

was at the time given (August 16, 1988), both true and complete. Installation prior to exceeding 2,000 assemblies is still the only firm milestone date for accomplishing this effort.

2. In fact, in the ordinary course, a detailed definitive schedule for a project of this magnitude could not be prepared until after certain steps have been taken, such as the proposal and approval of funding for the detailed design of the project (as distinct from the conceptual design, which has already been accomplished), the preparation of the detailed design, approval of capital authorization for the project once the final parameters are known for certain, determination of equipment lead times, and coordination of installation with plant operations. Vermont Yankee's final determination to undertake this project is also dependent upon resolution of these proceedings, issuance of the proposed license amendment, and issuance by the NRC Staff of an SER concluding that the project resolves all outstanding issues and concerns relevant to the adequacy of the VYNPS spent fuel pool cooling system. While Vermont Yankee understands the Staff to be of that opinion, the SER has not been issued yet, and if for any reason (though none can be foreseen) this proposal were not acceptable, then Vermont Yankee would most likely propose some other course of action. Consequently, the determination by Vermont Yankee to implement the proposed enhancement to the spent fuel pool

cooling system is as yet conditional, and no detailed schedule is in order in the ordinary course.

3. Because the proposed addition involves no new technological issues, because the conceptual design of the system has already been done, and because, therefore, implementation of the proposed addition is considered straightforward and the lead time to accomplish it is conservatively bounded with some degree of confidence, Vermont Yankee knows that there is no present imperative either to begin the efforts required to implement this addition, or to adopt definitive schedules therefor.

4. Because Vermont Yankee presently has authority to store up to 2,000 spent fuel assemblies in its spent fuel pool, and because the purpose of offering the proposed enhancement was to moot the contention offered in opposition to a request to increase this inventory limit above 2,000 spent fuel assemblies, Vermont Yankee believed that its commitment was adequate to moot the contention if stated in terms of system implementation completed prior to the storage of more than 2,000 assemblies. This is how the commitment is framed in Vermont Yankee's letter to the NRC Staff dated March 2, 1988 (FVY 88-17) and reiterated in Vermont Yankee's letter to the NRC Staff dated June 7, 1988 (FVY 88-47).

5. The discussion between Mr. McElwee and the NRC Staff that occurred during the meeting of February 9, 1988, to which the Board has made reference in its Memorandum and

Order of September 27, 1988, is in no way inconsistent with the foregoing. What Mr. McElwee outlined for the Staff was a feasibility analysis for completing implementation of the proposed addition prior to the storage of the 2,001st spent fuel assembly in the spent fuel pool. The purpose of this presentation to the Staff was threefold: (i) to demonstrate that the proposed addition was a feasible solution to the problem, (ii) to show that design, implementation and testing could be accomplished prior to storage of more than 2,000 assemblies, and (iii) to make clear to the Staff that Vermont Yankee did not intend implementation of the proposed addition until the Staff has concurred that the proposal effectively resolved or mooted concerns previously expressed. (In that respect, we point out that, contrary to Vermont Yankee's expectations at the time of the February meeting, conceptual design was accomplished prior to receipt of the SER, and the results of that effort were eventually submitted to the Staff, with copies to the parties, on June 7, 1988.) Mr. McElwee projected general milestones first in his presentation in terms of plant cycles and then in response to a Staff question in terms of estimated earliest possible dates. Plant cycle lengths vary according to plant operating history. Mr. McElwee did not state then, nor has it ever been the position of Vermont Yankee, that such a series of general milestones had been formally established as the Vermont Yankee schedule for implementation of the addition.

In fact, it is the present expectation of Vermont Yankee that, once the acceptability of the proposed addition has been settled, a detailed schedule will be formally established, and it is the further present expectation of Vermont Yankee that, in the ordinary course of conservative business planning, such a schedule would aim to have the proposed addition fully implemented some time before it would actually be needed to authorize the storage of the 2,001st spent fuel assembly in the spent fuel pool.

6. As the Board has noted, both Mr. Reid (who signed the prior answer to interrogatories) and one of counsel for Vermont Yankee were present at the meeting with the Staff. The prior answer was prepared or reviewed, as the case may be, with the recollection of what transpired at that meeting in mind (but without actually reviewing the transcript). Since receipt of the Board's Memorandum and Order of September 27th, Vermont Yankee has reviewed the transcript, and it can see where the language attributed to Mr. McElwee on pages 19-20 is susceptible of being misinterpreted if taken out of the context of the Vermont Yankee presentation, so as to suggest the possible existence of detailed schedules. In fact, there is no inconsistency between or among Mr. McElwee's presentation, Vermont Yankee's prior answer to Interrogatory No. 5, and the facts.

7. With respect to Table A-2 of Vermont Yankee's submission of June 7, 1988, Vermont Yankee respectfully

refers the Board and parties to the second column (entitled "Normal Refueling Discharge: Number of Bundles in Pool"). As shown there, availability of the enhanced cooling sub-system would not be required to support the offload into the spent fuel pool and the restart of the reactor until after Cycle 16. Following Cycle 16, the spent fuel pool inventory would be less than 2,000 assemblies, but not by enough to support an additional 1/3 of the core for one more refueling. It was on this basis that Mr. McElwee equated the end of Cycle 16 with the completion of the proposed additions. That the two statements have always been considered to be equivalents is reflected in the use of both in Vermont Yankee's letter to the NRC Staff dated March 2, 1988 (FVY 88-17).

8. Vermont Yankee was aware of the fact that, if it were assumed that a full-core offload might be required following Cycle 15, and if at that time the enhanced cooling system has not yet been made operational, the entirety of the core could not be placed in the pool without additional authority. In such event, which Vermont Yankee deems unlikely, one of the courses of action open to Vermont Yankee would be to seek temporary authority, on an emergency basis, to store more than 2,000 assemblies in the pool temporarily. If such a request were to be made, the justification for it would be that, if one assumes a full-core offload, then under this scenario there is no potential for restarting the reactor (until either 2/3 or 3/3 of the core has been taken

out of the spent fuel pool and returned to the reactor) and hence there could be no claim that any use of the RHR system to enhance spent fuel pool cooling impairs redundancy, since by definition in such circumstances there could be no need of any portion of the RHR system to cool the reactor. Another alternative would be to keep the core in the reactor until all requirements for storage of more than 2,000 assemblies had been met, recognizing that this course of action could prolong the outage.

9. For the foregoing reasons, the truthful and complete answer to Interrogatory No. 5 as propounded on August 4, 1988, is exactly as set forth in Vermont Yankee's answer to it filed August 16, 1988. Any other answer to that question would have been then (and would be today) not accurate. If Vermont Yankee had known at the time that answer was prepared that it was necessary to dispel any possible misinterpretations of the February 9th transcript, it most likely would have added to its response the substance of what is contained in this further answer, but the answer as given would have remained, as set forth, that Vermont Yankee does not (at the time the original answer was prepared, or today) have any more detailed schedule for the implementation of the proposed amendment and does not foresee establishing any such schedule until at least after the publication of the Staff's SER and most likely the completion of these proceedings.

FURTHER ANSWER TO INTERROGATORY NO. 6:

As Vermont Yankee understands the Board's Memorandum and Order of September 27, 1988, the question to which it is to respond is the extent to which the proposed addition to the spent fuel pool cooling system is or is not "identical" to such additions at other plants. See Memorandum and Order at 10.

Vermont Yankee has undertaken no detailed assessment of the spent fuel pool cooling systems at other plants, but is generally familiar with the techniques employed at other plants to accomplish spent fuel pool cooling. Based on this information, Vermont Yankee further responds to this interrogatory as follows:

1. Vermont Yankee is not aware of any plant that has proposed an enhancement to its spent fuel pool cooling system that is identical to that proposed here. Vermont Yankee is aware of various other systems which increase spent fuel pool heat transfer capacity, but not in the manner of Vermont Yankee's proposal, as an emergency standby system.

2. From the foregoing, it follows that Vermont Yankee has no information about the specific equipment used in any other such proposed enhancement. As to the inquiry regarding "heat transfer capacity of the equipment, number of fuel [assemblies] to be cooled" (Memorandum and Order at 11), Vermont Yankee has not made those specific comparisons. Vermont Yankee believes on the basis of general information

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that the Tech Spec limitation on spent fuel pool bulk temperature at all BWRs is in the range of 140°F to 150°F. In September 1987 Vermont Yankee compiled information in the form of the matrix attached hereto, which while not specifically addressing the inquiries made here, does concern the general matter of plants recently expanding spent fuel pools.¹

3. The equipment to be employed in the proposed enhancement of the Spent Fuel Pool Cooling system, as contemplated in the conceptual design submitted on June 7, is not equipment specially designed for standby cooling systems. It is, rather, equipment that might just as well be specified for "original" spent fuel pool cooling systems, and Vermont Yankee is not aware of any attribute of the equipment that is unique to the fact that, in this application, it will be employed in connection with an additional set of cooling loops, to achieve enhanced heat transfer capacity.

4. Vermont Yankee believes that the above information answers, as best it can, the interrogatory as interpreted in the Board's Memorandum and Order.



Donald A. Reid

¹ As to bulk temperature, see Attachment page 2 (Nine Mile Point) which notes 125°F. Vermont Yankee has not determined whether this is a Tech Spec or Admin limitation.

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State of Vermont
County of Windham

Then appeared before me the above-subscribed Donald A. Reid and made oath that he is authorized to execute the foregoing further answers to interrogatories on behalf of Vermont Yankee, that he made inquiry and believes that the foregoing further answers accurately set forth such information as is available to Vermont Yankee.

Judith A. Harris
Notary Public
My commission expires: 2/10/91



Plant Berack Matrix

Plant	Type/Commercial Operation	Berack SER	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact *	Comments
Grand Gulf (NPL)	BWR/85	8/86	Yes	Yes (LOOP and DC Loss)	Yes (Modification Required)		<ul style="list-style-type: none"> o Pool temperature of 140°F required. o Technical Specification on limit of use of augmented RCR for 30 days. o Technical Specification on temperature when exceeding 140°F. o Will propose FPC MOD in three to five years for Cycles 13-15 and beyond. o Emergency procedures for LOOP and single failure of DC in place using hoses from fire truck.
Peach Bottom (Philadelphia Electric)	BWR/74	2/86	No (Three Trains)	Yes	No		<ul style="list-style-type: none"> o 150°F pool temperature accepted. o Spargers cut three to four feet below water level. o Identified means of cooling pool using RBCCW HTexch. in emergency by manual connections. o Several hard-piped means of emergency make-up identified requiring manual actions.
Millstone II (NUSCO)	BWR/75	1/86	Yes	Yes	Yes (Technical Specification Changes)		<ul style="list-style-type: none"> o Pool temperature of 140°F required. o Technical Specification change requiring 21-day decay prior to start-up. o With Technical Specification change, meet SRP requirements.

* Individuals' names and telephone numbers are redacted.

Plant Rerack Matrix
(Continued)

Plant	Type/Commercial Operation	Rerack SER	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
Trojan (PG&E)	PMR/75	6/84	No	Yes	Yes (Procedures)		<ul style="list-style-type: none"> o Required procedure for emergency makeup to pool using seismic SW tie-in. o Showed only needed RHR for full core offload. o Shortened spargers approximately eight feet below water level. o ASLB hearings after rerack affirmed license amendment. o Rack impact major hearing obstacle.
North Anna (VEPCO)	PMR/78	12/84	No	Yes	No		<ul style="list-style-type: none"> o Have separate Fuel Storage Building with capability to make up using fire mains. o Emergency procedures in place and walked down for makeup using hard pipe from fire main. Available after seismic event; some manual actions required.
Nine Mile Point (Niagara Mohawk)	PMR/69	2/84	Yes	Yes	No		<ul style="list-style-type: none"> o Keep pool temperature <125°F for both normal offload (one train) and abnormal load (two trains). o Will not commence offload unless FPC is able to keep temperature <125°F; required if SW inlet temperature is higher than 90°F used in analysis. o Emergency makeup available from two separate supplies, one of which is not hard piped. No special procedures were required. o No RHR tie-in available.

Plant Rerack Matrix
(Continued)

Plant	Type/Commercial Operation	Rerack SER	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
St. Lucie II (FP&L)	PWR/83	10/84	See Comments	See Comments	See Comments		<ul style="list-style-type: none"> o New plant which reracked prior to pool usage; net SRP for design for original license. o St. Lucie I submittal at NRC now. Do not expect to make any modifications (one train of FPC is seismic). o Turkey Point is upgrading their FPC due to rerack; in hearings.
Cinna (RCLE)	PWR/70	11/84	Yes (One Train)	Yes Comp. Cooling and Backup Skid and Pump	Yes (Modification Required)		<ul style="list-style-type: none"> o Due to heat load for full core offload, Technical Specification requires 17-day decay prior to offload of full core. o Modifications to be complete in 1988 of second, seismic train of FPC which will delete above requirement. o Use 150°F Technical Specification limit with statement that seven hours to get backup cooling lined up; no requirements for shutdown. o Required emergency procedure in place for emergency makeup using hoses, etc.

Plant Rerack Matrix
(Continued)

Plant	Type/Commercial Operation	Rerack SER	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
Oconee 3 (Duke)	PWR/74	9/83	Not Completely (Three Trains)	No Specific Procedure	See Comments (Modification Required)		<ul style="list-style-type: none"> o Upgraded FPC to third train due to boiling analysis. Were limited to original assembly locations until upgrade finalized. However, it was a utility decision for upgrade. o No pool temperature limit in Technical Specification, but met SRP value of 140°F. o Seismic makeup is available to pool by hard-piped lines from BMST tank.
McGuire (Duke)	PWR/81	9/84	Yes	Se. ment	No		<ul style="list-style-type: none"> o Redundant seismic fuel pool cooling. o Makeup capability available. o Original design met SRP requirements.
Oyster Creek (CPU)	BWR/69	9/84	Yes (Two Trains)	Yes	No		<ul style="list-style-type: none"> o FPC trains seismic prior to rerack submittal. o Emergency makeup procedure in place prior to submittal. o Only major issue was seismic analysis of racks.

Plant Rerack Matrix
(Continued)

Plant	Type/Commercial Operation	Rerack SER	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
Calvert Cliffs I and II (BGE)	PWR/74477	5/82	Yes	Yes	No		<ul style="list-style-type: none"> o Two redundant trains of seismic FPC. o Analysis shows pool <125°F. o Emergency makeup identified.
Yankee Plant (YAS)	PWR/61	Done in Stages 78-82	No	Redundant Nonseismic System	N/A		<ul style="list-style-type: none"> o Rerack done in stages (i.e., Criticality, T-H, Mech. etc., submittals all sent in separately over a number of years). o Design change in 1978 provided a permanent Redundant Cooling System (nonseismic). o Prior to this modification, no backup was available during shutdown.
Farley I and II (SCS)	PWR/77481	4/83 6/82	Yes	Yes	No		<ul style="list-style-type: none"> o Two trains of seismic FPC. o Makeup capability assured by procedure. o Met single failure criterion of SRP.

Plant Rerack Matrix
(Continued)

Plant	Type/Commercial Operation	Rerack SER	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
Quad Cities I (Comm Edison)	BWR/73	4/82	No	Yes See Comment	No		<ul style="list-style-type: none"> o Diffuser cut three to six feet below water level. o Review done in early 1980; no Technical Specification changes made for SRP requirements. o Nonseismic FPC System. o Emergency makeup uses RHR cross-tie.
Brunswick 2 (CP&L)	BWR/75	12/83	Yes (Two Trains)	None Procedural- ized	No		<ul style="list-style-type: none"> o Take credit for RHR for abnormal heat loads. o Showed with two seismic trains of FPC that had adequate cooling. o Building loads were major NRC issue.
Ft. Calhoun (Omaha Public Power)	PWR/74	9/83	Yes (Two Pumps, One Ht Ex)	Yes	Yes (Modification Required)		<ul style="list-style-type: none"> o Required emergency makeup capability. Modification done to hard pipe cross-tie to pool from Safety Injection System. o Considered using hoses, etc., but not possible. o Pool temperature limit is 140°F; unchanged by rerack.

Plant Rerack Matrix
(Continued)

Plant	Type/Commercial Operation	Rerack SE.	Seismic FPC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
Big Rock Point (Consumers Power)	BWR/63	10/84	Yes (in Cont)	Yes	Yes (Modification Required)		<ul style="list-style-type: none"> o Amendment granted subject to a few conditions/modifications. o Required remotely operated emergency makeup line for pool (LOCA analysis). o Zircaloy/steam reaction admitted in hearings, but dismissed due to modification commitment.
Arkansas Nuclear One and Two (Arkansas Power and Light)	PWR/74	4/83	No	None Procedural- ized	No		<ul style="list-style-type: none"> o Did not meet current SRP criteria, only showed compliance with FSAR requirements. o Nonseismic FPC-calculated boil-off time of lost and stated that, in that time frame, makeup would be provided using hoses, etc.
Maine Yankee (MAYP)	PWR/72	4/84	Yes See Comments	Yes	No See Comments		<ul style="list-style-type: none"> o FPC System seismic, but not single-failure proof. o Showed time to boil and capability for makeup in that time frame. o Makeup paths identified for rerack, but do not seem to be proceduralized. o Both hard-piped lines and test means available.

Plant Berrack Matrix
(Continued)

Plant	Type/Commercial Operation	Berrack BEE	Seismic FFC	Emergency Makeup Capabilities	New Requirement (SRP)	Utility Contact	Comments
Summer (SCE & C)	PMB/81	9/84	Yes	See Comments	See Comments		<ul style="list-style-type: none"> o Fairly new plant which met SRP for original design. o FFC is seismic and single-failure proof.
Pallasdes (Consumers Power)	PMB/71	7/87	Yes	Yes	No		<ul style="list-style-type: none"> o Berrack only provided spaces for two additional cycles; heat loads not major issue. o Two seismic trains of FFC. o Makeup capability available by adding spool piece to SM/PW System. o Took credit for RHR makeup also.

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CERTIFICATE OF SERVICE

I, Kathryn A. Selleck, hereby certify that on October 7, 1988, I made service of the within document in accordance with the rules of the Commission by mailing a copy thereof postage prepaid to the following:

Charles Bechhoefer, Esquire,
Chairman
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

David J. Mullet, Esquire
Vermont Department of
Public Service
120 State Street
Montpelier, VT 05602

Mr. Glenn O. Bright
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

Ellyn R. Weiss, Esquire
Harmon & Weiss
Suite 430
2001 S Street, N.W.
Washington, DC 20009

Mr. James H. Carpenter
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

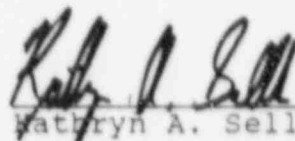
George B. Dean, Esquire
Assistant Attorney General
Department of the Attorney
General
One Ashburton Place
Boston, MA 02108

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Washington, DC 20555

Ann P. Hodgdon, Esquire
Office of the General Counsel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

Atomic Safety and Licensing
Appeal Board Panel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

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


Kathryn A. Selleck