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RELATED CORRESPONDENCE

February 19, 1988 DOCKETED USNRC

UNITED STATES NUCLEAR REGULATORY COMMISSION '88 FEB 22 P4:17
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of)
)
Public Service Company of)
New Hampshire, et al.)
)
(Seabrook Station, Units 1 & 2))
)
_____)

Docket No. 50-443 OL-1/444-06-1
ONSITE EMERGENCY
PLANNING & TECHNICAL
ISSUES

NEW ENGLAND COALITION ON NUCLEAR POLLUTION'S
THIRD SET OF INTERROGATORIES AND REQUEST FOR
THE PRODUCTION OF DOCUMENTS TO APPLICANTS
ON NECNP CONTENTION IV

INSTRUCTIONS FOR USE

The following interrogatories are to be answered in writing and under oath by an employee, representative or agent of the Applicants with personal knowledge of the facts or information requested in each interrogatory. We remind you of your obligation to supplement answers to interrogatories, under 10 C.F.R. § 2.740(e).

The following definitions shall apply to these interrogatories:

- 1) "Document" shall mean any written or graphic matter or communication, however produced or reproduced, and is intended to be comprehensive and include without limitation any and all correspondence, letters, telegrams, agreements, notes, contracts, instructions, reports, demands, memoranda, data, schedules, notices, work papers, recordings, whether electronic or by other means, computer data, computer printouts, photographs, microfilm,

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microfiche, videotapes, charts, analyses, intra-corporate or intra-office communications, notebooks, diaries, sketches, diagrams, forms, manuals, brochures, lists, publications, drafts, telephone minutes, minutes of meetings, statements, calendars, journals, orders, confirmations and all other written or graphic materials of any nature whatsoever.

2) "Identify" with respect to any document shall mean to state the following: the document's title, its date, the author of the document, the person to whom the document was sent, all persons who received or reviewed the document, the substance and nature of the document, and the present custodian of the document and of any and all copies of the document.

3) "Identify" with respect to any action or conduct shall mean state the following regarding any such action or conduct: the person or persons proposing and taking such action; the date such action was proposed and/or taken; all persons with knowledge or information about such action; the purpose or proposed effect of such action; and any document recording or documenting such action.

4) "Identify" with respect to an individual shall mean state the individual's name, address, employer, occupation, and title.

5) "Describe" with respect to any action, event or matter shall mean state the following regarding such action, event or matter: the date of such action, event, or matter; the substance

or nature of such action, event or matter; the persons participating in or having knowledge of such action, event or matter; the current and past business positions and addresses of such persons; and the existence and location of any and all documents relating to such action or matter.

6) "Describe" with respect to any piece of equipment shall mean the type, manufacturer, equipment tag number and model number of the equipment.

7) "Biofouling" shall mean any degree of micro- or macro-biological cell deposition and subsequent biologically mediated corrosion of nuclear power plant cooling systems by aquatic debris, macro- or micro-biological organisms, silt, and mud, or by any other organic or inorganic material.

8) "Microbiologically induced corrosion" shall mean corrosion or degradation that is generally caused by both aerobic or anaerobic bacteria, or any sedimentation caused by that process.

GENERAL INTERROGATORIES+

1) Please identify all persons who participated in the preparation of answers to these interrogatories, and identify the portions of your response to which each person contributed.

BIOFOULING, CORROSION AND BLOCKAGE BY MICRO- AND MACRO-BIOLOGICAL ORGANISMS

2. For each of the individuals listed in Attachment 1-1 of your response to NECNP's Second Set of Interrogatories and Request for Production of Documents to Applicants on NECNP Con-

tention IV, state their area of expertise and qualification, including, but not limited to expertise in the field of microbiology, and identify the portions of your response to each interrogatory to which each person contributed.

3) In your response to question 2(n) of NECNP's Second Set of Interrogatories and Request for Production of Documents to Applicants on NECNP Contention IV, on page 12, you stated that "The PCCW system is not chlorinated," and on page 34, you stated "For the systems mentioned, PCCW, ECCS, SCCW, RHR and FW, the water is chlorinated...prior to being put into the systems." Please explain the apparent inconsistency between these statements.

4. In your response to questions 2(1) and 8 of NECNP's Second Set of Interrogatories and Request for Production of Documents to Applicants on NECNP Contention IV, on pages 8 and 34, you stated that you performed "bulk water sampling" to monitor for bacterial contamination. For each system at Seabrook filled with circulating water, please answer the following questions:

a) Describe the parameters measured by "bulk water sampling," including but not limited to oxygen, cell count, chlorine concentration, algae.

b) Describe the exact locations at which bulk water sampling is or will be performed.

c) Describe the number of times per week, month or year, whichever is applicable, that bulk water sampling will be performed at each location.

Applicants on NECNP Contention IV, on page 35, you stated that you performed "visual examination of closed-loop systems ...[and] components on a routine bases" for determining the effectiveness of the microbiologically induced corrosion prevention program. For each such system, please answer the following questions:

a) Please specifically identify which systems you consider "closed-loop systems."

b) Please describe how many times per year such examinations will be performed.

c) Please identify which components of each system will be examined, and the exact location of these components.

d) Identify and produce any documents, reports, or protocols that provide information relating to this visual inspection program.

7. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, for which microbiologically induced corrosion is controlled through injection of biocides or biostats, including but not limited to chlorine, hydrazine, or boric acid, please answer the following questions:

a) Please describe the exact location of each place of injection, the distance (in feet of piping) between injection points, and the type of chemical injected at each place of injection.

b) Please describe the equipment used to make such injections at each location.

c) Please describe the precise frequency or duration of injections (i.e. 24 hours per day, 365 days per year) and concentration (in parts per million) at each location.

d) Please describe your plans for monitoring the effectiveness of such treatments, including but not limited to sampling of the bulk water, sampling of pipe-liquid interfaces, inspection, or use of an on-line biofouling monitoring device.

e) For each technique identified above for monitoring the effectiveness of such treatments, indicate the equipment used to perform such monitoring, indicate the exact locations at which the monitoring will be performed through the system, and the distance between monitoring points or locations, and the frequency which samples are taken.

f) Please describe your criteria for residual chlorine concentration at each sampling point that you consider adequate to control microbiologically induced corrosion throughout that system.

g) Identify and produce any documents, reports, or protocols that provide information relating to your chlorination or chemical treatment program.

8. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW sys-

tems, for which biofouling is controlled through injection of biocides or biostats, including but not limited to chlorine, hydrazine, or boric acid, please answer the following questions:

a) Please describe the exact location of each place of injection, the distance (in feet of piping) between injection points, and the type of chemical injected at each place of injection.

b) Please describe the equipment used to make such injections at each location.

c) Please describe the precise frequency or duration of injections (i.e. 24 hours per day, 365 days per year) and concentration (in parts per million) at each location.

d) Please describe your plans for monitoring the effectiveness of such treatments, including but not limited to sampling of the bulk water, sampling of pipe-liquid interfaces, inspection, or use of an on-line biofouling monitoring device.

e) For each technique identified above for monitoring the effectiveness of such treatments, indicate the equipment used to perform such monitoring, indicate the exact locations at which the monitoring will be performed through the system, and the distance between monitoring points or locations, and the frequency which samples are taken.

f) Please describe your criteria for residual chlorine concentration at each sampling point that you consider adequate to control biofouling throughout that system.

g) Identify and produce any documents, reports, or protocols that provide information relating to your chlorination or chemical treatment program.

9. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, please describe your program or techniques for inspecting piping and heat exchanger surfaces, including valves, baffle plates, and other component parts of the heat exchangers, to determine the extent the presence of slime, sediment, or microbiological organisms. In your response, please also answer the following specific questions:

a) Describe in detail how such inspections are or will be performed

b) Describe the operational phase of the system when the inspections are performed.

c) Describe the frequency of such inspections, the exact location of the surfaces that will be inspected, and any equipment that will be utilized to perform such inspections.

d) If no inspections are to be performed, explain why not.

10. Please identify all systems filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, in which no chemical biocide, or biostat is used to control

biofouling or microbiologically induced corrosion, and explain why you do not believe use of such chemicals is necessary to control biofouling or microbiologically induced corrosion in these systems.

11. Please identify all systems filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PTCW, ECCS, RHR, SW, AND FW systems, which are not monitored for the presence of, or conditions conducive to, biofouling or microbiologically induced corrosion. For each system, please answer the following questions:

a) Please identify the metallurgical composition or other material used in the piping and in each of the various parts component parts of the system, including but not limited to valves, baffle plates, and bearings.

b) Please describe how you intend to detect the presence of, or conditions conducive to, biofouling or microbiologically induced corrosion in those piping materials and other component parts that are not concrete or epoxy-lined materials.

c) If you perform inspections of tubing and heat exchanger components that are not cement or epoxy lined, please describe how such inspections are performed and the frequency of such inspections.

12. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not

limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, please describe any techniques you use, or plan to use, to prevent the build-up of slime in heat exchangers and all component parts thereof.

13. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, please answer the following questions:

a) Describe any program you have to monitor oxygen level and chlorine concentration in each system.

b) Produce any data you have measuring the oxygen levels and chlorine concentrations in each system, including the time such samples or measurements were taken, and the location of the sampling or measurement points.

14. In NRC Inspection Report No. 50-443/87-24, at page 15-17, the inspector observed several problems concerning the service water piping and determined that neither microbiologically induced corrosion or biofouling was involved. Please describe the exact nature of the problem for which microbiologically induced corrosion or biofouling was considered a possible cause, and answer the following questions regarding this problem:

a) Identify and produce any documents, inspection reports, work requests, station information reports or photographs that in any way discuss, investigate, or evaluate this leak, or that identify or describe the extent and nature of the leak.

b) Produce the most current version of piping and instrumentation diagrams for this system. This question may be answered by reference to the appropriate diagram in the F.S.A.R.

c) Describe when, and the circumstances under which, this problem was discovered.

d) Describe exactly where in this system, the problem occurred, including whether it occurred on a weld, through the body of a valve, through any internal part of a valve, or through a mechanical joint on or in the valve.

e) Describe the metallurgical composition or other material used for each of the various parts where this problem occurred, comprising this heat-exchanger.

f) Explain how you reached the conclusion that microbiologically induced corrosion played a role in this problem.

g) Describe what you have done, or intend to do, to solve this problem and prevent it from occurring in this system in the future.

15. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, please describe your program for preventing or controlling bivalve larvae from settling on piping and heat-exchanger surfaces.

16. For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not

limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, please describe your program for measuring flow velocity to estimate flow rate, and answer the following questions regarding this system:

- a) Describe the equipment used to take such measurements.
- b) Identify the locations or points at which such measurements will be taken.
- c) Identify the distance between measuring points or locations.
- d) Describe the frequency with which such measurements will be taken, and the operational phase of the plant when measurements will be taken.
- e) Describe your criteria for flow velocity differential at each point that you consider adequate to indicate the presence and/or absence of biofouling or other blockage throughout that system.
- f) Identify and produce any documents, reports, or protocols that provide information relating to your flow velocity measurement program.

17) In your response to interrogatory 24 of NECNP's First Set of Interrogatories and Request for Production of Documents to Applicants on NECNP Contention I.V and IV, on page 18, you stated that should Applicants' chlorination and heat treatment program "not be appropriate, there are a number of options including

mechanical cleaning, injection of higher chlorine levels... and/or heat treatment of the transition (intake) structure and intake tunnel." Please answer the following questions regarding this statement:

a) For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, describe your current heat treatment program, including the equipment used in performing such heat treatment, the temperatures for such heat treatments, and the frequency such heat treatment will be performed.

b) For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, please describe the criteria or parameters you will use to determine that chlorine and heat treatment are "not appropriate," and the criteria or parameters you will use to determine what alternative treatment(s) should be used.

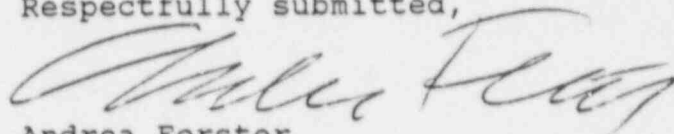
c) For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, describe how frequently you plan to conduct "mechanical cleaning" should your current program "not be appropriate," and describe any equipment that will be used to perform such "mechanical cleaning."

d) For each system at Seabrook filled with circulating water, either fresh water or salt water, including but not limited to the Fire Protection, PCCW, ECCS, RHR, SW, AND FW systems, describe your plan to conduct "heat treatment of the transition (intake) structure and intake tunnel," including the frequency that such treatments will be made, and explain how this treatment differs from your current heat treatment program.

e) Identify and produce any documents, reports, or protocols that provide information relating to your current heat treatment program.

f) Identify and produce any documents, reports, or protocols that provide information relating to your program or plans for "mechanical cleaning, injection of higher chlorine levels... and/or heat treatment of the transition (intake) structure and intake tunnel."

Respectfully submitted,



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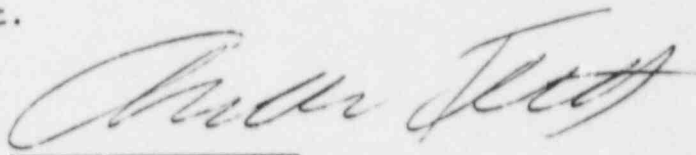
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CERTIFICATE OF SERVICE

I certify that on February 19, 1988, copies of the foregoing interrogatories were served by first-class mail on all parties listed on the attached service list.



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