## U. S. NUCLEAR REGULATORY COMMISSION

#### REGION I

Report No. 84-22

Docket No. 50-271

License No. DPR-28

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

Facility Name: Vermont Yankee Nuclear Power Station

Inspection at: Vernon, Vermont

Inspection Conducted: November 1 - December 3, 1984

Inspectors:

Senior Resident Inspector

gject Engineer

12/13/84

Approved by:

L. E. Tripp, Chief, Reactor Projects Section 3A, Projects Branch 3

<u>Inspection Summary</u>: Inspection on November 1 - December 3, 1984 (Report No. 50-271/84-22) <u>Areas Inspected</u>: Routine, unannounced inspection on day time and backshifts by the resident and Region-based inspectors of: actions on previous inspection findings; plant power operations, including operating activities and records; plant physical security; surveillance testing; maintenance activities; Appendix R Emergency Lighting inspection followup; licensee event reports; plant staffing changes; and evaluations regarding Rosemont 1152 transmitters. The inspection involved 88 onsite inspection hours.

<u>Results</u>: No violations were identified in 9 areas inspected. A concern was identified in the area of emergency lighting for Appendix R requirements in that sufficient lighting was not provided in all required areas.

### 1.0 Persons Contacted

Interviews and discussions were conducted with members of the licensee staff and management during the report period to obtain information pertinent to the areas inspected. Inspection findings were discussed periodically with the management and supervisory personnel listed below.

- Mr. J. Babbitt, Security Supervisor
- Mr. J. Desilets, Operations Supervisor
- Mr. R. Leach, Chemistry and Health Physics Supervisor
- Mr. J. Pelletier, Plant Manager
- Mr. D. Reid, Operations Superintendent

## 2.0 Status of Previous Inspection Findings

2.1 (Closed) Followup Item 84-21-01: Plant Effluent Monitor Calibration. Licensee drawing 5920-FS-1603 shows the installation details for the plant effluent monitor, MPL 17-340, at the discharge structure. The pipe that houses the detector is made of 4 inch diameter schedule 80 pipe at the top, and undergoes a transition to schedule 10 pipe at the bottom of the well, where the detector is mounted. The schedule 10 wall thickness matches the pipe wall thickness used in the detector calibration stand. No changes to the monitor calibration procedure are necessary. This item is closed.

2.2 (Open) Follow Item 84-21-02: Problem With Control Rod Drive (CRD) 18-11. After performing acceptably and passing six coupling checks under cold conditions, CRD 18-11 could not be withdrawn past position 46 under hot conditions. A licensee representative stated that engineering evaluations have shown that operation for the remainder of the cycle with the group of four control rods including 18-11 at position 46 will not significantly reduce any safety margins. The inspector reviewed Yankee Atomic Electric Company evaluation RP 84-338 dated November 9, 1984 which supported the licensee's position. In response to the inspector's request, the licensee placed control rod 18-11 on the computer input for monitoring of scram times such that any anomalies occurring during an unplanned scram of the reactor would be recorded. This item remains open pending completion of the licensee's evaluation and repair of control rod 18-11.

2.3 (Open) Follow Item 84-21-10: North 40 Survey Results and Evaluation. The licensee completed surveys of materials in the owner controlled area North of the plant site (North 40) and identified no other contaminated items. The contamination levels on all items except the box of asbestos were less than applicable state and federal release limits. However, the level of radioactivity on some of the items was in excess of Vermont Yankee procedure limits for release to the unrestricted area. The licensee determined that the box containing the asbestos was removed from the plant during the Fall 1981 refueling outage, and was subsequently moved from storage in the North Warehouse to the salvageable materials storage area in the North 40. The licensee concluded that the mishandling of the box was an isolated incident and no contaminated asbestos was removed from the plant site.

The inspector reviewed the status of the actions listed in Plant Information Report (PIR) 84-04, which were scheduled to be taken as a result of the contaminated material identified onsite on February 2, 1984. An evaluation was completed and measures were taken to reduce the number of 'open' exits from the radiation controlled area to 6; the remaining 13 exits were either shut with lead seals or locked with key control provided by health physics personnel. Continuous health physics coverage is provided for the movement of material outside the radiation controlled area. Contamination surveys of the plant grounds were completed in the Spring of 1984 and will be repeated annually. The last action to be taken will install a radiation monitor at the vehicle gate near Gatehouse 2. Preparations to install the vehicle monitor were in progress during this inspection period and the monitor is scheduled to be functional by the end of 1984. The licensee determined that the box of contaminated asbestos containing 20 uCi'of Co-60 would have been detected by a vehicle monitor. (Licensee preliminary estimates on detectability are as low as 18 uCi of Co-60 or 34 uCi of CS-137). The inspector had no further comments on this item at the present time. The licensee's PIR for the material found in the North 40 is scheduled to be completed and available for review by January, 1984. This item remains open pending completion of the PIR and subsequent review by the NRC.

2.4 (Open) Unresolved Item 84-21-09: Evaluation of Diesel Generator (DG) Differential Relay Failures. Licensee and Yankee Atomic engineering personnel met with Westinghouse representatives on November 7, 1984 to review the application of the SA-1 relays at Vermont Yankee and the failures in October, 1984.

The following conclusions were reached during the meeting: (i) the application of the SA-1 relays at Vermont Yankee did not contribute to the failures; (ii) the misorientated surge suppression zener diodes installed for the lockout relay would have increased the voltage stress on the differential relay trip circuitry by 180 volts, but probably did not contribute to the failures; (iii) no obvious explanation for the observed failures within 12 hours could be identified - the relays probably reached an accelerated end-of-life from cumulative damage sustained from normally experienced switching transients within the DC system; (iv) there was no immediate jeopardy of another zener failure in the repaired relays, even though the process leading to failure was still in place; and, (v) the original relays should be replaced with an improved Class 1E relay, Style 1329D62A01D. Since there is a 26 week lead time to obtain the Class 1E style, engineering recommended that currently available commercial grade relays, which are functionally identical to the original relays, be installed for the interim period.

Commercial grade SA-1 relays, style 290B225A10D, were installed in the control circuits for the A and B diesel generators on November 27 and 28, respectively, in accordance with Engineering Design Change Request (EDCR) 84-425. The relays were obtained under purchase order 23860. The inspector witnessed the installation activities for the B diesel. The commercial grade relays incorporate an improved surge suppression circuit that uses an RC network in place of the zener diode. The commercial relay is also enhanced with a larger surge withstand capacity and a saturating reactor circuit that will minimize inadvertent operation of the relays due to current transformer saturation. The EDCR safety evaluation addressed the differences between the original, commercial and Class 1E relays and concluded that the commercial and Class 1E relays were identical, except for Quality Assurance and a slight change in the indicator circuit.

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The inspector noted that the color coding for the knife switches on the new relays was changed to agree with the latest vendor recommendation to close the positive voltage contact last when placing the relay into the circuit electrically. Both diesel generators were satisfactorily tested using the normal operations surveil-lance procedure following installation of the new relays.

The inspector had no further comment on this item at the present time. This item remains open pending complet in of the licensee's review of the October failures and subsequent review by the NRC.

### 3.0 Shift Logs and Operating Records

Shift logs and operating records were reviewed to determine the status of the plant and changes in operational conditions since the last log review, and to verify that: (1) selected Technical Specification limits were met; (2) log entries involving abnormal conditions provided sufficient detail to communicate equipment status, correction, and restoration; (3) operating logs and surveillance sheets were properly completed and log book reviews were conducted by the staff; and, (4) Operating and Special Orders did not conflict with Technical Specification requirements.

The following plant logs and operating records were reviewed periodically during the period of November 1 - December 3, 1984:

- -- Shift Supervisor's Log
- -- Night Order Book Entries
- -- Control Room Operators Log
- -- Auxiliary Operators Log
- -- Switching Log
- -- Jumper and Lifted Lead Log
- -- Maintenance Request Log
- -- Shift Turnover Checklist
- -- Discharge Log
- -- Radiochemistry Analysis Log
- -- Chemistry Log
- -- PRO Reports dated August 19 and 31, 1984

No violations were identified.

#### 4.0 Inspection 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, Reactor Building, Diesel Rooms, Radwaste Building, Control Point Areas, and the grounds within the Protected Area. Control room staffing was reviewed for conformance with the requirements of the Technical Specifications and AP 0036, Shift Staffing. Inspection reviews and findings completed during the tours were as described below.

## 4.1 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.

# 4.2 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. The inspector reviewed the licensee actions following a fire that occurred on a portion of the Turbine Building roof.

The fire was discovered by Operations personnel at 8:35 P.M. on November 7, 1984, on the South end of the Ventilation Corridor roof above Turbine Supply Fans 1A and 1B. A fire emergency was declared and the plant fire brigade responded to extinguish a smoldering fire that occurred in new roofing material that was installed that day. The fire did not affect safety related systems or equipment. Plant operators declared an Unusual Event in accordance with the emergency plan at 8:45 P.M. since the fire was not reported out within 10 minutes. The Vernon Fire Department responded to the site, but was not needed to extinguish the fire. The fire was completely extinguished after about a 2 foot by 4 foot area of roofing material was removed. The emergency conditions were terminated at 10:15 P.M. Notifications were made to the States and the NRC Duty Officer by 9:00 P.M. There were no injuries and no release of radioactive material as a result of the fire.

The licensee suspended further work on the roof pending completion of an investigation of the fire. The fire started as a result of work activities on November 7, 1984 and occurred due to the process used to install the roof where torches are used to melt sheets of roofing material together. Installation activities were completed at 4:00 P.M. on November 7, 1984 and a fire watch was maintained until 6:00 P.M. per established procedures. Roof insulation and tar paper apparently smoldered since the termination of work at 4:00 P.M. and then caught fire at about 8:35 P.M. Damage caused by the fire was minimal and limited to the newly installed material. Work resumed on November 13, 1984 after the licensee changed the technique used to install the roofing material and established additional controls.

No violations were identified.

### 4.3 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, Vermont Yankee Local Control Switching Rule. Controls implemented per Switching Orders 84-1355 and 1347 were reviewed.

No violations were identified.

#### 4.4 Feedwater Sparger Performance

The inspector monitored the feedwater sparger leakage detection system data and reviewed the monthly summary of feedwater sparger performance provided by the licensee in accordance with his commitment to NRC:NRR made in letter FVY 82-105. The licensee reported that, based on the leakage monitoring data reduced as of October 31, 1984, there were (1) no deviations in excess of 0.10 from the steady state value of normalized thermocouple readings; and (2) no failures in the 16 thermocouples initially installed on the 4 feedwater nozzles.

No violations were identified.

### 4.5 Safeguard System Operability

Reviews of the Residual Heat Removal, Core Spray, Residual Heat Removal Service Water, High Pressure Coolant Injection, Standby Liquid Control and Reactor Core Isolation Cooling (RCIC) systems were conducted to verify 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 electrical breakers were properly aligned for active components.
- -- inspection of major components for leakage, proper lubrication, cooling water supply, and general condition.

No violations were identified.

#### 4.6 Radiological Controls

Radiation controls established by the licensee, including radiological surveys, condition of access control barriers, and postings within the radiation controlled area were observed for conformance with the requirements of 10 CFR 20 and AP 0503, Establishing and Posting Controlled Areas. Radiation work permits were reviewed to verify conformance with procedure AP 0502. Work activities in progress were reviewed for conformance with the established RWP requirements.

No violations were identified.

4.7 Jumpers and Lifted Leads (J/LL)

Implementation of J/LL Requests 84-173 through 84-185 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 requests.

Implementation of Mechanical Bypass request 84-21 on November 2, 1984, was reviewed to verify no adverse conditions were created and to verify that controls were

maintained as specified in the request. The bypass was issued during work on the discharge check valve for the A residual heat removal service water pump and was used to drain water from the pump casing to the reactor building roof drain. Samples were taken of the service water to assure it was not contaminated. Requirements issued with the bypass included provisions to assure that secondary containment was not compromised.

No violations were identified.

#### 4.8 Analyses of Process Liquids and Gases

Analysis 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.

No violations were identified.

### 5.0 Maintenance Activities

Maintenance activity associated with the following was reviewed to verify that the requirements of AP 0021 were met and equipment return to service was proper, including the completion of operability testing.

-- MR 84-1447, Containment Sample Valve VG-26 Position Indication -- MR 84-2033, A RHRSW Pump Discharge Check Valve

5.1 Valve VG-26 is a containment isolation valve and its 'open' position indication was lost due to a failed reed switch. This item was previously reviewed during NRC inspection 84-18. The 'open' position indication for VG-26 was restored to an operable status during the inspection period following replacement of the reed switch. No inadequacies were identified.

5.2 Plant operators noted that the A RHRSW pump discharge check valve was not seating properly during the performance of the monthly functional test of the system per OP 4124 on November 2, 1984. The manual discharge valve was shut and the A RHRSW pump was declared inoperable at 5:00 A.M. Alternate system testing was conducted in accordance with Technical Specification 3.5.C.2. The check valve was repaired and the A RHRSW pump was declared operable following surveillance testing at 10:06 P.M. on November 2, 1984.

No violations were identified.

### 6.0 Surveillance Activities

The following surveillance tests were reviewed to verify that the testing was performed as required by the procedure, test results demonstrated conformance with Technical Specification requirements, and, system restoration to service was proper.

-- OP 4124.06, RHRSW System Monthly Functional Test, November 2, 1984 -- OP 4326.01, Reactor Building Ventilation and Refueling Floor Radiation Monitor Functional Test, November 27, 1984

6.1 During the performance of OP 4326 on November 2, 1984, Instrument and Control (I&C) technicians caused an inadvertent Group III isolation at 12:55 P.M. by removing the channel bypass prior to clearing the high trip condition instituted during the functional test of the reactor building ventilation and refueling floor radiation monitors. The reactor building ventilation system isolated, the Group III containment isolation valves closed, and the standby gas treatment system started as required. Plant operators re-established normal conditions and a notification was made to the NRC Duty Officer at 1:19 P.M.

The incident was reviewed with the I&C Foreman. The licensee's review of the event determined that the inadvertent actuation occurred as a result of personnel error, and no procedural inadequacies were identified. The inspector verified that OP 4326 requires that the radiation monitor trip conditions be cleared prior to removing the channel bypass. The technicians involved in the test were counseled by I&C supervision.

The failure to follow the requirements of OP 4326 is considered a licensee identified violation of Technical Specification 6.5.A. No notice of violation will be issued since the requirements of the NRC Enforcement Criteria in 10 CFR 2, Appendix C, were met.

No violations were identified by the inspector.

#### 7.0 Operational Status Reviews

Control Room panels and operating logs were reviewed regularly for indications of operational problems. The operational status of standby emergency systems and equipment aligned to support routine plant operation was, confirmed by direct review of control room panels. Licensed personnel were interviewed regarding existing plant conditions, facility configuration and knowledge of recent changes to procedures, as applicable. Acknowledged alarms were reviewed with licensed personnel as to cause and corrective actions being taken, where applicable. Anomalous conditions were reviewed further.

Operational status reviews were performed to verify conformance with Techncial Specification limiting conditions for operation and approved procedures. The following items were noted during inspector reviews of plant operational status.

7.1 The recirculation weld leakage detection system remained operable during the inspection period, with status information available from six detectors. The system was energized continually to check the status of the detectors. No indications of recirculation system weld leakage was detected.

No violations were identified.

7.2 During routine operations at 100% full power on November 11, 1984, the B Recirculation Pump motor generator (MG) set tripped at 6:13 A.M. for no apparent reason. A generator lockout condition was annunciated in the main control room, but no other initiating condition that would cause a lockout was identified. The plant response to the loss of one recirculation pump was as expected and operators stabilized the plant in accordance with OP 2110. The generator lockout condition was cleared. Subsequent investigations could not identify a cause for the trip and escalation to full power resumed at 8:49 A.M.

Operators noted 5% down spikes in speed on the B MG set at 10:00 A.M. and reactor power was decreased to remove the B pump from service for further evaluation. A faulty generator tachometer was identified and replaced to correct the speed spiking problem. However, no other condition was identified that would explain the earlier generator lockout condition. The B recirculation pump was restarted at 2:13 P.M. on November 11, 1984 and escalation to full power was completed at 1:30 A.M. on November 12, 1984. The B recirculation pump operated without further incident for the remainder of the inspection period.

No violations were identified.

7.3 During routine operations at 100% power on November 16, 1984, an inadvertent trip of Recirculation Pump A occurred at 8:05 A.M. when Motor Control Center (MCC) 6A was lost inadvertently due to an auxiliary operator's error. While preparing to rack out a breaker on MCC 6A, the operator noted interference when he inserted the latching tool on the compartment interlock for the breaker of interest. The operator inserted the tool on the interlock mechanism for the adjacent MCC 6A feeder breaker for comparison. This action caused the interlock mechanism to trip the feeder breaker, which operated as designed for personnel and equipment protection to assure a breaker is open prior to racking it down. The inadvertent trip of the MCC 6A feeder breaker caused a loss of power to the A recirculation lube oil system pump and other equipment. The recirculation pump tripped on loss of oil pressure.

The reactor responded as expected to the loss of one of two recirculation pumps, i.e., core flow decreased thereby reducing core power, steam flow, and feed flow. The inspector observed the restarting of the recirculation pump A, which was done in accordance with the normal operating procedure. No inadequacies were identified.

No violations were identified.

7.4 During routine operations at 100% power, an inadvertent Group III isolation occurred at 10:29 P.M. on November 17, 1984, due to a spurious high radiation signal spike on the B reactor building ventilation monitor. Operators reset the isolation after reviewing other area and process radiation monitors to confirm that the signal on the monitor was spurious and erroneous. Spurious Group III isolations occurred six times during the next day for the same reason, and the operators bypassed radiation monitor 17-452B at 4:51 P.M. on November 18, 1984 to eliminate the problem. Bypassing the radiation monitor caused the plant to enter a 24 hour action statement per Technical Specification Table 3.2.3. Monitor 17-452B was repaired and returned to an operable condition at 4:20 P.M. on November 19, 1984.

No violations were identified.

### 8.0 Rosemont 1152B Transmitters

The licensee determined on November 2, 1984 that a report under CFR Part ?1 should be made for a potential defect that was first identified during an investigation of a level transmitter failure reported to the NRC in LER 84-19. The level transmitter failed on June 15, 1984 as a result of the circuit board mounting screws coming loose in the electronics unit. Loose mounting screws were found in 6 of 16 other Rosemont model 1152T0280 transmitters used in safety related applications for vessel level and pressure measurement. The transmitters were installed during a design change in 1980 and are seismically qualified to IEEE-344 (1975). The following is a listing of 1152T0280 transmitters in applications used at the plant, along with a summary of the findings following the June failures.

#### 1152T0280s

-	LT	2-3-57 A 1	B (	2 units)	-	PT	2-3-55	A	to	D	(4	units)
-	LT	2-3-58 A &	B (	2 units)	-	PT	2-3-56	A	to	D	(4	units)
-	LT	2-3-72 A t	OD (	4 units)								

#### Summary of Findings - Loose Circuit Board Screws

-	PT	2-3-56D	1	screw loose 3/4 turn
-	PT	2-3-55D	2	screws loose 3/4 turn
-	PT	2-3-55C	1	screw loose 1 turn
-	PT	2-3-55A	3	screws loose 3/4 turn
-	PT	2-3-72A	1	screw missing
-	PT	2-3-72C	3	screws loosened 4 turns (failed instrument)

The instruments listed above provide reactor vessel level and pressure signal inputs to the reactor protection and engineered safeguard actuation systems. The transmitters use three mounting screws to mount the circuit board inside the electronics unit. It takes 10 turns to completely remove a screw, but only 4 turns (on all three screws) to allow the circuit board to become unplugged. A loose circuit board in the level transmitter that failed in June, 1984 caused the transmitter to fail high, which would have prevented a low reactor vessel level condition from being measured and initiating a reactor scram. A potentially substantial safety hazard could have existed due to the defect had the condition remained undetected and uncorrected, by preventing multiple, redundant transmitters from performing their safety function.

The inspector met with the Engineering Support Supervisor on November 2, 1984 to review the licensee's evaluations and the corrective actions taken following the June 15, 1984 failure to check and retighten the screws in all 16 transmitters. Rosemont 1153 transmitters used at the plant have a different mounting configuration and are not considered to be subject to the same failure mechanism. The 1152 transmitters will be re-checked in February, 1985 to determine whether the connections loosen during normal service for the transmitters. It is possible that the transmitters were supplied with loose circuit boards from the vendor. The licensee has been in contact with Rosemont, Inc. for followup and further review of the item. A written report pursuant to CFR Part 21 was submitted on November 7, 1984 as Supplement 1 to LER 84-19. This item is considered open pending completion of the licensee's review to determine whether the observed failures were caused by normal service conditions, and pending receipt and review of further information regarding the vendor's evaluation of the failure (IFI 84-22-01).

#### 9.0 Staffing Changes

The inspector met with the Plant Manager on November 15, 1984 to review personnel and staffing changes in the Operations Department. The following changes were effective on November 9, 1984:

- -- Mr. D. LaBarge was assigned to the position of Senior Operations Engineer
- -- Mr. J. Edelhauser was assigned to the recirculation pipe replacement project
- -- Mr. R. Granch was assigned to the new staff position of Assistant to the Operations Supervisor
- -- Mr. G. LeClair was assigned to the position of Assistant Operations Supervisor

The above changes created two vacancies in the Shift Supervisor ranks which would be filled from the existing group of operators with Senior Reactor Operator (SRO) licenses. The licensee also stated that Mr. J. Desilets would remain the Operations Supervisor for an interim period until another person could be selected for the position. The alternatives available to the licensee to fill the Operations Supervisor position and the Technical Specification 6.0 requirements that the incumbent for the position hold an SRO license were discussed. The licensee is considering a proposed change to the technical specifications.

The inspector identified no inadequacies regarding experience and license requirements in the personnel and staffing changes announced by the licensee.

### 10.0 Emergency Lighting for Alternate Shutdown

Paragraph III.J of Appendix R to 10 CFR 50 states, "Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto".

Procedure OP 3126, Shutdown Using Alternate Shutdown Methods, August 3, 1984, provides the instructions to shut down the plant in the event of the loss of the Control Room or Cable Vault. The procedure includes the immediate actions that must be taken to shut down the plant remote from the control room, assuming a concurrent loss of offsite power, along with instructions to restore onside AC power using diesel generator A and to use the residual heat removal system to control torus and reactor temperatures once AC power has been restored. Emergency lighting may have to be used to perform some of the actions prescribed in OP 3126.

The licensee installed 41 emergency lighting battery units (most with 2 lights per unit) under Plant Alteration Requests (PARs) 81-03, 82-27 and 83-72 to specifically aid plant shutdown activities. Other emergency lights exist for general safety purposes. The battery units are rated for 8 hours with up to two 12 watt lamps. The inspector reviewed the three PAR packages and verified that the 41 battery units were installed as described in the PARs with no more than two lamps. Each battery's indications were reviewed to verify the battery was operational. The emergency lighting units are inspected for operability monthly under procedure OP 4800, General Safety Surveillance, July 2, 1984. The inspector reviewed the completed forms VYOPF 4800.08 performed on September 13, 1984 and October 16, 1984. The inspector noted that lighting unit 21A-3-1K was not listed on form VYOPF 4800.08, but that the unit had been written on the two completed forms and verified to be operational. A licensee representative stated that the form would be changed to add lighting unit 21A-3-1K.

Procedure OP 3126 was used as a guide to walk the routes to be used by operators to verify that adequate lighting would exist to reach the equipment and to operate it. The inspector reviewed drawings G191357, G191358 and G191359 (lighting equipment in the Reactor Building) to verify that the drawings had been revised to show the as-installed configuration of the emergency lighting units.

In general, the inspector concluded that the emergency lighting provided to reach equipment needed for alternate shutdown is good. However, the inspector concluded that the lighting in the following areas may not be sufficient to perform the necessary operations of the equipment and that further review of these operations would be necessary, possibly including simulated equipment operation under the actual emergency lighting conditions. (Parenthetical paragraph identification are references in OP 3126.)

- (a) Barksdale pressure switch isolation valves (C.3.a and Appendix A and H)
- (b) RCIC alternate shutdown panel (Appendix A and H)
- (c) RHR alternate shutdown panel and MCC 9B (Appendix B and G)
- (d) Local manual control of both Recirculation Motor Generator sets (C.7.a, Appendix C and Appendix G.3)
- (e) Alternate/normal control power knife switches for Bus 9 and Bus 4 (C.5 and Appendix I.2)
- (f) Valves RHR-38A and RHR-66 near NE Torus catwalk (Appendix B, Torus Cooling Mode, Step 1 and Shutdown Cooling Mode, Step 1)
- (g) Travel from RCIC Room to HPCI Room and return via Torus area (Appendix A,5 and Appendix H. 5)

The above areas were reviewed with licensee personnel and normal lighting was shut off at the inspector's request on November 28, 1984 on the Reactor Building 280 foot elevation and in the 213 foot elevation of the RCIC room to aid in the evaluation. Existing lighting was judged sufficient by the inspector to operate the equipment listed in items c, d, and f above. For item e, existing lighting was sufficient for Bus 9, but an additional light should be added for the back side of Bus 4. Additional lighting should be installed to operate the equipment identified in items a, b, and g. Although emergency lighting was sufficient to illuminate the general area of the RCIC 213 foot elevation, the RCIC alternate shutdown panel was in total darkness without normal lighting and a light adjacent to the panel is necessary to operate the panel. The licensee noted the above discrepancies for further review and corrective action. This item is unresolved pending completion of licensee actions to correct the identified lighting deficiencies and subsequent review by the NRC (UNR 84-22-02).

# 11.0 Review of Licensee Event Reports

The licensee event reports (LERs) listed in Appendix I were reviewed in the NRC Resident and Regional Offices. The reports were reviewed to verify that the event and its safety significance were clearly described; the cause of the event was identified and corrective actions taken (or planned) were appropriate; and, the report satisfied the requirements of 10 CFR 50.73.

No violations were identified.

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# 13.0 Management Meetings

Preliminary inspection findings were discussed with licensee management periodically during the inspection. A summary of findings for the report period was also provided at the conclusion of the inspection and prior to report issuance.

### APPENDIX I

# LISTING OF LERS REVIEWED

LER 84-03, 21 samples from the weekly surveillance of the environmental stations were mistakenly discarded as rubbish

LER 84-04, Reactor scram from 100 FP on April 16, 1984 due to MSIV isolation caused by MSIV 80C failing closed during testing due to a faulty air pilot assembly

LER 84-05, HPCI inoperable during 5 days of power operations due to blocked high drywell pressure initiation logic, which was not reset by operator following April 16, 1984 scram

LER 84-06, Both post accident torus level instruments found inoperable following return to service after routine calibration

LER 84-08, Weekly data at one environmental air station lost because technician failed to restart sample pump following collection of sample cartridges

LER 84-10, Both stack gas monitors inoperable during power operations: one monitor had instrument drift by ½ decade; a gamma sensitive detector was mistakenly installed for the second monitor during maintenance

LER 84-13, Redundant SLC relief valves had lift setpoints found less than technical specification limits during testing; system function not compromised

LER 84-14, Weekly air sample data lost at environmental station due to blown fuse on sample pump, possibly caused by electrical storm

LER 84-15, Inadvertent scram signal generated on July 24, 1984 while shutdown for refueling when operator inadvertently tripped RPS power during "second" verification checks

LER 84-16, Inadvertent scram signal generated on July 28, 1984 with plant in refueling shutdown due to spurious loss of alternate RPS power during bus switching operations

LER 84-17, Service water system sampling not performed for two days while radiation monitor out of service due to improper shift turnover

LER 84-18, Inadvertent scram signal generated on August 1, 1984 with plant in refueling due to spurious loss of alternate RPS power during bus switching operations

LER 84-19, Rosemont 1152 level transmitters potentially inoperable due to loose circuit board mounting screws supplied by vendor

LER 84-20. RCIC inoperable when failed annunciator relay in control circuit caused loss of power to inboard steam supply valve

LER 84-22, Lockouts tripped on both diesel generators due to failed zener diodes in generator differential relays