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Licensee: Vermont Yankee Nuclear Power Corporation

Facility: Vermont Yankee Nuclear Power Station

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EXECUTIVE SUMMARY

Vermont Yankee (VY) Nuclear Power Station NRC Inspection Report 50-271/99-02

This integrated report covers a six week period of inspection and includes aspects of licensee operations, engineering, maintenance, and plant support.

Operations

Appropriate control of safety system alignments, implementation of Technical Specification (TS) required actions, and adequate operability reviews for degraded equipment were observed during routine control room tours. (Section O1.1)

VY properly identified, evaluated, and resolved an inservice test procedure deficiency associated with the core spray pump discharge check valves. Prompt actions were taken to demonstrate operability of the valves and inservice test program documentation changes have been initiated. The past failure to perform inservice testing in accordance with the ASME Code is a violation of TS requirements. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Event Report (ER) 99-0318 (NCV 50-271/99-02-01). (Section O1.2)

VY completed the installation and testing of new torus narrow range level indication. The improved instrumentation eliminated the need for restrictive administrative controls that had been used to compensate for instrument uncertainty. This modification effectively eliminated a long standing operator workaround. (Section O2.1)

Technical Specification 6.5 requires adherence to procedures for operation of plant equipment. Operations procedure OP-2126, "Diesel Generator," specifies settings for the exhaust fan control, RATS-1A. Contrary to the above, on January 5, 1999, the NRC found that the high temperature setpoint of RATS-1A was at the incorrect setting. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as ER 99-0020 (NCV 50-271/99-02-02). (Section O8.1)

Maintenance

The maintenance activities observed during this period were performed well. Workers demonstrated appropriate foreign material exclusion precautions during maintenance on the reactor core isolation cooling (RCIC) system. Administrative problems were noted with a work package for maintenance on the standby gas treatment system (SBGT), but they did not affect the quality of the work. Modification work to the switchgear and cable vault fire suppression systems were appropriately supported by system engineering. (Section M1.1)

Executive Summary (cont'd)

The surveillance activities observed during this period were correctly performed. Good procedure use and attention to detail were noted during tests of the high pressure coolant injection (HPCI) system's isolation instrumentation. (Section M1.2)

NRC questions concerning a degraded service water connection to the "B" emergency diesel generator were adequately addressed by VY through the corrective action process. In reviewing this issue, VY identified that the subject service water expansion joints were elongated beyond their design limit. An operability determination was developed to address the problem for the short term, but a modification to the piping and/or replacement of the connections is anticipated as the final corrective action. (Section M2.2)

Technical Specification 6.5 requires detailed procedures be prepared, approved, and adhered to for corrective maintenance. Contrary to the above, VY failed to provide adequate procedures for maintenance (weld repairs) of main steam isolation valves during the 1996 refueling outage. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as ER 98-0476 (NCV 50-271/99-02-03). (Section M8.1)

Engineering

The NRC identified a potential mechanism for degradation of the standby gas treatment system's moisture separators. VY's examination and testing of the moisture separators, and associated drains, found a sufficient debris accumulation to warrant VY's consideration of periodic cleaning and inspection. Based on the as-found condition of the equipment, there was no concern for operability prior to the cleaning. (Section E2.1)

Plant Support

On February 25, 1999, VY completed modifications to the Emergency Diesel Generator rooms' sprinkler systems that increased the gallons-per-square foot coverage. The manual sprinkler system had been degraded, but functional, since August 1997 because it could not provide the water density described in the VY licensing basis. The modifications provided a good resolution by restoring the original design capacity. (Section F2.1)

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ATTACHMENTS

Attachment 1 - List of Acronyms Used

Attachment 2 - Items Opened, Closed, or Discussed

Report Details

Summary of Plant Status

Throughout most of the inspection period, the Vermont Yankee (VY) plant was operated at 100% power. On February 22, power was reduced to 92% after operators identified perturbations in reactor pressure with the mechanical pressure regulator in service. After pressure control was transferred to the electrical pressure regulator, full power operation was resumed and repairs were made to the mechanical pressure regulator. On March 16, 1999, operators made a planned power reduction to 68% in support of surveillance testing and a control rod pattern adjustment. Minor power reductions were also made to support routine surveillance testing during this period.

I. Operations

O1 **Conduct of Operations**¹

O1.1 Observation of Routine Plant Operations

a. Inspection Scope (71707)

The inspectors routinely toured the control room to assess the conduct of activities, verify safety system alignments, and verify compliance with Technical Specification (TS) requirements. Equipment deficiencies identified in control room logs were reviewed, and discussed with shift supervision, to evaluate both the equipment condition and the licensee's initial response to the issue.

b. Observations and Findings

No problems were identified with the status of plant safety systems during the control room tours or review of Event Reports (ERs). A sample review of work orders and ERs found that the basis for operability of degraded equipment was adequately evaluated and documented. The inspector noted that VY has been developing procedural guidance to enhance the consistency and quality of operability determinations.

c. Conclusions

Appropriate control of safety system alignments, implementation of Technical Specification required actions, and adequate operability reviews for degraded equipment were observed during routine control room tours.

¹Topical headings such as O1, M8, etc., are used in accordance with the NRC standardized reactor inspection report outline. Individual reports are not expected to address all outline topics.

O1.2 Core Spray System Check Valve Operability

a. Inspection Scope (71707)

On March 16, 1999, VY identified the surveillance procedure for full flow testing of the core spray (CS) pump discharge check valves was not fully adequate to meet ASME Section XI requirements. The inspector reviewed VY's immediate actions in response to this discovery.

b. Observations and Findings

Event Report 99-0318 was initiated on March 16 after VY's design basis documentation verification team questioned the adequacy of the full flow test procedure for the CS pump discharge check valves. The shift supervisor's 4:34 p.m. log entry acknowledged the problem and noted the initiation of a 24-hour administrative period in which the proper surveillance would have to be performed in order to demonstrate operability.

Section XI of the ASME Boiler and Pressure Vessel Code (ASME Code) requires check valves be exercised to the position(s) required to fulfill their safety function(s). The CS check valves have an open safety function that was previously demonstrated during the CS system's quarterly TS surveillance, performed at 3000 gpm. However, VY engineers subsequently identified that the fuel cycle dependent loss of coolant accident (LOCA) analysis assumes a maximum CS flow of 4000 gpm at 0 psid (vessel to drywell). Consequently, the surveillance test that had previously been considered a full flow test could only be credited as a partial flow test.

On March 16, VY used ultrasonic equipment to verify the "A" and "B" CS discharge check valves actually stroked full open with the existing surveillance test flow of 3100 gpm. VY used an existing procedure, and proven equipment, to meet the ASME Code allowance for "alternate means" of verifying the check valves full stroke. The inspector determined this surveillance provided assurance of the valve's condition and adequately addressed operability of the valves. At 11:59 p.m., the shift supervisor exited the 24-hour administrative period for performing the missed/inadequate surveillance.

The inspector concluded that VY took the actions, consistent with NRC guidance in Generic Letter 91-18, to ensure operability of the CS check valves. At the close of this report period, VY was evaluating the final inservice test program resolution of this issue. Based on discussions with the Inservice Test program coordinator, and NRC contacts at the Office of Nuclear Reactor Regulation, the inspector determined that VY's proposed programmatic approach was reasonable and that no further NRC inspection was necessary at this time.

TS 4.6.E requires operability testing of safety-related valves in accordance with Section XI of the ASME Code. The past failure to perform testing in accordance with the ASME Code is a violation of the TS requirement. The issue was entered in VY's corrective action program as ER 99-0318. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. **(NCV 99-02-01: Failure to Perform IST for Core Spray Check Valves as Required by ASME Code)**

The inspector noted that VY submitted LER 99-002-00 to report this violation on April 15, 1999. Because the LER was received after the close of this inspection report period, the adequacy of the LER will be reviewed in a subsequent inspection.

c. Conclusions

VY properly identified, evaluated, and resolved an inservice test procedure deficiency associated with the core spray pump discharge check valves. Prompt actions were taken to demonstrate operability of the valves and inservice test program documentation changes have been initiated. The past failure to perform inservice testing in accordance with ASME Section XI is a violation of TS requirements. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as ER 99-0318 (NCV 50-271/99-02-01).

O2 Operational Status of Facilities and Equipment

02.1 Torus Level Instrumentation Operator Workaround

a. Inspection Scope (71707)

Since September 1997, control room operators have been required to maintain the torus water level within a narrow range to compensate for uncertainties associated with the original plant instrumentation. VY approved a Basis for Maintaining Operation (BMO) to address operability and summarized its justification for deferring corrective actions beyond the 1998 refueling outage in a letter to the NRC dated May 1, 1998. The inspector reviewed VY's final resolution of this deficiency.

b. Observations and Findings

On February 24, 1999, during the on-line installation of narrow range torus level instruments, VY identified a potential discrepancy in the existing level indication. VY made a 1-hour NRC notification (EN 35400) based on past operation in a condition outside the plant's design basis. At the time, VY conservatively reported the finding because a torus water volume greater than previously evaluated had the potential to invalidate the containment design basis analysis.

On March 29, VY retracted this notification after their further investigation revealed the existing level instrument was actually accurate to within 0.08 inches of the BMO 97-41

assumptions. VY's potential reportable occurrence (PRO) evaluation for this minor discrepancy concluded that "...the slight increase in torus water volume/level will not adversely challenge the primary containment's ability to perform its safety functions as described in the FSAR Safety Design Bases" (PRO 99-0232, dated March 25, 1999). The inspector concluded that VY's evaluation was commensurate with the magnitude of the discrepancy and no problems were identified.

The two new narrow level instruments were both operable as of March 24, 1999. The new instruments have a greater accuracy and consequently, VY was able to eliminate the restrictive administrative torus level band required by BMO 97-41.

c. Conclusions

VY completed the installation and testing of new torus narrow range level indication. The improved instrumentation eliminated the need for restrictive administrative controls that had been used to compensate for instrument uncertainty. This modification effectively eliminated a long standing operator workaround.

O8 Miscellaneous Operations Issues

O8.1 Review of Open Items Related to Operations (92901)

The following open item was reviewed for closure based on a review of additional information from VY and a sampling of the licensee's corrective actions where appropriate.

(Closed) URI 99-01-01: Diesel Generator Exhaust Fan Controller Settings

On January 5, 1999, the inspector identified that the thermostat for the "A" emergency diesel generator (EDG) room's safety-related exhaust fan had been improperly set. Rather than being set to maintain a 10°F temperature band, the high and low settings had been set at the same temperature. Specifically, the high temperature setpoint was set at 55°F rather than 65°F. VY initiated ER 99-0020 to document this finding in the corrective action program. At the close of NRC Inspection 50-271/99-01, the inspector had not determined whether this condition would have prevented the fan from operating, a condition that would have rendered the "A" EDG inoperable. The issue was listed as an unresolved item pending a future review of the fan's control circuit.

After review of the applicable electrical system drawing (B191301, sh 1350) and discussion with VY engineering, the inspector determined that the fan would have operated to maintain room temperature within limits, but that it would have cycled on and off more frequently than normal.

Technical Specification 6.5 requires adherence to procedures for operation of plant equipment. Operations procedure OP 2126, "Diesel Generator," specifies settings for the exhaust fan control, RATS-1A. Contrary to the above, on January 5, 1999, the NRC found that the setting of RATS-1A was not in accordance with Operations procedure, OP

2126. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as ER 99-0020. **(NCV 99-02-02: Failure to Maintain Diesel Generator Exhaust Fan Control Setting as Required by Procedure)**

II. Maintenance

M1 Conduct of Maintenance

iv1.1 Maintenance Observations

a. Inspection Scope (62707)

The inspector observed portions of plant maintenance activities to verify that the correct parts and tools were utilized, the applicable industry code and Technical Specification requirements were satisfied, adequate measures were in place to ensure personnel safety and prevent damage to plant structures, systems, and components, and to ensure that equipment operability was verified upon completion of post maintenance testing.

b. Observations and Findings

The inspector observed all or portions of the following maintenance activities:

- WO 99-13021, Reactor Core Isolation Cooling (RCIC) System Turbine Exhaust Rupture Disc Inspection

This work was performed as part of a scheduled maintenance outage for the RCIC system. The inspector observed cleaning and reassembly preparation of the rupture disc seating surfaces. The opened piping was posted as a foreign material exclusion (FME) area, and the required FME log was being maintained. No problems were noted.

- WO 99-00444, "A" Train Standby Gas Treatment System Moisture Separator Inspection

The inspector reviewed the work order and noted the following weakness. A hand-written step had been added to remove the moisture separator. Although such a change is allowed by procedure AP 0021, "Work Orders," the inspector noted that a step to subsequently replace the moisture separator had not been included. This was important because it is possible to install the moisture separator upside down and the improper orientation would prevent its functioning. The inspector observed that the unit was reinstalled in the proper orientation during this work activity.

The inspector discussed this weakness with VY management. The forthcoming periodic maintenance procedure, discussed in section E2.1 of this report, is anticipated to address this concern.

- WO 99-00471, Installation of Mechanical Timers for the Switchgear and Cable Vault Carbon Dioxide Systems

The inspector reviewed minor modification, MM 99-002, to determine work scope and adequacy of post work testing, ensure proper licensee review and approval of the work package, and verified system conformance with FSAR requirements. No deficiencies were noted. The inspector verified that technical specification requirements were properly implemented during the maintenance activity. System engineering support was present and involved in the oversight of the work activities.

c. Conclusions

The maintenance activities observed during this period were performed well. Workers demonstrated appropriate FME precautions during RCIC system maintenance. Minor administrative problems were noted with a SBGT system work package, but they did not affect the quality of the work. Modification work to the switchgear and cable vault fire suppression systems were appropriately supported by system engineering.

M1.2 Surveillance Observations

a. Inspection Scope (61726)

The inspector observed portions of a surveillance test to verify proper calibration of test instrumentation, use of approved procedures, performance of work by qualified personnel, conformance to Limiting Conditions for Operations (LCOs), and correct post-test system restoration.

b. Observations and Findings

- OP 4116, Secondary Containment Surveillance, performed March 26

The inspector observed Auxiliary Operators (AOs) implement a portion of the quarterly reactor building railroad airlock air system leakage test of surveillance OP 4116. The AOs followed the test sequence of VYOPF 4116.03; the test equipment was within its calibration period; and the system met its acceptance criteria. No performance problems were identified.

- OP 4356, HPCI Steam Line High Flow Functional Calibration; OP 4357, HPCI Steam Line Low Pressure Functional Calibration; OP 4358, HPCI Steam Line and Space High Temperature Functional Calibration, performed March 23

The inspector attended the pre-job brief and monitored the calibration of the HPCI differential pressure switch from the control room. The inspector noted that the pre-job brief provided the operating crew with expected alarms to be received in the control room. Good procedure use was noted.

- OP 4374, Torus Narrow Range Water Level Transmitter Loop Calibration, performed February 25

The inspector observed a portion of the calibration activities performed in the torus room. No significant problems were identified during the implementation of the calibration procedure.

c. Conclusions

The surveillance activities observed during this period were correctly performed. Good procedure use and attention to detail were noted during surveillances on the HPCI system isolation instrumentation.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 EDG Cooling System Flexible Hose

a. Inspection Scope (62707)

The inspector performed a walkdown of the "B" EDG to verify its standby alignment and assess its material condition.

b. Observations and Findings

On March 5, the inspector noted that a flexible hose in the "B" EDG after cooler cooling system showed evidence of past leakage and discussed this observation with VY's Operations Planning Group. On March 9, VY determined the hose should be replaced during the next "B" EDG LCO maintenance period, as a precautionary measure. However later that same day, the inspector observed that the hose was leaking a small amount of coolant, apparently as a result of having been flexed during the earlier VY examination. The inspector reported this to VY and the "B" EDG was declared inoperable. The hose was replaced and the EDG was returned to service the following day. VY personnel initiated ER 99-0292 to document the degraded condition in the corrective action program.

c. Conclusions

The NRC identified a leaking flexible hose in the "B" Emergency Diesel Generator (EDG) cooling system during a routine plant walkdown. The EDG was declared inoperable, the hose was promptly replaced, and the event was entered into the corrective action program.

M2.2 EDG Heat Exchanger/Service Water Expansion Joint

a. Inspection Scope (62707)

Following completion of extensive modifications to the EDG fire protection systems, the inspector performed walkdowns of the EDGs to verify that no inadvertent damage had occurred as a result of the maintenance, including the associated scaffolding installation and removal.

b. Observations and Findings

The EDGs are cooled by station service water (SW). The SW system supply and return lines connect to the EDGs through stainless steel expansion joints. On March 8, the inspector noted a dent in the "B" EDG SW supply expansion joint, and questioned whether this affected its seismic qualification.

VY subsequently identified that dents were present in the SW expansion joints of both EDGs. Through discussions with the vendor, VY determined that these dents did not present an immediate operability concern. However, as a result of these discussions, VY identified that all four EDG SW expansion joints were stretched beyond their intended length. This condition had not been previously recognized because the expansion joint configuration was from original construction, and there had been no reason to subsequently question the installation.

VY developed an operability determination, BMO 99-05, "Degradation of EDG Bellows Connections," to address the degraded condition of the expansion joint and establish a plan for corrective action. At the close of the inspection period, VY was investigating the possible solutions, with a plan for correction of the condition to be developed by April 15, 1999.

c. Conclusions

NRC questions concerning a degraded service water connection to the "B" emergency diesel generator were adequately addressed by VY through the corrective action process. In reviewing this issue, VY identified that the subject service water expansion joints were elongated beyond their design limit. An operability determination was developed to address the problem for the short term, but a modification to the piping and/or replacement of the connections is anticipated as the final corrective action.

M8 **Miscellaneous Maintenance Issues**

M8.1 In-office Review of LERs Related to Maintenance (90712)

An in-office review of select Licensee Event Reports (LERs) was performed during this inspection. The adequacy of the overall event description, immediate actions taken, cause determination, and corrective actions were considered during this review. The following LERs were closed:

(Closed) LER 98-024-00: Main Steam Safety Valve Lifted Below Technical Specification Set Point. This LER documented that one of the two main steam safety valves, removed for testing during the 1998 refueling outage, lifted at a pressure lower than allowed by the Technical Specifications (TS). A note associated with TS Table 2.2.1 indicates the as-found tolerance for the safety valves is 1240 psig \pm 3%. Because one of the valves lifted at 1184 psig, or -4.5%, VY was required to adjust the valve prior to its next use.

The inspector reviewed the licensee's root cause and proposed corrective actions. The licensee was unable to determine a root cause for this event; however, an apparent cause was considered to be set point drift. The valve exhibited no leakage during the previous operating cycle and there has not been a chronic problem with safety valve set point drift at VY. The inspector noted that the as-found safety valve setpoint did not result in an improper overlap with the relief valve setpoints.

NUREG 1022, Event Reporting Guidelines 10 CFR 50.72 and 50.73, provides guidance on evaluating the reportability of discrepancies found during TS surveillance tests. NUREG 1022 states, "It should be assumed that the discrepancy occurred at the time of its discovery unless there is firm evidence, based on a review of relevant information (e.g., the equipment history and cause of failure) to believe that the discrepancy existed previously." Because there was no evidence to suggest when the safety valve settings specified in TS Table 2.2.1 were exceeded, the inspector concluded there was no violation of the requirement. This LER is closed.

(Closed) LER 98-009-01: Main Steam Isolation Valve (MSIV) Leakage Exceeds Technical Specification Limit. During the 1998 refueling outage, local leakage rate test results for the inboard and outboard valves on the "B" and "C" steam lines exceeded TS 3.7.A.4 limits. VY reported the TS violation in LER 98-009-00 and the supplement report was issued to document their final root cause investigation results. VY attributed the failures to poor work scheduling and planning, improper work practices and inadequate corrective maintenance during the 1996 refueling outage. These problems were investigated and corrective actions were taken during the 1998 outage.

The inspector reviewed the safety significance of the test failures in the context of NRC Generic Letter 86-17, Technical Findings Related to Generic Issue C-8; Boiling Water Reactor Main Steam Isolation Valve Leakage and Leakage Treatment Methods and the NRC's resolution of Generic Issue C-8. VY determined that the estimated leakage would have exceeded the licensing basis assumptions. However, VY also concluded that no increase in off-site dose would be expected from a loss of coolant accident based on the iodine deposition which would occur downstream of the MSIVs. The inspector noted that VY's approach of crediting the steam system for holdup was consistent with the bases used for elimination of MSIV leakage control systems at other facilities. Because the approach for assessing the as-found condition was reasonable, the problem was entered into the licensee's corrective action system (ER 98-0476), and most corrective actions were taken in 1998, no further NRC follow up of the valve failures is warranted.

Technical Specification 6.5 requires detailed procedures be prepared, approved, and adhered to for corrective maintenance. Contrary to the above, VY failed to provide

adequate procedures for maintenance (weld repairs) of main steam isolation valves during the 1996 refueling outage. The procedure problem has been documented in VY's corrective action program (ER 98-0476). This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with Appendix C of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as ER 98-0476. **(NCV 99-02-03: Inadequate Procedures For 1996 MSIV Repairs)**

M8.2 Review of Open Items Related to Maintenance (92902)

The following open item was reviewed for closure based on a review of additional information from VY and a sampling of the licensee's corrective actions where appropriate.

(Closed) IFI 97-06-01: Logic System Functional Testing (LSFT) Deficiencies

This item was opened to track the adequacy of the licensee's response and resolution to Generic Letter (GL) 96-01, "Testing of Safety-Related Logic Circuits." In a letter to the NRC dated February 23, 1998, the licensee stated that the logic review was completed, applicable surveillance procedures modified and testing completed to satisfy technical specification requirements. The review identified twenty-two logic contacts that required additional testing. The inspector discussed the final resolution of this issue with cognizant engineering personnel. A review of several VY identified discrepancies revealed that ER's were written and the contacts subsequently tested with satisfactory results. Because VY took reasonable corrective actions and no loss of function occurred, the inspector determined no additional NRC follow-up is required. This inspector follow-up item is closed.

III. Engineering

E2 **Engineering Support of Facilities and Equipment**

E2.1 Standby Gas Treatment System Moisture Separator

a. Inspection Scope (37551)

On December 8, 1998, VY initiated Event Report 98-2145 after identifying a potential problem with the standby gas treatment (SBGT) system moisture separator drains during design basis documentation efforts. After concluding VY initial response to the potential problem was reasonable, the inspector performed a walkdown of the system to observe the physical configuration.

b. Observations and Findings

The moisture separator is the first component in the SBGT filter train. It is designed to remove entrained moisture drawn into the SBGT system under accident conditions and direct it through a loop seal, to a radioactive waste floor drain. Proper functioning of the moisture separator and loop seal would be necessary, under certain assumptions, to

prevent condensation buildup that could carry-over into the particulate filter and activated carbon sections of the filter train.

During a walkdown of the standby gas treatment (SBGT) system, the inspector noted that the outlet of the moisture separator drain's loop seal was a small orifice at the top of a sight glass. The inspector considered that this restricted flow path might become plugged by a relatively small amount of material, such as dust or corrosion products. An accumulation of debris could occur over time because the moisture separator acts as a roughing filter and the SBGT system is operated in support of routine maintenance at VY due to design limitations. The inspector found that VY had no requirements in place to periodically examine the moisture separator or to verify that the drain line was clear. After discussions with the cognizant system engineering representative, VY initiated work order requests to examine the moisture separators and loop seals.

On March 9, VY's examination found that there was some accumulation of corrosion products and dust on the inlet side of the moisture separator. However, VY's assessment was that this debris would not have affected the moisture separators' function. The outlet side of the moisture separator was essentially clean, and the drain line was verified to be unobstructed by pouring water through it.

Based on the results of this maintenance, VY plans to institute a periodic requirement to clean and inspect the interior of the SBGT trains. Specific attributes of this maintenance activity were under development as of the close of the inspection period.

c. Conclusions

The NRC identified a potential mechanism for degradation of the standby gas treatment system's moisture separators. VY's examination and testing of the moisture separators, and associated drains, found some debris accumulation warranting consideration of periodic cleaning and inspection. Based on the as-found condition of the equipment, there was no concern for operability prior to the cleaning.

IV. Plant Support

F2 Status of Fire Protection Facilities and Equipment

F2.1 Emergency Diesel Generator Sprinkler Systems

VY reported the identification of a degraded condition for the EDG sprinkler systems in LER 97-019-00, dated September 18, 1997. Because of a calculation error during modifications to the fire water system in 1982, the sprinkler system's water density for the EDG rooms would be less than was previously committed to in a 1978 correspondence to the NRC. Although the manually initiated system was still functional, it did not have sufficient capacity to meet its licensing basis.

On February 25, 1999, VY completed modifications to the Emergency Diesel Generator rooms' sprinkler systems that increased the gallons-per-square foot coverage. The

manual sprinkler system had been degraded, but functional, since August 1997 because it could not provide the water density described in the VY licensing basis. The modifications provided a good resolution by restoring the original design capacity.

V. Management Meetings

X1 Exit Meeting Summary

The resident inspectors met with licensee representatives periodically throughout the inspection and following the conclusion of the inspection on April 22, 1999. At this meeting, the purpose and scope of the inspection was reviewed, and the preliminary findings were presented. The licensee acknowledged the preliminary inspection findings.

The inspector asked the licensee whether any material examined during the inspection should be considered proprietary. No proprietary information was identified.

X2 NRC Management Visit

On April 5th and 6th, NRC management from the Region I office toured the Vermont Yankee site and met with the licensee's management. The NRC management team included Hubert Miller, Regional Administrator, Region I, Richard Crlenjak, Deputy Division Director, DRP, William Ruland, Acting Deputy Division Director, DRS, and Clifford Anderson, Branch Chief, Projects Branch 5.

LIST OF ACRONYMS USED

BMO	Basis for Maintaining Operation
CFR	Code of Federal Regulation
CR	control room
CS	core spray
EDCR	Engineering Design Change Request
EDG	emergency diesel generator
ER	Event Report
FME	foreign material exclusion
GE	General Electric
GL	Generic Letter
HPCI	high pressure coolant injection
IFI	inspector follow item
IN	Information Notice
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LPCI	low pressure coolant injection
MCC	motor control center
NNS	non-nuclear safety
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
PORC	Plant Operations Review Committee
QA	Quality Assurance
RHR	residual heat removal
RP	radiation protection
SER	Safety Evaluation Report
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	unresolved item
VY	Vermont Yankee

ITEMS OPENED, CLOSED, OR DISCUSSED

OPENED

None

CLOSED

URI 99-01-01: Diesel Generator Exhaust Fan Controller Settings (page 4)
LER 98-024-00: Main Steam Safety Valve Lifted Below Technical Specification Set Point
(page 9)
LER 98-009-01: Main Steam Isolation Valve (MSIV) Leakage Exceeds Technical
Specification Limit (page 9)
IFI 97-06-01: Logic System Functional Testing (LSFT) Deficiencies (page 10)

NON-CITED VIOLATIONS

NCV 99-02-01: Failure to Perform IST for Core Spray Check Valves as Required by
ASME Code (page 3)
NCV 99-02-02: Failure to Maintain Diesel Generator Exhaust Fan Control Setting as
Required by Procedure (page 5)
NCV 99-02-03: Inadequate Procedures For 1996 MSIV Repairs (page 10)