

January 19, 2007

Mr. Theodore A. Sullivan  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
320 Governor Hunt Road  
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - NRC INTEGRATED  
INSPECTION REPORT 05000271/2006005

Dear Mr. Sullivan:

On December 31, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vermont Yankee Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on January 9, 2007 with you and members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Raymond J. Powell, Chief  
Projects Branch 5  
Division of Reactor Projects

Docket No.: 50-271  
License No.: DPR-28

Enclosure: Inspection Report 05000271/2006005  
w/Attachment: 1: Supplemental Information  
w/ Attachment: 2: Mitigating System Performance  
Index verification

cc w/encl:

M. R. Kansler, President, Entergy Nuclear Operations, Inc.  
G. J. Taylor, Chief Executive Officer, Entergy Operations  
J. T. Herron, Senior Vice President and Chief Operating Officer  
C. Schwarz, Vice-President, Operations Support  
O. Limpas, Vice President, Engineering  
J. M. DeVincentis, Manager, Licensing, Vermont Yankee Nuclear Power Station  
Operating Experience Coordinator, Vermont Yankee Nuclear Power Station  
W. Maguire, General Manager, Plant Operations, Entergy Nuclear Operations, Inc.  
N. Rademacher, Director NSA, Vermont Yankee Nuclear Power Station  
J. F. McCann, Director, Licensing  
C. D. Faison, Manager, Licensing  
M. J. Colomb, Director of Oversight, Entergy Nuclear Operations, Inc.  
T. C. McCullough, Assistant General Counsel, Entergy Nuclear Operations, Inc.  
J. H. Sniezek, PWR SRC Consultant  
M. D. Lyster, PWR SRC Consultant  
S. Lousteau, Treasury Department, Entergy Services, Inc.  
D. O' Dowd, Administrator, Radiological Health Section, DPHS, DHHS, State of New  
Hampshire  
Chief, Safety Unit, Office of the Attorney General, Commonwealth of Mass.  
J. E. Silberg, Pillsbury, Winthrop, Shaw, Pittman LLP  
G. D. Bisbee, Esquire, Deputy Attorney General, Environmental Protection Bureau  
J. Block, Esquire  
J. P. Matteau, Executive Director, Windham Regional Commission  
D. Katz, Citizens Awareness Network (CAN)  
R. Shadis, New England Coalition Staff  
G. Sachs, President/Staff Person, c/o Stopthesale  
J. Giarrusso, MEMA and Commonwealth of Massachusetts, SLO Designee  
State of New Hampshire, SLO Designee  
State of Vermont, SLO Designee

T. Sullivan

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Distribution w/encl:   **(via E-mail)**

S. Collins, RA  
M. Dapas, DRA  
R. Powell, DRP  
T. Walker, DRP  
J. Lamb, RI OEDO  
R. Laufer, NRR  
J. Shea, PM, NRR  
J. Boska, Backup PM, NRR  
D. Pelton, DRP, Senior Resident Inspector  
A. Rancourt, DRP, Resident OA  
Region I Docket Room (with concurrences)  
ROPreports@nrc.gov

**SUNSI Review Complete:**    **BAB4**           **(Reviewer's Initials)**

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-271

Licensee No.: DPR-28

Report No.: 05000271/2006005

Licensee: Entergy Nuclear Operations, Inc.

Facility: Vermont Yankee Nuclear Power Station

Location: 320 Governor Hunt Road  
Vernon, Vermont 05354-9766

Dates: October 1, 2006 through December 31, 2006

Inspectors: David L. Pelton, VY Senior Resident Inspector  
Beth E. Sienel, VY Resident Inspector  
Jennifer A. Bobiak, Reactor Inspector, DRS  
James D. Noggle, Senior Health Physicist, DRS  
Joseph G. Schoppy, Senior Reactor Inspector, DRS  
Suresh K. Chaudhary, Nuclear Materials Inspector, DNMS  
Robert J. Prince, Nuclear Materials Inspector, DNMS

Approved by: Raymond J. Powell, Chief  
Projects Branch 5  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000271/2006005; 10/01/06 - 12/31/06; Vermont Yankee Nuclear Power Station; Routine Integrated Report.

This report covered a 13-week period of inspection by resident Inspectors and announced inspections by regional engineering, radiation protection, and nuclear materials inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Findings

None.

## REPORT DETAILS

### Summary of Plant Status

Vermont Yankee (VY) Nuclear Power Station began the inspection period at full power. With the exception of minor power reductions to support rod pattern adjustments and periodic alignment of the circulating water system to the cooling towers, VY remained at full power throughout the inspection period.

#### **1. REACTOR SAFETY**

##### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness for Seasonal Susceptibilities

###### a. Inspection Scope (one sample)

The inspectors reviewed measures established by Entergy for ensuring cold weather availability and operability of the service water (SW) system. The inspectors reviewed Vermont Yankee Operating Procedure (OP) 2196, "Seasonal Preparedness," and its Forms 1, "Cold Weather Initiation Operations Checklist," and 3, "Operations Cold Weather Protection Walkdown Checklist," and discussed the completion of items with operations personnel to confirm the items on the checklists were either completed or appropriately tracked for completion. The inspectors performed a walkdown of the SW system and compared the current system alignment and operation to those specified in OP 2196 and OP 3181, "Service Water/Alternate Cooling Operating Procedure," to independently verify that selected actions to prepare for cold weather operations were completed appropriately and the system was maintained at temperatures to ensure operability. The inspectors also reviewed recent condition reports (CRs) related to cold weather protection to ensure proper actions were taken in response to identified issues.

###### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment

##### .1 Partial Equipment Alignment (71111.04)

###### a. Inspection Scope (three samples)

The inspectors performed three partial system walkdowns of risk-significant systems to verify system alignment and to identify any discrepancies that could impact system operability. Observed plant conditions were compared to the applicable standby

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alignment of equipment specified in OP 2123, "Core Spray;" OP 2181, "Service Water/Alternate Cooling Operation Procedure;" and OP 2114, "Operation of the Standby Liquid Control System." The inspectors also observed valve positions, the availability of power supplies, and the general condition of selected components to verify there were no obvious deficiencies. The inspectors verified the alignment of the following systems:

- The 'A' train of the core spray (CS) system while the 'B' train was out of service for planned maintenance;
- The accessible portions of the SW system while alternate cooling system (ACS) cooling tower cell 2-1 was out of service for planned maintenance; and
- The 'B' train of the standby liquid control (SLC) system while the 'A' train was out of service for planned maintenance.

b. Findings

No findings of significance were identified.

.2 Complete Equipment Alignment (71111.04S)

a. Inspection Scope (one sample)

The inspectors performed a complete equipment alignment walkdown of the emergency diesel generators (EDGs). The walkdown was performed by comparing actual equipment alignment to approved piping and instrumentation diagrams; OP 2126, "Diesel Generators," and OP 2181, "Service Water/Alternate Cooling Operation Procedure," lineups; and the updated final safety analysis report (UFSAR) and design basis document descriptions of the system. The inspectors observed valve positions, the availability of power supplies, and the general condition of components to verify there were no unidentified deficiencies. The inspectors also reviewed OP 3126, "Shutdown Using Alternate Methods," to confirm that operators could perform portions of the procedure applicable to the EDGs. Additionally, the inspectors reviewed open corrective maintenance and CRs related to the EDGs to confirm that open items did not impact system operability.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope (nine samples)

The inspectors identified fire areas important to plant risk based on a review of Entergy's Vermont Yankee Safe Shutdown Capability Analysis, the Fire Hazards Analysis, and the Individual Plant Examination External Events (IPEEE). The inspectors toured plant areas important to safety in order to verify the suitability of Entergy's control of transient combustibles and ignition sources, and the material condition and operational status of

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fire protection systems, equipment, and barriers. The following fire areas (FAs) and fire zones (FZs) were inspected:

- Fuel oil storage tank and transfer pump house (FA 12);
- Radwaste corridor (FA 13);
- Reactor core isolation cooling (RCIC) corner room, reactor building 213 foot elevation (FA RCIC);
- Control room (FZ 1);
- The 'A' emergency core cooling system (ECCS) corner room (FZ RB1);
- RCIC corner room, reactor building 232 foot elevation (FZ RB1S);
- Start-up transformers (no fire designation);
- Main and auxiliary transformers (no fire designation); and
- John Deere diesel generator enclosure (no fire designation).

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (IP71111.07B)

a. Inspection Scope (three samples)

The inspectors selected three heat exchanger (HX) samples for this review: the 'B' EDG lube oil HX, the 'B' EDG jacket water HX, and the ACS cooling tower cell 2-1. These samples were selected based on a review of plant-specific risk assessment information and the results of previous NRC inspections.

The inspectors reviewed Entergy's methods for ensuring heat removal capabilities (e.g., inspection, cleaning, maintenance, and performance monitoring) for the selected HXs and compared them to commitments made in response to generic letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The inspectors reviewed the results of various testing methods to verify that the number of plugged EDG HX tubes was bounded by assumptions in the engineering analyses.

The inspectors reviewed the design fouling factor assumptions for the EDG HXs and the engineering analyses of minimum calculated SW flowrate to the HXs. This review was performed to verify that the minimum calculated SW flowrate, in conjunction with the heat transfer capability of the EDG HXs, supported the minimum heat transfer rates assumed during accident and transient conditions. The inspectors reviewed EDG HX modeling analyses against the HX specification sheets to ensure the analysis was valid. The inspector also reviewed SW and cooling tower basin silt survey results and Entergy's associated trending data and action plans.

The inspectors compared surveillance test and inspection data to the established acceptance criteria to verify that the results were acceptable and that HX operation was consistent with design. The inspectors walked down the HXs, cooling tower and basin, accessible portions of the ACS, and the SW pumps and traveling water screens to

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assess the material condition and configuration control of these systems and components. The inspectors reviewed Federal Energy Regulatory Commission (FERC) inspection reports for the Vernon dam project.

The inspectors also reviewed a sample of corrective action notifications related to the selected HXs, the cooling tower, and the SW system to ensure that Entergy appropriately identified, characterized, and corrected problems related to these essential systems and components.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope (one sample)

The inspectors observed a simulator-based licensed operator requalification exam provided to operators. The inspectors evaluated crew performance in the areas of clarity and formality of communications; ability to take timely actions; prioritization, interpretation, and verification of alarms; procedure use; control board manipulations; oversight and direction from supervisors; and command and control. Crew performance in these areas was compared to Entergy management expectations and guidelines as presented in Vermont Yankee Administrative Procedure (AP) 0151, "Responsibilities and Authorities of Operations Department Personnel;" AP 0153, "Operations Department Communication and Log Maintenance;" and Vermont Yankee Department Procedure (DP) 0166, "Operations Department Standards." The inspectors also compared simulator configurations with actual control board configurations. For any weaknesses identified, the inspectors observed Entergy evaluators to verify that they also noted the issues to be discussed with the crew.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope (two samples)

The inspectors performed one issue/problem-oriented inspection of actions taken by Entergy in response to an unexpected loss of power to motor control center (MCC) 89A when aligned to its maintenance (i.e., backup) power supply. The inspectors also performed one system/function performance history-oriented inspection of the station main (SM) portion of the 125 VDC electrical system, a subsystem currently designated as a(1). The inspectors reviewed work practices that may have contributed to degraded system performance, Entergy's ability to identify and address common cause failures, the applicable maintenance rule scoping document for each system, the current

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classification of these systems in accordance with 10 CFR 50.65 (a)(1) or (a)(2), the applicable system a(1) performance evaluation, and the appropriateness of the performance criteria and goals established for each system. The inspectors also reviewed recent system health reports and/or discussed system performance with the responsible system engineer.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope (five samples)

The inspectors evaluated online risk management for four planned maintenance activities and one emergent repair activity. The inspectors reviewed maintenance risk evaluations, work schedules, recent corrective actions, and control room logs to verify that other concurrent or emergent maintenance activities did not significantly increase plant risk. The inspectors compared reviewed items and activities to requirements listed in AP 0125, "Plant Equipment" and AP 0172, "Work Schedule Risk Management - Online." The inspectors also walked down areas of the plant containing equipment that was determined to have higher risk significance during the following work activities:

- Planned maintenance on the 'A' train of the CS system;
- Planned maintenance on the 'B' train of the CS system;
- Planned maintenance on the ACS cooling tower 2-1;
- Planned maintenance on the 345 KV offsite power line 381; and
- Emergent repair of MCC 89A following the failure of its backup power supply breaker.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (three samples)

The inspectors reviewed three operability determinations prepared by Entergy. The inspectors evaluated the operability determinations against the guidance contained in NRC Inspection Manual Part 9900, Technical Guidance, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," as well as Entergy procedure ENN-OP-104, "Operability Determinations." The inspectors verified the adequacy of the following evaluations of degraded or non-conforming conditions:

- Metallic wear products identified in the 'B' EDG lubricating oil during analysis;
- The failure of standby gas treatment (SBGT) system valve SBGT-3B to close as expected during surveillance testing; and
- 'A' ECCS corner room ventilation cooler (RRU-7) cooling coil differential pressure exceeded acceptance criteria during testing.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope (six samples)

The inspectors reviewed six post-maintenance testing (PMT) activities on risk-significant systems. The inspectors either directly observed the testing or reviewed completed PMT documentation to verify that the test data met the required acceptance criteria contained in the applicable work order (WO), technical specifications (TS), UFSAR, and/or inservice testing program. Where testing was directly observed, the inspectors verified that installed test equipment was appropriate and controlled and the test was performed in accordance with applicable station procedures. The inspectors also verified that the test activities were adequate to ensure system operability and functional capability following maintenance, systems were properly restored following testing, and any discrepancies were appropriately documented in the corrective action program. The inspectors reviewed the following PMT activities:

- Testing of the 'A' train of the CS system following the installation of "Pomona" jacks into the initiation logic circuitry, in accordance with WO 06-6249;
- Testing of the 'B' train of the CS system following the installation of "Pomona" jacks into the initiation logic circuitry, in accordance with WO 06-6248;
- Testing following the replacement of the 'B' EDG loss of field relay, in accordance with WO 05-5146;
- Testing of ACS cooling tower CT 2-1 following the completion of fall mechanical preventive maintenance activities, in accordance with WO 06-5322;
- Testing following the installation of the remote racking modification on the 'C' SW system pump breaker, in accordance with WO 51067805-32; and
- Testing of the 'A' train of the SLC system following planned preventive maintenance activities, in accordance with OP 4114, "Standby Liquid Control System Surveillance."

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)a. Inspection Scope (four samples)

The inspectors observed surveillance testing to verify that the test acceptance criteria specified for each test was consistent with TS and UFSAR requirements, the test was performed in accordance with the written procedure, the test data was complete and met procedural requirements, and the system was properly returned to service following testing. The inspectors observed selected pre-job briefs for the test activities. The inspectors also verified that discrepancies were appropriately documented in the corrective action program. The inspectors verified that the following surveillance testing activities met the above requirements:

- Torus-to-reactor building vacuum breaker opening force test (in-service test), in accordance with OP 4202, "Primary Containment Vacuum Breaker Inspection and Testing;"
- 'B' SGBT system monthly surveillance test (routine test), in accordance with OP 4117, "Standby Gas Treatment System Surveillance," Section A;
- SGBT system initiation logic testing (routine test), in accordance with OP 4335, "Reactor Building Ventilation Isolation and Standby Gas Treatment System Initiation Logic Bus Power Monitor Functional Test;" and
- High Pressure Coolant Injection (HPCI) system valve testing (in-service test), in accordance with OP 4120, "High Pressure Coolant Injection System Surveillance," Section B.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY****Cornerstone: Occupational Radiation Safety (OS)**2OS1 Access Control to Radiologically Significant Areas (71121.01)a. Inspection Scope (twenty-one samples)

Implementation of the access control program was reviewed against the criteria contained in 10 CFR 20, site technical specifications, and the licensee's procedures. The inspectors conducted the following activities to verify that the licensee was properly implementing physical, engineering, and administrative controls for access to high radiation areas, and other radiologically controlled areas, and that workers were adhering to these controls when working in these areas:

### Planning

- Reviewed occupational exposure cornerstone performance indicator incidents during the current assessment period.

### Plant Walk Downs and Radiation Work Permit (RWP) Reviews

- Conducted walk downs of exposure significant work areas of the plant and reviewed licensee controls and surveys to determine if licensee surveys, postings, and barricades were acceptable and in accordance with regulatory requirements;
- Conducted independent radiation surveys to determine whether prescribed RWP and procedural controls were in place and whether licensee surveys and postings were complete and accurate;
- Reviewed RWPs containing access control requirements to exposure-significant areas of the plant including high radiation areas. Reviewed electronic personal dosimeter alarm set points with respect to current radiological condition applicability, and interviewed radiation workers to verify their understanding of plant procedures governing alarm response and knowledge of radiological conditions in their work area;
- Reviewed RWPs containing access controls requirements for airborne radioactivity areas with the potential for individual worker internal exposures of >50 millirem (MREM) Committed Effective Dose Equivalent (CEDE);
- Reviewed internal dose assessments where dose exceeded 50mrem in 2006; and;
- Reviewed the licensee's physical and programmatic controls for highly activated materials stored underwater in the spent fuel pool against the requirements of applicable access control procedures.

### Problem Identification and Resolution

- Reviewed licensee radiation protection program self-assessments and audits during 2006 to determine if identified problems were entered into the corrective action program for resolution;
- Reviewed CRs associated with the radiation protection access control and as low as is reasonably achievable (ALARA) areas between January 2006 and September 2006. The inspectors also discussed CRs with licensee staff to determine if the follow-up activities were being conducted in an effective and timely manner commensurate with their safety significance;
- Screened repetitive deficiencies to determine if the licensee's self-assessment activities were identifying and addressing these deficiencies; and
- Reviewed Occupational Exposure Performance Indicator incidents reported during the current assessment period.

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### Job-In-Progress Reviews

- The following three radiologically significant jobs were reviewed with respect to the radiological work requirements: Leak investigation on the 4B feedwater heater during power operations, Turbine building roof replacement during power operations, and Radioactive shipment 06-73 preparations;
- Reviewed the adequacy of surveys, job coverage and contamination controls employed during the above three radiologically significant jobs listed above; and
- Reviewed significant dose gradients requiring relocation of dosimetry for the radiologically significant jobs listed above.

### High Risk Significant, High Dose Rate High Radiation Area, and Very High Radiation Area Controls

- Reviewed changes made to the high radiation area and very high radiation area procedures since the last inspection in this area. Also discussed the management of these changes with the Radiation Protection Manager;
- Discussed controls established to support entry into the transverse in-core probe (TIP) room with the duty watch radiation protection technician; and
- Physically challenged the integrity of locked high radiation area entrances.

### Radiation Worker Performance

- Evaluated radiation worker performance during the three radiologically significant jobs listed in the Job-In-Progress section above. Reviewed performance against the specific radiation protection work requirements and worker knowledge of the radiological conditions in their work areas; and
- Reviewed CRs to determine if radiological incidents occurred that were caused by radiation worker errors, to determine if there were any trends or patterns and, to determine if the licensee's corrective actions adequately addressed these trends.

### Radiation Protection Technician Proficiency

- Evaluated radiation protection technician work performance during the three radiologically significant jobs listed in the Job-In-Progress section above. Evaluated technician performance with respect to their knowledge of the radiological conditions, the specific radiation protection work requirements, and radiation protection procedures; and
- Reviewed CRs to determine if radiological incidents occurred that were caused by radiation protection technician errors and to determine if there were any trends or patterns and if the licensee's corrective actions adequately addressed these trends.

### b. Findings

No findings of significance were identified.

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2OS2 ALARA Planning and Controls (71121.02)a. Inspection Scope (six samples)

Implementation of the ALARA program was reviewed against the criteria contained in 10 CFR 20.1101(b) and the licensee's procedures. The inspectors conducted the following activities to verify that the licensee was properly maintaining individual and collective radiation exposures as low as is reasonably achievable:

Planning

- Reviewed the licensee's collective exposure history to determine the plant's current 3-year rolling average exposure for 2003-2005;
- Reviewed site-specific source term trends to determine if there was any increasing trend reflecting higher than average boiling water reactor radiation levels or an increasing trend in collective exposures;
- Reviewed source-term data from 2003 through 2006. Interviews were conducted with the ALARA supervisor and the Chemistry Superintendent relative to reactor water chemistry and source-term controls being implemented to reduce occupational exposure.

Problem Identification and Resolution

- Reviewed licensee radiation protection program self-assessments and audits related to the ALARA program during 2006 to determine if the audit program scope met the requirements of 10 CFR 20.1101(c);
- CRs associated with the radiation protection access control and ALARA areas were reviewed and discussed with licensee staff to determine if the follow-up activities were being conducted in an effective and timely manner commensurate with safety significance; and
- Identified repetitive deficiencies were screened to determine if the licensee's self-assessment activities were identifying and addressing these deficiencies.

b. Findings

No findings of significance were identified.

**Cornerstone: Public Radiation Safety (PS)**2PS1 Gaseous and Liquid Effluents (71122.01)a. Inspection Scope (eleven samples)

The requirements for radioactive effluent controls are specified in the Technical Specifications and the Offsite Dose Calculation Manual (ODCM). The inspectors performed the following reviews and onsite inspections to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs:

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### Planning

- Reviewed the 2004 and 2005 Radiological Annual Effluent Release Reports. The current ODCM (Revision 30) was reviewed including technical justifications for changes made since the previous revision. Sections 9.4 and 10.12 of the UFSAR were reviewed to gain an understanding of the gaseous radioactive waste system and station ventilation systems. The latest quality assurance audit (ODCM Audit Report, QA-6-2005-VY-1) was reviewed. Finally, Entergy's program for identifying, controlling and assessing potential contaminated spills and leakage was also reviewed.

### Onsite Inspection

- Performed walkdowns of plant equipment and observed work activities to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs. Equipment walkdowns were performed for the radioactive liquid/gaseous effluent radiation monitoring systems (RMS) and air cleaning systems. Observations were performed during radiological sampling and measurement activities and during a November 28, 2006, plant stack gaseous effluent sample;
- Reviewed the radioactive annual effluent release reports through 2006 to determine if there had been any radioactive liquid waste releases. Two radioactive gaseous release permits were selected and reviewed with respect to ODCM and procedural requirements;
- Performed reviews to determine if there had been instances of unplanned effluent RMS unavailability that would require compensatory sampling and analysis between November 2004 and October 2006. Also performed reviews to determine if there were any abnormal or unmonitored release, and no spills or leaks involving the spread of radioactive material on the grounds of the facility;
- Reviewed the ground water monitoring program currently under development by the licensee. To date, the licensee has identified applicable systems containing radioactive liquid, has identified applicable underground piping and structures, and is developing a hydrology study;
- Reviewed changes to the ODCM (Revision 30) since the last inspection of this program area;
- Reviewed effluent release dose calculations for each month from November 2004 through October 2006 with respect to TS/ODCM calculation methodology, and 10 CFR 50, Appendix I public dose requirements;
- Reviewed the most recent air cleaning system filter surveillance test results required by Technical Specifications (visual inspection, pressure differential, in-leakage tests, laboratory charcoal efficiency test, and air flow capacity tests, as appropriate) for the following systems: the SBT system, the shutdown iodine system, the radwaste roof filtration system, and the augmented off-gas filtration system;
- Reviewed the most recent calibration results for the gaseous and liquid effluent RMS radiation monitors and associated flow rate measurement devices, as required by the ODCM for the following: Liquid radwaste effluent (RM-17-350), Service water effluent (RM-17-351); Cooling tower influent (RM-17-359), Steam

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jet air ejector (RM-17-150A/B), Augmented off-gas (RM-3127/3128), and Plant stack I & II primary and secondary calibrations. Effluent liquid and gas sample radiation measurement equipment calibrations were reviewed for in-use high purity germanium gamma spectrometers and liquid beta scintillation counter. Selected counting equipment quality control charts were reviewed to ensure the continued operability of this equipment was appropriately documented; and

- Reviewed the implementation of the measurement laboratory quality control program, including effluent intra-laboratory and inter-laboratory comparisons. In addition, the inspectors reviewed the 2005 quality assurance audit (ODCM Audit Report, QA-6-2005-VY-1) of the radioactive liquid and gaseous effluent control program and the ODCM.

#### Identification and Resolution of Problems

- Reviewed CRs relative to the Vermont Yankee Effluents Program between January 2005 and November 2006.

#### b. Findings

No findings of significance were identified.

### **4. OTHER ACTIVITIES**

#### 4OA1 Performance Indicator Verification (71151)

##### a. Inspection Scope (three samples)

The inspectors reviewed Entergy submittals for the performance indicators (PIs) listed below. The PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," and AP 0094, "NRC Performance Indicator Reporting," were used to verify the accuracy and completeness of the PI data reported.

#### Mitigating Systems Cornerstone

- Safety System Functional Failures

The inspectors reviewed licensee event reports, portions of operator logs, maintenance rule out of service logs, and CRs to verify the accuracy and completeness of the PI data for the period from October 1, 2004, through September 30, 2006.

#### Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

The inspectors reviewed implementation of Entergy's Occupational Exposure Control Effectiveness PI Program. Specifically, the inspectors reviewed CRs and RCA dosimeter exit logs for the past four calendar quarters. These records were reviewed

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for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators.

#### Public Radiation Safety Cornerstone

- RETS/ODCM Radiological Effluent Occurrences

The inspectors reviewed a listing of relevant effluent release reports for the past four (4) calendar quarters, for issues related to the public radiation safety performance indicator. The inspectors reviewed the following documents to ensure Entergy met all requirements of the performance indicator: monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases; quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and dose assessment procedures.

- b. Findings

No findings of significance were identified.

#### 4OA2 Identification and Resolution of Problems (71152)

- .1 Review of Items Entered into the Corrective Action Program

- a. Inspection Scope

The inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into Entergy's corrective action program at an appropriate threshold and that adequate attention was being given to timely corrective actions. Additionally, in order to identify repetitive equipment failures and/or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into Entergy's corrective action program. This review was accomplished by reviewing the description of each new CR and/or by attending daily CR screening meetings. A listing of CRs reviewed is included in the attachment to this report.

- b. Assessments and Observations

No findings of significance were identified.

- .2 Semi-Annual Trend Review

- a. Inspection Scope

The inspectors performed a semi-annual trend review to identify trends, either Entergy or NRC identified, that might indicate the existence of a more significant safety issue. Included within the scope of this review were:

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- CRs generated from July through December 2006;
- Corrective maintenance backlog listings from July through December 2006;
- The corrective action program 2<sup>nd</sup> and 3<sup>rd</sup> Quarter 2006 trend reports; and
- Daily review of main control room operating logs.

In NRC Inspection Report (IR) 2006-003, the inspectors discussed human performance-related trending CRs issued in the radiation protection department. During the current inspection, the inspectors also reviewed the CRs issued to identify any continuing trends in this area and discussed observations with the Plant Manager. The corrective actions completed and in progress to address the individual issues as well as to address human performance trends were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified.

However, the inspectors observed that two Level 'A' CRs were written this period potentially related to Radiation Protection (RP) Department human performance. CR 2006-2600 was written when a post-reactor water cleanup (RWCU) system resin transfer radiological survey was not completed prior to permitting personnel entry into the RWCU phase separator valve aisle, a locked high radiation area. This issue is currently under NRC review. CR 2006-2723 was written when a radioactive shipment sent from VY to another facility was found to have receipt dose rates above federal limits. This issue was determined to be a violation of low to moderate increased importance to safety as documented in IR 2006-011 and related correspondence.

The inspectors concluded that RP Department Management appropriately determined the significance of the issues in the corrective action program for evaluation and determination of corrective actions. Actions in the RP Department excellence plan, as discussed with the Plant Manager and RP Manager, and the specific CR root cause analyses appear appropriate to improve human performance in this area.

.3 Annual Sample Review - Loss of the Vermont Yankee Northfield 345 KiloVolt (kV) Line

a. Inspection Scope (one sample)

The inspectors reviewed Entergy's response to the loss of the Northfield 345 kV line that occurred on August 3, 2006, to ensure that the full extent of the issues were identified, appropriate evaluations were performed, and appropriate corrective actions were specified and prioritized. The inspectors walked down affected areas of the plant and interviewed relevant station personnel. The inspectors evaluated the root cause analysis and corrective actions against the requirements of Entergy's corrective action program.

b. Findings and Observations

No findings of significance were identified.

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The inspectors found the root cause analysis to be thorough and the corrective actions to be appropriate. Entergy has initiated corrective actions commensurate with the significance of this issue and has acknowledged the organizational aspects as well as the design aspects of this loss of line. Upgrades to the Northfield line's protection strategy were given appropriate prioritization and coordination studies are planned. Improvements to the Transmission Interface Agreements will be implemented that should give assurance that appropriate communications will be made for future protection system design changes.

.4 Annual Sample Review - History of Service Water System Leakage due to Microbiologically Influenced Corrosion

a. Inspection Scope (one sample)

The SW system at VY has historically been challenged by microbiologically influenced corrosion (MIC). MIC has been responsible for a number of deleterious effects including restricted system flows caused by tuberculation in piping and components as well as system through-wall leaks. The purpose of this inspection was to determine the current impact of MIC on the SW system, to evaluate the suitability of corrective actions taken by the licensee to address individual MIC-related SW system issues, and to assess the licensee's long range plan for minimizing the effects of MIC on the SW system. The inspectors reviewed CRs and associated corrective actions addressing MIC-related SW system issues, reviewed available operating experience (OE) information pertaining to MIC, performed walk downs of the accessible portions of the SW system, and discussed long range SW system improvement plans with the SW system engineer.

b. Findings and Observations

No findings of significance were identified.

The inspectors found that the licensee had taken appropriate actions to address individual MIC-related SW system issues. Additionally, the licensee continues to effectively manage the deleterious effects of MIC on the SW system through a combination of visual inspections, ultrasonic testing (UT) inspections, enhanced chemistry control methods and sampling, and replacement of piping and components with MIC-resistant materials when possible.

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 05000271/2001003-01, Adequacy of Hemyc Cable Wrap Fire Barrier Qualification Test and Evaluation.

Inspection Report 05000271/2001003 documented the potential inadequacy of Hemyc fire barrier wrap material used in 10 CFR 50, Appendix R, applications at VY. The issue was considered to be unresolved pending further NRC review to determine whether the qualification tests of the Hemyc fire wrap systems were acceptable. In subsequent NRC fire tests, results indicated that Hemyc fire wrap systems could not be routinely relied upon as one-hour fire barriers. The NRC staff informed the industry of the concerns

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associated with these materials by issuing information notice (IN) 2005-07, "Results of Hemyc Electrical Raceway Fire Barrier System Full Scale Fire Testing," and GL 2006-03, "Potentially Nonconforming Hemyc and MT Fire Barrier Configurations." As required by GL 2006-03, VY responded appropriately to the NRC concerns by implementing compensatory measures as appropriate and by initiating corrective actions to further evaluate Hemyc fire wrap systems used on-site. In 2005, VY replaced Hemyc fire wrap used in 10 CFR 50, Appendix R, applications with a different fire wrap material (i.e., 3M Interam). The NRC staff determined that there were no performance deficiencies associated with the licensee's use or replacement of Hemyc fire wrap material. This URI is closed.

.2 Temporary Instruction (TI) - 2515/169, "Mitigating System Performance Index Verification"

a. Inspection Scope

The objective of TI 2515/169 was to verify that the licensee had correctly implemented the Mitigating Systems Performance Index (MSPI) guidance for voluntarily reporting the unavailability and unreliability of the monitored safety systems. On a sampling basis, the inspectors validated the accuracy of the unavailability and unreliability input data used for both the 12-quarter period of baseline performance and for the first reported results (i.e., second calendar quarter, 2006). Specific attributes examined by the inspectors per this TI included surveillance activities which do not render the train unavailable for greater than 15 minutes, surveillance activities which do not render the train unavailable due to credit for prompt operator recovery actions, and independently confirming the accuracy of baseline planned unavailability, actual planned and unplanned unavailability, and the accuracy of failure data (i.e., demand, run, and load, as appropriate) for the monitored components. Per TI 2515/169-05 reporting requirements, additional information pertaining to the inspectors review is included in Attachment 2 to this report.

b. Findings

No findings of significance were identified.

.3 Independent Spent Fuel Storage Installation

a. Inspection Scope (60853)

The inspectors reviewed engineering design documents and supporting calculations associated with the design and construction of the VY Independent Spent Fuel Storage Installation (ISFSI) pad. The inspectors discussed design specifications with cognizant personnel and the basis for various design parameters. The inspectors evaluated the design and construction details for the ISFSI pad against the design parameters for the dry cask storage system selected for use at VY (i.e., HOLTEC 100). Design aspects reviewed by the inspectors included seismic considerations, soil liquefaction potential, cask tip over analysis, and properties of construction materials.

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b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 9, 2007, the resident inspectors presented the inspection results to Messrs. Theodore Sullivan and William Maguire and members of the VY staff. The inspectors asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

**ATTACHMENT 1**

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Entergy Personnel

M. Desilets, Training and Development Manager  
J. Devincentis, Licensing Manager  
J. Dreyfuss, Director of Nuclear Safety  
M. Hamer, Licensing  
E. Harms, Operations Manager  
W. Maguire, General Manager of Plant Operations  
D. Mannai, Licensing Manager  
K. Pushee, Radiation Protection Manager  
N. Rademacher, Director of Engineering  
T. Sullivan, Site Vice President  
C. Wamser, Work Planning and Outage Scheduling Manager  
M. Wilson, Emergency Preparedness Manager

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Closed

05000271/2001003-01	URI	Adequacy of Hemyc Cable Wrap Fire Barrier Qualification Test and Evaluation
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**LIST OF DOCUMENTS REVIEWED**

**Section 1R07: Heat Sink Performance**

Condition Reports

	2005-1733	2005-3842	2006-1952
2005-0566	2005-1762	2006-0163	2006-1972
2005-0579	2005-2624	2006-0803	2006-2620
2005-0730	2005-2933	2006-1936	2006-3594
2005-0875	2005-3741	2006-1949	

Audits and Self-Assessments

Snapshot Assessment for the 2006 NRC Heat Sink Performance Inspection, dated 8/14/06



Calculations

Vermont Yankee Calculation (VYC) 1282, Evaluation of Vermont Yankee Diesel Generator Cooling

VYC 1282A, Evaluation of Diesel Generator Service Water Flow Requirements

VYC 1803, Thermal Performance of Alternate Cooling System Using Cooling Tower Test Data

VYC 1803A, Thermal Performance of Alternate Cooling System for Design Basis Conditions

VYC 2408, Cooling Tower Water Height in Hot Water Deck/Basin During Winter Operation

VYC 124, Alternate Cooling Pressure Loss Analysis, Rev. 0

Design and Licensing Bases Documents

Federal Energy Regulatory Commission Letter to New England Power Company, Independent Consultant's Safety Inspection Report Exemption Request, dated 8/6/97

Vermont Yankee GL89-13 Commitment Cross Reference Matrix, dated 11/14/06

Vermont Yankee Design Basis Document for Service Water Systems - Service Water, Residual Heat Removal Service Water, and Alternate Cooling Systems, Rev. 4

Vermont Yankee Design Basis Document for Emergency Diesel Generator and Auxiliary Systems

VY 95-122, NRC Letter to Vermont Yankee (Vermont Yankee Service Water Inspection 95-14), dated 8/31/05

Jacket Water Heat Exchanger Specification Sheet, dated 12/22/69

Lube Oil Cooler Heat Exchanger Specification Sheet, dated 12/22/69

Drawings

G-191159 SH.1, Flow Diagram Service Water System

G-191159 SH.2, Flow Diagram Service Water System

Evaluations

Operability Evaluation No. CR-VTY-2006-01420, dated 5/19/06

Operability Evaluation No. CR-VTY-2005-02624, dated 9/20/05

ER 06-1308, Develop Temporary Alteration - Deicing Gate Restraints, dated 5/4/06

ER 06-1366, Modify or Replace TA-2006-006 for the CW Deicing Gate, dated 8/15/06

ER 06-1565, Revise Change Notice TA-2006-006-001, dated 10/5/06

PMCR NO. 2005-1570, Inspect Pit at CT-2, dated 12/28/05

Inspection and Testing

FERC Document 921113-0030, Connecticut River FERC Licensed Projects Sixth Consultant's Safety Inspection Reports, dated 10/29/92

FERC Document 990201-0321-3, 1998 Operation Inspection Vernon Project, dated 1/11/99

FERC Document 20020904-0201, 2002 Operation Inspection Vernon Project, dated 8/30/02

FERC Document 20050707-0202, 2005 Operation Inspection Vernon Project, dated 6/24/05

VYOPF 4126.02, Diesel Generator Operating Data (B EDG), dated 10/24/06

STP 95-02, Hydraulic Performance Testing of the Alternate Cooling System, dated 4/5/95

VYOPF 4181.08, Service Water Pump Capacity Test (D SW Pump), dated 11/9/05

Attachment

### A-1-3

STP 94-02, Hydraulic/Thermal Performance Testing of ACS Cell No. 1, dated 2/7/95  
VYOPF 4181.02, Service Water Valve Operability Test - Quarterly Basis, dated 11/1/06  
VYOPF 4181.16, Service Water Piping  $\Delta P$  Test EDG B Operating, dated 9/19/06  
VYOPF 4124.06A, RHRSW Pump 'A' (P-8-1A) and Valve Operability and Full Flow Test data Sheet, dated 11/2/06  
VYOPF 4181.07, Service Water Manual Valve Exercising - Once Per Cycle, dated 11/3/05  
VYNEF 8064.04, DG-1-1B Jacket Water Heat Exchanger Non-Code Internal Visual Examination, dated 3/24/05  
VYNEF 8064.04, DG-1-1B Lube Oil Cooler Heat Exchanger Non-Code Internal Visual Examination, dated 3/24/05  
VYOPF 5265.02, DG-1-1B Jacket Water As-Found Service Water Heat Exchanger Inspection, dated 3/22/05  
VYOPF 5265.02, DG-1-1B Lube Oil Cooler As-Found Service Water Heat Exchanger Inspection, dated 3/22/05  
Record of Eddy Current Inspection of 1B Diesel Generator Heat Exchangers at Vermont Yankee Nuclear Plant, dated 9/18/00  
WO 05-1214, B SW Strainer Ultrasonic Thickness Examination Report, dated 6/6/05  
Silting and MIC Macrofouling Observations during RFO 25, dated 12/5/05

#### Operating Experience

NRC Information Notice 2006-17: Recent Operating Experience of Service Water Systems Due to External Conditions, dated 7/31/06  
SYSENG 2006-039, Review NRC IN-2006-17, Recent Operating Experience of Service Water Systems Due to External Conditions, dated 11/14/06  
Generic Service Water System Risk-Based Inspection Guide, NUREG/CR-5865 EGG-2674 Ice Blockage of Water Intakes, NUREG/CR-0548  
Operating Experience Feedback Report - Service Water System Failures and Degradations, NUREG-1275 Vol. 3

#### Preventive Maintenance

T5 Crew Schedule Week 648 (11/26/06 - 12/02/06)  
ME039, Diesel Generator Preventive Maintenance Basis, Rev. 6  
ME076, Cooling Tower Fan Preventive Maintenance Basis, Rev. 1  
ME078, Circulating Water Deicing Gate Valve Preventive Maintenance Basis, Rev. 0  
ME307, Cooling Tower Preventive Maintenance Basis, Rev. 15

#### Procedures

ON 3148, Loss of Service Water, Rev. 12  
OP 2126, Diesel generators, Rev. 34  
OP 2180, Circulating Water/Cooling Tower Operation, Rev. 90  
OP 2181, Service Water/Alternate Cooling Operating Procedure, Rev. 107  
OP 3127, Natural Phenomena, Rev. 17  
OP 4181, Service Water/Alternate Cooling System Surveillance, Rev. 36  
OP 4630, Service Water System Sampling and Treatment, Rev. 5  
OP 5202, Maintenance/Inspection of Heat Exchangers, Pressure Vessels and Tanks, Rev. 15

#### A-1-4

OP 5265, Service Water Component Inspection and Acceptance Criteria, Rev. 5  
PP 7021, Service Water Program, Rev. 2  
PP 7601, Service Water Chemical Treatment and Monitoring Program, Rev. 2

#### System Health Reports and Trending Data

SW Chemical Treatment and Monitoring Report - 3<sup>rd</sup> Quarter 2006, dated 10/24/06  
Service Water Health Report - 3<sup>rd</sup> Quarter 2006  
Emergency Diesels & Auxiliaries - EDG Health Report - 3<sup>rd</sup> Quarter 2006  
Buildings & Structures- BLD Health Report - 3<sup>rd</sup> Quarter 2006  
Circulating Water - CW Health Report - 3<sup>rd</sup> Quarter 2006  
5265.06, Intake Structure Inspection Data, dated 5/3/01 - 10/21/05  
CT-2 Inspection Results 2006, dated 7/31/06  
Diesel Generator Test HX Tracking Report, dated 11/14/06

#### Work Orders

02-4904	04-5475	05-2101	05-5296
04-3211	04-5765	05-2673	06-5994
04-3617	05-0695	05-4637	
04-4896	05-1832	05-5084	

#### Miscellaneous Documents

Heat Exchanger Performance Monitoring Guidelines, EPRI NP-7552 Project 3052-1 Final Report, December 1991  
Risk-Informed Inspection Notebook for Vermont Yankee Nuclear Power Station, Revision 2  
Vermont Yankee Individual Plant Examination IPE, December 1993  
Vermont Yankee Individual Plant Examination External Events IPEEE, June 1998  
Temporary Modification Log, dated 10/30/06  
Preparation and Procedures for an Official CTI Thermal performance Test, dated January 1986  
ACS 10CFR50.65 Maintenance Rule Scoping Basis Document, Rev. 2  
SW 10CFR50.65 Maintenance Rule Scoping Basis Document, Rev. 7

#### **Sections 20S1: Access Control to Radiologically Significant Areas and 20S2: ALARA Planning and Controls**

#### Condition Reports

2006-00226	2006-01190	2006-02513
2006-00241	2006-01388	2006-02523
2006-00264	2006-01449	2006-02541
2006-00265	2006-01588	2006-02560
2006-00287	2006-01738	2006-02584
2006-00290	2006-02067	2006-02592
2006-00375	2006-02164	2006-02595
2006-00383	2006-02237	2006-02600
2006-00445	2006-02238	2006-02624

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2006-00478	2006-02247	2006-02654
2006-00550	2006-02342	2006-02723
2006-00588	2006-02345	2006-02733
2006-00609	2006-02379	2006-02742
2006-00643	2006-02382	2006-02743
2006-00666	2006-02407	2006-02769
2006-00679	2006-02438	2006-02777
2006-00693	2006-02447	2006-02798
2006-00697	2006-02466	2006-02810
2006-00759	2006-02477	2006-02811
2006-00790	2006-02483	2006-02824
2006-00852	2006-02494	2006-02907
2006-00919	2006-02498	2006-02921
2006-01114	2006-02503	2006-02940
2006-02934	2006-02961	2006-02994
2006-03004	2006-03006	2006-03026

### Procedures

AP 0532, Very High Radiation Area and Locked High Radiation Area Door Key Control  
EN-RP-101, Access Control for Radiologically Controlled Areas  
EN-RP-105, Radiation Work Permits  
EN-RP-141, Job Coverage

### Miscellaneous Documents

Quality Assurance Audit Report QA-14-2006-VY-1, Radiation Protection  
Quality Assurance Surveillance Report QS-2006-VY-009, Radiation Protection  
Quality Assurance Surveillance Report QS-2006-VY-005, Radiation Protection Staff Overtime  
Corporate VY Radiation Protection Program Assessment LOCR-VYLO-2006-0082  
Radiation Protection Self Assessment of locked high radiation area doors, March 22, 2006  
Radiation Protection Self Assessment of radioactive material control, February 6-9, 2006  
Oversight Observation Checklists: 02C-VY-2006-0318, 02C-VY-2006-0247, 02C-VY-2006-0291, 02C-VY-2006-0296, 02C-VY-2006-0298

### **Section 2PS1: Gaseous and Liquid Effluents**

#### Condition Reports:

2005-0707	2005-2670	2005-2905
2005-4007	2006-0346	2006-01728
2006-02940	2006-03323	

**Section 4OA2.1: Review of Items Entered into the Corrective Action Program**

Condition Reports

2006-2532	2006-3390
2006-2723	2006-3411
2006-3188	2006-3417
2006-3214	2006-3666
2006-3306	
2006-3350	

**Section 4OA2.3: Annual Sample Review - Loss of the Vermont Yankee Northfield 345 KiloVolt (kV) Line**

Condition Reports

2006-2371  
2006-2378  
2006-2383  
2006-2399  
2006-2478  
2006-2495

Calculations

VYC 2341, "381 Line Protection Calculation", Rev. 0

Procedures

OP 0150, "Conduct of Operations and Operator Rounds", Rev. 169

Miscellaneous Documents

Action Plan, 381 Line Protective Relay Upgrades, 10/23/06  
Design Basis Document, "Reactor Protection System", Rev. 16  
ER 06-1538, "Install 381 Line Directional Overcurrent Relay", Rev. 0  
Root Cause Analysis Report, "Loss of Northfield 345 kV Line", 09/05/06

**Section 4OA2.4: Annual Sample Review - History of Service Water System Leakage due to Microbiologically Influenced Corrosion**

Condition Reports

2006-1115	2006-1927
2006-1413	2006-1952
2006-1722	2006-1948
2006-1906	2006-2673

A-1-7

2006-2818	2006-3423
2006-2910	2006-3441
2006-3192	2006-3447
2006-3411	

Engineering Department System Health Reports

1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarter 2005 Service Water System Health Reports  
1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Quarter 2006 Service Water System Health Reports

Procedures

PP 7021, "Service Water Program"

Miscellaneous Documents

Vermont Yankee Service Water System Long Range Improvement Plan (Draft)  
Engineering Request 04-0597, "SW and RHRSW System Condition Evaluation"  
Service Water Leakage Database  
2002 Service Water System Self Assessment  
MIC Index  
Service Water System UT Summary Report  
Service Water System Piping and Instrument Drawings Marked-up to Indicate Through-Wall leaks

**Section 4OA5.2: Temporary Instruction (TI) - 2515/169, "Mitigating System Performance Index Verification"**

Condition Reports

2006-3465

Procedures

AP 0094, "NRC Performance Indicator Reporting"  
EN-LI-114, "Performance Indicator Process"

Engineering Reports

VY-RPT-05-00005, "VY PRA Model Inputs for MSPI"  
VY-RPT-06-00001, "VY Mitigating System Performance Index (MSPI) Bases Document"

Vermont Yankee Maintenance Rule State of the System Reports

2004-2006 Residual Heat Removal System Maintenance Rule State of the System Reports  
2004-2006 Residual Heat Removal Service Water System Maintenance Rule State of the System Reports  
2004-2006 Service Water System Maintenance Rule State of the System Reports  
2004-2006 Emergency Diesel Generator Maintenance Rule State of the System Reports

2004-2006 High Pressure Coolant Injection System Maintenance Rule State of the System Reports

2004-2006 Reactor Core Isolation Cooling System Maintenance Rule State of the System Reports

Miscellaneous Documents

Availability and reliability data summary 2004-2006 for MSPI systems

Main control room logs

Engineering Request 05-0719, "Self-Assessment of PRA in Accordance with NEI 99-02, Appendix G"

**Section 4OA5.3: Independent Spent Fuel Storage installation**

Calculations

VYC 2427, Development of Acceleration Time Histories for the Vermont Yankee ISFSI Analysis

VYC 2428, Development of Strain Compatible Soil Properties for Vermont Yankee ISFSI Analysis

VYC 2429, Assessment of Liquefaction Potential at the Vermont Yankee ISFSI Site

VYC 2433, Soil Structure Interaction Analysis for the Vermont Yankee ISFSI

VYC 2434, Vermont Yankee Cask Sliding Analysis

VYC 2435, Vermont Yankee Nuclear Power Station ISFSI Concrete Storage Pad Design

VYC 2438, Static Slope Stability Analysis Results for the Vermont Yankee ISFSI

VYC 2439, Seismic Slope Stability Analysis Results for the Vermont Yankee ISFSI

Miscellaneous Documents

Vermont Yankee ISFSI/Dry Fuel Storage Project Quality Plan

Engineering Request ER 05-0361, ISFSI Facility Concrete Storage Pad, Apron, and Ramps, Rev. 0

**LIST OF ACRONYMS**

ACS	alternate cooling system
ADAMS	agencywide documents access and management system
ALARA	as low as is reasonably achievable
AP	Vermont Yankee administrative procedure
CEDE	committed effective dose equivalent
CFR	code of federal regulations
CR	condition report
CS	core spray
CT	cooling tower
CTI	cooling tower institute
CW	circulating water
DFR	digital fault recorder
DP	vermont yankee department procedure
ECCS	emergency core cooling system
EDG	emergency diesel generator
FA	fire area
FERC	federal energy regulatory commission
FZ	fire zone
GL	generic letter
HPIC	high pressure coolant injection
HX	heat exchanger
IN	information notice
IPEEE	individual plant examination external events
IR	inspection report
ISFSI	independent spent fuel storage installation
kV	kilo volt
MCC	motor control center
MREM	millirem
MIC	microbiologically influenced corrosion
MSPI	mitigating systems performance index
NEI	nuclear energy institute
NRC	nuclear regulatory commission
ODCM	offsite dose calculation manual
OE	operating experience
OP	operating procedure
PARS	publicly available records
PI	performance indicator
PMT	post maintenance testing
RCIC	reactor core isolation cooling
RHRSW	residual heat removal service water
RMS	radiation monitoring system
RP	radiation protection
RWCU	reactor water cleanup
RWP	radiation work permit
SBGT	standby gas treatment
SM	station main
SLC	standby liquid control
SW	service water



TI	temporary instruction
TIP	transverse in-core probes
TS	technical specification
UFSAR	updated final safety analysis report
URI	unresolved item
UT	ultrasonic testing
VYC	Vermont Yankee calculation
VY	Vermont Yankee
WO	work order

**ATTACHMENT 2**

**TEMPORARY INSTRUCTION (TI) - 2515/169 SUPPLEMENTAL INFORMATION**

Question 1: For the samples selected, did the licensee accurately document the baseline planned unavailability hours for the MSPI systems?

Answer 1: The licensee accurately documented the baseline planned unavailability hours for the MSPI systems.

Question 2: For the samples selected, did the licensee accurately document the actual unavailability hours for the MSPI systems?

Answer 2: The licensee accurately documented the actual unavailability hours for the MSPI systems.

Question 3: For the sample selected, did the licensee accurately document the actual unreliability information for each MSPI monitored component?

Answer 3: The licensee accurately documented the actual unreliability information for each MSPI monitored component.

Question 4: Did the inspectors identify significant errors in the reported data, which resulted in a change to the indicated index color? Describe the actual condition and corrective actions taken by the licensee, including the date when the revised PI information was submitted to the NRC.

Answer 4: The inspectors did not identify significant errors in the reported data.

Question 5: Did the inspectors identify significant discrepancies in the basis document which resulted in (1) a change to the system boundary; (2) an addition of a monitored component; or (3) a change in the reported index color? Describe the actual condition and corrective actions taken by the licensee, including the date of when the bases document was revised.

Answer 5: The inspectors did not identify significant discrepancies in the basis document.