

U. S. NUCLEAR REGULATORY COMMISSION

TERA 50-271

Region I

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Report No. 82-14

Docket No. 50-271

License No. DPR-28

Priority --

Category C

Licensee: Vermont Yankee Nuclear Power Corporation

1671 Worcester Road

Framingham, Massachusetts 01701

Facility Name: Vermont Yankee

Inspection At: Vernon, Vermont

Inspection Conducted: July 6-30, 1982

Inspectors:

J. W. Raymond
W. J. Raymond, Senior Resident Inspector

9/17/82
date signed

S. J. Collins
S. J. Collins, Resident Inspector

9/17/82
date signed

Approved By:

R. M. Gallo
R. M. Gallo, Chief, Reactor Projects
Section 1A, Projects Branch #1

9/21/82
date signed

Inspection Summary: Inspection on July 6-30, 1982 (Report No. 50-271/82-14)

Areas Inspected: Routine, announced inspection on routine and back shifts by the resident inspectors of: previous inspection findings; plant operations, including records, plant status and operational activities; physical security; operational surveillance; maintenance activities; ESF system operability; IE Bulletin 79-27 followup; licensee event report followup; Emergency Preparedness Appraisal (CAL 82-13) followup; and, actions taken on NUREG 0737 (TMI Action Plan) items. Additionally, a working session was held on July 9, 1982, with licensee and Vermont State representatives in regard to the April 24, 1982, loss of feedwater transient. The onsite inspection involved 104 hours by two resident inspectors.

Results: Of ten areas inspected, no violations were identified in nine areas. One apparent violation was identified in the area of in-plant radiological controls (failure to post a Hot Spot radiation area as required by AP 0503 and Technical Specification 6.5.B - paragraph 4).

DETAILS

1. Persons Contacted

The below listed technical and supervisory personnel were among those contacted:

Vermont Yankee Nuclear Power Corporation

Mr. L. Anson, Plant Training Supervisor
Mr. R. Branch, Operations Supervisor
Mr. B. Buteau, Reactor Engineering and Computer Supervisor
Mr. P. Donnelly, Instrument and Control Supervisor
Mr. R. Kenny, Engineer, Assessment Coordinator
Mr. L. Goldthwaite, Instrument and Control Foreman
Mr. S. Jefferson, Technical Services Superintendent
Mr. B. Leach, Health Physicist
*Mr. M. Lyster, Operations Superintendent
*Mr. W. Murphy, Plant Manager
Mr. J. Pelletier, Assistant Plant Manager
Mr. R. Selby, Senior Control Instrument Specialist

*denotes those present at management meetings held periodically during the inspection.

2. Status of Previous Inspection Findings

- a. (Open) Followup Item (CAL 50-271/82-13-03), Containment Air Samples. The licensee reported the results of his evaluation of iodine plateout on containment air sample vials in letter FVY 82-79 dated June 30, 1982. The evaluation concluded that methyl iodide plateout on the sample vials used for post accident analyses was negligible. This evaluation was based on methyl iodide testing conducted on June 19, 1982, and summarized in a June 23, 1982 test report provided by a licensee contractor. The licensee concluded, based on the methyl iodide results, that the samples obtained with the present sample system would be indicative of the atmosphere being sampled.

However, the licensee's evaluation did not include an assessment of plateout of elemental iodine, which would also be present in the post-accident containment atmosphere. This matter was discussed with the Plant Chemist and NRC Region I representatives during telephone conversations on July 19 and July 21, 1982. The licensee will review this area further, correct any deficiencies in containment samples resulting from iodine plateout and report the results to NRC Region I. This item is discussed further in paragraph 10 below.

This item remains open pending completion of the licensee actions described above and subsequent review by the NRC.

- b. (Closed) Followup Item (CAL 50-271/82-13-05), Protective Action Recommendations to Offsite Agencies. The licensee developed and issued procedure OP 3511, which provides the criteria for recommending protective actions to offsite authorities. See paragraph 10 below for further discussions in this area. This item is closed.
- c. (Closed) Followup Item (CAL 50-271/82-13-06), Radioiodine Analyses. Instructions provided in OP 3510 were upgraded to describe methods to distinguish radioiodines from noble gases in air samples. The methods include the use of silver zeolite cartridges. See paragraph 10 below for further discussions in this area. This item is closed.
- d. (Open) Followup Item (CAL 50-271/82-13-07), Emergency Action Levels. Actions were completed to revise Appendix A of the Emergency Plan and AP 3125 to provide Emergency Action levels that address the requirements of NUREG 0654, Appendix 1 (Revision 1). Additionally, plant personnel were trained in the new Emergency Action Levels. Comments resulting from the inspector's review of AP 3125 are discussed in paragraph 10 of this report.

Subsequent to an NRC meeting held with the licensee and Vermont State representatives on July 9, 1982, the licensee requested additional time to complete his actions in this area. This matter is discussed further in paragraph 10 and 13 below.

Development of Emergency Action Levels which address NUREG 0654 requirements remains an open item pending completion of licensee actions and subsequent review by the NRC.

- e. (Closed) Followup Item (CAL 50-271/82-13-09), Assessment Procedures Upgrade. Licensee procedures AP 3125, 3511, 3510 and 3513 were revised to include: (i) methods for initially obtaining an estimate of thyroid dose rate when plant conditions indicate an offsite problem may exist; (ii) a method for making an initial dose projection if installed control room instrumentation is inoperable; and, (iii) a correlation between core conditions and the reading of the containment high range monitor. This item is discussed further in paragraph 10 below. This item is closed.

3. Shift Logs and Operating Records

- a. Shift Logs and operating records were reviewed to verify that:
 - Operating logs and surveillance sheets were properly completed and that selected Technical Specification limits were met.
 - Control Room log entries involving abnormal conditions provided sufficient detail to communicate equipment status, lockout status, correction and restoration.

- Log Book reviews were conducted by the staff.
 - Operating and Special Orders did not conflict with Technical Specifications requirements.
 - Jumper (Bypass) log did not contain bypassing discrepancies with Technical Specification requirements and that jumpers were properly approved prior to installation.
 - Potentially Reportable Occurrences were appropriately dispositioned.
- b. The following plant logs and operating records were reviewed periodically during the period of July 6-30, 1982:
- Control Room Log
 - Night Order Book Entries
 - CR Information Book
 - Jumper/Lifted Lead Log Book
 - Safety Related Maintenance Requests
 - Control Room Operator Round Sheet
 - Auxiliary Operator Rounds Sheet
 - Communications Log
 - Switching Order Log
 - Chemistry Log Sheet
 - Shift Turnover Checklist
 - Surveillance Log
 - Potential Reportable Occurrence Book
 - Discharge Records
 - Radiochemistry Analysis Log
 - Equipment Status Log
 - RE Log Typer-Core Performance Log
 - Health Physics Control Point Log

No violations were identified. Except as noted below, the inspector had no further comments on this item.

- (1) A potential reportable occurrence (PRO) report was written on July 14, 1982, due to the possible use of non-conservative minimum critical power ratio (MCPR) operating limits for Cycle 9 operations. The PRO report was reviewed and the matter was discussed with the Technical Services and Reactor Engineering Supervisors. The PRO report was written after receipt of preliminary core wide transient analysis results showed the limiting MCPR should have been 1.26 for Cycle 9 based on a postulated loss of feedwater heating transient. This result was obtained using the calculations methodology of the RETRAN-TCPYA01 code. The 1.26 MCPR operating limit was more conservative than the 1.25 value approved by the NRC, and used by the licensee for Cycle 9 operation from BOC to EOFPL-2MWD/ST. The 1.25 MCPR operating limit was based on a postulated rod withdrawal error transient, obtained using the calculational methodology of the SIMULATE code.

After subsequent review of this item, the licensee concluded on July 15, 1982 that the item was not reportable under Technical Specification 6.7.B.1.h due to (i) the preliminary nature of the results, using a code (RETRAN) that was as yet unapproved by the NRC; and (ii) the difference in calculational methodologies used in the RETRAN/SIMULATE codes and the known conservatisms built into the RETRAN results.

The licensee has submitted information to NRC:NRR to support use of the RETRAN code for reload analyses. Final NRC staff action is still pending on this item, along with review of analysis results to support Cycle 9 operation from EOFPL-2 to EOFPL. As of mid-July, Cycle 9 burnup was about 4200 MWD/ST. EOFPL-2 (5600 MWD/ST) is expected to be reached before the end of August 1982. The MCPR operating limit was administratively set to 1.29 by the licensee pending NRC staff review and approval of the analysis for the remainder of Cycle 9 operation.

The inspector concurred, based on the above information, that this item was not reportable under Technical Specification 6.7.B.1 and the inspector had no further comments on this item for the present. This item is unresolved pending submittal of the final Cycle 9 analysis results by the licensee and subsequent review by the NRC (URI 50-271/82-14-01).

4. Plant Tours

Plant tours were conducted routinely during the inspection period to observe activities in progress and verify compliance with regulatory and administrative requirements. Tours of accessible plant areas included the Control Room Building, Turbine Building, Reactor Building, Diesel Rooms, Intake Structure, Radwaste Building, Control Point Areas and the grounds within the Protected Area. Inspection reviews and findings completed during the tour were as described below.

a. Control Room Panel Review

The operational status of standby emergency systems and equipment/systems aligned to support routine plant operation was confirmed by direct review of control room panels. The following items were reviewed to verify adherence to Technical Specification Limiting Conditions for Operation (LCOs) and approved procedures.

- Switch and valve positions required to satisfy LCO's, were applicable and personnel knowledge of recent changes to procedure, facility configuration and existing plant conditions.
- Alarms or absence of alarms. Acknowledged alarms were reviewed with on shift licensed personnel as to cause and corrective actions being taken, where applicable.
- Meter indications, recorder values, status lights, power available lights and front panel bypasses.
- Computer printouts and comparisons of redundant readings.

No violations were identified.

b. Radiological Controls

Radiation controls established by the licensee, including: posting of radiation areas, radiological surveys, condition of step-off-pads, and disposal of protective clothing were observed for conformance with the requirements of 10 CFR 20 and AP 0503, Establishing and Posting Controlled Areas, OP 4530, Dose Rate Radiation Surveys, OP 4531, Radioactive Contamination Surveys, AP 0504, Shipment and Receipt of Radioactive Materials. Confirmatory surveys were performed in areas toured to verify established posting of radiological conditions was proper. Radiation work permits were reviewed to verify conformance with procedure AP 0502, Radiation Work Permits.

No inadequacies were identified, except as noted below.

- (1) During a routine radiation survey on July 14, 1982, of the torus catwalk (Reactor Building 250 foot elevation), the inspector noted a hot spot radiation area on a section of the Main Steam Drain line above the catwalk. Measured radiation levels were 250 mRem/hr on contact with the line and greater than 100 mRem/hr at 12 inches. The general area radiation level at distances greater than 12 inches was less than 100 mr/hr. The area would not be properly classified as a High Radiation due to the actual dose rates, the configuration of the source and the remote probability of obtaining a whole body exposure in excess of 100 mRem in one hour. The drain line did meet the definition of a "Hot Spot" radiation area as described in procedure AP 0503, Establishing and Posting Controlled Areas.

Although a "Hot Spot" sticker was affixed to the line, it was crossed out, dated April 15, 1981 and contained no dose rate information. Thus, the drain line was essentially not posted. Failure to post and mark the line as a hot spot radiation area per AP 0503 requirements is contrary to the requirements of Technical Specification 6.5.B (VIOL 50-271/82-14-02). Upon discovery of the conditions discussed above, the inspector contacted the on-shift Health Physics Technician, who took actions immediately to survey the line and establish proper posting.

c. Plant Housekeeping and Fire Prevention

Plant housekeeping conditions, including general cleanliness and storage of materials to prevent fire hazards were observed in 11 areas toured for conformance with AP 0042, Plant Fire Prevention, and AP 6024, Plant Housekeeping.

No violations were identified.

d. Fluid Leaks and Piping Vibrations

Systems and equipment in all areas toured were observed for the existence of fluid leaks and abnormal piping vibrations. Pipe hangers and restraints installed on various piping systems were observed for proper installation and condition.

No inadequacies were identified.

e. Control Room Manning/Shift Turnover

Control Room Manning was reviewed for conformance with the requirements of 10 CFR 50.54(k), Technical Specifications, APO 0152, Shift Turnover, AP 0150, Responsibility and Authority of Operations Department Personnel and AP 0036, Shift Staffing. The inspector

verified, during the inspection, that appropriate licensed operators were on shift. Manning requirements were met at all times. Several shift turnovers were observed during the course of the inspection. All were noted to be thorough and orderly.

No items of noncompliance were identified.

f. Equipment Tagout and Controls

Tagging and controls of equipment released from service were reviewed during the inspection tours to verify equipment was controlled in accordance with AP 0140, VY Local Control Switching Rules. Controls implemented per Switching Orders 82-324, 82-367 and 82-380.

No inadequacies were identified.

g. Analyses of Process Liquids and Gas s

Analyses results from samples of process liquids and gases were reviewed periodically during the inspection to verify conformance with regulatory requirements. The results of isotopic analyses of radwaste, reactor coolant, off-gas and stack samples recorded in shift logs and the Plant Daily Status Report were reviewed to verify that Technical Specification limits were not exceeded and that no adverse trends were apparent. Boron analysis results reported for the Standby Liquid Control System on June 2 and July 14, 1982, were reviewed.

No inadequacies were identified.

h. Jumpers and Lifted Leads (J/LL)

Implementation of J/LL Request Nos. 82-039, 82-043 and 82-048 were reviewed to verify that controls established by AP 0020 were met, no conflicts with the Technical Specifications were created and installation/removal was in accordance with the requests.

No violations were identified.

i. Conformance with Technical Specification LCOs

The operational status of plant systems and equipment was reviewed to verify compliance with selected Technical Specification LCOs. Conditions established to meet Technical Specification 3.7.A.6, 4.7.6.9, Table 4.7.2.a, Table 3.1.1 and Table 3.2.2 were verified through direct observation and/or surveillance record review.

No violations were identified.

j. Containment Isolation

System valve lineups established to maintain containment integrity and isolation capability were reviewed on a sampling basis during inspection torus to verify conformance with the configuration specified by OP 2115. The review confirmed that manual valves were shut, capped and locked as required by procedure; power was available to motor operated valves and no physical obstructions would block operation; and, no leakage was evident from valves, penetrations and flanges.

No inadequacies were identified.

k. Surveillance Activities

Ongoing surveillance testing of safety related equipment was reviewed to verify the activities were conducted in accordance with approved procedures; test instruments were calibrated; redundant systems were operable and LCDs were met; testing was conducted by qualified personnel; and, test acceptance criteria were met. Parts of the following surveillance were observed:

- + OP 4363, HPCI-CST Water Level Functional Test, July 12, 1982
- + OP 4313, Reactor Water Low Level Scram-Low Low Isolation, July 19, 1982

No inadequacies were identified.

l. Radwaste System Operations

Implementation of Radwaste System controls was reviewed to verify that solid, liquid and gaseous waste processing activities were conducted in accordance with approved procedures OP 2610, OP 2153 and OP 2151. The review also verified that required instrumentation was operable during releases, effluent samples were taken and analyzed, and required approvals were obtained prior to release (where applicable). Discharge permit log through 82-461 was reviewed.

Process controls established to transfer the contents of the waste collector tank to the B Waste Sample tank were reviewed on July 29, 1982, while the transfer was in progress. The position of the control switch for valve LRW-342 was noted to be in the "Sample Tank B" position instead of the "Auto" position as stated in Step H.4a of OP 2151. The effect of placing the LRW-342 control switch in the "Sample Tank B" position was to negate the automatic diversion capability of the valve whereby flow is directed back to the waste collector tank under high conductivity conditions. This matter was discussed with the on-shift Radwaste Operator, who was found to be

knowledgeable of the waste transfer in progress, the procedural requirements and the process controls required for the transfer. The LRW-342 controller was returned to the "Auto" position.

The above departure from the instructions specified in OP 2151 did not result in an unsafe condition because conductivity remained below acceptable limits during the operation in progress. The observed deviation from procedural controls appears to be an isolated instance, based on routine inspector monitoring of radwaste operations. However, this area will be further reviewed during future routine inspections to detect adverse trends.

The inspector had no further comment on this item.

5. Observations of Physical Security

The inspector observed and/or verified during regular and offshift hours that selected aspects of plant physical security were in accordance with regulatory requirements, the physical security plan and approved procedure. This review included elements of the following security measures:

- guard staffing of all shifts on various days was observed to be as required;
- implementation of access controls, including identification, authorization, badging, escorting, personnel and vehicle searches and, when applicable, the completion of compensatory measures during periods when equipment was inoperable;
- selected barriers in the protected areas and vital areas were observed and random monitoring of isolation zones was performed; and,
- observations of secondary alarm station activities were made at random periods.

No violations were identified.

6. Surveillance Testing

The inspector observed or reviewed the following surveillance tests to verify that: testing was performed in accordance with approved, technically adequate procedures by qualified personnel; test instrumentation was calibrated; test data was accurate and complete, and demonstrated conformance with Technical Specification requirements; testing was completed in accordance with the established schedule; Technical Specification LCOs were met while testing was in progress and system restoration to service was proper; and, activities were in compliance with AP 4000, Surveillance Testing Control.

- OP 4121, Reactor Core Isolation Cooling System Surveillance (RCIC)
- OP 4120, High Pressure Coolant Injection System Pump Operability and Flow Rate
- OP 4308, Average Power Range Monitor Calibration
- OP 4364, RCIC Steam Line High Flow Functional
- OP 4210, 24 VDC ECCS/UPS Battery Checks

No violations were identified.

7. Maintenance Activities

The maintenance request log was reviewed to determine the scope and nature of work done on safety related equipment. The review confirmed: the repair of safety related equipment received priority attention; no backlog of required repairs developed on safety related systems; and, the performance of safety related systems was not impaired.

Maintenance activity associated with the following was observed/reviewed by the inspector to verify (where applicable) procedure compliance; radiation controls; personnel qualification; and, equipment return to service, including operability testing.

- MR 82-872, RHR - 192B heat exchanger outlet valve
- MR 82-841, DOOR 202 operation
- MR 82-474, MCC 89A/UPS A operation
- Review of RHRSW valve V10-89B operability

No violations were identified.

8. Safeguard System Operability

Reviews of the Reactor Building Closed Cooling Water, Core Spray A, Upper Containment Sprays, Reactor Core Isolation Cooling, and High Pressure Coolant Injection Systems verified that the systems were properly aligned and fully operational in the standby mode. Review of the above systems included the following:

- visual observation of the valve or remote position indication to verify that each accessible valve was correctly positioned.
- verification that accessible power supplies and breakers were properly aligned for active components.

- visual inspection of major components for leakage, proper lubrication, cooling water supply, and general condition.
- verification that required instrumentation was functional and calibrated.

No violations were identified.

9. IE Bulletin Review

Licensee actions taken for the IE Bulletin 79-27 were reviewed to verify that:

- the bulletin was received onsite and reviewed for applicability to the facility;
- bulletin action items and identified problems were appropriately dispositioned;
- corrective actions were completed or are planned; and,
- responses to the NRC were accurate and in accordance with requirements specified in the bulletin.

Inspector followup on the selected bulletin is summarized below.

a. IE Bulletin 79-27, Loss of Non-Class I-E Instrumentation and Control Power System Bus During Operation

The licensee response to this bulletin was provided in letter WVY 80-37 dated March 10, 1980. The response adequately addressed each bulletin item and was found to be accurate as determined by the inspector's review of facility design features. Additionally, the following actions were completed by the licensee:

- (1) Modifications to install the Recirculation Pump/Analog Trip System were completed during the 1980 refueling outage. One feature of these modifications was to provide additional reactor vessel pressure (PT 2-3-56) and level (LT 2-3-72) indication in the control room, powered from separate and independent 24 volt dc power supplies. Alarms on the loss of the 24 volt power supplies were provided on control room panel (CRP) 9-4. Other annunciators added to CRP 9-4 will alarm a loss of power from the 120 volt ac Reactor Protection System (RPS) power distribution panel.
- (2) "Power Available" lights are provided on CRP 9-15/17 to show the status of power from supplies MCC 8A, MCC 8B and MCC 9A for the 120 volt ac RPS Bus A/B.

- (3) The following plant procedures were revised as required to include information required by bulletin item 2.

- OP 2145, Normal and Emergency 125 VDC Operation
- OP 3140, Alarm Response
- OP 2144, 120/240 VAC Uninterruptible (Vital) MG Set

The licensee also issued a new procedure, OP 2147, to describe the normal and abnormal operation of the 120/240 volt ac instrument bus.

- (4) All Control Room indicators were labelled to clearly identify the individual power sources, including the 120/240 VAC VITAL and 120/240 VAC INSTRUMENT buses. Thus, an additional "indicator" of loss of power from a given source was provided in the control room, based on failed instrument indications from instruments in a given power source group.
- (5) The licensee completed an evaluation to determine the need to install additional indication/alarms in the control room to annunciate loss of power from certain power supplies. Based on this review and the actions described above, the licensee determined that no further actions were required to supply loss of power indications for the 120 volt vital AC Subpanel A; 120/240 VAC Instrumentation Distribution Panel; and, 120 volt IAC Subpanel A.

The inspector had no further comments on this item. Licensee actions for IE Bulletin 79-27 are considered acceptable and complete.

No violations were identified.

10. Emergency Preparedness Appraisal Followup

The actions taken by the licensee in response to NRC Region I Confirmatory Action Letter (CAL) 82-13 dated April 28, 1982, were reviewed. Emergency Appraisal followup items with a due date of on or before July 20, 1982, were reviewed.

a. (CAL 82-13-03) Containment Air Samples: Due June 30, 1982

The results of methyl iodide testing were reported in letter FVY 82-79 dated June 30, 1982, based on tests conducted on June 19 and 20, 1982, by a licensee contractor. The "plateout" test report conducted under purchase order 18650 was reviewed. Methyl iodide plateout on the containment air aluminum sample vials was determined to be less than 0.01%. Additional testing to assess the plateout of elemental and particulate iodine will be completed to

quantify the amount of sample loss. Elemental and particulate iodine are the predominant chemical iodine forms in the period immediately following an accident. A written report of the elemental iodine evaluation will be forwarded to NRC Region I for review by October 1, 1982. This item will be reviewed further by the NRC staff upon receipt of the licensee's evaluation.

b. (CAL 82-13-05) Protective Action Recommendations: Due July 20, 1982

Procedure OP 3511 was written to provide the directions and criteria needed to recommend protective action to the plume EPZ states. Recommendations are made based upon projected and measured dose rates with provisions for using a "default release duration estimate" as required. The protection action recommendation is based on the Environmental Protection Agency Protective Action Guides. The inspector had no comments on the instructions provided by OP 3511. Further NRC staff review of this item will be completed in conjunction with item 82-13-07 (see paragraph 10.d below).

c. (CAL 82-13-06 Radioiodine Analyses: Due July 20, 1982

Procedures OP 3513 and OP 3510 were revised to provide additional instructions on radioiodine sampling and analysis. Trigger levels for use of silver zeolite cartridges were provided. The specified trigger levels for stack gas and offsite/boundary air samples were specified as 20 mRem/hr and 100 cpm above background, respectively. OP 3510 includes instructions to purge air samples to remove noble gases. The purge time was selected to approximately equal the sample duration and flow rate. No inadequacies were identified. This area will be reviewed further by the NRC staff on a subsequent inspection.

d. (CAL 82-13-07) Emergency Action Levels: Due July 20, 1982

Appendix A of the Emergency Plan and AP 3125 were revised to provide Emergency Action Levels (EALs) that address the requirements of NUREG 0654, Revision 1. Plant procedure revisions were completed by June 30, 1982, but the procedures were not issued pending completion of personnel training on the revised instructions. The inspector interviewed members of the Training Department and reviewed training records to verify that training on the new procedures had been completed as of July 20, 1982. All plant emergency directors received training on the new version of AP 3125 by July 20, 1982, with the exception of one individual who was not available for the class. A makeup session was completed by this individual as of August 11, 1982. Plant control room operators, supervisory control room operators and nuclear safety engineers also completed training in AP 3125.

The licensee has delayed issuance of AP 3125 and other revised implementing procedures pending review of the revised Plan and procedures by State representatives. The licensee requested an extension until September 30, 1982, to complete action on this item, based on a meeting with NRC and Vermont State personnel on July 9, 1982. NRC Region I granted the extension in a letter dated July 30, 1982.

The inspector met with the Operations Superintendent to discuss the draft revisions to AP 3125. The inspector requested and received the draft revision to Appendix A of the Emergency Plan for subsequent review. Based on a comparison of AP 3125 with NUREG 0654, Revision 1, the inspector determined that the following EALs require further review by the licensee and the NRC staff: inclusion of security event EALs; natural phenomena EALs for Alert and Site Area classes; "other hazards" EALs for the Site Area class; and inclusion of the EPA Protective Action Guidelines for the Site Area and General Emergency classes.

This item will be reviewed further on a subsequent inspection.

e. (CAL) 82-13-09) Assessment Procedures: Due June 1, 1982

The licensee's engineering organization determined the correlation between the containment high range monitor reading and the degree of core damage. The results were provided in a May 12, 1982, memorandum to site personnel. Based on the correlation, a monitor reading of 10,000 R/hr would be indicative of a large gap fraction release to the drywell. A monitor reading of 10,000 R/hr was incorporated in AP 3125 as a General Emergency EAL. A monitor reading of 1,000 R/hr would be indicative of a significant gap fraction release to the drywell. This value was incorporated in AP 3125 as a Site Area Emergency EAL.

Procedures AP 3513 and AP 3510 were revised to incorporate criteria that would call for the determination of an initial estimate of thyroid dose rate when plant conditions indicate an offsite problem may exist. Per instructions in AP 3510, an iodine determination will be made using silver zeolite sample cartridges if the count rate on the charcoal cartridges sample exceeds 100 cpm over background. Similarly, per instructions in AP 3513, an iodine determination will be made if the high range stack gas monitor exceeds 20 mRem/hr.

AP 3513 now includes instructions to obtain a site boundary dose rate to use for dose projection calculations should installed instrumentation be inoperable. The inspector had no further comments on this area at the present. Emergency procedures will be reviewed further on a subsequent inspection.

11. Licensee Event Report Review

The licensee event reports (LERs) listed below were reviewed in the NRC Resident/Regional Office. The reports were reviewed to determine whether: the information provided was clear in the description of the event and identification of safety significance; the event cause was identified and corrective actions taken (or planned) were appropriate; the report satisfied requirements with respect to information provided and timeliness of submittal per NUREG 0161 and Technical Specification 6.7 criteria. Those reports annotated with an asterisk(*) concern events that required inspector followup action and inspector review/evaluation of the event is documented elsewhere, in this or other inspection reports.

- + *LER 82-15/1P, Drywell Nitrogen Purge Isolation Valves failed to close, June 23, 1982
- + *LER 82-9/3L, Reactor Pressure Indication PI 2-3-55D Inoperable Due to Failed Power Supply, June 11, 1982
- + LER 82-10/3L, RHRSW Pump Inoperable Due to Faulty Breakers, June 11, 1982
- + LER 82-11/3L, Control Rod Position Indication lost Due to Failed Power Supply, June 30, 1982
- + *LER 82-6/3L, Main Steam Line Isolation Pressure Setpoint Drift, March 21, 1982

No violations were identified. Except as noted below, the inspector had no further comments on this item.

a. LER 82-15: Drywell Purge Isolation Valves

Drywell isolation valves V16-20-20 and V16-20-22B failed to close on June 22, 1982, when the control room operator attempted to manually reduce the nitrogen flow into the drywell. The valves are series isolation valves on the one inch diameter nitrogen makeup line. Since both valves were inoperable, the Technical Specification 3.7.D.2 limiting condition for operation (LCO) could not be met and a plant shutdown to cold conditions was required within 24 hours, unless the valves were sooner made operable.

Actions were taken to shut manual isolation valves V16-20-22C and V16-20-22D and repair the inoperable valves. The valves were repaired and made operable. The Technical Specification 3.7.D LCO was thus satisfied. The cause for failure was determined to be an accumulation of dirt/rust in the position indication well of the Automatic PN 15-678 valve. The source of the containment was the carbon steel lines in which the valves are located. The lines were used as an air supply makeup prior to inerted plant operations.

Prior to the valve failures on June 22, 1982, the lines were used to provide a high velocity nitrogen purge operation following a recent plant shutdown. The licensee believes that the high velocity purge caused the rapid buildup of dirt in the valve internals. It is believed that the recent purge with dry nitrogen cleaned out the line, and thus, no future valve failures would be expected. No further corrective actions were planned at the present.

During the licensee's response to the event, plant management took the position that the manual isolation valves in the purge lines could be used to meet the Technical Specification 3.7.D.2 action statement. This matter was discussed with NRC Region I staff, who stated that only valves listed in Technical Specification Table 4.7.2.a could be used to meet the action statement when an isolation valve listed in that table is found to be inoperable. The above NRC position was discussed again with the Plant Manager in a meeting on July 13, 1982. The licensee acknowledged the NRC position, but disagreed with it on technical grounds. The inspector stated that a change to the Technical Specifications would be required to take credit for the manual isolation valves.

The inspector had no further comment on this item.

b. LER 82-6: Main Steam Line Pressure Setpoint Drift

The inspector reviewed the OP 4323 test results for February 19, 1982. During the test, the trip setpoints for DPIS 2-120A, B and C were found to be 8.8, 8.8 and 8.7 psid, respectively. A trip setting of 8.5 psid is required to meet the Technical Specification limiting safety system setpoint of 40% steam flow. The trip setpoints were reset to be within the range established by OP 4323. The 120% steam flow setpoints were found to be within specification.

OP 4323 test results for the period from January - August 1982, were reviewed. Setpoint drift over time appeared to be random and not excessive. No further licensee actions appear to be warranted at this time.

The inspector had no further comments on this item.

12. Review of NUREG 0737 TMI Action Plan Requirements

The TMI action plan (TAP) item listed below was reviewed to verify licensee actions were completed in accordance with commitments provided in letter FVY 82-65 dated June 4, 1982.

a. TAP II.K.3.22B, RCIC Section Switchover

Design modifications were completed under EDCR 81-22, ECN #3 to provide for automatic switchover of RCIC suction from the condensate storage tank to the torus. Hardware changes were completed under the EDCR 81-22 installation procedures on November 17, 1981. Post-installation testing was conducted on November 25, 1981.

The modifications included the new installation of redundant, separate level instrument channels (Division SII) to sense condensate storage tank (CST) level. Upon reaching the CST low level setpoint, the torus suction valves (V39 and V41) are first opened and then the CST suction valve (V18) is closed. This sequence assures positive suction to the RCIC pump is maintained. The inspector determined on July 12, 1982, that instrument isolation valve CST 810 was locked open as required by procedure. The inspector also verified that changes were made to procedures OP 2121, 4121, 3116, 3131 and 3140 to reflect the modifications. No inadequacies were identified.

No violations were identified. Conformance of the modifications to design criteria specified by the NRC staff is the subject of further staff review.

13. Followup of April 24, 1982 Transient

NRC Region I personnel met with licensee and State of Vermont personnel on July 9, 1982. NRC, State and Vermont Yankee attendance at the meeting was as shown in Attachment 1. The working session with Vermont and Vermont Yankee representatives was part of the ongoing NRC review of the April 24, 1982, loss of feedwater transient and the session was held to gather further information for use in the NRC's consideration of enforcement action. Items discussed at the meeting included the following:

- + NRC findings as a result of NRC inspection 82-07 and investigation 82-12
- + Safety significance of the loss of feedwater event
- + Emergency plan procedures for communications and notifications of events
- + Status of revisions to the Emergency Plan and the implementing procedures
- + Scope and purpose of NRC Enforcement Policy

The matters discussed during the meeting were considered useful in the NRC's ongoing review of the event.

14. Unresolved Item

An unresolved item is a matter for which more information is required to determine whether an item is acceptable or a violation of requirements. An unresolved item is discussed in paragraph 4 of this report.

15. Management Meeting

Meetings were held with licensee management periodically during the inspection and at the conclusion of the inspection period to discuss inspection findings. The apparent violation of Technical Specification 6.5.B requirements was discussed in a meeting with the Plant Manager on July 16, 1982. The licensee acknowledged the inspector's findings.

The inspector also informed the licensee that NRC staffing at the Vermont Yankee site had been reduced to one resident inspector as of July 11, 1982, with the reassignment of Mr. S. J. Collins to another facility.

ATTACHMENT 1

Meeting Attendees - July 9, 1982

Vermont Yankee Nuclear Power Corporation

Mr. W. F. Conway, President and Chief Executive Officer
Mr. E. W. Jackson, Manager of Operations
Mr. W. P. Murphy, Plant Manager

Yankee Atomic Electric Company

Mr. J. A. MacDonald, Manager, Radiation Protection Group
Mr. J. G. Robinson, Director, Environmental Engineering

State of Vermont

Mr. M. C. Sinclair, Secretary, Civil and Military Affairs
Mr. R. H. Saudek, Commissioner of Public Service
Mr. E. B. Pineles, Governor's Counsel
Mr. P. L. Paull, Nuclear Engineer, Department of Public Service

U. S. Nuclear Regulator Commission

Mr. R. C. Haynes, Regional Administrator, Region I
Mr. R. W. Starostecki, Director, Division of Project and Resident Programs,
Region I
Mr. R. M. Gallo, Chief, Reactor Projects Section, Region I
Mr. W. J. Raymond, Senior Resident Inspector, Vermont Yankee Resident Office