

7017

DOCKETED  
USNRC

August 31, 1988

'88 SEP -6 P5:18

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF REGISTRATION  
AND SAFETY INSPECTION  
BRANCH

In the Matter of	)	
	)	
Vermont Yankee Nuclear	)	
Power Corporation	)	Docket No. 50-271-OLA
	)	(Spent Fuel Pool)
(Vermont Yankee Nuclear	)	
Power Station)	)	

NECNP'S MOTION TO COMPEL APPLICANT TO RESPOND  
TO NECNP'S THIRD SET OF INTERROGATORIES  
AND REQUEST FOR PRODUCTION OF DOCUMENTS

The New England Coalition on Nuclear Pollution ("NECNP") hereby requests that the Licensing Board order Applicants to provide answers to interrogatories 11, 12, 13, 14, 14, and 16, contained in NECNP's Third Set of Interrogatories and Requests for the Production of Documents, to which Applicant has objected and refused to supply answers, and to NECNP Interrogatories 5 and 6, to which Applicant has supplied partial answers.

I. Background

NECNP Contention 1, which was formulated in response to the Applicant's original proposed amendment is as follows:

The spent fuel pool expansion amendment should be denied because, through the necessity to use one train of the reactor's residual heat removal system (RHR) in addition to the spent fuel cooling system in order to maintain the pool water within the regulatory limits of 140 degrees F, the single failure criterion as set forth in the General Design Criteria, and particularly Criterion 44, will be violated. The Applicant has not established that its proposed method of spent fuel pool

cooling ensures that both the fuel pool cooling system and the reactor cooling system are single failure proof.

In its June 7, 1988, submission the Applicant effectively conceded the correctness of NECNP's position, taken in NECNP Contention 1, that the existing Spent Fuel Pool Cooling System violated the single failure criterion. Applicant proposed in that submission what amounts to an entirely different license amendment describing a new design for the Spent Fuel Pool Cooling System, which it asserts will meet the single failure criterion. NECNP was permitted an additional period of discovery on this new proposal to explore whether the revised Spent Fuel Pool Cooling System was capable of performing as specified.<sup>1</sup>

The Applicant has objected to virtually every discovery request contained in NECNP's Third Set of Interrogatories and requests for the production of documents by asserting that the information requested is not relevant to the new material introduced by Vermont Yankee's June 7, 1988, submission and that discovery is now limited to the "matters added or altered by that submission." See e.g., Answers of Vermont Yankee Nuclear Power Corporation to NECNP's Third Set of Interrogatories and Requests of the Productions of Documents, dated August 16, 1988, at 3. In so doing, Applicant takes an excessively narrow view of the effect of its June 7, submission as well as an overly restrictive interpretation of the scope of discovery.

---

1 LPB-88-18, Slip Opinion, at 3.

II. NECNP's Interrogatories Regarding Environmental Qualification, Fire Protection, Missiles, Flooding, Testing, and Corrosion are Within the Scope of NECNP Contention 1.

The Applicant have objected to NECNP's interrogatory questions regarding the extent to which the equipment of the new Spent Fuel Pool Cooling System are environmentally qualified,<sup>2</sup> or protected from the effects of natural phenomenon such as earthquakes,<sup>3</sup> protected from dynamic effects such as the effects of missiles in accordance with GDC 4,<sup>4</sup> provided with adequate fire protection,<sup>5</sup> or whether they have met the testing, inspection, and surveillance requirements.<sup>6</sup> Applicants take the position, without explanation, that these matters are outside the scope of discovery because NECNP's Contention 1 is that the Spent Fuel Pool Cooling System does not meet the single failure criterion. This objection is directly contrary to longstanding NRC positions and the philosophy underlying the single failure criterion.

The primary regulatory basis cited by NECNP Contention 1 was General Design Criterion 44 of 10 CFR Part 50, App. A. It provides as follows:

A system to transfer heat from structures, systems and components important to safety, to an ultimate heat sink shall

---

2 Interrogatories 11, 12.

3 Interrogatory 13.

4 Interrogatories 15, 16.

5 Interrogatories 15, 16.

6 Interrogatory 14.

be provided. The safety system function shall be to transfer the combined heat load of these structures, systems, and components under normal operating and accident conditions.

Suitable redundancy in components and features, and suitable interconnections, leak detection and isolation capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) the system safety function can be accomplished assuming a single failure.

NRC regulations require that "structures, systems and components important to safety," such as the Spent Fuel Pool Cooling System, must, inter alia, be environmentally qualified in accordance with 10 CFR § 50.49, and GDC 4, and protected from the effects of natural phenomenon such earthquakes and floods, in accordance with GDC 2, dynamic effects such as the effects of missiles in accordance with GDC 4, and must have adequate fire protection in accordance with 10 CFR § 50.48 and GDC 3. Applicant's objections to answering NECNP's interrogatories concerning the extent to which the revised Spent Fuel Pool Cooling System satisfies these requirements apparently rest on the incorrect premise that the single failure criterion could be met by a system that is not environmentally qualified, seismically qualified, or which has inadequate fire protection, or have not met the testing, inspection, and surveillance requirements.

The relevance of these requirements to the single failure criterion is implicit in the philosophy underlying the single failure criterion. In evaluating a safety system's such as the Spent Fuel Pool Cooling System's conformance with the single failure criterion, one must examine several different requirements implicit in the single failure criterion. The first step

is to identify components in the Spent Fuel Pool Cooling System that are not seismic Category I, those that are not qualified for accident and post-accident environments, and those that serve both safety and nonsafety systems and whose failure can affect the performance of or create the need for the Spent Fuel Pool Cooling System. Next, one must assume that all failures that can be predicted to occur as a direct or consequential result of an event will occur if such failures will adversely affect the performance of the Spent Fuel Pool Cooling System. After assuming the failures of nonsafety-grade, nonqualified equipment and those failures cause by an event, any other single failure in the Spent Fuel Pool Cooling System or its auxiliary supporting systems is arbitrarily assumed. It is implicit in the precepts underlying the single failure criterion that, in order to meet the single failure criteria, a system important to safety, such as the Spent Fuel Pool Cooling System, must be environmentally qualified, seismically qualified, and protected from fire.

This philosophy underlying the single failure criterion is set out in numerous statements of official NRC position. See NRC Standard Review Plan 7.2, App. A, and 7.3, App. 1; Regulatory Guide 1.53, "Application of the Single-Failure Criterion to Nuclear Power Plant Protection Systems," and IEEE Standard 379-

1972.<sup>7</sup> These documents firmly establish that an evaluation to determine whether the single failure criterion is met must include an evaluation of whether the system equipment is environmentally and seismically qualified and whether an event or occurrence such as a fire would disable both trains of the system. Therefore, in order to demonstrate compliance with the single failure criterion, one must know whether the equipment and components which make up the parts of the system used for pool cooling are environmentally qualified, seismically qualified and suitably protected from fire, flooding and missiles.

For example, a single failure in the Vermont Yankee Spent Fuel Pool Cooling System could result in a fire. In order to demonstrate compliance with the single failure criterion, the Applicant would have to show that adequate fire protection exists to prevent the fire from disabling the redundant spent fuel pool train. GDC 3 and 10 C.F.R. 50.48 set forth in detail the requirements for adequate fire protection. These must be satisfied in order to demonstrate compliance with the single failure criterion. The same goes for GDC 2 and 4, which set out the requirements for protection from flooding and missiles,

---

7 NRC Regulatory Guide 1.53, which "describes an acceptable method of complying with the Commission's requirements with respect to satisfying the single-failure criterion," endorses IEEE Std 379-1972. The 1972 version of IEEE standard 379 has since been superseded by a 1977 Standard. Although the NRC has not yet revised Regulatory Guide 1.53, the substance and conclusions of the 1972 IEEE Standard are in essence unchanged in the 1977 edition.

respectively. Accordingly, NECNP Interrogatories 15 and 16, concerning protection from fire, flooding and missile designs, are relevant to NECNP Contention 1.

Similarly, in order for the Spent Fuel Pool Cooling System to meet the Single Failure criterion in the event of an earthquake, Applicants would need to demonstrate that the equipment is seismically qualified. If neither train of the Spent Fuel Pool Cooling System has been demonstrated capable of functioning following a design-basis earthquake, the single failure criterion is, by definition, not met, since a design basis earthquake could disable all capability for adequate spent fuel pool cooling. Accordingly, NECNP Interrogatory 13, concerning protection from earthquakes, is relevant to NECNP Contention 1.

In the event of any design basis accident in the plant, Applicants must show that the Spent Fuel Pool Cooling System is capable of operating in the environment created as its location as a result of that accident. If neither train of the Spent Fuel Pool Cooling System is environmentally qualified, both would be assumed to fail, leaving the plant with no capability for adequate spent fuel pool cooling. Accordingly, NECNP Interrogatories 11 and 12 are relevant to NECNP Contention 1.

The relevance of NECNP Interrogatory 14, regarding Applicant's surveillance, inspection and testing requirements, is even more obvious. Again, Applicant claims that these requirements are not within the scope of NECNP Contention 1. However, compliance with these requirements are clearly required in order

to demonstrate compliance with the single failure criterion. One type of single failure is an "undetectable" failure. IEEE Standard 379-1972 states that identifying potential nondetectable failures is an "implicit condition" of complying with the single failure criterion. This requires that the means for detecting failures be analyzed. The NRC Regulatory Guide 1.53, which has endorsed IEEE Standard 379-1972, plainly states:

The detectability of a single failure is predicated on the assumption that the test results in the presence of a failure from the results that would be obtained if no failure is present. Thus, inclusive testing such as "continuity checks" of relay circuit coils in lieu of relay operations should not be considered as adequate bases to classify as detectable all potential failures which could negate the functional capability of the tested device.

This Regulatory Guide makes clear that one of the conditions that must be met in order to satisfy the single failure criterion is testing. Thus, in evaluating the new Spent Fuel Pool Cooling System's conformance with the single failure criterion, it is necessary for NECNP to determine whether Applicant has satisfied these testing, inspection and surveillance requirements in order to determine whether there are other failures that can be assumed to exist. Thus, NECNP Interrogatory 14, regarding whether Applicant has satisfied testing, inspection, and surveillance requirements, is within the scope of NECNP Contention 1.

Applicants have refused to respond to NECNP Interrogatory 17, which inquires into Applicant's program for monitoring and controlling corrosion in all component parts of the Spent Fuel Pool Cooling System, on the ground that corrosion is not within the scope of NECNP Contention 1. However, NRC regulations defin-



ing single failure criterion envision some circumstances under which passive failures of mechanical components could lead to a single failure, thus requiring some consideration of failure of passive components.<sup>8</sup> Clearly, piping and valves are passive components, and corrosion of pipe could lead to the failure of the pipe. Accordingly, corrosion of pipes is an event could cause a failure, which should therefore be assumed in designing against a single failure, and NECNP should be given an opportunity to explore the extent to which there may be such passive failures of mechanical components of the Spent Fuel Pool Cooling System.

It was unnecessary for NECNP to explicitly list every possible way the single failure criterion could be violated in Contention 1. Whether the spent fuel pool cooling safety function was disabled directly by failure of system equipment or indirectly by fire, flooding, missiles, earthquakes, or a harsh environment, the result would be the same -- the Spent Fuel Pool Cooling System would not meet the single failure criterion. Thus, these issues identified in NECNP Interrogatories 11, 12, 13, 14, 15, 16, and 17 are clearly part of NECNP Contention 1.

In addition, the June 7, 1988, submission raises these issues squarely for the first time because it is the first time the Applicant effectively acknowledges the applicability of these rules and purports to meet them. In contrast, it was not necessary to explore these issues in the context of Applicant's pre-

---

8 See 10 CFR Part 50, Appendix A, note 2.

vious Spent Fuel Pool Cooling System because there was only a single train of the Spent Fuel Pool Cooling System, and thus, the single failure criterion was violated on its face. The Applicant instead argued (unsuccessfully) that the single failure criteria did not apply to spent fuel pools.<sup>9</sup> In other words, questions about the compliance of the existing system with the single failure criterion thus did not (could not) get to the level of detail compelled by the new proposal because the Applicant did not take the position that the single failure criterion, which it now purports to meet, was applicable to its Spent Fuel Pool Cooling System.

III. Applicants Response to NECNP Interrogatories  
5 and 6 Are Incomplete and Inadequate.

Applicant's response to NECNP Interrogatory 5, in which NECNP requested that Applicant describe "in detail" its schedule for completing the design, installation and testing of its enhanced Spent Fuel Pool Cooling System, is incomplete and unresponsive. Applicant's response is essentially that it will be completed prior to storage of more than 2,000 spent fuel assemblies.<sup>10</sup> While NECNP recognizes that it is difficult to predict such schedules with absolute accuracy, Applicants must have a schedule for completion of the design, installation and testing for the system if, indeed, Applicant is in good faith in

---

<sup>9</sup> See ALAB-869, July 21, 1987, p.8-12.

<sup>10</sup> See "Answers of Vermont Yankee Nuclear Power Corporation to NECNP's Third Set of Interrogatories and Requests of the Productions of Documents," dated August 16, 1988, at 6.

proposing these enhancements to its Spent Fuel Pool Cooling System. Accordingly, NECNP hereby moves to compel Applicant to provide schedules for completing design, installation, and testing of the system, separately according to each phase, and the date the system is expected to be operational.

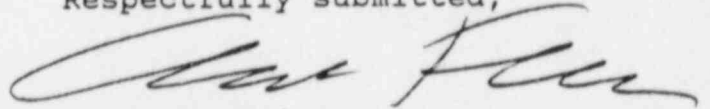
Applicant's response to NECNP Interrogatory 6, in which NECNP requested that Applicant describe whether its enhanced Spent Fuel Pool Cooling System was similar to that used by any other plant, is also unresponsive. Applicant's interpretation of "similar" as relating to fluid flow and heat transfer, is too broad. NECNP is plainly referring to the addition of the Emergency Standby Subsystem, which is a plant specific system, and obviously cannot be used by all other commercial nuclear power plants. Indeed, it is not currently be used by Applicant itself.

#### IV. Conclusion

It is clear from the foregoing that NECNP's Interrogatories 11 through 17 are within the scope of NECNP Contention 1. Moreover, it is long-established that discovery is very broad, following the decisions of the federal courts in construing FRCP 26. Allied-General Nuclear services et al. (Barnwell Fuel Receiving and Storage Station), LBP-77-13, 5 NRC 489 (1977); Texas Utilities Generating Co. (Comanche Peak Steam Electric Station, Units 1 and 2), LBP-81-25, 14 NRC 241, 243 (1987). Any request which might lead to the discovery of relevant facts is permissible. This test will be easily satisfied unless it is clear that the material sought can have no possible bearing on the issues. Com-

Commonwealth Edison Co. (Zion Station, Units 1 and 2), ALAB-185, 7  
AEC 240 (1974). Accordingly, Applicants should be compelled to  
respond to NECNP Interrogatories 11 through 17, and to provide  
complete answers to NECNP Interrogatories 5 and 6.

Respectfully submitted,



Ellyn R. Weiss  
Andrea Ferster  
HARMON & WEISS  
2001 "S" Street N.W. Suite 430  
Washington, D.C. 20009  
(202) 328-3500

CERTIFICATE OF SERVICE

I certify that on August 31, 1988, copies of the foregoing  
pleading were served by first-class mail, or as otherwise indi-  
cated, on all parties listed below.

Charles Bechhoefer, Chairman  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Glenn O. Bright  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. James H. Carpenter  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Secretary of the Commission  
Attn: Docketing and Service Section  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Christine N. Kohl, Chairman  
Atomic Safety and Licensing Appeal Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

George Dean, Esq.  
Assistant Attorney General

Commonwealth of Massachusetts  
Department of the Attorney General  
One Ashburton Place  
Boston, MA 02108

David J. Mullett, Esq.  
Vermont Department of Public Service  
120 State Street  
Montpelier, VT 05602

Ann Hodgdon, Esq.  
Office of the General Counsel Bethesda  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Diana Sidebctham  
R.F.D. #2  
Putney, Vermont 05346

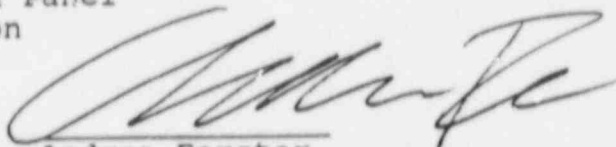
R.K Gad III  
Ropes & Gray  
225 Franklin Street  
Boston, MA 02110

Gary J. Edles  
Atomic Safety and Licensing Appeal Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Howard A. Wilber  
Atomic Safety and Licensing Appeal Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Geoffrey M. Huntington, Esq.  
Office of the Attorney General  
Environmental Protection Agency  
State House Annex  
25 Capitol Street  
Concord, NH 03301-6397

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



Andrea Ferster