Proposed Change No. 74
Supplement No. 1

VERMONT YANKEE NUCLEAR POWER CORPORATION

SEVENTY SEVEN GROVE STREET
RUTLAND, VERMONT 05701

B.3.2.1
PC 74-3

REPLY TO:
ENGINEERING OFFICE
TURNPIKE ROAD
WESTBORO, MASSACHUSETTS 01581
TELEPHONE 617-366-9011

WVY 79-18

February 23, 1979

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation

Reference: (a) License No. DPR-28 (Docket No. 50-271)
(b) Vermont Yankee Nuclear Power Corporation letter to the U.S. Nuclear Regulatory Commission dated August 16, 1978 (Proposed Change No. 74)
(c) U.S. Nuclear Regulatory Commission letter to Yankee Atomic Electric Company dated October 13, 1978
(d) Atomic Safety and Licensing Appeal Board decision of December 27, 1978 in the matter of Tennessee Valley Authority Yellow Creek Nuclear Plants, Units 1 and 2 (ALAB-515)

Dear Sir:

Subject: Supplement One to Proposed Change No. 74, Appendix B Technical Specification Change

Pursuant to Section 50.59 of the Commissions' Rules and Regulations, Vermont Yankee Nuclear Power Corporation proposed a complete rewrite of the Appendix B Technical Specifications, Reference (b). The USNRC, after discussions with the licensee, approved only a portion of the change which was related to open cycle operation, Reference (c). Vermont Yankee Nuclear Power Corporation hereby proposes to supersede the outstanding portion of Reference (b) with the enclosed Technical Specification proposal.

PROPOSED CHANGE: Reference is made to Vermont Yankee Nuclear Power Corporation's operating license (No. DPR-28) and Appendix B to this operating license. We propose to modify these documents as follows:

A. Operating License No. DPR-28

Delete the following "Environmental conditions" specified on page 4: Paragraphs E.1, E.2, E.3, and E.4.

B. Appendix B Technical Specifications

Replace Appendix B of the Technical Specifications with Attachment A to this letter. The proposed change is intended to replace license conditions of Appendix B with the water quality limits and surveillance requirements that fall within the jurisdiction and authority of the U.S. Environmental Protection Agency and the Vermont Agency of Environmental Conservation which were established in compliance with the Federal Water Pollution Control Act Amendments of 1972 (FWPCA).

REASON FOR CHANGE: Water quality limits and environmental surveillance requirements are presently imposed on the Vermont Yankee Nuclear Power Corporation by two agencies: (1) the U.S. Nuclear Regulatory Commission and (2) the State of Vermont - Agency of Environmental Conservation. Vermont Yankee's request for deletion of limiting conditions for operations for certain water quality parameters and related environmental surveillance requirements contained in the Appendix B Technical Specifications is based upon the fact that the U.S. Environmental Protection Agency and State of Vermont have been charged with the responsibility to regulate pollutant discharges into water bodies under the FWPCA. Vermont Yankee believes that the present Appendix B Technical Specifications represent unnecessary duplicative efforts among regulatory agencies. The intent of this proposed change, to eliminate regulatory overlap, is fully consistent with Section 101 (f) of FWPCA, where it is stated that:

> "It is the national policy that to the maximum extent possible the procedures utilized for implementing this Act shall encourage the drastic minimization of paperwork and interagency decision procedures, and make the best use of available manpower and funds, so as to prevent needless duplication and unnecessary delays at all levels of government."

Section 511 of the FWPCA provides that nothing under the National Environmental Policy Act shall be deemed to authorize any Federal agency to review any effluent limitation or other requirement established pursuant to the FWPCA, or to impose, as a condition of any license or permit, any effluent limitation other than any such limitation established pursuant to the FWPCA. In Reference (d) the Atomic Safety and Licensing Appeal Board determined that the Federal responsibility for water quality standards and pollution control has been shifted to EPA as its exclusive province (see Section III.4, pp. 20 and 21).

As a result of previous NRC determinations (Reference c) and after implementation of these changes to Appendix B, the four Environmental conditions referenced above are no longer appropriate. The determination required in Paragraph E.1 has already been made (Reference c) and the NPDES permit will assume jurisdiction of the items discussed in Paragraphs E.2, E.3, and E.4.

BASIS FOR CHANGE: Pursuant to the Federal Water Pollution Control Act, the State of Vermont National Pollution Discharge Elimination System (NPDES) Permit Program Regulations were approved by the U.S. Environmental Protection Agency on March 11, 1974 and amended on January 11, 1977. In accordance with Federal and State regulations, the Vermont Yankee Nuclear Power Corporation has been issued NPDES Permit VT 0000264 which became effective July 8, 1975. On March 14, 1978 Vermont Yankee submitted to the Vermont Agency of Environmental Conservation its report in support of an amendment to its NPDES Permit entitled "316 Demonstration, Vermont Yankee Nuclear Power Station, Environmental Impact Assessment", dated March, 1978. This report presented engineering, hydrological, and biological information in support of Vermont Yankee's request, pursuant to Sections 316a and 316b of the Federal Water Pollution Control Act, for alternative thermal effluent limitations. The rationale for the proposed alternative thermal effluent limitations was the result of the evaluation of data obtained from chemical, physical and biological studies begun in 1967, and hydrological and biological studies conducted during 921 days of open-cycle operation from 1974 through 1978 reported as Vermont Yankee Hydrothermal and Biological Studies, Phases I-V, and summarized in the 316 Demonstration Report.

The studies characterized the thermal plumes caused by Vermont Yankee's discharge under a range of plant operating conditions, river flow rates, and river temperature. These data were used to examine the impact of the thermal plume on resident aquatic biota. In addition, the effects of impingement and entrainment were studied. The results demonstrated that Vermont Yankee's open-cycle operation has not significantly altered the distribution, abundance or diversity of resident aquatic biota.

The Vermont Agency of Environmental Conservation reviewed the results of Vermont Yankee's hydrothermal and biological studies as reported in the 316 demonstration study and tentatively determined on June 26, 1978, pursuant to 40CFR122.15(b)(1), to amend Vermont Yankee's NPDES permit to allow open-cycle operation during the period October 15 to May 15 subject to the following thermal limitations:

(a) the temperature at Monitor 3 during open-cycle operation shall not exceed 65°F.

(b) the rate of change of temperature at Monitor 3 shall not exceed 5°F per hour.

(c) the increase in temperature above ambient at Monitor 3 shall not exceed 13.4°F.

A public hearing was held on the draft NPDES permit on August 4, 1978. The permit was issued on September 12, 1978. The Vermont Agency of Environmental Conservation's determination to amend the Vermont Yankee NPDES permit to incorporate the above thermal limitations was based on a

determination that the discharge will not significantly alter the distribution, abundance or diversity of resident aquatic biota and that the protection of a balanced, indigenous community of shellfish, fish and wildlife in and on the Connecticut River will be assured.

The thermal limits now specified in NPDES Permit No. VT 0000264 were reviewed and approved by the U.S. Nuclear Regulatory Commission on October 13, 1978 see Reference (c). The NRC conclusion in Reference (c) states "On the basis of our analysis, it is concluded that there will be no significant environmental impact attributable to the proposed action other than has already been predicted and described in the Final Environmental Statement and subsequent Environmental Impact Appraisals."

In lieu of the present NRC Appendix B water quality limits and surveillance requirements, Vermont Yankee is herewith submitting a proposed change which will incorporate by reference limitations placed upon Vermont Yankee operation by the State of Vermont, Agency of Environmental Conservation, thus clarifying the respective roles of NRC and the State regarding statutory authority pursuant to the FWPCA. In compliance with the provisions of that Act, the Vermont Yankee Nuclear Power Corporation is authorized by the Vermont Agency of Environmental Conservation to discharge liquid effluents from its facility located at Vernon, Vermont into the Connecticut River in accordance with the conditions of their discharge permit No. VT0000264, as amended. This permit became effective September 12, 1978 and shall expire at midnight June 30, 1980. A copy of the permit is provided as Attachment C.

Vermont Yankee has made a comparison of limits and surveillance requirements imposed upon the operation of the Vermont Yankee Nuclear Power Station by the NRC, Appendix B Technical Specification and NPDES Permit (Attachment B). We have concluded that effluent limitations and surveillance requirements specified in the NPDES Permit are either identical to the NRC requirements or, where differences exist, are more than adequate to assure protection of the environment.

Vermont Yankee believes the proposed change is warranted considering (1) the absence of any significant adverse environmental impacts due to operation of the Vermont Yankee station and (2) the jurisdictional authority of the U.S. Environmental Protection Agency and State of Vermont as set forth in the FWPCA.

SAFETY CONSIDERATIONS: This proposed change does not present any hazard considerations not described or implied in the license applications as amended.

This proposed change has been reviewed by the Vermont Yankee Nuclear Safety Audit and Review Committee.

[illegible] DETERMINATION: This proposed change requires an approval that involves

a single environmental issue and is deemed not to involve a significant hazards consideration. For these reasons, Vermont Yankee Nuclear Power Corporation proposes this change as a Class III Amendment. A payment of $4,000.00 was included with Reference (b). Since this letter merely modifies a previous request, no additional payment is required. Vermont Yankee Nuclear Power Corporation believes that the NRC revised fee schedule is illegal. Vermont Yankee is aware that this fee schedule is being contested before the U.S. Court of Appeals for the Fifth Circuit and therefore submitted the referenced fee under protest without waiving its right to contest the validity of this fee or the entire NRC fee schedule, and without waiving any right to recover, in whole or in part, all fees paid or to be paid under the invalid fee schedule.

SCHEDULE OF CHANGE: This change shall be incorporated into the Vermont Yankee Technical Specifications immediately upon Commission approval.

We trust this information is acceptable to you; however, should you have any questions please feel free to contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

W. P. Johnson
Vice President

COMMONWEALTH OF MASSACHUSETTS)
)ss.
COUNTY OF WORCESTER)

Then personally appeared before me, W. P. Johnson, who, being duly sworn did state that he is Vice President of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing request in the name and on the behalf of Vermont Yankee Nuclear Power Corporation, and that the statements therein are true to the best of his knowledge and belief.

Robert H. Groce Notary Public
My Commission Expires September 14, 1984

1.0 LIMITING CONDITIONS FOR OPERATION

1.1 CONDENSER COOLING WATER

Applicability:

Applies thermal and chemical effluent limitations upon the operation of Vermont Yankee.

Objective:

The purpose of the specification is to assure that effluent releases into the Connecticut River are (1) consistent with the well-being of the existing Connecticut River ecosystem and (2) in accordance with the Federal Water Pollution Control Act, as amended, and state water quality regulations duly imposed upon the operation of the Vermont Yankee Nuclear Power Station.

Specification:

A. All thermal and chemical discharge limits shall be in accordance with the limits and conditions expressed in:

1) NPDES Discharge Permit No. VT0000264 by the State of Vermont - Agency of Environmental Conservation.

Limits and conditions contained in the above referenced document, which set thermal and chemical effluent limitations upon the operation of Vermont Yankee, are herewith, incorporated by reference in Section 1.0 of the Vermont Yankee - Appendix B Technical Specifications.

B. All future modifications to the above referenced document shall automatically become part of this specification as of the effective date of such

2.0 REPORTING REQUIREMENTS

2.1 CONDENSER COOLING WATER

Applicability:

In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following identified reports shall be submitted to the Director of the appropriate Regional Office of Inspection and Enforcement and the Director of the Office of Nuclear Reactor Regulation (c/o Distribution Services Branch).

1. Routine Reports

A. Monthly NPDES Discharge Monitoring Report

The results of monitoring except radionuclides, as required by NPDES Permit No. VT0000264, shall be reported and submitted on a monthly basis by the 25th of the month following the completed report period.

B. Annual Environmental Monitoring Report

An annual Environmental Monitoring Report covering the previous calendar year shall be submitted. This report shall include the following information

1) The results of the Nonradiological Environmental Monitoring Program required by NPDES Permit No. VT0000264.

2) A tabulation of the concentration of radionuclides in liquid effluents released to the Connecticut River.

2. Nonroutine Reporting

A. NPDES Noncompliance Reports

Events resulting in noncompliance with the terms and conditions of NPDES Permit No. VT0000264

change. The NRC Office of Nuclear Reactor Regulation shall be notified of any change.

shall be the subject of written reports submitted within five days of becoming aware of such conditions.

Basis:

As required by Section 402 of the Federal Water Pollution Control Act Amendments of 1972 (FWPCA), 33 U.S.C. 1251 et seq. the Vermont Yankee Nuclear Power Corporation has received a final NPDES Permit from the State of Vermont - Agency of Environmental Conservation for discharges from its facility located at Vernon, Vermont. This permit identified as NPDES Permit No. VT0000264 as amended became effective September 12, 1978 and shall expire at midnight June 30, 1980.

O.C. - Open Cycle
C.C. - Closed Cycle

ATTACHMENT B

COMPARISON OF APPENDIX B TECHNICAL SPECIFICATION AND NPDES PERMIT

	LIMITS	NRC	EPA	COMMENT
A.	DISCHARGE TEMPERATURE	O.C. NONE C.C. NONE	O.C. NONE – C.C. 81°F X 93°F Max. (Blowdown)	
A'.	RIVER TEMPERATURE AT MONITOR #3	13.4°F ΔT 5°F per Hour 65°F Maximum Oct. 15 to May 15	13.4°F ΔT 5°F per Hour 65°F Maximum Oct. 15 to May 15	
B.	CHEMICAL CONCENTRATIONS OF DISCHARGE	CHLORINE - 0.1 mg/l free residual max. No time limit --- pH - 6.5 - 8.5	0.2 mg/l free residual max. <2 hrs/day 0.5 mg/l total residual max. --- 6.5 - 8.5	
C.	RIVER FLOW	1200 CFS minimum at Vernon Dam. If less than 1200 CFS, VY must operate closed cycle	NONE	On July 31, 1970, the Federal Power Commission issued an order to New England Power Co. requiring them to provide a minimum of 1200 CFS
D.	FISH KILL	No limit on any species.	Limit only on Atlantic salmon & American shad; 0.1% of maximum number of these species anticipated to pass Vernon based on number stocked or released. (Report impingement immediately of shad or salmon).	

O.C. - Open Cycle
C.C. - Closed Cycle

ATTACHMENT B
(continued)
COMPARISON OF APPENDIX B TECHNICAL SPECIFICATION AND NPDES PERMIT

MONITORING REQUIREMENTS		NRC	EPA	COMMENT
A. RIVER FLOW RATE		Continuous from Hydrotail Race Gauge	Hourly averages from Hydro Logs	Tail Race Gauge is inaccurate due to Operations of Northfiel Mountain Pump Storage Plant.
B. TEMPERATURE	RIVER	Continuous at Monitors 3&7	Continuous at Monitors 3&7	
	DISCHARGE	NONE	DAILY: Max., Min., & Mean O.C. & C.C.	
C. pH	RIVER	Continuous at Monitors 3&7	Continuous at Monitors 3&7	
	DISCHARGE	Continuous	NONE	
D. CHLORINE RESIDUAL	DISCHARGE	Continuous during chlorination	Grab samples during chlorination	
E. DISSOLVED OXYGEN	RIVER	Continuous at Monitors 3&7	Continuous at Monitors 3&7	
	DISCHARGE	NONE	Quarterly grab at discharge (Also at Monitors 3&7)	
F. WATER QUALITY PARAMETER	RIVER	Conductivity & Turbidity Continuous at Monitors 3&7	16 Parameters - Quarterly grabs at discharge & Monitors 3&7	Propose deleting continuous monitoring of conductivity & turbidity at Monitors 3&7
	DISCHARGE	NONE		
G. PHYTOPLANKTON/ ZOOPLANKTON		NONE	Monthly at Monitors 3&7	
H. ENTRAINMENT		2 per month(O.C.&C.C.)	1 per month on O.C. None on C.C.	The phase studies have documented the low value of these studies during the winter months and on C.C.
I. BENTHIC FAUNA		NONE	1 per month from May through November at Stations 2, 3, 4 and 5	

O.C. - Open Cycle
C.C. - Closed Cycle

ATTACHMENT B
(continued)
COMPARISON OF APPENDIX B TECHNICAL SPECIFICATIONS AND NPDES PERMIT

MONITORING REQUIREMENTS	NRC	EPA	COMMENT
J. FISH IMPINGEMENT	All fish impinged are identified by species, size and quantity	Oct. 15 - Oct. 31: 3/week Nov. : 1/week Dec.-Feb. : 1/month Mar.1-Apr.15 : 1/week Apr.16-May 15 : 3/week	For NPDES, all fish impinged during the surveillance periods are identified, weighed, and measured and reported in the annual environmental report
K. FINFISH	NONE	Annually: 500 no. of dam & 500 so. of dam	

ATTACHMENT B
(continued)
COMPARISON OF APPENDIX B TECHNICAL SPECIFICATION AND NPDES PERMIT

REPORTING REQUIREMENTS	NRC	EPA	COMMENT
1. ROUTINE	Annual Environmental Monitoring Report	(a) Annual Environmental Monitoring Report (b) Monthly NPDES Discharge Monitoring Report	Will include impingement and a summary of annual liquid releases of radionuclides to the Connecticut River.
2. NON-ROUTINE	30 day written report	NPDES non-compliance Report: 5 days	

ATTACHMENT C

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION
MARTIN L. JOHNSON, Secretary
Montpelier, Vermont 05602
OFFICE OF THE SECRETARY

Department of Fish and Game
Department of Forests and Parks
Department of Water Resources
Environmental Board
Division of Environmental Protection
Division of Recreation
Division of Planning
Natural Resources Conservation Council

September 11, 1978

Mr. William R. Adams, Jr.
Regional Administrator
Room 2203
John F. Kennedy Federal Building
Boston, MA 02203

Re: Amended Discharge Permit
Vt. Yankee Nuclear Power Corp. - Vernon
VT0000264 3-1053 13-17-002

Dear Mr. Adams:

Transmitted herewith pursuant to 40 CFR 122.18 and 124.47 is a copy of an Amended Discharge Permit which I have today issued to the Vermont Yankee Nuclear Power Corporation, 77 Grove Street, Rutland, Vermont 05701 permitting it to operate its Nuclear Power Station at Vernon, Vermont in the open cycle mode during the pericd October 15 through May 15.

As required by 40 CFR 122.18, I wish to advise you that the permit contains thermal effluent limitation less stringent than required by Sections 301 and 306 of the Clean Water Act (P.L. 95-217). As further required by 40 CFR 122.18 the following evidence was used in making my final determination to issue this permit which had previously been proposed pursuant to 40 CFR 122.17:

(1) 316 Demonstration - Engineering, Hydrological and Biological Information and Environmental Impact Assessment - Vermont Yankee Nuclear Power Corporation (Aquatec, Inc., March 1978) including the results of Vermont Yankee Hydro Thermal and Biological Studies Phases I-IV carried out between 1974 and 1977 and referenced therein.

(2) Written comments and objections received during the public comment period (June 28 - August 18, 1978) provided for in our Public Notice dated June 28, 1978. These comments and objections included a letter from Diana P. Sidebottham, President and Chairman, Legal and Technical Committee of the New England Coalition on Nuclear Pollution, Inc. to Agency of Environmental Conservation dated August 18, 1978 transmitting a Review of 316 Demonstration (Item #1 above) dated

August 14, 1978 by John R. Clark.

(3) Letter dated August 31, 1978 from John W. Beck, Executive Vice President, Vt. Yankee Nuclear Power Corporation to Donald W. Webster, Hearing Examiner, Agency of Environmental Conservation transmitting Vt. Yankee's technical Response to Mr. Clark's Review (Item #2 above) prepared by W.D. Countryman, R.M. McNeer and D.J. Max dated August 30, 1978.

(4) Memorandum from Angelo Incerpi, Chief Fisheries Biologist, Vt. Dept. of Fish and Game to David L. Clough, Director, Water Quality Division, dated May 19, 1978.

(5) Oral and written statements presented at the informational public hearing held in Brattleboro on August 4, 1978.

(6) Memorandum from David L. Clough, Director, Water Quality Division to me dated September 7, 1978 responding to Mr. John R. Clark's comments.

(7) Memorandum from Angelo Incerpi, Chief Fisheries Biologist to me dated September 11, 1978 in response to Mr. Clark's comments.

(8) Memorandum from Donald W. Webster, Hearing Officer to me dated September 11, 1978, providing a staff summary of procedures for the amendment process.

Items (1) through (5) have been previously transmitted to EPA through Mr. Ted Landry of the Permits Branch. Items (6) through (8) are transmitted herewith.

You will note that the permit has an effective date of October 11, 1978, which is 30 days from the date of issuance. This period is to allow the statutory time for any appeals that might be made under State Law (10 V.S.A. §1269) and Federal Law.

Because of the importance to the permittee of having this permit become effective at the earliest possible time, I would appreciate your timely review of this permit. Should you have any comments to make I also would appreciate a response at your earliest convenience.

Thank you for your attention to this matter.

Sincerely yours,

Brendan J. Whittaker, Secretary
AGENCY OF ENVIRONMENTAL CONSERVATION

BJW/
cc: Ted Landry, Permits Branch, EPA Region I

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602
Department of Water Resources

Department of Fish and Game
Department of Forests, Parks, and Recreation
Department of Water Resources
Environmental Board
Division of Environmental Engineering
Division of Environmental Protection
Natural Resources Conservation Council

September 7, 1978

MEMORANDUM

TO: Brendan J. Whittaker, Secretary
Agency of Environmental Conservation

THRU: Reginald A. LaRosa, Acting Commissioner
Department of Water Resources

FROM: David L. Clough, Director
Water Quality Division

RE: Final Recommendations - Vermont Yankee 316a Amendments

I have reviewed the testimony and written submissions to the record resulting from the subject hearing held on August 4, 1978. The principal objection to issuance of the amendments proposed by the Agency was from the New England Coalition on Nuclear Pollution Inc., as prepared by Dr. John R. Clark in a report dated August 14, 1978. Also reviewed was the response to Dr. Clark's testimony by Vermont Yankee which was submitted on August 31, 1978.

Ms. Esther Poneck on behalf of the Coalition and speaking for Dr. Clark at the hearing, objected to the proposed permit on the grounds that the supporting studies were inadequate and inconclusive. Dr. Clark had discussed the 316a report with me by telephone the day before the hearing and had not seen a copy of the report at that time. Dr. Clark requested that I read him the table of contents which I did and it was my understanding that this was his only exposure to the report prior to the hearing. On that basis I can give his "hearsay" testimony by Ms. Poneck no credibility and consider it somewhat irresponsible.

Dr. Clark's written objections revolve primarily around the sampling technique used in plankton studies and the apparent growth of some planktonic forms during the passage of cooling water through the plant which Dr. Clark says is impossible in a once-through cooling scenario. It is my understanding that the sampling techniques used were routine and widespread in the "business" and in fact they were reviewed by biologists from Vermont, New Hampshire, Massachusetts and EPA through the review of the subject studies by the Technical Advisory Committee which helped develop the scope of the studies.

The contention by Dr. Clark that plankton growth during cooling water passage through the plant is "preposterous" is not supported and is due either from an incomplete reading of the report or a failure to understand the circulating water scenario. In fact, a portion of the cooling water, even during so-called open cycle, is continuously recirculated to maintain optimum condensor operating conditions. Therefore, growth of plankton in the warm water environment thus created is completely possible and has been widely observed in similar situations.

The whole question of plankton increases or decreases in the circulating water or in the river itself is somewhat academic to begin with. The ambient plankton populations in the river between the months of October-May are so low as to be inconsequential regardless of the impact of the circulating water.

Dr. Clark concludes that the finfish studies are inadequate and inconclusive and that impingement could be a problem in some of the open cycle months. It is my impression that a great deal of finfish work was done and it does appear adequate to me. In addition, the state fisheries biologists on the TAC were a part of the review process throughout and to my knowledge have been well satisfied with the conduct of the studies and the interpretation of the results. The highest levels of impingement were observed in October, March and April but the numbers and weight of fish involved remain highly insignificant regardless of the percentages involved - i.e., a daily average of about one-half pound of minnows was impinged throughout the four study phases. Dr. Clark's further concerns with impact on migratory fish during the April and October periods have been much discussed by the technical people in the Agency and are well covered by the permit conditions relating to termination of open-cycle if such effects are observed.

In summary, my final recommendation would be to issue the requested amendments as proposed in our preliminary draft for which the hearing was held on August 4th subject to the revised notification procedure in PART I,(A),(1),(b.)(3)(i) which I suggested at that time.

RAL/

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602

OFFICE OF THE SECRETARY

Department of Fish and Game
Department of Forests, Parks, and Recreation
Department of Water Resources
Environmental Board
Division of Environmental Engineering
Division of Environmental Protection
Natural Resources Conservation Council

September 11, 1978

MEMORANDUM

TO: For the Record

FROM: Angelo Incerpi, Fisheries Biologist A.I.

SUBJECT: Vt. Yankee amended Discharge Permit

The Fisheries Division of Vermont Fish and Game Department has reviewed and made suggestions towards the modification of the Vermont Yankee permit.

There were some areas of concern; however, these were directed towards future migrations of anadromous fish during the freshwater phase of their life cycle.

The Vt. Yankee Nuclear Power Corporation realizing our concerns have agreed to continue studies regarding thermal effects on water quality parameters as well as on the fishery resources.

We have reviewed the proposed operational permit and feel that it contains the necessary safeguards to protect the fisheries in the Connecticut River. The permit clearly states that the Secretary of the Agency of Environmental Conservation can modify the permit if problems become evident. With these safeguards as stated in the amended permit Fish and Game interests have adequate protection.

AI:psp

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602

OFFICE OF THE SECRETARY

Department of Fish and Game
Department of Forests, Parks, and Recreation
Department of Water Resources
Environmental Board
Division of Environmental Engineering
Division of Environmental Protection
Natural Resources Conservation Council

September 11, 1978

Vermont Yankee Cooling Towers
Staff Summary - Procedural History

I. Procedural:

1. Vermont Yankee prepared a "316" report-March 1978 and submitted the report with petition for the amendment to the present discharge permit.

2. During the first week of June 1978, a public information hearing was scheduled for July 11, 1978.

3. Because additional time was required for staff review, the hearing scheduled for July 11, 1978 was cancelled with the hearing to be rescheduled for a later date.

4. Public hearing was rescheduled for August 4, 1978 in Brattleboro with date for filing of comments of August 18, 1978.

5. On June 28, 1978, legal notices were filed with newspapers.

6. On July 3 and July 10, 1978, legal notices were published.

II. Public Hearing:

1. Public information hearing was held in Brattleboro on August 4, 1978.

2. No parties (other than the applicant, Vermont Yankee) entered an appearance prior to the scheduled hearing, nor did any party present at the hearing enter their appearance or request to appear.

3. Vermont Yankee presented their application for amended and supporting materials (ie "316"report, etc.)

4. Staff personnel of the Agency of Environmental Conservation testified pertaining the proposed amended permit and proposed further revision to the amended permit.

5. Esther Poneck of the New England Coalition on Nuclear Pollution spoke at the hearing of August 4, 1978, and stated that a Dr. John R. Clark of Washington, D.C. would file written comments within the comment period.

III. Subsequent filings:

1. On the afternoon of August 18, 1978, comments of Dr. John R. Clark, Fisheries Biologist of Washington, D.C. were received with letter of transmittal from Diana Sidebottham of the New England Coalition on Nuclear Pollution.

2. Subsequently, Vermont Yankee filed a rebuttal to Dr. Clark's statement.

IV. Findings and Recommendations:

1. It is the opinion of the Agency staff that the statement of Dr. Clark raised no significant issues requiring further action or consideration by the Secretary, and the Hearing Officer so finds.

2. The Hearing Officer concurs with the recommendation of the Agency staff that an amended permit should be granted to Vermont Yankee permitting open mode cooling operation as contained in the draft permit, as amended.

Donald W. Webster
Hearing Officer

Permit No. 3-1053

Application No. 13-17-002

NPDES No. VT0000264

AMENDED
DISCHARGE PERMIT

In compliance with the provisions of the Vermont Water Pollution Control Act, as amended, (10 V.S.A. Chap. 47 § 1251 et. seq; the "Act"),

Vermont Yankee Nuclear Power Corporation
77 Grove Street
Rutland, VT 05701

is authorized to discharge from a facility located at

Governor Hunt Road
Vernon, Vermont 05354

to receiving waters named

the Connecticut River (Class B, Type III)

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on October 12, 1978

This permit and the authorization to discharge shall expire at midnight,

June 30, 1980

Original Discharge Permit #3-1053 issued on July 8, 1975

This Amended Permit signed on September 12, 1978

Secretary, Agency of Environmental Conservation

Form WR-88

PART I

Permit No. 3-1053

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(Special Conditions)

Except as specified in Paragraphs 1 through 12 below, the permittee is not authorized to discharge to the Connecticut River an effluent to which any pollutants have been added.

1. The permittee is authorized to discharge controlled amounts of heated water and other liquid waste to the Connecticut River provided that:

a. Such discharges do not violate applicable Vermont water quality standards and are not adverse to: human health and safety; the environment in the vicinity of Vernon; and fish and other wildlife, including their value as fish and game and their habitat and ecology.

b. The permittee is required to operate its circulating water cooling facilities in a closed-cycle mode except as follows:

(1) Experimental open-cycle test programs which are approved by the Vermont Yankee Technical Advisory Committee and the Secretary of the Vermont Agency of Environmental Conservation.

(2) If, during power operation, an unexpected failure results in a complete loss of the cooling tower system, the above closed cycle restriction may be modified for a period not to exceed twenty-four (24) hours to permit an orderly shutdown by utilizing the main condenser as a heat sink and operating in an open-cycle mode.

(3) During the period October 15 through May 15 open-cycle operation is allowed provided that:

(i) The temperature at Monitor 3 during open-cycle operation shall not exceed 65°F. However, when the temperature reaches 60°F the permittee shall notify the Secretary within 24 hours of each occurrence.

(ii) The rate of change of temperature at Monitor 3 shall not exceed 5°F per hour.

(iii) The increase in temperature above ambient at Monitor 3 shall not exceed 13.4°F.

(iv) For purposes of this sub-paragraph "rate of change of temperature" shall mean the difference between consecutive hourly average temperatures and "increase in temperature above ambient" shall mean plant induced temperature increase as shown by equation 1.1 (defined at Page 1-8 of Vermont Yankee's 316 Demonstration: Engineering, Hydrological & Biological Information and Environmental Impact Assessment (March 1978).

(v) Notwithstanding the above, the Secretary may with respect to the period October 15 thru May 15 impose more stringent effluent limitations for control of the thermal component of Vermont Yankee's discharge, including a requirement of closed cycle operation, if he determines that open cycle operation is having an adverse effect on resident or anadromous fish species in the river. Vermont Yankee will be given notice and opportunity for hearing prior to the imposition of such more stringent effluent limitations, unless the nature of the adverse effect will not allow sufficient time to give such notice and opportunity for hearing, in which event the Secretary shall hold a hearing within 10 days of his action if requested by the permittee. Nothing in this sub-paragraph shall be construed to limit the power of the Secretary to modify this permit as provided in Part II B 4 c hereof.

c. A mixing zone for open/hybrid cycle operation may be designated if appropriate after completion of the permittee's further hydro-thermal and biological studies.

d. A mixing zone is designated for cooling tower blowdown under closed-cycle operation. The blowdown mixing zone shall not exceed an area of three (3) acres contiguous to the discharge outfall.

e. Any heated water discharged in the Vernon Pool under the terms of this permit shall be aerated or otherwise treated to provide a content of dissolved oxygen substantially at the level of saturation.

2. Racks and screens preventing fish and other wildlife from entering the condenser water intake must be operated and maintained in a manner as previously approved by the Vermont Water Resources Board. Solids collected on the traveling screens shall not be reintroduced into the Connecticut River.

3. All radioactive liquid wastes collected in the plant will be processed through a treatment system, including filtering and/or demineralization, to concentrate the radioactive material. Radioactive material removed from the liquid will be processed and disposed of in accordance with Nuclear Regulatory Commission regulations. Low level radioactive wastes may be released to the Connecticut River after treatment pursuant to procedures contained in the Summary Report on Liquid Radwaste System, Vermont Yankee Nuclear Power Corporation, submitted to the Vermont Water Resources Board on December 11, 1968, and subsequent submissions dated March 26, 1970, November 20, 1970, and November 6, 1971, subject to the following restrictions:

a. The average annual concentration of radionuclides, except tritium, in liquid effluents released to the unrestricted environment shall not exceed one one-hundreth (1/100) of the limits specified in Table II, Appendix B, 10 CFR 20.

b. The maximum instantaneous concentration of radionuclides, except tritium, in liquid effluents released to the unrestricted environment shall not exceed one-tenth (1/10) of the limits specified in Table II, Appendix V, 10 CFR 20.

c. The maximum annual quantity of radionuclides, except tritium, in liquid effluents released to the unrestricted environment shall not exceed five (5.0) curies.

d. The estimated annual average concentration of tritium in liquid effluents released to the unrestricted environment shall not exceed 0.005 microcuries per liter.

e. The permittee shall report to the Agency of Environmental Conservation any abnormal releases of radioactivity, in liquid effluents, which are required to be reported to the Nuclear Regulatory Commission.

f. The permittee shall monitor the concentrations of radionuclides in liquid effluents released to the Connecticut River and report such data annually to the Agency of Environmental Conservation.

4. The permittee shall conduct an environmental monitoring program to measure and record physical, chemical, and biological data to assure compliance with the requirements of this permit in accord with Environmental Monitoring Studies, Connecticut River near Vernon, Vermont, NPDES No. VT0000264 (Attachment A to this permit). The permittee shall submit an annual report of such monitoring to the Agency of Environmental Conservation.

5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the date of signing and lasting through June 30, 1980 the permittee is authorized to discharge from outfall(s), serial number(s) 001 (Circulating Water Discharge)

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Daily Avg	Discharge Limitations kg/day (lbs/day) Daily Max	Discharge Limitations Other Units (Specify) Daily Avg	Discharge Limitations Other Units (Specify) Daily Max	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow-m^3/Day (MGD)	-	-	-	-		
(1) Closed Cycle		36,700 (9.7)		73,400 (19.4)	Daily	Weekly Avg.
(2) Open Cycle		2,000,000 (543)			Daily	Weekly Avg.
Temperature, Closed Cycle		27°C (81°F)		34°C (93°F)	(a) Continuous	Daily Avg.
Chlorine Free Residual				0.2 mg/1	(b) (c)	Grab
Chlorine Total Residual				0.5 mg/1	(b) (c)	Grab
Sodium					Weekly	Grab
Sulfate					Weekly	Grab

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units and shall be monitored. Not Applicable

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Samples shall be taken at locations which are representative of the effluents discharged.

(a) If, under normal operating conditions, the supplementary blowdown spray pond becomes inoperable, daily instantaneous maximum temperatures of 110°F are permitted, provided that the maximum time above 93°F does not exceed 7 days during any one month.
(b) Not to exceed two hours per day.
(c) Monitoring only during chlorination.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the date of signing and lasting through June 30, 1980
the permittee is authorized to discharge from outfall(s), serial number(s)
001A (Plant Heating Blowdown)
Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/d		Other Units (Specify)		Monitoring Requirements	
	Daily Avg	Daily Max	Daily Avg	Daily Max	Measurement Frequency	Sample Type
Flow-m^3/Day (MGD)	-	-	1.1 -(0.0003)	1.9- (0.0005)	*	Estimate
Phosphorus						Grab

*Shall be monitored when discharged.

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units and shall be monitored.

Not Applicable

Not
pplicable There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Before combining with cooling water.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the date of signing and lasting through June 30, 1980
the permittee is authorized to discharge from outfall(s), serial number(s)
001B (Make-up demineralizer regenerate waste)
Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Daily Avg		Discharge Limitations kg/day (lbs/day) Daily Max		Discharge Limitations Other Units (Specify) Daily Avg	Discharge Limitations Other Units (Specify) Daily Max	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow-m^3/Day (MGD)	-		-		38 -(0.010)	91 - (0.024)	*	Estimate
Total Suspended Solids	2.724	(6)	9.08	(20)			*	Grab

* Shall be monitored when discharged (approximately once every two weeks)

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units and shall be monitored.
Not Applicable

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
point of discharge

8. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the date of signing and lasting through June 30, 1980 the permittee is authorized to discharge from outfall(s), serial number(s) 001C (Water treatment sand filter backwash)

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Daily Avg	Daily Max	Other Units (Specify) Daily Avg	Daily Max	Monitoring Requirements Measurement Frequency	Sample Type
Flow-m^3/Day (MGD)	-	-	3.8 -(0.001)	182-(0.048)	*	Estimate
Total Suspended Solids	5.448 (12)	18.16 (40)			*	Grab

* Shall be monitored when discharged (approximately twice per week)

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units and shall be monitored.
Not Applicable

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

point of discharge.

9. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the date of signing and lasting through June 30, 1980 the permittee is authorized to discharge from outfall(s), serial number(s) 002 (Radioactive Liquid Discharge)
Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Daily Avg	Daily Max	Other Units (Specify) Daily Avg	Daily Max	Monitoring Requirements Measurement Frequency	Sample Type
Flow-m^3/Day (MGD)	36,336 - (9.6)	109,008 (28.8)	-	-	*	*
Radioactivity	*	*	*	*	*	*

* See Special Condition 3 (f) for monitoring.

Not Applicable

The pH shall not be less than standard units nor greater than standard units and shall be monitored.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Samples shall be taken at locations which are representative of the radioactive effluents discharges.

10. In addition to the discharges specified in paragraphs 5-9 above the permittee is authorized to discharge from the following storm drains:

006 North Storm System Discharge Point
007 East Storm System Discharge Point
008 South Storm System Discharge Point

Effluent limits and monitoring reports will not be required for these discharges, however, future storm drain and manhole construction shall conform to Agency policy for storm water treatment.

11. The permittee granted permission to conduct a test program for Calgon corrosion inhibitors as described in Appendix C of the October 28, 1976 submission by Howard S. Lewis. However, the continued use of a corrosion inhibitor shall only be approved by an amendment to this permit.

12. The permittee is authorized to use Drewsperse 738, a proprietary condenser cleaning compound, as needed, during periods of high river water turbidity, to maintain condenser cleanliness. The amount of Drewsperse 738 to be used shall not exceed 72 gallons (600 lbs.) at maximum flow and shall be reduced in proportion to flow reduction to maintain a concentration not in excess of 10 ppm.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

NONE

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

NONE

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

Monitoring results except radionuclides data shall be reported as specified on an approved Discharge Monitoring Report Form, postmarked no later than the 25th day of the month following the completed reporting period. The first report is due on September 25, 1978. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Secretary and the Regional Administrator at the following addresses:

Agency of Environmental Conservation
Montpelier, Vermont 05602

NPDES Permit Section

Environmental Protection Agency
Region I
John F. Kennedy Federal Building
Boston, Massachusetts 02203
Attention: Permits Branch

3. Definitions

For purposes of this permit, the following definitions shall apply.

Average - The arithmetic mean of values of analyses from samples taken at the frequency required for such parameter over a specific operating period.

Composite sample - A sample consisting of a minimum of eight grab samples collected at regular intervals over a normal operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a normal operating day.

Daily Average - The mean value of the analyses of at least eight grab samples collected at regular intervals over a normal operating day.

Grab Sample - An individual sample collected in a period of less than 15 minutes.

Daily Average Discharge - the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily

sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

Daily Maximum Discharge - The maximum permissable total discharge during any calendar day.

Closed Cycle Operation and Blowdown - The circulating water system mode in which water is circulated through the cooling towers to dissipate condenser heat. The only water discharged to the river during closed-cycle operation is the blowdown from the cooling towers. Blowdown refers to the water continuously removed from the cool side of the cooling tower collection basins to rid the cooling towers of dissolved solids.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304 (g) of the Federal Water Pollution Control Act, under which such procedures may be required. Guidelines establishing these test procedures have been published in the Federal Register as Vol. 38, No. 199, Part II, dated October 16, 1973.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person(s) who performed the analyses;

d. The analytical techniques or methods used;

e. The results of all required analyses and,

f. Weather conditions, plant operating condition, and any unusual or abnormal condition shall also be noted.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Secretary or the Regional Administrator.

PART II

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submissions of a new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Secretary and the Regional Administrator with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and
b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
c. Persons holding Discharge Permits shall comply with a and b above by submitting the required information with an application for an Emergency Pollution Permit.

3. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypassing

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Secretary and the Regional Administrator in writing of each such diversion or bypass.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

7. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

a. In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such alternative power source is not in existence, and no date for its implementation appears in Part 1,

b. Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the head of the State water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Secretary and to the Agency of Environmental Conservation.

3. Availability of Reports

Except for data determined to be confidential under Section 1259 (c) of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution

control agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 1275 (b) of the Act.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

5. Toxic Pollutants

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307 (a) of the Federal Water Pollution Control Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" (Part II, A-5) and "Power Failures" (Part II, A-7), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 1281 of the Act.

8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Federal Water Pollution Control Act.

9. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART III

OTHER REQUIREMENTS

"Any action on the part of the Agency of Environmental Conservation in reviewing, commenting upon or approving plans and specifications for the construction of wastewater treatment facilities shall not relieve the permittee from its responsibility to achieve effluent limitations set forth in this permit and shall not constitute a waiver of, or act of estoppel against any remedy available to the Agency, the State of Vermont or the federal government for failure to meet any requirement set forth in this permit or imposed by state or federal law."

ENVIRONMENTAL MONITORING STUDIES
CONNECTICUT RIVER NEAR VERNON, VERMONT
NPDES NO. VT0000264

PARAMETER	MONITORING FREQUENCY AND/OR DATES	MONITORING LOCATIONS	COMMENTS
River Flow Rate	Hourly	Vernon Dam	River flow data will be tabulated from the records of the Vernon Hydroelectric Generating Station.
Temperature	Continuous	Vermont Yankee Monitor Stations 3 and 7	Water temperature data will be monitored with in situ probes in the river and with tank sensor of the Honeywell W-20 Water Quality Monitors. Data will be telemetered to the Vermont Yankee control room for use in plant operation and will be tabulated in the annual report as hourly, daily, and monthly means.
	See Comments	Vernon Pool and/or Connecticut River downstream of Vernon Dam	One survey to characterize Vermont Yankee's discharge thermal plume will be conducted during each spring and fall period of special studies to assess Vermont Yankee's open cycle operation on anadromous fish.
pH	Continuous	Vermont Yankee Monitor Stations 3 and 7	Analog record of pH collected by Honeywell W-20 monitors will be reduced to daily pH maxima and minima.
Dissolved Oxygen	Continuous	Vermont Yankee Monitor Stations 3 and 7	Analog record of DO collected by Honeywell W-20 monitors will be reduced to daily means and daily maxima and minima with their times of occurrence.
16 Water Quality Parameters	Quarterly	Vermont Yankee Monitor Stations 3 and 7 and Vermont Yankee cooling water discharge	Grab samples will be analyzed for the following parameters: Dissolved oxygen, turbidity, pH, alkalinity, total and calcium hardness, chloride, sulfate, total phosphorus, total and suspended solids, chromium, copper, iron, sodium and zinc

ENVIRONMENTAL MONITORING STUDIES
CONNECTICUT RIVER NEAR VERNON, VERMONT
NPDES NO. VT0000264

PARAMETERS	MONITORING FREQUENCY AND/OR DATES	MONITORING LOCATIONS	COMMENTS
Phytoplankton Zooplankton	Monthly	Vermont Yankee Monitor Stations 3 and 7	Organisms will be identified to lowest feasible taxonomic level and enumerated as their normally occurring unit.
Entrainment			
a) Phytoplankton Zooplankton	Monthly when Vermont Yankee is operating in hybrid or open cycle cooling modes	Connecticut River at Vermont Yankee intake structure and cooling water discharge to the river	Duplicate samples will be collected and analyzed to determine the identity of organisms present and the ratio of living to dead organisms in the samples.
b) Ichthyoplankton	Daily in April, May and June until spring spawning habits of resident finfish are documented	Vermont Yankee intake bay during open cycle operation; in river near intake structure during closed cycle operation	Ichthyoplankters will be counted and will be identified when feasible.
Benthic Fauna	Monthly, May through November	Vermont Yankee Stations 2, 3, 4, and 5	Monthly samples will be collected by Ekman dredge at river quarter points. These dredge samples will be supplemented at each station by three collections utilizing cage samplers retrieved after 30 to 60 days in the river. Organisms will be counted and identified to lowest practicable taxonomic level.

ENVIRONMENTAL MONITORING STUDIES
CONNECTICUT RIVER NEAR VERNON, VERMONT
NPDES NO. VT0000264

PARAMETER	MONITORING FREQUENCY AND/OR DATES	MONITORING LOCATIONS	COMMENTS
Fish Impingement	During hybrid or open cycle operation, one 24 hour sample in accord with the following schedule: Period — Frequency Oct 15 -Oct 31 — 3/Week November — 1/Week Dec - Feb — 1/month Mar 1 - Apr 15 — 1/Week Apr 16 -May 15 — 3/Week	Vermont Yankee circulating water traveling screens	All fish impinged will be identified, weighed, and measured. Immediate notification of the impingement of any American shad or Atlantic salmon will be made to the Secretary, and frequency of sampling will be increased to a daily basis until seven (7) consecutive days have passed with no further impingement of either of these two species. All impinged specimens of American shad and Atlantic salmon shall be preserved. During the periods April 16 through May 15 and October 15 through October 31, if the number of Atlantic salmon smolt or American shad impinged reaches one-tenth of one percent of the maximum numbers of these fish anticipated to be passing the Vernon area each year, Vermont Yankee will revert to closed cycle operation for the remainder of the period. The maximum number of Atlantic salmon smolt anticipated to be passing the Vernon area each year will be determined as the total number of salmon stocked upstream of the Vernon Dam that will be two years old that calendar year. The maximum number of American shad anticipated to be passing the Vernon area each year is the number of shad eggs and/or the number of eggs estimated to be released by gravid females stocked upstream of Vernon Dam that calendar year.

ENVIRONMENTAL MONITORING STUDIES
CONNECTICUT RIVER NEAR VERNON, VERMONT
NPDES NO. VT0000264

PARAMETERS	MONITORING FREQUENCY AND/OR DATES	MONITORING LOCATIONS	COMMENTS
Finfish	Annually	Vermont Yankee Stations 2 to 8	A representative sample consisting of at least 500 fish north of Vernon Dam and 500 fish south of Vernon Dam will be collected each year. All fish collected will be identified and weight and total length will be measured. Scales for age-growth determinations will be collected from the following species: All salmonids, American shad, walleye, smallmouth bass, largemouth bass, yellow perch, and white perch. Vermont Yankee will explore special studies to assess the impact of Vermont Yankee's open cycle operation on the movement of anadromous fish in the vicinity of the plant.