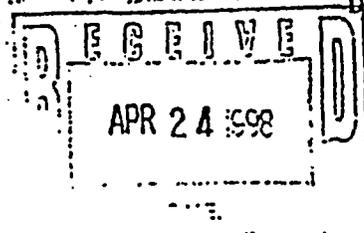




State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD



AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Wastewater Management Division
103 South Main St. - Sewing Bldg
Waterbury VT 05671-0405
Telephone: (802) 241-3822
FAX: (802) 241-2596
April 22, 1998

Mr. Edward E. Matson
Employee Services and Facilities Supervisor
Vermont Yankee Nuclear Power Corporation
PO Box 157 Governor Hunt Road
Vernon VT 05354-0157

Re: FINAL ID-9-0036-2
PIN# NS95-0006.05
Vermont Yankee Nuclear Power Corporation
Vernon, Vermont

= revised from 6/96 version

Dear Mr. Matson:

Enclosed is the final indirect discharge permit issued to the Vermont Yankee Nuclear Power Corporation which has been signed by the Director of the Wastewater Management Division for the Commissioner of the Department of Environmental Conservation.

A set of the approved engineering plans for the New Office Building is also enclosed. Please note that no changes may be made to the approved plans without prior approval from the Secretary.

During the comment period we received comments from Mr. Dean Weyman of Vermont Yankee Nuclear Power Corporation. In response to those comments, some changes were made to the final permit:

Permit Condition C(3) - Approved Plans for New Office Building 2,160 GPD Leachfield
In the last sentence, the word "with" was changed to "without."

Permit Condition D(1) - General Operating Requirements
The language in this permit condition has been modified as follows:

"The effluent disposal rate to sewage disposal system shall not exceed the values listed below in Condition B(2) except as may occur on an occasional basis during normal operation.:"

The table previously listed in Condition D(1) has been deleted.

Permit Condition D(3) - Operation During Plant Outages
The following language has been added to this permit condition:

"The permittee shall verify that the New Warehouse system pump station is properly alternating between both fields during plant outages. At least every two weeks during outages, the permittee shall measure the depth of ponding in the observation wells in the New Warehouse system."

Mr. Edward Matson
Final ID-9-0036-2
Vermont Yankee Nuclear Power Corporation
April 22, 1998
Page 2

Please read the entire permit carefully and become familiar with all of its terms and conditions, especially those which require actions by certain dates. Enclosed please also find a DEC Permit Customer Survey. Please fill out this survey and return it to the address indicated on the back side of the form. Thank you.

Please feel free to call me at 802-241-3824 if you have any questions.

Sincerely,



John J. Akielaszek
Indirect Section Chief

Enclosures: Final ID-9-0036, Approved Plans, DEC Customer Survey
cc w/permit only: Michael Foster, SVE Associates
Dan Wilcox, Regional Engineer
Permit File

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05676

INDIRECT
DISCHARGE PERMIT
AMENDMENT

File Code: LCT-9-0036

Permit No.: ID-9-0036-2
PIN : NS95-0006.05

SECTION A - "ADMINISTRATION"

In compliance with provisions of 10 V.S.A. §1263, and in accordance with the following conditions, the permittee:

Vermont Yankee Nuclear Power Corporation
RD #5 Box 169
Ferry Road
Brattleboro, Vermont 05301

is authorized to indirectly discharge treated domestic sewage and other laboratory wastes defined herein from subsurface and mound disposal systems serving the Vermont Yankee Nuclear Power Plant to the ground water and indirectly into the Connecticut River in the Town of Vernon, Vermont. This permit amendment authorizes the construction and operation of a sewage treatment and subsurface disposal system to serve a new office building. The design capacity of the new office treatment and disposal system is 2,160 gallons per day (gpd). The total disposal capacity at Vermont Yankee including this proposed discharge would be 14,347 gpd during normal operation and 26,297 gpd during plant outages. These flows also include the use of both alternating leachfields serving the New Warehouse during plant "outages" which was previously approved in October, 1997.

A1. Permit Summary:

Expiration Date	September 30, 2000
Type of Waste	Domestic Sewage/Laboratory Waste
Treatment System	Septic Tanks
Disposal System	Leachfields/Mounds
Town	Vernon
Drainage Basin	Lower Connecticut River
Receiving Stream	Connecticut River
Drainage Area	6266 mi ²
Stream Flow:	
Low Median Monthly (LMM)	1,971,129,600 gpd (est)
7Q10	984,918,500 gpd (est)

A1. Permit Summary (continued):

Total Disposal Capacity	14,347 gpd (normal operation) 26,297 gpd (during plant outages)
Dilution Ratio (stream flow : effluent)	137,390:1 at LMM (normal operation) 68,650:1 at 7Q10 (normal operation) 74,956:1 at LMM (during plant outages) 37,454:1 at 7Q10 (during plant outages)

A2. Compliance Schedule:

The following schedule summarizes the actions and requirements necessary for compliance with the conditions of this permit. The permittee shall complete the requirements in accordance with the dates indicated. See the designated section for specific details.

<u>Condition # and Description</u>	<u>Schedule Date</u>
A3. Apply for renewal of Indirect Discharge Permit	By March 31, 2000
C3. Submit a copy of a contract with a Vermont Registered Professional Engineer to provide inspection of construction	Prior to the start of any construction on the New Office Building system
C3. Submit inspecting Engineer's Certification of Construction	Following construction completion but before system is put into operation
C3. Submit As-Built Plans for New Office Building System	Within 60 days of completion of construction
C4. Install observation and groundwater monitoring wells	By October 1, 1998
D2. Have a Vermont Registered Professional engineer complete an inspection of all sewage collection, treatment and disposal systems.	Annually in April
D2. Submit Annual Inspection Report	Annually prior to June 1st

A2. Compliance Schedule (continued):

<u>Condition # and Description</u>	<u>Schedule Date</u>
D2. Submit schedule for implementing engineer's recommendations	Annually by July 15th
D3. Submit tabulation of ponding levels	As specified
D4. Notify Secretary of pumping of tanks	Every three years, minimum
E1. Submit amendment to QA/QC Plan for groundwater monitoring well locations	By July 1, 1998
E2(A) Collect and analyze effluent samples	As Specified
E2(C) Record water meter readings	As Specified
E3(A) Collect and analyze groundwater monitor samples	As Specified
E3(B) Measure and record the depths to groundwater in the monitor wells	As Specified
E4(A) Collect and analyze receiving stream samples	As Specified
E2(A), E2(C), E3(A), E3(B), E4(A) Submit results of monitoring	By the 15th of the second month following the date of sampling
E5. Submit evaluation by a water quality specialist of all required effluent, ground, and surface water quality data and biological monitoring data.	January 1, 2000

A3. Expiration Date:

This permit, unless revoked or amended, shall be valid until September 30, 2000 despite any intervening change in Water Quality Standards or the classification of receiving waters. Renewal of this Indirect Discharge permit will be subject to all rules applicable at the time of application for renewal, including biological standards to determine significant alteration of aquatic biota.

The permittee shall apply for an Indirect Discharge Permit renewal by March 31, 2000.

A4. Effective Date:

This permit becomes effective on the date of signing.

A5. Revocation:

The Secretary may revoke this permit in accordance with 10 V.S.A. §1267.

A6. Transfer of Permit:

This permit is not transferable without prior written approval of the Secretary. The permittee shall notify the Secretary immediately, in writing, before any sale, lease or other transfer of ownership of the property from which the permitted discharge originates. The proposed transferee shall make application for a permit to be reissued in their name. Failure to apply shall be considered a violation of this permit. Responsibility for compliance with the conditions of this permit shall be the burden of the permittee until such time as transfer of the permit to the transferee is complete. This permit shall be transferred only upon showing by the permittee or proposed transferee of compliance with the following conditions:

- a. The transferee shall be a legal entity, financially and technically competent to operate, inspect, maintain and replace the system;
- b. If the transferee is a corporation or other legal entity, it shall be demonstrated that such legal entity has legal authority to raise revenues for the proper operation, inspection, and maintenance of the system; and
- c. The transferee shall provide a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee(s) to the Secretary.

A7. Minor Modifications of Permits:

The Secretary may modify this permit without requiring a permit application, a public notice, or a public hearing to correct typographical errors, or to increase the monitoring frequency in accordance with Condition E(8) of this permit.

A8. Indirect Discharge Rules:

This indirect discharge was reviewed and qualified for an Indirect Discharge Permit in accordance with Section 14-B-201 (F), In Situ, In-Ground Effluent Testing, of the Indirect Discharge Rules.

The New Warehouse sewage treatment and disposal system was approved under Water Supply and Wastewater Disposal Permit WW-2-0339. This indirect discharge permit incorporates by reference all of the terms and conditions of that permit with the exception of Condition #6 of WW-2-0339 which has been superseded by Condition D3 of this permit.

A9. Right of Department To Inspect:

In accordance with the Vermont Yankee Nuclear Power Corporation's security requirements and standard protocol for site inspections, the permittee shall permit the Secretary or the Secretary's authorized representative upon the presentation of their credentials:

- a. To enter upon permittee's premises in which any effluent source treatment or disposal system is located or in which any records are required to be kept under the conditions of the permit;
- b. To have access to and copy any records required to be kept under conditions of this permit;
- c. To inspect any monitoring equipment or method required in this permit;
- d. To sample any discharge of waste, or groundwater or surface water; and
- e. To inspect at reasonable times, any collection, treatment, pollution management and disposal facilities required by this permit.

A10. Permit Availability:

A copy of the approved plans and this permit shall remain at the office of the permittee and, upon request, shall be made available for inspection by authorized representatives of the Secretary.

A11. Minor Modifications To System:

Minor modifications of the engineering design which do not reduce the treatment effectiveness or increase the capacity of the system may be approved in writing by the Secretary without permit amendment.

Before making modifications to the treatment and/or disposal system the permittee shall submit plans to the Secretary for review and approval. These plans must be approved before any of the modifications or additions are made.

A12. Correction of Failed Systems:

The Secretary may, upon discretion, issue an Amendment to the Indirect Discharge Permit for the design and reconstruction of a failed wastewater disposal system where the replacement system design was not previously approved.

Before reconstruction of the failed system the permittee shall submit plans to the Secretary for review and approval. These plans must be approved before any reconstruction occurs. Due to the urgency of the need to correct failed disposal systems, the Secretary will process these Amendments as soon as possible.

SECTION B "INDIRECT DISCHARGE"

B1. Location of Indirect Discharge:

The indirect discharge is located on the Connecticut River in the Town of Vernon in Windham County, Vermont with a drainage area of 6,266 square miles at the point of compliance. The indirect discharge can be located on the USGS Brattleboro Vermont 15' quadrangle map at Latitude N 42^o 46' 54" and Longitude W 72^o 30' 49".

B2. Nature of Indirect Discharge:

The discharge consists primarily of treated domestic sewage and may also include small volumes of laboratory waste, primarily pH buffer solutions, acetic acid (5% solution) and potassium iodide (0.3% solution).

B2. Nature of Indirect Discharge (continued):

The wastewater is discharged from subsurface and mound wastewater disposal systems with the following approved capacities:

Disposal System	Normal Operation Design Capacity (gpd)	"Plant Outage" Design Capacity (gpd)
Main (North) System ⁽¹⁾	4,950	14,900
C.O.B. (South) System	4,607	4,607
New Office Building System	2,160	2,160
New Warehouse System ⁽²⁾	2,000	4,000
Governor Hunt House System	540	540
Gatehouse #1 System	90	90
TOTALS	14,347	26,297
⁽¹⁾ During plant outages, the Main (North) system may be loaded to a maximum of 14,900 gallons per day by loading both existing leachfields (combined 9,900 gpd) and the new 5,000 gpd leachfield. The outage lasts approximately one month and occurs every 18 months. During these outages Vermont Yankee Nuclear Power Corporation adds temporary workers to perform maintenance on the plant		
⁽²⁾ During plant outages, the New Warehouse System may be loaded to a maximum of 4,000 gallons per day by loading both existing leachfields.		

The low median monthly flow (LMMF) of the Connecticut River is approximately 1,971,129,600 gpd and the 7Q10 flow is approximately 984,918,500 gpd. During normal operation, the stream flow/effluent dilution ratio is 137,390:1 at LMMF and 68,650:1 at 7Q10. During plant outages the stream flow/effluent dilution ratio is 74,956:1 at LMMF and 37,454:1 at 7Q10.

B2. Nature of Indirect Discharge (continued):

The following data, based on self-monitoring of these systems by the permittee, was used in determining that the sewage disposal systems meet the Aquatic Permitting Criteria of the Indirect Discharge Rules during plant outages (the period of highest disposal rate):

Parameter	Discharge Flow (gpd)	Mean Discharge Concentration (mg/l)	Mean Upstream Concentration (mg/l)	Calculated Downstream Concentration (mg/l)	IDR Limit Concentration (mg/l)
TDP	26,297	0.023	0.010	0.010	0.011
NO _x	26,297	4.18	0.308	0.308	2.0
TKN	26,297	2.56	0.468	0.468	3.0
NO ₃	26,297	0.027	0.005	0.005	0.02
NH ₃	26,297	1.56	0.045	0.045	0.85
BOD ₅	26,297	1.42	1.32	1.32	2.0

Discharge concentration data based on downgradient monitoring well data; n > 38 (n = number of samples analyzed) including wells 1301, 1302, 3301, 3302, 3401 (these are downgradient of the Main (North) System, C.O.B. (South) System and New Warehouse System).
 Upstream concentration data based on minimum n = 14
 Connecticut River - Low Median Monthly Flow = 1,971,129,600 gpd (est)
 and 7Q10 Flow = 984,918,500 gpd (est)

SECTION C "SYSTEM CONSTRUCTION"

C1. Approved Plans - Existing Systems:

The sewage collection, treatment, and disposal systems are depicted on the following plans and specifications for Vermont Yankee prepared by Southern Vermont Engineering (except VY-D-20 plan series) and stamped by Peter Boemig, P.E., and which have been stamped "APPROVED" by the Department of Environmental Conservation. No changes shall be made to the sewage collection, treatment, and disposal systems as shown on these plans without prior written approval from the Secretary.

C1. Approved Plans - Existing Systems (continued):

SHEET #	TITLE	DATE PREPARED	LAST REVISION DATE
1888-01	Vermont Yankee Overall Site Plan	10-26-88	6-4-90
1888-02	Site Plan for South Sewage Disposal System "AS BUILT"	10-26-88	6-11-90
1888-03	System Profiles "AS BUILT"	10-26-88	6-11-90
1888-04	Pipe Details and Specifications "AS BUILT"	10-26-88	2-13-89
1888-05	Trench Details "AS BUILT"	10-26-88	2-13-89
1888-06	Seal Details "AS BUILT"	10-26-88	2-13-89
1888-07	Manhole Details "AS BUILT"	10-26-88	2-13-89
1888-08	Pump Station Details and Septic System Notes "AS BUILT"	10-26-88	3-7-89
1888-09	South Sewage Disposal System Replacement Mound and Governor Hunt House Secondary Replacement Area	12-15-88	6-11-90
1888-10	Site Plan - Layout of Force Main From South Sewage Disposal System Pump Station to Replacement Mound	12-15-88	3-7-98
1888-11	Profile, Cross Section, and Notes For South Sewage Disposal System Replacement Mound "AS BUILT"	12-15-88	3-7-98
1888-12	Site Plan - Governor Hunt House and Gatehouse #1 Primary and Replacement Sewage Disposal Systems	12-15-88	2-25-90
1888-13	Governor Hunt House and Gatehouse #1 Notes and Details	12-15-88	2-25-90
1888-14	Test Pit, Well, and Monitor Locations "AS BUILT"	12-15-88	6-11-90
1888-15	South Sewage Disposal System Storm Sewer Relocation	1-30-89	6-11-90
1888-16	Site Plan for Warehouse Sewage Disposal System	6-17-90	7-24-90
1888-17	Sewer Profile and Details for Warehouse Sewage Disposal System	6-17-90	7-24-90

C1. Approved Plans - Existing Systems (continued):

SHEET #	TITLE	DATE PREPARED	LAST REVISION DATE
1888-18	Water and Sewer Connections For Medical and Fitness For Duty Trailers	7-24-90	8-10-90
VY-D-20-010	Sewage System - Sanitary System Site Plan	9-13-76	9-23-83
VY-D-20-011	Sewage System - System Plan & Existing Septic Tank Modifications	8-13-76	7-25-77
VY-D-20-012	Sewage System - Lift Station Details	7-26-76	7-25-77
VY-D-20-013	Sewage System - System Profile	9-13-76	7-25-77

C2. New 5,000 GPD Leachfield (Main Sewage Disposal System) Record Drawings:

The modifications and expansion of the Main (North) sewage treatment and disposal system were completed in accordance with the following plans and specifications stamped and signed by Peter R. Boemig, P.E. of Southern Vermont Engineering:

Sheet 1 of 4 entitled "Site Plan, North Sewage Disposal System Expansion," dated April 2, 1996 last revised, 7/9/96.

Sheet 2 of 4 entitled "System Profiles, North Sewage Disposal System Expansion," dated April 2, 1996, last revised 7/9/96.

Sheet 3 of 4 entitled "Septic Tank and Pump Station Details, North Sewage Disposal System Expansion," dated April 2, 1996, last revised 5/14/96.

Sheet 4 of 4 entitled "Leachfield Details and Notes, North Sewage Disposal System Expansion," dated April 2, 1996, last revised 7/9/96.

C3. Approved Plans for New Office Building 2,160 GPD Leachfield:

The construction of the new sewage treatment and disposal system for the New Office Building shall be completed in accordance with the following plans and specifications stamped and signed by Mike Foster, P.E., of SVE Associates:

Sheet SD5 of 11 entitled "Proposed Support Building - Sewage Disposal System Site Plan", dated 1/22/98, last revised 3/10/98;

C3. Approved Plans for New Office Building 2,160 GPD Leachfield (continued):

Sheet SD6 of 11 entitled "Proposed Support Building - Sewage Disposal System Site Plan", dated 3/10/98;

Sheet SD7 of 11 entitled "Proposed Support Building - Sewage Disposal System Details", dated 1/22/98, last revised 3/10/98;

Sheet SD8 of 11 entitled "Proposed Support Building - Sewage Disposal System Details", dated 1/22/98, last revised 3/10/98;

Sheet SD9 of 11 entitled "Proposed Support Building - Sewage Disposal System Details", dated 1/22/98, last revised 3/10/98; and

Sheet SD10 of 11 entitled "Proposed Support Building - Sewage Disposal System Notes", dated 1/22/98, last revised 3/10/98;

and which have been stamped "APPROVED" by the Department of Environmental Conservation. No changes shall be made to the plans without prior approval from the Secretary.

C4. Construction Inspection and Certification:

The construction of the sewage treatment and disposal system to serve the New Office Building shall be completed in accordance with the approved plans and under the inspection of a Vermont Registered Professional Engineer. Within 10 days of the completion of construction the inspecting engineer shall make written certification to the Department of Environmental Conservation that the work was completed in accordance with the approved plans and specifications and under his inspection.

The numerical results of the leakage tests on all tankage shall be submitted as part of the inspecting engineer's Certification of Construction. The engineer's Certification of Construction shall be subject to the review and acceptance of the Department of Environmental Conservation.

Before the start of any construction on the sewage treatment and disposal system, the permittee shall submit a copy of a signed contract with a Vermont Registered Professional engineer to provide inspection of the approved construction to the Department of Environmental Conservation.

The contract, at a minimum, shall contain the following:

- a. The names and qualifications of personnel providing inspection;
- b. The location of the new septic tank, pumping station, sewer force mains and the disposal fields shall be staked out by a Vermont Registered Surveyor or Professional engineer in accordance with the approved plans;

C4. Construction Inspection and Certification (continued):

- c. The engineer or designated representative shall be present for the installation of all major system components;
- d. The engineer or designated representative shall be present for the leakage testing of all tankage, gravity sewer pipe testing and pressure testing of the sewer force main;
- e. The engineer shall, prior to backfilling the distribution piping in each disposal field, supervise the testing of each distribution network with clean water to assure that there is complete and even distribution. The difference in discharge rate between any two laterals in the disposal field, as determined on a gallons/square foot basis, shall not exceed 15%. Variations greater than 15% will require corrective action;
- f. The engineer or designated representative shall provide general inspection of the work at reasonable intervals to assure that construction is in accordance with the contract documents;
- g. The engineer or designated representative shall maintain written reports of all inspections performed including dates, items inspected and comments. Copies of all inspection reports shall be submitted to the Department of Environmental Conservation a minimum of once every two weeks;
- h. When the system construction is completed and before the inspecting engineer has issued their certification, the permittee shall arrange an inspection of the system with the engineer and the Department of Environmental Conservation personnel; and
- i. Following completion of construction and before the system is placed into operation, the inspecting professional engineer shall certify in writing to the Department of Environmental Conservation that the construction is complete and in accordance with approved plans and specifications. The engineer shall submit as-built plans for the system within 60 days of completion of construction.

C5. Installation of Leachfield Observation Wells and Groundwater Monitoring Wells:

By October 1, 1998, a total of three leachfield observation wells shall be installed in each disposal field serving the New Office Building. The wells shall be located so that at least one well is installed in the trench with the lowest elevation in each field.

By October 1, 1998, a total of three groundwater monitoring wells (one upgradient, two downgradient) shall be installed around the disposal fields serving the New Office Building in accordance with the approved QA/QC Plan [See Condition E(1)].

SECTION D "SYSTEM OPERATION"

D1. General Operating Requirements:

The wastewater disposal system shall be operated at all times in a manner that will (1) not permit the discharge of sewage onto the surface of the ground; (2) not result in the surfacing of sewage; (3) not result in the direct discharge of sewage into the waters of the State; (4) not result in a violation of Water Quality Standards; and (5) not cause a significant alteration of the aquatic biota in the receiving waters.

The disposal fields for the Main, ^{Cob,} New Warehouse, and New Office Building sewage disposal systems shall be alternated on an annual basis. The effluent disposal rate to sewage disposal system shall not exceed the values listed in Condition B(2) except as may occur on an occasional basis during normal operation. X

D2. Annual Inspection:

Annually during the month of April, the permittee shall engage a professional engineer registered in the State of Vermont to make a thorough inspection, evaluation, and report of the complete sewage collection, treatment and disposal system. The engineer's inspection shall include, but not be limited to the following:

- a. verification of the use of alternate disposal fields (Main, New Warehouse and New Office disposal systems);
- b. verification of the proper operation of the lift station pumps and alarms;
- c. inspecting the entire collection system, removing manhole covers to observe the condition of the sewers and manholes, and noting any signs of inflow or excess infiltration;
- d. evaluating the accumulation of solids and scum in the septic tanks and verifying the date of pumping of the tanks;
- e. checking the proper distribution of flow and the levelness of all distribution boxes in the disposal fields;
- f. checking the depth of ponding in observation wells for those fields in use during the inspection;
- g. checking the calibration of the effluent flow meter (if applicable); and
- h. noting any necessary repairs, or maintenance that needs to be performed.

D2. Annual Inspection (continued):

Before June 1st each year the permittee shall have a professional engineer submit an annual report that includes the following items:

- a. a complete list of the items inspected and the results of the inspection;
- b. a discussion of the recommended repairs and maintenance required; and
- c. an evaluation of metered water use, depth of ponding and groundwater table levels in the vicinity of the disposal fields (if groundwater depth measurement is required).

Before July 15th each year the permittee shall notify the Secretary in writing stating how the engineer's recommendations are to be implemented and including a schedule for the required repairs and maintenance.

D3. Operation During Plant Outages:

The permittee shall verify that the Main (North) system pump station is properly alternating among all three fields during plant outages. At least every two weeks during outages, the permittee shall measure the depth of ponding in the observation wells in the Main (North) system. The permittee shall verify that the New Warehouse system pump station is properly alternating between both fields during plant outages. At least every two weeks during outages, the permittee shall measure the depth of ponding in the observation wells in the New Warehouse system. The permittee shall submit a tabulation of the recorded measurements at the end of each outage period, along with the required flow records.

D4. Septage Disposal:

At least once every three years all of the septic tanks in the system shall be pumped out. When it is determined by the inspecting engineer during the annual inspection that pumping is required, the septic tanks shall be pumped out by July 1 of the year of the inspection. Sampling of the septic tank effluent for radioactivity in accordance with the procedures listed in the approved Quality Assurance/Quality Control Plan must be done each time pumping occurs, prior to pumping the tanks.

Before pumping the septage for land application, the permittee shall notify the Secretary in writing, of the name and address of the pumper and verify that the sludge has been tested for radioactivity and will be disposed of in accordance with the Solid Waste Management Facility Certification.

D5. System Operation and Maintenance:

The sewage collection, treatment, and disposal system shall be operated and maintained at all times in a manner satisfactory to the Secretary and in a manner that will not pose a risk to the public health and safety, or cause contamination of drinking water supplies, groundwater and/or surface water.

D6. Reporting of Failures:

The permittee shall immediately report any failure of the wastewater collection, treatment, or disposal system to the Secretary, first by telephone on the first working day within 24 hours of the failure and then in writing within 5 business days of the failure. The written notice shall include a discussion of the actions taken or to be taken to correct the failure.

Notification shall be to the Indirect Discharge Permit Section of the Department of Environmental Conservation at (802) 241-3822.

D7. Discharge Restrictions:

The permittee shall not allow any person to discharge or cause to be discharged anything other than sanitary wastewater and the laboratory wastes authorized herein to this treatment and disposal facility.

SECTION E "MONITORING"

E1. Quality Assurance/Quality Control Plan:

By July 1, 1998 the permittee shall submit an amendment to the approved Quality Assurance/Quality Control Plan showing the location of the new observation wells and groundwater monitoring wells in and around the New Office Building disposal fields. A total of three monitoring wells shall be installed, one upgradient and two downgradient of the disposal fields. The location of the wells shall be subject to the review and approval of the Secretary.

The laboratory identified in the Quality Assurance/Quality Control Plan shall demonstrate successful performance for U.S. EPA check samples for all parameters and shall analyze any check samples provided by the Department. Failure to obtain an acceptable result for either the Department or EPA check samples may be a basis for requiring an alternate analytical laboratory.

E2. Effluent Monitoring:

A. Chemical

The effluent to the disposal fields for the Main, C.O.B., New Warehouse and New Office Building sewage disposal systems shall be sampled and analyzed as follows:

Parameter	Measurement Units	Sample Type	Sample Frequency
Flow ⁽¹⁾	gpd	Daily Total	Continuous
Biochemical Oxygen Demand (5-day)	mg/l	Grab	April and October
Total Suspended Solids	mg/l	Grab	April and October
pH	S.U.	Grab	April and October
Total Kjeldahl Nitrogen	mg/l	Grab	April and October
Ammonia (as N)	mg/l	Grab	April and October
Nitrate/Nitrite Nitrogen (NO ₃ / NO ₂ as N)	mg/l	Grab	April and October
Total Phosphorus	mg/l	Grab	April and October
Total Dissolved Phosphorus	mg/l	Grab	April and October
Chloride (Cl-)	mg/l	Grab	April and October
<p>⁽¹⁾ The permittee may record daily water use as an alternative to this monitoring requirement (See E(2)(B) below).</p> <p>The results of the effluent analysis shall be submitted to the Secretary prior to the 15th day of the second month following the date of sampling.</p>			

B. Sewage Volume:

The permittee shall install sewage flow meters on the Main Sewage Disposal system, the C.O.B. sewage disposal system, New Warehouse sewage disposal system and New Office Building system in order to monitor the daily sewage flow to each of these disposal fields. Alternatively, the permittee may record the daily water meter readings for all units connected to these sewage disposal systems, along with any bottled water utilized, to determine the total volume of water used each day. The volume of water used and individual meter readings shall be submitted to the Secretary by the 15th of the month following the recording period.

E3. Groundwater Monitoring:

A. Chemical and Bacteriological Monitoring:

The groundwater in the monitoring wells upgradient and downgradient of the Main, C.O.B., New Warehouse and New Office Building sewage disposal fields, both primary and alternate, as identified in the Quality Assurance/ Quality Control plan, shall be sampled and analyzed for the following parameters:

Parameter	Measurement Units	Sample Type	Sample Frequency
Biochemical Oxygen Demand (5-day)	mg/l	grab	April and October
Total Kjeldahl Nitrogen (as N)	mg/l	grab	April and October
Ammonia (as N)	mg/l	grab	April and October
Nitrite (as N)	mg/l	grab	April and October
Nitrate (as N)	mg/l	grab	April and October
Total Dissolved Phosphorus (as P)	mg/l	grab	April and October
Chloride (Cl-)	mg/l	grab	April and October
pH	S.U.	grab	April and October
Escherichia coli	Colonies/100 ml	grab	April and October
Depth to Groundwater (below ground surface)	inches	----	At time of sampling

Because of changing water table conditions, the samples from the groundwater monitors might not be collected on the same day or in the same week if water is not available. If a monitor has water at any time during the month then a sample is required to be collected and analyzed. For the purpose of this section, therefore, weekly groundwater measurements are required in April and October.

The results of these analyses shall be submitted to the Secretary prior to the 15th day of the second month following the date of sampling.

B. Groundwater Levels:

The Quality Control/Quality Assurance plan includes the location of a minimum of six groundwater monitors installed around the Main, C.O.B. and New Warehouse disposal systems each, three groundwater monitors installed around the New Office Building disposal fields, and two groundwater monitors installed around the Governor Hunt and Gatehouse #1 disposal systems each, to monitor the level of the ground water table. Upon request by the Secretary, the depth to groundwater (below ground surface) shall be measured and recorded at a frequency determined by the Secretary above that required in E3(A) above. Any such request would be in the form of a letter to the permittee.

E4. Receiving Stream Monitoring:

Indirect Discharge Permits normally require regular chemical and biological monitoring of the receiving waters. Due to the extremely large stream flow to effluent flow ratio at low median monthly flow (approx. ^{137,219}161,748:1), and the size of the Connecticut River at the point of compliance, stream water quality monitoring is not required for this system. However, if the Secretary determines stream monitoring to be necessary, the permittee shall submit, upon written notice from the Secretary, sampling procedures for chemical and biological sampling of the receiving waters within 90 days of receiving such notice. The requirement for sampling and the frequency of such sampling will be upon written notice from the Secretary.

E5. Summary Water Quality Evaluation:

By January 1, 2000 the permittee shall have a qualified water quality specialist submit an evaluation to the Secretary of all past effluent and groundwater quality data and determine what, if any, short or long term impacts there have been on groundwater quality. If chemical and biological monitoring of the receiving waters was conducted, the results of that monitoring shall also be evaluated.

E6. Sampling and Testing Procedures:

All wastewater, groundwater and surface water sampling, preservation, handling and test procedures used to comply with the monitoring requirements herein shall conform to procedures specified in the most current edition of Standard Methods for the Examination of Water and Wastewater APHA - AWWA - WPCF, and the Vermont Water Quality Standards unless written approval of an alternate method is received from the Agency.

E7. Miscellaneous:

If the permittee monitors any required parameter set forth in this permit for this treatment and disposal system more frequently than required by this permit, the results of such monitoring shall be included on the Discharge Monitoring Report Form.

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. Records shall include laboratory bench sheets showing exact location, time and composites of sample as well as analytical procedures used, interim results obtained and all calculations supporting the reported test results.

E8. Additional Monitoring:

The Secretary reserves the right to require additional monitoring of the system, in accordance with Condition A(7) of this permit, should operation of the system fail to meet the requirements of Conditions D(1) and D(5).

SECTION F - "COMPLIANCE REVIEW"

If the results of monitoring the effluent and groundwater (Section E) show there is a possibility that the aquatic permitting criteria of the Indirect Discharge Rules may be exceeded at the designated stream flow conditions, the Secretary may increase the frequency of, or change the location of monitoring of the ground and surface water. If continued monitoring and analysis indicates that a violation of the effluent disposal rate, or a violation of the Vermont Water Quality Standards, or a significant alteration of the aquatic biota has occurred, is occurring, or is likely to occur the Secretary may require the permittee to take appropriate corrective actions to eliminate or reduce the possibility of a violation.

The issuance of this permit amendment, ID-9-0036-2, to the Vermont Yankee Nuclear Power Corporation by the Secretary relies upon the data, designs, judgement and other information supplied by the applicant, his consultants and other experts who have participated in the preparation of the application. The Secretary makes no assurance that the systems will meet the performance objectives of the applicant and no warranties or guarantees are given or implied.

SECTION G - "EFFECTIVE DATE"

This Amended Indirect Discharge Permit, ID-9-0036-2, issued to Vermont Yankee Nuclear Power Corporation for the discharge of wastewater from the sewage treatment and disposal systems at the Vermont Yankee Nuclear Power Facility in Vernon, Vermont is effective this 22nd day of April, 1998.

Canute E. Dalmasse, Commissioner
Department of Environmental Conservation

By Marilyn J. Davis
Marilyn J. Davis, Director
Wastewater Management Division

APPENDIX 4

Main (North) System Final Design Plan Showing the Locations of the Monitoring Wells for the Vermont Yankee Sewage Disposal System

