-8, 10 NRC 141, 147-148 (1979). Thus, the Staff objects to this document request on the grounds: (1) that the information sought may be available in the Public Document Room; (2) that NECNP has failed to demonstrate that the requested documents are not available from other sources in violation of 10 F+C.F.R. § 2.744 and 2.720; (3) that NECNP has failed to demonstrate that the requested documents are necessary to a proper decision in this

proceeding in violation of 10 C.F.R. § 2.720(h)(2)(ii) and (4) that the document request is unreasonably vague, burdensome, and irrelevant in requesting such broad a category of documents necessitating an extensive search.

#### INTERROGATORY 22

Identify and provide access to any and all documents referred to or relied on in preparing the response to the interrogatories regarding Contention I.U.

#### RESPONSE

The documents relied upon or referred to are identified in the individual responses.

#### CONTENTION II.B.1

##### INTERROGATORY 1

What is the NRC staff's position with respect to NECNP Contention II.B.1? State all facts and opinions and identify and provide access to all documents on which that position is based.

#### RESPONSE

Consistent with Staff practice, the Seabrook FSAR Section 17.2 does address each of the criteria in Appendix B in sufficient detail to enable an independent reviewer to determine whether and how all of the requirements of Appendix B are satisfied.

This position is based on the use of the acceptance criteria described in Subsection II of Section 17.2 of the NRC Standard Review Plan, NUREG-0800 for the review of the QA program description for Seabrook.



In our view, it was determined that the acceptance criteria were properly addressed and, therefore, that the QA program description satisfied NRC requirements. For documents, see response to Interrogatory 2.

#### INTERROGATORY 2

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention II.B.1., and identify all documents on which the NRC staff expects to rely at the hearing with respect to this contention.

#### RESPONSE

A. The individuals to be called as witnesses have not yet been selected. The principal reviewer for the Staff in this area is John W. Gilray.

B. Documents to be used have not been finally determined, but includes:

1. 10 C.F.R. Part 50.
2. NRC Standard Review Plan NUREG-0800 (Section 17.2) and referenced Regulatory Guides.
3. The Seabrook FSAR.
4. The Safety Evaluation Report for Seabrook.

#### CONTENTION II.B.3

#### INTERROGATORY 4

What is the NRC staff's position with respect to NECNP Contention II.B.3? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

Based on the Staff's review, the Quality Assurance organization does have the independence required by Criterion 1 of 10 C.F.R. 50, Appendix B.

This position is based on the determination that the acceptance criteria described in Subsection II of Section 17.2 of the NRC Standard Review Plan, NUREG-0800, are met by the QA and QC functions within the corporate and plant management organizations. Sufficient independence is provided by the organizational location and reporting relationships.

INTERROGATORY 5

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention II.B.3., and identify all documents on which the NRC staff expects to rely at the hearing with respect to this contention.

RESPONSE

A. John W. Gilray will be the NRC staff expert to respond to Contention II.B.3.

B. Final documents to be used are not available, but include those documents listed in response to Interrogatory 2.

INTERROGATORIES 6-15

6. Describe the NRC staff's understanding of the responsibilities and functions of the Executive Vice President - Engineering and Production.

a. Describe the NRC staff's understanding of the daily activities of the Executive Vice President - Engineering and Production.

7. Describe the NRC staff's understanding of the responsibilities and functions of the Vice President - Production.

- a. Describe the NRC staff's understanding of the daily activities of the Executive Vice President - Production.
8. Describe the NRC staff's understanding of the responsibilities and functions of the Nuclear Quality Manager.
  - a. Describe the NRC staff's understanding of the daily activities of the Nuclear Quality Manager.
9. Describe the NRC staff's understanding of the responsibilities and functions of the Quality Supervisor.
  - a. Describe the NRC staff's understanding of the daily activities of the Quality Supervisor.
10. Describe the NRC staff's understanding of the responsibilities and functions of the Nuclear Production Superintendent.
  - a. Describe the NRC staff's understanding of the daily activities of the Nuclear Production Superintendent.
11. Describe the NRC staff's understanding of the responsibilities and functions of the Station Manager.
  - a. Describe the NRC staff's understanding of the daily activities of the Station Manager.
12. Describe the NRC staff's understanding of the responsibilities and functions of the Nuclear Production Operations Support Manager.
  - a. Describe the NRC staff's understanding of the daily activities of the Nuclear Production Operations Support Manager.
13. Describe the NRC staff's understanding of the responsibilities and functions of the Nuclear Production Engineer Manager.
  - a. Describe the NRC staff's understanding of the daily activities of the Nuclear Production Engineer Manager.
14. Describe the NRC staff's understanding of the responsibilities and functions of the Training Center Manager.
  - a. Describe the NRC staff's understanding of the daily activities of the Training Center Manager.
15. Describe the NRC staff's understanding of the responsibilities and functions of the Compliance Manager.
  - a. Describe the NRC staff's understanding of the daily activities of the Compliance Manager.

RESPONSE

The responsibilities and functions of the Public Service Company of New Hampshire's personnel identified in Interrogatories 6 through 15 are as described in FSAR Sections 17 and 13. In addition, the Staff will describe the functions of the key personnel involved in the QA program in its SER.

INTERROGATORY 16

To the knowledge of the NRC staff, does the Executive Vice President - Engineering and Production have any QA duties that are unique to that position and may not be delegated? If so, please describe those duties and identify the personnel with whom the Executive Vice President - Engineering and Production would interact in the course of carrying out those duties, if known by the NRC staff.

RESPONSE

The NRC staff is not aware of any QA duties unique to the position of the Executive Vice President - Engineering and Production.

INTERROGATORY 17

To the knowledge of the NRC staff, does the Vice President - Production have any QA duties that are unique to that position and may not be delegated? If so, please describe those duties and identify the personnel with whom the Vice President - Production would interact in the course of carrying out those duties, if known by the NRC staff.

RESPONSE

The position of the Vice President - Production has been replaced by the position of Vice President - Nuclear Production. The NRC staff

is only knowledgeable of those duties of the Vice President - Nuclear Production described in the FSAR Sections 17 and 13.

INTERROGATORY 18

The FSAR states on page 17.2-1 that "The Vice President - Production will mediate disputes arising within the OQAP."

- a. What sorts of disputes does the NRC staff understand are referred to in this sentence?

RESPONSE

The position of the Vice President - Production has been replaced by the position of Vice President - Nuclear Production. Stop work actions, the degree of inspection activities and the degree and timeliness of corrective actions are examples of possible disputes that could be elevated to the Vice President - Nuclear Production for mediation.

INTERROGATORY 19

Identify the NRC staff's understanding of each situation in which personnel in the OQAP interact with personnel involved in Nuclear Production (NP) as described in the FSAR at page 17.2-4.

- a. In each case, identify the positions of the personnel in question.
- b. In each case, describe how and by whom disputes between OQAP and NP personnel are resolved, if known by the NRC staff.

RESPONSE

The NRC staff is only knowledgeable of those interactions described in the FSAR Section 17.2.



INTERROGATORY 20

Identify all personnel whom the NRC staff understands to have stop work authority.

- a. In each case, explain how and by whom the stop work order may be lifted, both when the originator agrees that it should be lifted and when the originator does not believe the stop work order should be lifted, if known by the NRC staff.

RESPONSE

Organizational responsibilities for stop work actions are as described in the FSAR Section 17.2 and also in the Staff's SER.

CONTENTION II.B.4

The Quality Assurance Program for operations as described in the FSAR does not demonstrate how the Applicant will assure that replacement materials and replacement parts incorporated into structures, systems, or components important to safety will be equivalent to the original equipment, installed in accordance with proper procedures and requirements, and otherwise adequate to protect the public health and safety. Similarly, the Quality Assurance Program does not assure or demonstrate how repaired or reworked structures, systems, or components will be adequately inspected and tested during and after the repair or rework and documented in "as-built" drawings.

INTERROGATORY 21

What is the NRC staff's position with respect to NECNP Contention II.B.4.? State all facts and opinions and identify and provide access to all documents on which this position is based.



RESPONSE

FSAR Section 17.2 describes adequately the controls for replacement materials and parts and the inspection and test controls for repaired and reworked structures, systems or components. This position is based on a determination that the acceptance criteria described in Subsection II of Section 17.2 of the NRC Standard Review Plan, NUREG-0800 are met by the Applicant's QA program description.

INTERROGATORY 22

Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention II.B.4., and identify all documents on which the NRC staff expects to rely at the hearing with respect to this contention.

RESPONSE

- A. John W. Gilray will be the NRC staff expert to respond to Contention II.B.4.
- B. Documents have not been finally determined, but will include those documents listed in response to Interrogatory 2.

INTERROGATORY 23

Describe the NRC staff's understanding of the actions that will be taken by Applicants to assure that replacement materials and replacement parts incorporated into structures, systems, or components important to safety will be equivalent to the original equipment (or otherwise in compliance with applicable standards and regulations), installed in accordance with proper procedures and requirements, and otherwise adequate to protect the public health and safety.

- a. Identify the personnel whom the NRC staff understands will be responsible for this activity.

RESPONSE

The FSAR Section 17.2 describes the controls and identifies the organizations to assure proper implementation of controls and applicable standards and regulations for replacement material and parts. The NRC staff is not aware of the specific personnel responsible for this activity, beyond those general responsibilities set forth in Section 17.2 of the FSAR.

INTERROGATORY 24

Describe the NRC staff's understanding of the actions that will be taken by Applicants to assure that repairs or rework carried out on structures, systems, or components important to safety will comply with all applicable standards and regulations.

- a. Identify the personnel whom the NRC staff understands will be responsible for this activity.

RESPONSE

The FSAR Section 17.2 describes the controls and identifies the organizations to assure proper implementation of controls and applicable standards and regulations for repairs or rework activities. The NRC staff is not aware of the specific personnel responsible for this activity, beyond those general responsibilities set forth in Section 17.2 of the FSAR.

CONTENTION II.B.5

The Quality Assurance program for operations as described in the FSAR fails to assure the presence on the operating staff of an adequate number of qualified QA/QC personnel, particularly during off-shifts.

INTERROGATORY 25

What is the NRC staff's position with respect to NECNP Contention II.B.5? State all facts and opinions and identify and provide access to all documents on which that position is based.

RESPONSE

The FSAR Section 17.2 and the NRC Region I inspection activities assure that there will be adequate staffing of qualified QA/QC personnel to properly carry out their QA program.

INTERROGATORY 26

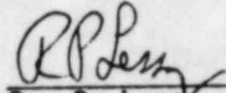
Identify all individuals whom the NRC staff expects to call as witnesses with respect to NECNP Contention II.B.5., and identify all documents on which the NRC staff expects to rely at the hearing with respect to this contention.

RESPONSE

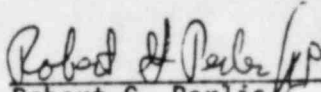
A. John W. Gilray and possibly an NRC Region I representative (not known at this time) will be the NRC Staff expert(s) to respond to Contention II.B.5.

B. For documents, see response to Interrogatory 22.

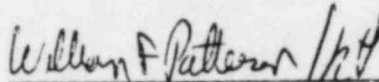
Attorneys Making Objections,



Roy P. Lessy  
Deputy Assistant Chief  
Hearing Counsel



Robert G. Perlis  
Counsel for NRC Staff



William F. Patterson  
Counsel for NRC Staff

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.

(Seabrook Station, Units 1 and 2)

Docket Nos. 50-443 OL  
50-444 OL

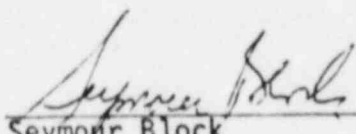
AFFIDAVIT OF SEYMOUR BLOCK

I, Seymour Block, being duly sworn, state as follows:

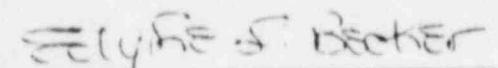
1. I am employed by the U.S. Nuclear Regulatory Commission as a Senior Health Physicist, Radiological Assessment Branch, Division of Systems Integration, NRR.

2. I have provided responses to NECNP Contention I.N (Interrogatory 4).

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

  
Seymour Block

Subscribed and sworn to before me  
this 21<sup>st</sup> day of DECEMBER 1982

  
Notary Public

My commission expires: 7/1/86

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. )

(Seabrook Station, Units 1 and 2) )

Docket Nos. 50-443 OL  
50-444 OL

AFFIDAVIT OF LYNNE A. FAIROBENT

I, Lynne A. Fairobent, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Health Physicist, Radiological Assessment Branch, Division of Systems Integration, NRR.

2. I have provided responses to NECNP Contention I.N (Interrogatory 5).

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

Lynne A. Fairobent  
Lynne A. Fairobent

Subscribed and sworn to before me  
this 7<sup>th</sup> day of December 1982

Raythe S. Beecher  
Notary Public

My commission expires: 7/1/86



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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(Seabrook Station, Units 1 and 2)

Docket Nos. 50-443 OL  
50-444 OL


AFFIDAVIT OF JOHN O. SCHIFFGENS

I, John O. Schiffgens, being duly sworn, state as follows:


1. I am employed by the U.S. Nuclear Regulatory Commission as a  
Materials Engineer, Materials Engineering Branch, Division of Engineering,  
NRR.

2. I have provided responses to NECNP Contention I.U.

I hereby certify that the statements and opinions given are true and  
correct to the best of my personal knowledge and belief.

  
John O. Schiffgens

Subscribed and sworn to before me  
this 25<sup>th</sup> day of December 1982

  
Notary Public

My commission expires: 7-1-86

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.

(Seabrook Station, Units 1 and 2)

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Docket Nos. 50-443 OL  
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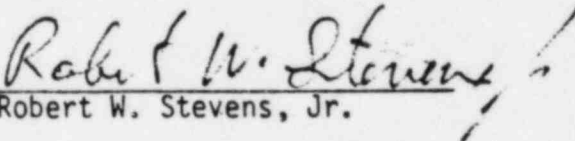
AFFIDAVIT OF ROBERT W. STEVENS, JR.

I, Robert W. Stevens, Jr., being duly sworn, state as follows:

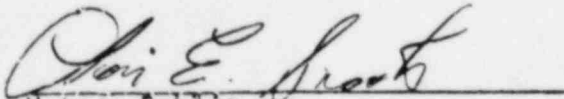
1. I am employed by the U.S. Nuclear Regulatory Commission as a Reactor Engineer, Instrumentation and Control Systems Branch, Division of Systems Integration, NRR.

2. I have provided responses to NECNP Contentions I.D.2; I.D.4; and I.L.

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

  
Robert W. Stevens, Jr.

Subscribed and sworn to before me  
this 23<sup>RD</sup> day of DECEMBER 1982

  
Notary Public

My commission expires: 7-1-86

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.

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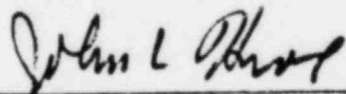
AFFIDAVIT OF JOHN L. KNOX

I, John L. Knox, being duly sworn, state as follows:

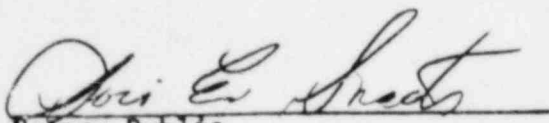
1. I am employed by the U.S. Nuclear Regulatory Commission as an Electrical Engineer (Reactor Systems), Power Systems Branch, Division of Systems Integration, NRR.

2. I have provided responses to NECNP Contentions I.D.4; I.F. (Interrogatories 1-2, 6-8).

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

  
\_\_\_\_\_  
John L. Knox

Subscribed and sworn to before me  
this 23<sup>rd</sup> day of December 1982

  
\_\_\_\_\_  
Notary Public

My commission expires: 7-1-86

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Docket Nos. 50-443 OL  
50-444 OL

My commission expires: 7-1-86

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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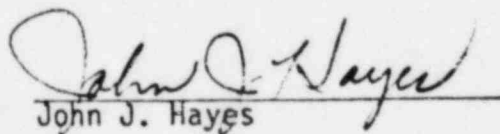
AFFIDAVIT OF JOHN J. HAYES

I, John J. Hayes, being duly sworn, state as follows:


1. I am employed by the U.S. Nuclear Regulatory Commission as a Nuclear Engineer in the Meteorology and Effluent Treatment Branch, Division of Systems Integration, Office of Nuclear Reactor Regulation (NRR).

2. I have provided responses to NECNP Contention I.N (Interrogatories 1-3, 7-11).

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

  
John J. Hayes

Subscribed and sworn to before me  
this 23<sup>rd</sup> day of December, 1982

  
Notary Public

My commission expires: 7-1-86

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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In the Matter of )

PUBLIC SERVICE COMPANY OF )  
NEW HAMPSHIRE, et al. )

(Seabrook Station, Units 1 and 2) )

Docket Nos. 50-443 OL  
50-444 OL

AFFIDAVIT OF RAJ K. ANAND

I, Raj K. Anand, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Mechanical Engineer (Auxiliary Systems), Auxiliary Systems Branch, Division of Systems Integration, NRR).

2. I have provided responses to NECNP Contentions I.B.1 (Interrogatories 15-19); I.C; and I.D.3.

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

Raj K. Anand  
Raj K. Anand

Subscribed and sworn to before me  
this 23<sup>rd</sup> day of December 1982

John E. Sroob  
Notary Public

My commission expires: 7-1-86



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE, et al.

(Seabrook Station, Units 1 and 2)

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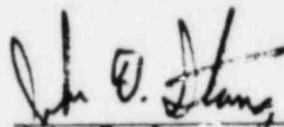
AFFIDAVIT OF JOHN F. STANG

I, John F. Stang, being duly sworn, state as follows:

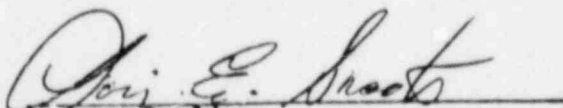
1. I am employed by the U.S. Nuclear Regulatory Commission as a Fire Protection Engineer, Chemical Engineering Branch, Division of Engineering, NRR.

2. I have provided responses to NECNP Contention I.M.

I hereby certify that the statements and opinions given are true and correct to the best of my personal knowledge and belief.

  
John F. Stang

Subscribed and sworn to before me  
this 23<sup>rd</sup> day of December 1982

  
Notary Public

My commission expires: 7-1-86

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE, et al.

(Seabrook Station, Units 1 and 2)

Docket Nos. 50-443 OL  
50-444 OL

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the captioned matter. In accordance with § 2.713(b), 10 C.F.R. Part 2, the following information is provided:

|                  |   |
|------------------|---|
| Name             | - William F. Patterson  |
| Address          | - Office of the Executive Legal<br>Director<br>U.S. Nuclear Regulatory Commission<br>Washington, D.C. 20555 |
| Telephone Number | - Area Code (301) 492-7657  |
| Admissions       | - District of Columbia Court of<br>Appeals  |
| Name of Party    | - NRC Staff<br>U.S. Nuclear Regulatory Commission<br>Washington, D.C. 20555                                 |

*William F. Patterson*  
William F. Patterson  
Counsel for NRC Staff

Dated at Bethesda, Maryland  
this 28th day of December, 1982

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. )

(Seabrook Station, Units 1 and 2) )

Docket Nos. 50-443 OL  
50-444 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "RESPONSE OF THE NRC STAFF TO NECNP'S FIRST SET OF INTERROGATORIES AND REQUEST FOR DOCUMENTS ON CONTENTIONS I.A.2, I.V., II.B.1-5, II.C., II.D., II.F., II.G., II.I., AND II.L - II.N. and NOTICE OF APPEARANCE (William F. Patterson) in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 28th day of December, 1982.

Helen Hoyt, Esq., Chairman\*  
Administrative Judge  
Atomic Safety and Licensing Board  
Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. Jerry Harbour  
Administrative Judge  
Atomic Safety and Licensing Board  
Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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Assistant Attorney General  
Environmental Protection Division  
Office of the Attorney General  
State House Annex  
Concord, NH 03301

Dr. Emmeth A. Luebke\*  
Administrative Judge  
Atomic Safety and Licensing Board  
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U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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John W. McCormack Post Office &  
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David R. Lewis\*  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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Hampton, NH 03842

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Atomic Safety and Licensing  
Appeal Panel\*  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Jane Doughty  
Field Director  
Seacoast Anti-Pollution League  
5 Market Street  
Portsmouth, NH 03801

Docketing and Service Section\*  
Office of the Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

William S. Jordan, III, Esq.  
Ellyn R. Weiss, Esq.  
Harmon & Weiss  
1725 I Street, N.W.  
Suite 506  
Washington, D.C. 20006

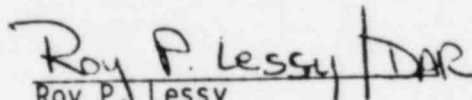
Phillip Ahrens, Esq.  
Assistant Attorney General  
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Hitchcock Hospital  
Hanover, NH 03755

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Ann C. Thompson, Esq.  
Sanders and McDermott  
408 Lafayette Road  
Hampton, NH 03842

Sen. Robert L. Preston  
State of New Hampshire Senate  
Concord, NH 03301

Atomic Safety and Licensing  
Board Panel\*  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

  
Roy P. Lessy  
Assistant Deputy Chief Hearing  
Counsel