

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

TERA 50-271

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Report No. 82-16

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: August 2-30, 1982

Inspectors: W. J. Raymond 9/17/82
W. J. Raymond, Senior Resident Inspector

Approved by: Robert M. Gallo 9/22/82
R. M. Gallo, Chief, Reactor Projects
Section 1A, Projects Branch #1

Inspection Summary:

Inspection on August 2-30, 1982 (Report No. 50-271/82-16)

Areas Inspected: Routine, announced inspection on routine and back shifts by the resident inspector of: previous inspection findings; plant operations, including plant status and operational activities; physical security; operational surveillance; maintenance activities; safeguard system operability; followup of plant evolutions and events; and, followup of licensee event reports. The onsite inspection involved 72 hours by one resident inspector.

Results: No violations were identified by the inspector in eight areas reviewed.

1. Persons Contacted

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

Vermont Yankee Nuclear Power Corporation

Mr. R. Branch, Operations Supervisor
Mr. P. Donnelly, Instrument and Control Supervisor
Mr. L. Goldthwaite, Instrument and Control Foreman
Mr. B. Leach, Chemistry and Health Physics Supervisor
Mr. M. Lyster, Assistant Plant Manager
*Mr. W. Murphy, Vice President and Manager of Operations
Mr. R. Pagodin, Engineering Support Supervisor
*Mr. J. Pelletier, Plant Manager
Mr. D. Phillips, Technical Assistant
Mr. R. Selby, Senior Control Instrument Specialist
Mr. J. Sullivan, Maintenance Foreman
Mr. W. Wittmer, Maintenance Supervisor

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

2. Status of Previous Inspection Findings

- a. (Open) Unresolved Item (50-271/81-05-08): Independent Verification of Safety Related Activities. Measures established in AP 0025 require independent verification of plant operating activities. Exceptions to the independent verification requirement are allowed when a functional test can be performed to verify operability and/or when an individual may incur a dose of 20 mRem while performing the independent verification. During a discussion of the implementation of independent verification requirements applied to tagging orders on August 30, 1982, the inspector noted that application of the 20 mRem criteria was improperly interpreted by a licensed operator. Based on this discussion, it appears that the procedural guidance should be rewritten to clarify that the 20 mRem limit is to be applied on a dose per item basis, rather than per job. This matter was discussed with the Plant Manager. The licensee stated that requirements in the switching and tagging procedure (AP 0140) would be revised to incorporate and clarify the dose limit criteria.

The inspector also reviewed the status of licensee actions to revise surveillance procedures to include documentation of independent verification activities. Actions are still in progress to revise Instrument and Control (I&C) Department surveillance procedures as they come up for review in the biennial review cycle. Of 94 procedures, the inspector estimated that 81 had been reviewed and revised, as necessary. The remaining 13 procedures will come up for review by January, 1983. Documentation of independent verification activities for these procedures during the

interim will continue to be provided by the existing procedures in conjunction with the instructions/policy documented in the licensee's February 20, 1981 memo (File No. 1.18) to I&C personnel. The inspector had no further comment on this item at the present time.

This area will be re-examined by the inspector on a subsequent inspection.

- b. (Closed) Unresolved Item (50-271/81-05-10): Use of Purging Versus Selective Collection Media for Air Samples. Actions have been completed to upgrade instructions in emergency procedures OP 3510 and 3530 to specify purging rates for charcoal cartridges used in air samples, prior to performing radioiodine analyses. Additionally, the licensee has provided silver zeolite cartridges for inplant and offsite air samples following an accident. NRC staff review of this matter is further documented in NRC Region I Inspection Reports 50-271/82-05 and 50-271/82-14. Procedures and equipment for using silver zeolite will be issued by September 30, 1982. 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.
- b. The following plant logs and operating records were reviewed periodically during the period of August 2-30, 1982:
- Shift Supervisor's 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
- Shift Turnover Checklist
- Surveillance Log
- Potential Reportable Occurrence Book
- Radiochemistry Analysis Log
- Equipment Status Log
- RE Log Typer-Core Performance Log

No violations were identified.

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 tours were as described below.

a. Control Room Panel Reviews

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, where applicable and personnel knowledge of recent changes to procedures, 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 comparison 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. Confirmatory surveys were performed in areas toured to verify established posting of radiological conditions was proper. Radiation work permits (RWPs) were reviewed to verify conformance with procedure AP 0502, Radiation Work Permits. The following RWPs were reviewed: 82-253, 82-309, 82-297, 82-298 and 82-290.

No violations were identified.

c. Plant Housekeeping and Fire Prevention

Plant housekeeping conditions, including general cleanliness and storage of materials to prevent fire hazards were observed in all 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 violations were identified.

e. Control Room Manning/Shift Turnover

Control Room staffing was reviewed for conformance with the requirements of the Technical Specifications, AP 0152, Shift Turnover and AP 0036, Shift Staffing. Several shift turnovers were observed and all were noted to be thorough and orderly.

No violations 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 82-419, 82-445 and 82-446 were reviewed.

No violations were identified.

g. Analyses of Process Liquids and Gases

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 August 4, 1982, were reviewed.

No violations were identified.

h. Jumpers and Lifted Leads (J/LL)

Implementation of J/LL Request No. 82-54 was 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 request.

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 4.3.D, 3.3.B.5, 3.6.A.1 and 3.7.A.7.b were verified through direct observation and/or surveillance record review.

No violations were identified.

j. 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 transfers and samples were taken and analyzed.

Process controls established to transfer water from the waste collector tank to waste sample tank B were reviewed on August 18, 1982 and found to be in accordance with the requirements of OP 2151.

No violations were identified.

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 procedures. This review included elements of the following security measures:

- guard staffing and manning 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 central and secondary alarm station activities were made at random periods.

No violations were identified.

6. Surveillance Testing

The inspector observed or reviewed portions of the following surveillance tests to verify that: testing was performed in accordance with approved procedures by qualified personnel; test instrumentation was calibrated; test data demonstrated conformance with Technical Specification requirements; 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 4117, Standby Gas Treatment System A Performance Check, August 18, 1982
- OP 4126, Emergency Diesel Generator Operability Test, August 9, 1982

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; radiological controls; personnel qualification; and, equipment return to service, including operability testing.

- MR 82-958, Uninterruptible Power Supply 1A, August 10, 1982
- MR 82-963, Diesel Generator A, August 10 and August 17, 1982
- MR 82-993, Reactor Water Cleanup Valve V12-18, August 16, 1982
- MR 82-138, Piping Hanger RHR-HD-187B, August 6, 1982
- MR 82-758, Reactor Water Cleanup (RWCU) Valve V12-15, August 6, 1982
- MR 82-929, Reactor Core Isolation Cooling System Isolation Relays, August 5, 1982

No violations were identified. The inspector had no further comment on these items, except as noted below.

a. MR 82-963: Diesel Generator A

During operability testing per OP 4126 of the A Diesel Generator on August 10, 1982, fluctuations in jacket cooling water outlet pressure of 8-10 psi were noted. The diesel was declared inoperable since coolant pressure fluctuations could be indicative of leakage past the cylinder adapter seals. Alternate system testing was completed. After further review and consultation with the diesel vendor, the licensee concluded that leakage into the cylinders was not occurring and the diesel was declared operable. The A Diesel Generator was subsequently removed from service on August 17, 1982, for inspection and repair. Air inleakage on jacket cooling water system flexible hosing was identified and repaired by replacement of the hoses. Use of hoses obtained from a non-approved vendor, but which met the original vendor's performance specifications, was dispositioned through non-conformance report (NCR) 82-12. NCR 82-12 is open pending revision of the safety designators on the diesel cooling water flow diagram. This matter is subject to NRC followup pending final dispositioning of NCR 82-12 (UNR 50-271/82-16-01).

b. MR 82-758: RWCU Valve V12-15

RWCU Valve V-12-15 is the containment inboard isolation valve for the supply to the RWCU pumps. Control room personnel noted problems in closing the valve using the CRP 9-4 control switch. Licensee review of the valve control circuitry on June 15, 1982, concluded that the closing torque switch on the motor operator was failed in the open

position. This failure was similar to a previous one in December, 1981. Plant Design Change Request (PDCR) 81-14 was implemented on June 15, 1982, for valve V12-15 to allow for proper seating of the valve without the closing torque switch, by adding a time delayed drop out relay in the closing circuitry for the valve. The inspector reviewed the PDCR 81-14 design change package, including the accompanying safety evaluation and the associated PDCR 81-14 installation and test procedure. The PCIS function of the valve was not affected by the change. No inadequacies were identified. The inspector had no further comments on this item.

c. MR 82-993: RWCU Valve V12-18

While returning the reactor water cleanup system to service on August 16, 1982, power and position indication was lost to the V-12-18 valve at 8:35 A.M., 15 minutes after the valve was opened. The operating cleanup pump automatically tripped as required. Control room personnel closed the inboard isolation valve, V12-15. Subsequent review by the licensee determined that the valve opening torque switch had failed (due to mechanical damage noted in the as-found condition), which allowed the motor to remain energized for 15 minutes after the valve was opened by the operators at about 8:20 A.M. Continued operation of the valve motor resulted in failure of the motor windings and tripping of the motor circuit breaker on DC panel DC-2A at 8:35 A.M. The motor was replaced. A new HFB motor circuit breaker was installed after testing was completed to verify time-current characteristics. After completion of testing per OP 4115.01, valve V12-18 was declared operable at 10:00 P.M. on August 17, 1982 and returned to service. The inspector had no further comment on this item.

8. Safeguard System Operability

Reviews of the Standby Gas Treatment System (Train A), Core Spray System (Loop B) and the Residual Heat Removal System (Loop B) 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.

No violations were identified.

9. Review of Plant Evolutions and Events

The inspector reviewed events that occurred during the inspection to verify continued safe operation of the reactor in accordance with the Technical Specifications and regulatory requirements. The following items, as applicable, were considered during the inspector's review of operational events:

- observations of plant parameters and systems important to safety to confirm operation within approved operational limits;
- description of event, including cause, systems involved, safety significance, facility status and status of engineered safety features equipment;
- details relating to personnel injury, release of radioactive material and exposure to radioactive material;
- verification of correct operation of automatic equipment;
- verification of proper manual actions by plant personnel; and,
- verification of adherence to approved plant procedures.

Items reviewed during this period included: the loss of the No. 4 drywell fan cooler unit on August 13, 1982; reactor scram due to a turbine control system malfunction on August 15, 1982; and plant shutdown and cooldown on August 27, 1982 to replace the recirculation pump seal packages. No violations were identified.

a. Loss of Recirculation Unit No. 4

During normal shift rounds on August 13, 1982, the auxiliary operator noted lower than normal motor current readings for the No. 4 drywell fan cooler/reactor recirculation unit (RRU). After further evaluation, control room personnel concluded the unit was inoperable and RRU No. 4 was shutdown. Surveillance of drywell temperatures was increased as the point-wise temperature distribution changed and re-established a new equilibrium with 3 RRUs in operation. Based on a review of VYOPF 4115.07 completed at 4:30 P.M. on August 13, 1982, the inspector noted that drywell average air temperature increased from about 150°F to 155°F. Additionally, the point-wise radial and axial temperature distributions increased, but remained bounded by valves previously analyzed by the licensee as acceptable (reference: NRC Region I Inspection Report 50-271/82-11). Plant operation at rated power continued until the

shutdown on August 27, 1982. Broken drive belts were replaced on RRU No. 4. Preventative maintenance was completed on all RRUs. Drywell temperatures returned to normal full power values for summer cooling conditions upon the return to power operation on August 31, 1982.

NRC review of elevated drywell temperatures is documented in Inspection Report 50-271/82-11. The effects of elevated temperatures on drywell equipment remains an open item (50-271/82-11-02) subject to further review by the NRC staff. The inspector noted that the revised drywell temperature limits specified in updated Section 5.0 of the Final Safety Analysis Report (issued July 20, 1982) were as follows:

- (i) drywell ambient temperatures in the range of 135°F to 165°F (except for upper regions) will assure sustained life of electrical equipment without deterioration;
- (ii) no limit is established for the upper drywell elevations; and,
- (iii) operation with 4 RRUs is expected to maintain an average temperature of 150°F with a maximum of 135°F in the vicinity of the recirculation pump motors.

Average drywell ambient temperature remained below 165°F during the period from August 13 to August 27, 1982. This area will be examined on a subsequent NRC inspection.

b. Reactor Scram from 94% FP

Power escalation was in progress with the reactor at 94% FP following routine surveillance on August 15, 1982. Upon noticing a poor response to power increase from the turbine control system electrical pressure regulator (EPR), operators switched control from the EPR to the mechanical pressure regulator (MPR). The MPR failed to respond properly after the EPR was removed from service, and a turbine control system induced pressure spike caused a reactor scram on high power (108% FP) at about 10:31 P.M. A group 1 isolation occurred 7 seconds later when main steam line pressure reached about 850 psig with the Mode Switch in RUN. Other plant systems responded as expected for a plant trip from full power. Reactor vessel water level remained above about 120 inches. Post scram recovery was completed in accordance with station operating procedures.

Licensee investigation of the turbine control system determined that the MPR malfunction was caused by a plugged sensing line on the

pressure regulator. The MPR sensing line was cleaned and preventative maintenance checks were completed prior to returning it to service. The licensee is evaluating the source and nature of the material found in the sensing line. Following completion of repairs to the turbine control system, the reactor was returned to critical at 3:00 A.M. on August 16, 1982. Full power operation resumed on August 19, 1982.

Inspector review of the scram event sequence identified no inadequacies in plant personnel response or plant safety systems. The following items were noted and discussed with the Plant Manager on August 18, 1982.

- (1) Five of eight reactor scrams in about the last two years were due to problems induced by the turbine control system. While no immediate safety problems were created by the plant trips, the inspector expressed his concern over the repetitive plant cycles and safety system challenges caused by unresolved turbine control system problems. The inspector noted by review of VYOPF 0145.01 that 101 of 200 allowable scram cycles had occurred as of August 15, 1982. NRC Region I Inspection Report 50-271/82-03 documents previous NRC review of this area.

The licensee acknowledged the inspector's comments and reviewed with the inspector recent actions that have been taken to resolve turbine control system problems. These actions included: overhaul of front standard and control valve servos, 1980-1981; inspection and cleaning of EPR/MPR sensing lines, 1981; overhaul of EPR pressure transducers, 1981; design modification and upgrade of EPR pump skid, 1980; and, MPR inspection and overhaul and tuning, 1980.

- (2) The licensee also discussed evaluations in progress to determine the feasibility of changing setpoints used to initiate group 1 isolations. As a result of NUREG 0737 item II.K.3.16 (Challenges and Failures to Relief Valves), the licensee's NSSS vendor has been contracted to conduct the analyses required to justify changes in the 850 psig main steam pressure and 120% main steam flow isolation setpoints. Pending acceptable results from the analyses, a change to the Technical Specifications would be proposed. The Plant Manager stated that the status and expected schedule for completion of the analyses would be provided to the inspector. This item is considered open pending completion of the licensee's actions and subsequent review by the NRC (IFI 50-271/82-16-02).

c. Recirculation Pump Seal Replacement

Gradual degradation of the recirculation pump seals was noted by the licensee through long term trending of seal leakoffs and seal cavity pressures. The plant was shutdown on August 27, 1982, to replace the seal packages on both recirculation pumps. The inspector reviewed shutdown activities, including health physics controls established for work within the drywell. The inspector also reviewed the preparation for start_{up} and the startup activities in progress on August 31, 1982. Items reviewed included the completion of startup prerequisites per VYOPF 0100.01 and drywell close-out per OP 2115, Appendix A. No inadequacies were identified.

10. Review of Licensee Event Reports (LERs)

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; and, the report satisfied the requirements of Technical Specification 6.7. 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 81-22/3L, MSIV-80D Failed to Close During Surveillance Test, August 1, 1981
- *+ LER 81-25/3L, Isolation Valve CRW-95 Failed to Close During Surveillance Test, September 28, 1981
- *+ LER 81-28/3L, Recirculation Pump Trip Instrumentation Inoperable, October 17, 1981
- + LER 81-32/3L, Isolation Valve CU-68 and CU-15 Seat Leakage Noted During Type C Test, November 20, 1981
- + LER 81-35/3L, Core Spray Injection Valve Circuit Breaker Failure, December 4, 1981
- *+ LER 81-36/3L, Isolation Valve CU-15 Torque Switch Failure, December 17, 1981
- *+ LER 81-37/3L, RHRSW Pump 1A Breaker Failure, December 27, 1981
- *+ LER 82-13/3L, Isolation Valve CU-15 Torque Switch Failure, June 15, 1982

- + LER 82-14/3L, RWCU Valve CU-18 Failed to Open, June 15, 1982
- *+ LER 82-17/3L, Drywell High Pressure Switch PS 5-12B Found Isolated and Inoperable, July 26, 1982
- *+ LER 82-10/3L, RHRSW Pump Breaker Failure, May 13, 1982

Except as noted below, the inspector had no further comments on this item.

a. LER 82-17, Pressure Switch PS 5-12B

While performing OP 4311 on July 26, 1982, I&C Technicians found drywell pressure switch PS 5-12B isolated, which would have prevented it from fulfilling its protective and isolation functions per Technical Specifications 3.1.1 and 3.2.2. Redundant pressure switches were operable and all switches were tested satisfactorily. Personnel who performed the previous monthly surveillance were interviewed by the licensee. The exact reason why or how the switch became isolated could not be determined. However, all technicians were reinstructed on the importance of properly returning systems to service.

The inspector reviewed the completed OP 4311 data sheets for July 26, 1982, and the previous monthly surveillance. Test results recorded on the data sheets were satisfactory and all sign-offs were complete. The inspector noted that as of June, 1982, OP 4311 had not been revised to incorporate a specific verification signoff at the procedure step where "return-to-service" occurs. Revision 8 of OP 4311, issued on July 29, 1982, did include such verification. The failure to return PS 5-12B to service upon completion of testing in June, 1982, appears to be a violation of Technical Specification 6.5.A and OP 4311 requirements, identified and corrected by the licensee. The inspector had no further comments on this item.

b. LER 82-10, RHRSW Pump Breaker

LER 82-10 documents two separate failures of the circuit breaker for the A RHRSW pump. A failure on May 13, 1982, was caused by a washer found jamming an auxiliary relay in the breaker mechanism. The washer was removed and the breaker was inspected and tested satisfactorily. On May 27, 1982, the breaker again failed. Subsequent inspection determined a worn "prop" to be the cause of failure. A new prop was installed and the breaker was tested and returned to service.

A failure of the A RHRSW pump breaker on December 27, 1981 (LER 81-37) was caused by worn bushings on the operating mechanism. The inspector reviewed the status of the licensee's preventative maintenance program

to replace the operating mechanism bushings on all 4KV BUS 3 and 4 motor breakers. As of July, 1982, eight of sixteen breakers had been completed, including all four RHRSW pump breakers. The remaining eight breakers will be completed in conjunction with the monthly surveillance testing of ECCS equipment. The inspector had no further comments on this item.

c. LER 81-25, Isolation Valve LRW-95 Failure

LER 81-25 concerns the failure of a containment isolation valve due to mechanical binding of the valve stem. It constituted another in a series of failures on the LRW-95 valves. Previous failures (LERs 81-21 and 81-17) were due to wear and/or dirt in the operating mechanism of the valves. Actions were completed during the 1981 refueling outage to install new NP series ASCO solenoid operators for the LRW 94 and 95 valves. No subsequent failures have since occurred.

Other failures of containment isolation valves have been identified by the licensee which were caused by dirt or other contaminant in the operating mechanism of the valves. Examples are documented in LERs 82-15 and 81-22.

One set of failures involve drywell/torus sample and purge line isolation valves which use Aktomatic 15800 series solenoid operators. The cause of these failures was due to an accumulation of dirt on the valve plunger assembly. The licensee plans to change the operators on sample valves susceptible to this failure mechanism with an operator of different design. This action is being completed through PDCR 82-02.

LER 81-22 concerned the failure of MSIV 80-D due to a foreign particle (dirt) lodged in the sliding spool area of the pilot solenoid valve, which prevented air from operating the main valve piston. Air supply to the pilot solenoid valves is from the Instrument Air System. Similar failures were reported in LERs 78-4/3L and 77-35/3L. Another possible similar failure was reported in LER 74-13. Dirt and corrosion from the Instrument Air System can in time accumulate within critical components of valve operating mechanisms and create the potential for adverse effects on valve operation. This matter was discussed with the Plant Manager on August 18, 1982. The licensee stated that the item would be reviewed further to determine whether further actions are warranted to improve the quality of air supply to the MSIV solenoid operators. This item will be reviewed further by the NRC pending completion of the licensee's evaluation (IFI 50-271/82-16-03).

d. LER 81-34, Missed Surveillance Test

LER 81-34/3L concerned an operating cycle test on the SGBT system HEPA filters that was not performed due to an oversight in test scheduling. The HEPA filters were subsequently tested satisfactorily. The cause for scheduling oversight was personnel error, which was also the cause for 9 other events over a three year period (reference LERs 81-33, 81-26, 81-03, 81-02, 80-38, 80-34, 80-16, 79-31 and 79-12). Seven of these ten events concerned missed surveillance; three concerned equipment limiting conditions for operation. The distribution of events amongst the Plant Departments was as follows: Chemistry and Health Physics - 4; Maintenance -3; Instrumentation and Control - 2; and Operations - 1.

The number of surveillance test missed is considered insignificant in comparison with the total number of all surveillances performed on an annual basis. The total number of events attributable to personnel error over a three-year period is not considered significant. However, this matter will be further reviewed on future NRC inspections to determine whether the observed events are indicative of an adverse trend (IFI 50-271/82-16-04).

e. LER 82-13, CU-15 Torque Switch Failure

LERs 82-13 and 81-36 concerned failure of the closing torque switch on the reactor water cleanup system inboard isolation valve V12-15. PDCR 81-14 was implemented to replace the torque switch with a time delay drop-out relay, following the December 27, 1981, failure. The torque switch was repaired and the circuitry was returned to its original configuration during a plant cold shutdown in June, 1982. PDCR 81-14 was implemented again on June 15, 1982, following a subsequent failure of the torque switch.

The inspector reviewed the nature of the circuitry changes instituted by PDCR 81-14 and noted that the PCIS function of the valve was not adversely affected by the changes. See paragraph 7.b. of this report for additional discussions of this item.

11. Unresolved Items

Unresolved items are items for which further information is required to determine whether the items are acceptable or violations. An unresolved item is discussed in paragraph 7 of this report.

12. Management Meetings

During the inspection period, licensee management was periodically notified of the preliminary findings by the resident inspectors. A summary was also provided at the conclusion of the inspection and prior to report issuance.