

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/88009(DRP)

Docket No. 50-461

License No. NPF-62

Licensee: Illinois Power Company  
500 South 27th Street  
Decatur, IL 62525

Facility Name: Clinton Power Station


Inspection At: Clinton Site, Clinton, Illinois

Inspection Conducted: April 4 through May 18, 1988

Inspectors: P. Hiland

S. Ray

D. Calhoun

Approved By: *R. W. Cooper*   
R. W. Cooper, Chief  
Reactor Projects Section 3B

Date 6/3/88

Inspection Summary

Inspection on April 4 through May 18, 1988 (Report No. 50-461/88009(DRP))

Areas Inspected: Routine, unannounced safety inspection by the resident inspectors of licensee action on previous inspection findings; onsite followup of written reports of nonroutine events at power reactor facilities; verification of containment integrity; operational safety verification; engineered safety feature system walkdown; monthly maintenance observation; monthly surveillance observation; training effectiveness; onsite followup of events at operating reactors; and environmental qualification.

Results: Of the 10 areas inspected, 3 violations were identified in the area of operational safety verification and 1 violation was identified in the area of engineered safety feature system walkdown. The identified violations included: failure to perform a shiftly surveillance (Paragraph 5.a); failure to perform a required leak rate test following maintenance (Paragraph 5.b); failure to maintain secondary containment integrity (Paragraph 5.c); and failure to take prompt corrective action for a condition adverse to plant safety (Paragraph 6.a.(8)). In addition to the identified violations, two unresolved items were identified in the area of environmental qualification:

one unresolved item concerned Weed thermocouples lacking sealant (Paragraph 11.b); and the second unresolved item concerned Weed RTDs lacking sealant (Paragraph 11.c). All of the above violations and unresolved items are receiving licensee management attention.

## DETAILS

### 1. Personnel Contacted

#### Illinois Power Company (IP)

W. Kelley, President  
W. Gerstner, Executive Vice President  
\*D. Hall, Vice President, Nuclear  
K. Baker, Supervisor, I&E Interface  
\*J. Brownell, Project Engineer/Specialist  
\*E. Bush, Director, Nuclear Program Scheduling  
R. Campbell, Manager, Quality Assurance  
J. Cook, Manager, Nuclear Planning and Support  
\*E. Corrigan, Director, Quality Engineering and Verification  
R. Freeman, Manager, Nuclear Station Engineering Department  
K. Graf, Director, Operations Monitoring Program  
D. Holesinger, Assistant Manager, Clinton Power Station  
\*E. Kant, Director, Design and Analysis Engineering  
\*A. McDonald, Director, Nuclear Program Assessment  
J. Miller, Manager, Scheduling & Outage Management  
J. Perry, Manager, Nuclear Program Coordination  
\*R. Schultz, Director, Planning and Programming  
F. Spangenberg, Manager, Licensing & Safety  
\*J. Weaver, Director, Licensing  
\*J. Wilson, Manager, Clinton Power Station  
\*R. Wyatt, Director, Nuclear Training Department

#### Soyland/WIPCO

J. Greenwood, Manager, Power Supply

#### Nuclear Regulatory Commission

\*P. Hiland, Senior Resident Inspector, Clinton  
\*S. Ray, Resident Inspector, Clinton  
R. Knop, Chief, Branch 3, Region III  
R. Cooper, Chief, Section 3B, Region III  
D. Calhoun, Reactor Inspector, Region III

\*Denotes those attending the monthly exit meeting on May 18, 1988.

The inspectors also contacted and interviewed other licensee and contractor personnel.

### 2. Previously Identified Items (92701)(92702)

a. (Open) Open Item (461/87031-01): Periodic Inspection of Seismic Monitoring Instrumentation.

During this inspection period, the licensee received a letter from NRR staff member J. Stevens to F. Spangenberg dated April 5, 1988. That letter described the findings and observations of a visit by NRR staff member G. Giese-Koch in regard to seismic monitoring instrumentation at Clinton Power Station. The letter requested a response addressing the actions which have been taken or are contemplated to improve the reliability of the seismic instrumentation and the plant response procedures. This item will remain open pending NRR review of the licensee's response.

- b. (Closed) Violation (461/87039-01): Two Examples of Failure to Meet Technical Specification Requirements. The licensee failed to meet the 2 hour Action statement for an inoperable Containment and Reactor Vessel Isolation Control System (CRVICS) instrument. In addition, the licensee failed to maintain the Standby Gas Treatment System (SGTS) Exhaust High Range Radioactivity Monitor operable due to a missing particulate filter paper.

The licensee responded to the subject violation via IP letter U-601143, dated February 25, 1988, in a timely manner. During the report period, the inspectors reviewed the licensee's response to the subject violation as discussed below.

- (1) Upon recognition that the CRVICS instrument was inoperable, the licensee placed the instrument in a tripped condition and complied with the applicable Limiting Condition for Operation (LCO). The appropriate shift personnel were counselled on the error that had been made. In addition, plant operators were trained on the definitions of trip channel, system and function. The inspectors verified through review of training records that corrective action, as stated in the licensee's response was completed. The licensee reported this Technical Specification violation via LER 87-069-00 dated December 31, 1987. The LER was closed in paragraph 3.h. of this report.
- (2) Upon recognition that the SGTS High Range Radioactivity Monitor was inoperable due to missing particulate filter paper, the licensee installed the particulate assembly and properly sealed the sample assembly. Plant procedures governing the calibration and monthly channel checks were revised to provide a signature verification of the filter installation. The licensee reported this Technical Specification violation via LER 87-068-00 dated January 13, 1988. The LER was closed in paragraph 3.b. of this report.

Based on the inspectors' verification that corrective actions as stated in the licensee's response to this violation were completed, this item is closed.

No violations or deviations were identified.

3. Onsite Followup Of Written Reports Of Nonroutine Events At Power Reactor Facilities (92700)

For the Licensee Event Reports (LERs) listed below, the inspector performed an onsite followup inspection to determine whether responses to the events were adequate and met regulatory requirements, license conditions, and commitments and to determine whether the licensee had taken corrective actions as stated in the LERs.

- a. (Closed) LER 87-021-00 (461/87021-LL): Automatic Isolation of Reactor Core Isolation Cooling System Due to Utility Personnel Error.

This LER was previously reviewed in Inspection Report 50-461/88003, Paragraph 5.b. At the time of that inspection this LER remained open pending completion of corrective actions on LER No. 87-064-00. LER No. 87-064-00 was inspected and closed below in Paragraph 3.f. This resolves the inspectors' concerns on LER No. 87-021-00. This item is closed.

- b. (Closed) LER 87-040-00 (461/87040-LL): Violation of the Plant's Technical Specifications Due to Utility Personnel Error and LER No. 87-068-00 (461/87068-LL): Error by Indeterminable Person Results in Inoperable Standby Gas Treatment System High Range Radioactivity Monitor Due to Missing Particulate Filter Paper.

LER No. 87-040-00 was previously reviewed in Inspection Report 50-461/87031, Paragraph 10.c.(2). At the time of that inspection, this event was considered a licensee identified violation for which no Notice of Violation was issued (461/87031-08). LER No. 87-068-00 was previously discussed in Inspection Report 50-461/87039, Paragraph 9.b.(2) and was one of two examples of a violation (461/87039-01B). That violation was closed above in Paragraph 2.b. Both of these events were similar and included many common corrective actions. The inspectors reviewed revisions to the particulate monitor calibration, sampling, and channel check procedures to verify that they had been changed to include signature verification of particulate filter presence during each of those evolutions. The inspectors also reviewed training records to verify that the lessons learned from these LERs had been emphasized to the appropriate personnel. These items are closed.

- c. (Closed) LER 87-059-00 (461/87059-LL): Reactor Core Isolation Cooling Isolation Resulting From Control and Instrumentation Technician Miswiring of Temporary Jumper Cable.

This event was previously discussed in Inspection Report 50-461/87032, Paragraph 10.b.(12). The inspectors reviewed revised procedures discussed in the LER to verify that they had been changed to incorporate continuity checks and functional verifications of

multiconductor cables used in temporary applications. The inspectors also reviewed training records of applicable personnel to verify training in the lessons learned from this event. This item is closed.

- d. (Closed) LER 87-060-00 (461/87060-LL): Misoperation of Non-Class 1E 125 volts Direct Current Breaker By Utility Non-Licensed Operator Resulting in Automatic Reactor Trip.

This event was previously discussed in Inspection Report 50-461/87032, Paragraph 10.b.(13). The inspectors reviewed the Post Trip Review Report completed as a result of this trip and verified that the cause of the trip and the plant response was adequately understood prior to restart. Corrective actions verified by the inspectors included installing operator aid diagrams on Motor Control Centers 1DC16E and 1DC17E and installing labels identifying the locations of the distribution panel markers. With the above corrective actions completed, existing procedures and training lesson plans and qualification criteria adequate. This item is closed.

- e. (Closed) LER 87-062-00 (461/87062-LL): Unacceptable Leakage Rates Through Main Steam Isolation Valves (MSIVs).

This event was previously discussed in Inspection Report 50-461/87036, Paragraph 11.b.(2). During preplanned Local Leak Rate Testing (LLRT) on the MSIVs after completion of the Clinton startup test program, the licensee identified leakage in excess of the Technical Specification allowable leakage rate of 28 standard cubic feet per hour per line.

The licensee attributed the cause of this event to various anomalies in the seating surfaces of the affected inboard and outboard MSIVs. Six MSIVs were reworked by lapping the seats and machining the valve poppets. As documented in Inspection Report 50-461/87036, Paragraphs 7 and 8; and Inspection Report 50-461/87035, Paragraph 3.b.(2), the inspectors witnessed portions of the MSIV rework and performance of the post maintenance local leak rate tests. Based on successful completion of the corrective action as stated in the LER, this item is closed.

- f. (Closed) LER No. 87-064-00 (461/87064-LL): Inadequate Procedure and Inadequate Electrical Technicians Impact Matrix for Undervoltage Relay Removal Results in Division 3 Diesel Generator Auto-Start.

This event was previously discussed in Inspection Report 50-461/87036, Paragraph 11.b.(4). The inspectors reviewed the licensee's training records to verify all applicable personnel had received training on the lessons learned. The inspectors also reviewed the procedure being used at the time of the event as well as other similar procedures to verify revisions had been incorporated which should prevent similar actuations. This LER is closed.

- g. (Closed) LER No. 87-066-00 (461/87066-LL): Failure of Junction Boxes to Meet Environmental Qualifications Due to Construction Contractor Failure to Install Drainage Openings.

This LER was a result of licensee inspections conducted as a result of a condition in one junction box discovered during an environmental qualification inspection conducted by regional specialists. The single condition was made part of a severity level V violation (50-461/87026-03b). When licensee inspections indicated the missing weep hole condition existed in 156 junction boxes, the condition was included as part of an escalated enforcement package for which a conference with the licensee was held on March 31, 1988, at the regional offices. This event was also discussed in Inspection Report 50-461/87036, Paragraph 11.b.(6). The inspectors reviewed the LER for completeness and accuracy and verified by review of completed Maintenance Work Request C-45539, Field Alteration E-F007 and licensee training records that all corrective actions described in the LER had been completed. This LER is closed.

- h. (Closed) LER 87-069-00 (461/87069-LL): Licensed Operator Oversight During Review of Surveillance Impact Matrix Results in Inoperable Containment Isolation Function of Valve.

This event was previously discussed in Inspection Report 50-461/87039, Paragraph 9.b.(1) where it was one of two examples of a violation (461/87039-01A). The violation was closed in Paragraph 2.b. of this report. The corrective actions in the LER were reviewed along with the response to the Notice of Violation. This item is closed.

- i. (Closed) LER 87-070-00 (461/87070-LL): Inadequate Research Into Surveillance Instrumentation Design Basis Results in Inoperable Drywell High Pressure Transmitters Due to Unqualified Material Installation.

This event was previously discussed in Inspection Report 50-461/87039, Paragraph 9.b.(3). At the time of that inspection, the event was considered a licensee identified violation (461/87039-02) for which a Notice of Violation was not issued. During this report period, the inspectors reviewed the licensee's corrective action as stated in the subject LER.

As discussed in the LER, a contributor to this event was the licensee's administrative procedure for the control of Temporary Modifications. At the time of event occurrence, Administrative Procedure CPS No. 1014.03, "Temporary Modifications" allowed the installation of a temporary modification prior to the "full" review and approval of the safety evaluation. Licensee's corrective action to this event included revising CPS No. 1014.03 to require the

Facility Review Group (FRG) approval of the safety evaluation prior to installation of a temporary modification. In addition, the licensee provided training to appropriate staff personnel on the "lessons learned" from this event.

The inspectors verified that the corrective actions as stated in the LER were completed by review of CPS No. 1014.03, "Temporary Modifications", Revision 12, dated December 18, 1987, which required in Paragraph 8.2.3.1., the FRG approval of required safety evaluations prior to temporary modification installation. In addition, the inspectors verified through review of training records, that appropriate personnel had been trained on the lessons learned from this event. This item is closed.

- j. (Closed) LER No. 88-001-00 (461/88001-LL): Isolation of Reactor Water Cleanup System During Trending of Main Steamline Tunnel Temperatures Due to Random Failure of a Temperature Module.

This event was previously discussed in Inspection Report 50-461/87039, Paragraph 9.b.(4). The inspectors reviewed completed Maintenance Work Request C-44135 which replaced the temperature module as stated in the LER. The licensee also conducted extensive bench testing of the old module in an attempt to duplicate the problem. During that testing, static electricity, mechanical or electrical noise and improper component upgrades were eliminated as possible causes of the actuation. One additional spurious trip occurred during bench testing but the exact cause beyond random component failure could not be established. The licensee contacted other plants which used similarly designed systems and determined that unexpected trips of this type of temperature module were not uncommon despite component upgrades which attempted to eliminate spurious trips. The trips generally occurred when placing the READ/SET switch to the READ position. Some other plants had revised their procedures to utilize the system bypass switches when reading the module outputs. The licensee's Nuclear Station Engineering Department recommended that CPS operating procedures be revised to utilize the system bypass switch when obtaining shiftly room temperature readings on one-out-of-one trip logic modules.

The inspectors reviewed CPS No. 9000.01D001, Revision 29, Control Room Operator Surveillance Log - Mode 1, 2, 3 Data Sheet, to verify that a caution concerning the use of the bypass switches and the requirement to log the repositioning of the bypass switches had been incorporated into the procedure. This item is closed.

- k. (Closed) LER No. 88-002-00 (461/88002-LL): Auto-Start of Standby Gas Treatment System Results From Spurious Electrical Spike of Process Radiation Monitor Output Due to Detector Tube Failure.



This event was previously discussed in Inspection Report 50-461/87039, Paragraph 9.b.(6). Corrective actions stated in the LER consisted of repairing the failed detector and a review of the LER for lessons learned by operations and maintenance supervision. The inspectors verified that those actions had been completed. In the critique of this event, held by the Assistant Manager - Plant Operations, it was noted that neither monitor 1PR042A, which had a Maintenance Work Request (MWR) written on December 14, 1987, to correct a spurious spiking problem, nor 1PR042D, which had a MWR written on January 5, 1988, due to a failed channel functional test, had received adequate priority to expedite the repairs. The critique determined that one of the causes for the lack of priority was that the "Plant Impact" column for the "Significant Equipment Out of Service" section of the plant manager's Daily Activity Schedule was not being used. The Assistant Manager - Plant Operations directed that the "Plant Impact" column be used on the Daily Activity Schedule as a corrective action resulting from the critique. On April 25, 1988, the inspectors pointed out to the Assistant Manager - Plant Operations that the "Plant Impact" column was still not being used. He took immediate actions to correct the situation. This item is closed.

No violations or deviations were identified.

4. Verification of Containment Integrity (61715)

The inspectors conducted a walkdown of a sample of 10 containment penetrations prior to plant heatup above 200 degrees Fahrenheit. Among the attributes inspected were the proper positions of valves, indications of automatic isolation valve operability, and securing in position of manual isolation valves required to be secured by Technical Specifications. The inspectors also witnessed the performance of several local leak rate tests (LLRTs) of the containment air locks. The following discrepancies were noted.

- a. The Limitorque cover was loose on valve 1VP015A, Drywell Chill Water A Return Outboard Isolation. The inspectors informed the Supervisor - Plant Operations who had the cover tightened immediately.
- b. The handwheel retaining ring was off on valve 1VP015B, Drywell Chill Water B Return Outboard Isolation, allowing the handwheel to ride up the valve operating shaft. The valve had a deficiency tag dated February 1988, identifying the condition. The inspectors questioned the operability of the valve and the operating crew demonstrated that the valve would still operate both manually and with the motor operator.
- c. The lock wire was broken on valve 1VP044B, Chill Water Supply Header B Test Connection. The inspectors noted that the condition was also discovered and corrected by operators conducting containment valve lineup surveillances shortly after the condition was noted by the inspectors.

- d. The outboard equalizing valve was inoperable on the upper containment personnel air lock. The Supervisor - Plant Operations stated that they were aware of the condition and the valve would be repaired prior to heatup. Although the valve was later repaired, the repairs involved disassembly and the overall air lock leakage test required by Technical Specification 4.6.1.3.b.2 was not conducted prior to establishing primary containment integrity. This event is discussed below in Paragraph 5.b.
- e. While witnessing the door seal LLRT on the upper containment air lock inner door, the inspectors noted that the engineer performing the test had recorded one piece of data incorrectly. The engineer immediately corrected the data sheet.
- f. The inspectors noted that for the air lock door seal tests on both the upper and lower airlocks, there was no convenient source of service air for the LLRT rig. In the case of the upper air lock, hoses were run through a vital area door requiring a guard to be posted. For the lower air lock, the hose had to be run from the Low Pressure Core Spray Pump Room, which was a contaminated, radiation area. Since the door seal tests were normally run at least every three days on each door, these problems were significant inconveniences. The inspectors noted that the engineers had the LLRT rig modified to use a portable nitrogen supply instead of service air which eliminated these problems.

No violations or deviations were identified.

#### 5. Operational Safety Verification (71707)

The inspectors observed control room operations, attended selected pre-shift briefings, reviewed applicable logs, and conducted discussions with control room operators during the inspection period. The inspectors verified the operability of selected emergency systems and verified tracking of LCOs. Routine tours of the auxiliary, fuel, containment, control, diesel generator, turbine buildings and the screenhouse were conducted to observe plant equipment conditions including potential for fire hazards, fluid leaks, and operating conditions (i.e., vibration, process parameters, operating temperatures, etc). The inspectors verified that maintenance requests had been initiated for discrepant conditions observed. The inspectors verified by direct observation and discussion with plant personnel that security procedures and radiation protection (RP) controls were being properly implemented.

During the majority of this inspection period, the plant was in OPERATIONAL CONDITION 4 (Cold Shutdown) for a scheduled outage. The outage was entered on March 18, 1988 and was completed on May 5, 1988. The primary purpose of the outage was to conduct all outage surveillances which would have fallen due before the scheduled refueling outage in January 1989, and to conduct other necessary maintenance items.

During the outage, the status was tracked closely by supervisory personnel. The Director - Outage Maintenance Programs issued a daily report which was discussed in a daily staff meeting chaired by the Manager - Clinton Power Station. The Vice President - Nuclear held Manager's Status & Planning Meetings twice a week. The outage progress and significant activities were described twice weekly in the Nuclear Program News report which was distributed to all site employees.

Major work items completed during the outage included repairs to the "D" Main Steam Line Isolation Valves; cleaning, inspecting, and plugging of main condenser tubes; installing a condenser tube staking modification designed to eliminate tube failures due to vibrations; correcting problems with the Residual Heat Removal System Full Flow Test Return Valves which had prevented them from fully closing under flow conditions; and conducting inspections on all three Emergency Diesel Generators.

A substantial amount of the work performed was emergent work to correct conditions discovered after the start of the outage. This work was the primary cause of the length of the outage extending nine days beyond the original schedule.

Inspections were routinely performed to ensure that the licensee conducted activities at the facility safely and in conformance with regulatory requirements. The inspections focused on the implementation and overall effectiveness of licensee's control of operating activities, and the performance of licensed and nonlicensed operators and shift technical advisors. The following items were considered during these inspections:

- Adequacy of plant staffing and supervision.
  - Control room professionalism including procedure adherence, operator attentiveness and response to alarms, events, and off-normal conditions.
  - Operability of selected safety related systems including attendant alarms, instrumentation, and controls.
  - Maintenance of quality records and reports.
- a. On April 1, 1988, the licensee discovered that they had failed to perform the shiftly instrument channel checks of procedure CPS No. 9000.01D002, Control Room Operator Surveillance Log - Mode 4, 5 Data Sheet. That surveillance was required to be performed at least once per 12 hours in order to satisfy several Technical Specification requirements. Section 4.0.2. of CPS Technical Specification required that each surveillance requirement shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the surveillance interval. Surveillance procedure 9000.01D002 was not completed between 12:25

a.m. on April 1, 1988 and 4:10 p.m. on April 1, 1988. This was a period of 16 hours and 15 minutes which was greater than the required 12 hour interval plus the allowed 3 hour extension. The licensee attributed the missed surveillance to personnel errors by utility licensed operators who failed to perform it due to oversight aggravated by the high level of activities in the main control room. Failure to perform the shift channel checks required by Technical Specifications within the specified time interval as extended was a violation (50-461/88009-01(DRP)).

This violation was very similar in circumstance to some of the examples cited in violation 50-461/87032-01, which was closed in Inspection Report 50-461/88004, Paragraph 2.d. The corrective action of using a tracking board for shift periodicity surveillances should have prevented this event; however, the board was not being used to track this particular surveillance since it was so routine.

The licensee reported this event via LER 88-010-00 dated April 21, 1988.

The LER described the actions taken to correct the violation and to prevent recurrence. Immediate corrective action consisted of performing the required surveillance. This was completed within 25 minutes of discovering the condition. Actions to prevent recurrence consisted of counselling the control room operator and assistant shift supervisor who missed the surveillance; a night order was written on the event which reinforced the authority of the control room operators to limit control room activities; the practice of tracking completion of required surveillances on the main control room tracking board was initiated; and the assignment of the "B" control room operator as the person responsible for the completion of shift surveillances was established. The inspectors determined that these corrective actions were adequate and had been implemented. Based on the corrective actions taken by the licensee, the inspectors had no further concerns regarding this matter and this item is considered closed; consequently, no reply to this violation is required.

- b. On May 2, 1988, while conducting a closeout review of Maintenance Work Request (MWR) C-46275, the licensee identified that the overall air lock leakage test on the 828' elevation containment air lock required as a result of the work performed under that MWR on April 30, 1988, had not been completed. Technical Specification 4.6.1.3.b.2. required that the overall air lock leakage rate test be performed prior to establishing PRIMARY CONTAINMENT INTEGRITY when maintenance had been performed on the air lock that could affect the air lock sealing capability. The licensee had established PRIMARY CONTAINMENT INTEGRITY and entered OPERATIONAL CONDITION 2 on May 2, 1988. Entering OPERATIONAL CONDITION 2 without performing the required overall air lock leakage test was a violation of Technical Specification 4.6.1.3.b.2 (50-461/88009-02(DRP)).

A critique of the cause of this event determined that a deficient post maintenance test (PMT) evaluation had been conducted. The Shift Technical Advisor (STA) assigned to conduct the evaluation had not been trained in methods of performing PMT evaluations. The STA incorrectly concluded that an interlock test was the only test required and presented his evaluation to the Shift Supervisor. The Shift Supervisor attempted to contact the cognizant technical staff engineer responsible for coordination of local leak rate testing, but he was unable to reach that individual. The Shift Supervisor then concurred in the evaluation performed by the STA. MWR C-46275 had included removal, disassembly, and reinstallation of the equalizing valve on the outer door of the air lock. This work could affect air lock sealing capability.

After determining that the air lock test had not been performed as required, the licensee locked the inner door of the air lock and conducted the overall air lock leakage test. The leakage test failed when the leakage rate was noted to be greater than 18,000 standard cubic centimeters per minute (sccm). The acceptance criteria was 2360 sccm. The main leakage path appeared to be the seal on the outer door handwheel shaft and repairs were ordered. The inspectors who witnessed the leakage test noted that CPS No. 9861.02, Appendix G1, Upper Air lock Barrel Leak Rate Test, and Appendix G3, Lower Air lock Barrel Leak Rate Test, allowed preliminary testing and repairs of individual air lock flanges, seals and penetrations prior to conducting the overall air lock leakage test. Failures discovered while conducting these preliminary tests may not have been documented as surveillance failures, and "as found" overall leakage may not have been recorded. The licensee corrected this procedural discrepancy with Procedure Deviation For Revision No. 88-0243.

After tightening the shaft seals on the handwheel penetration failed to reduce the leakage to an acceptable value, the licensee disassembled and repaired the seal. A subsequent air lock leakage test on May 3, 1988, showed that the outer door handwheel shaft had been repaired but the overall air lock leakage was still unacceptable with leakage of about 11,000 sccm, most of which appeared to be through the inner door equalizing valve. The Manager - Clinton Power Station determined that since both the inner and outer door assemblies had unacceptable leakage, a significant secondary bypass leakage path had existed, and he ordered the ENS notification discussed in Paragraph 10.b.(9) of this report.

The problem with the inner door equalizing valve was determined to be due to cracked/crumbled resilient sealing materials and repairs were made. Later on May 3, 1988, the overall air lock leakage test on the 828' containment personnel air lock passed with a leakage rate of 1970 sccm and the air lock was declared operable.

The Manager - Clinton Power Station ordered an increased frequency for overall air lock leakage tests and other measures to determine the reliability and failure mechanisms of the personnel airlocks. An overall air lock leakage test on the 737' containment personnel air lock conducted on May 4, 1988, failed with a leak rate of 3000 sccm. The 737' air lock was subsequently repaired but again failed a leakage test on May 18, 1988. The licensee was evaluating the cause of these failures.

- c. On May 17, 1988, while operating at 100% power, the licensee performed corrective maintenance on a Secondary Containment Penetration Seal 1FB-0140. The need for corrective maintenance was originally identified on Condition Report 1-88-03-075, dated March 26, 1988, which identified damage to the "Bisco seal" on penetration 1FB-0140. Penetration 1FB-0140 was the High Pressure Core Spray (HPCS) system full flow test return line to the Reactor Core Isolation Cooling (RCIC) storage tank. At Clinton, the RCIC storage tank is located outside of the secondary gas control boundary adjacent to the Fuel Building.

When corrective maintenance was commenced, the licensee had not recognized the penetration as a secondary containment penetration seal. Maintenance Work Request (MWR) C-45214, which directed the corrective maintenance, identified the penetration as a fire protection boundary only. This was apparently the result of an error in detail drawing M28-1001-08-A-BC which was used by the MWR job planner. Revision C of that drawing dated May 16, 1985, identified the Fuel Building wall adjacent to the RCIC storage tank as a "Fire Barrier" only. With the penetration designated as a Fire Barrier, work was authorized to be performed without consideration of the potential for impact on the integrity of the Secondary Containment.

At about 11:30 a.m. on May 17, 1988, maintenance personnel removed the damaged Bisco seal from penetration 1FB-0140. Since the space between the RCIC storage tank and the Fuel Building outside wall was enclosed, plant operators did not detect any appreciable change in secondary containment pressure which was maintained within the required Technical Specification limit of greater than .25 inches of vacuum water gauge (T.S. 4.6.6.1.a.).

At about 2:15 a.m. on May 18, 1988, while performing routine plant tours, an auxiliary operator identified the missing Bisco seal from penetration 1FB-0140. Upon verification that the penetration was a secondary containment boundary, the Shift Supervisor declared the secondary containment inoperable and directed that maintenance personnel complete repairs that had been started the previous day. In addition, the Shift Supervisor directed that Technical Specification surveillance 4.6.6.1.c be performed to verify Standby Gas Treatment (VG) was still capable of drawing down secondary

containment within the Technical Specification required limits. Both 'G' subsystems were able to meet the Technical Specification acceptance criteria. The inspectors witnessed portions of the repair to the penetration and verified adherence to Technical Specification 3.6.6.1 Action "A" which required restoration of secondary containment integrity within four hours. Repairs to penetration 1FB-0140 were completed and secondary containment was restored to an operable condition at about 6:00 a.m. on May 18, 1988.

The inspectors noted that upon recognition of the missing Bisco seal from penetration 1FB-0140, the licensee's actions were in accordance with the appropriate Technical Specification; however, as defined in Technical Specification 1.3.8.e, secondary containment integrity would have existed when the sealing mechanism associated with each secondary containment penetration was operable. Removal of the Bisco seal from secondary containment penetration 1FB-0140 at 11:30 a.m. on May 17, 1988, while in Operational Condition 1 made the secondary containment inoperable. Failure of the licensee to restore secondary containment integrity to an operable status within four hours as required by Technical Specification 3.6.6.1. Action a. was a violation (50-461/88009-03 DRP).

In addition to the above, the inspectors review of CR 1-88-03-075 noted that the damaged Bisco seal was originally identified as "cracked and leaking". The engineering evaluation of that stated condition was that secondary containment integrity was not jeopardized due to satisfactory completion of a secondary containment integrity test per Technical Specification Surveillance 4.6.6.1.c (i.e. Standby Gas Treatment Drawdown Test). As discussed above, the Fuel Building penetration for the HPCS full flow test return line exits the Fuel Building and travels about 20 feet to the RCIC storage tank. The area between the RCIC storage tank and the Fuel Building is enclosed; however, neither that enclosure nor the RCIC storage tank were designed as Seismic Category I structures (ref: Clinton FSAR Table 3.2).

Clinton Final Safety Analysis Report (FSAR) Section 6.2.3 detailed the design basis for secondary containment. In that section it stated that the secondary containment was a Seismic Category I design and that design leakage was limited to 1500 standard cubic feet per minute at 0.25-inch water gauge differential pressure. The inspectors noted that the licensee's original engineering evaluation of the damaged Bisco seal concluded that secondary containment integrity was not jeopardized based solely on a successful surveillance test. It was not apparent to the inspectors that the engineering evaluation had considered the design basis described in the Clinton FSAR to conclude that secondary containment integrity would not be jeopardized with the damaged Bisco seal following a seismic event. It appeared to the inspectors that the successful

surveillance test of Standby Gas Treatment was in part due to the tightness of the "non-Seismic Category I" RCIC storage tank and its surrounding enclosure which may not remain functional following a seismic event. The inspectors requested the licensee to review the adequacy of the engineering evaluation provided in CR 1-88-03-075 which concluded that the secondary containment integrity was not jeopardized by the damaged Bisco seal. The inspector will review that evaluation concurrent with the licensee's response to the above violation (88009-03).

- d. The status of Main Control Room annunciators, instruments, and recorders was previously documented in Inspection Report 50-461/88004, Paragraph 5.d. At the time of that inspection, the licensee was intending to make a significant reduction in the number of those problems during the 1988 Spring outage. The inspectors noted the conditions in the control room with the plant operating at 100% power on May 17, 1988, after the outage. The inspectors noted improvements in the number of discrepant conditions in all areas listed below. Licensee management was continuing to provide significant attention to control room problems at the conclusion of this report period.

	<u>THIS REPORT PERIOD</u>	<u>LAST REPORT PERIOD</u>
Total Lighted Annunciators:	38	53
Total OOS/Disabled Annunciators:	17	32
Total OOS Instruments/Recorders:	2	3
Total Reduced Service Instr./Record.:	8	17

- e. Prior to plant startup from the Spring 1988 outage, the licensee reviewed the controls in place for scaffolds that were erected in seismic buildings. Administrative Procedure CPS No. 1050.01, "Control of Transient Equipment/Materials" detailed the controls of scaffolds that remained erected in seismic areas during plant operation.

The inspectors reviewed the requirements of CPS No. 1050.01 and verified by direct field observation that the eight scaffolds remaining in seismic areas after plant startup were erected and controlled in accordance with CPS No. 1050.01. The inspectors noted that two scaffolds were erected in the Auxiliary Building to allow personnel access to perform shiftly checks of chlorine monitors. In addition, several scaffolds were being used as tool racks to store refueling equipment. The remaining scaffolds were temporary installations for personnel access to perform post maintenance inspections with the plant at operating pressure and temperature.

The inspectors concluded that the licensee was adequately controlling the erection of scaffolds in seismic structures.

Three violations were identified.



6. Engineered Safety Feature System Walkdown (71710)

The inspectors performed a walkdown of the High Pressure Core Spray System (HPCS), Division III Shutdown Service Water System (SX), Division III Switchgear Heat Removal System (VX), and the Division III Diesel Generator (DG) and Support Systems during the report period to verify the system status. At the time the walkdown was performed, the licensee had identified the HPCS, SX, VX, and the DG and their support systems as operable Engineered Safety Feature systems meeting all the requirements of the plant's Technical Specifications.

For the purpose of this walkdown, the inspectors utilized the following system drawings and checklists contained in the system Operating and Surveillance Procedures.

- CPS No. 3309.01V001, "High Pressure Core Spray Valve Lineup", Revision 4
- CPS No. 3309.01V002, "High Pressure Core Spray Instrument Valve Lineup", Revision 3
- CPS No. 3309.01E001, "High Pressure Core Spray Electrical Lineup", Revision 3
- CPS No. 3211.01V001, "Shutdown Service Water Valve Lineup", Revision 6
- CPS No. 3211.01V002, "Shutdown Service Water Instrument Valve Lineup", Revision 1
- CPS No. 3211.01E001, "Shutdown Service Water Electrical Lineup", Revision 6
- CPS No. 3412.01V001, "Essential Switchgear Heat Removal Valve Lineup", Revision 5
- CPS No. 3412.01V002, "Essential Switchgear Heat Removal Instrument Valve Lineup", Revision 2
- CPS No. 3412.01E001, "Essential Switchgear Heat Removal Electrical Lineup", Revision 5
- CPS No. 3506.01V001, "Diesel Generator and Support Systems Valve Lineup", Revision 3
- CPS No. 3506.01V002, "Diesel Generator and Support Systems Instrument Valve Lineup", Revision 1
- CPS No. 3506.01E001, "Diesel Generator and Support Systems Electrical Lineup", Revision 4

- P&ID M05-1074, Sheet 1, "High Pressure Core Spray System (HPCS)", Revision 2
- P&ID M05-1052, Sheet 3, "Shutdown Service Water System (SX)", Revision V
- P&ID M05-1115, Sheet 3, "Essential Switchgear Heat Removal System (VX)", Revision K
- P&ID M05-1035, Sheet 3, "Diesel Generator Aux System (DG) (Starting Air, Exhaust, & Combustion System)", Revision U
- P&ID M05-1036, Sheet 2, "Diesel Generator Fuel Oil System (DO)", Revision R

a. During the walkdown, the following discrepancies were noted:

- (1) The label for valve 1E22-F337 was missing.
- (2) The location given for valves 1E22-F361A, 1E22-F361B, 1E22-F373, and 1E22-F375 in CPS No. 3309.01V002 should have been elevation 731' instead of elevation 712'.
- (3) The position for pump 1SX01PC control switch in CPS no. 3211.01E001 should have been "auto-after-stop" instead of "pull-to-lock" in the normal standby lineup.
- (4) During a valve lineup performed by the licensee on June 14, 1987 in accordance with CPS No. 3412.01V001, it was noted that the procedure reflected the incorrect (OPEN) position for valve 1RG606C. The inspector noted that this discrepancy had not been corrected in the valve lineup procedure; however, the valve was positioned correctly. If valve 1RG606C were opened, release of freon to the switchgear room could occur.
- (5) The positions for the following fans and dampers in CPS No. 3412.01E001 should have been as follows for the normal standby lineup:
  - 1VX03CC, AUTO-AFTER STOP
  - 1VX034C, CLOSED
  - 1VX044C, OPENED
  - 1VX05CC, AUTO-AFTER START

Although these components were properly positioned per the normal standby lineup, the lineup procedure requires revision to ensure that the system is properly aligned during future system lineups.

- (6) Valve 1D0604B is locked opened but its companion valve, 1D0604A is not locked.
- (7) The tags for valves 1DG611 and 1DG652 were on a support instead of on the actual valves.
- (8) The tornado missile doors for valve 1D0011C and the other fuel oil tank fill valves, were open and had existed that way for some time. Section 9.5.4.3. of the Final Safety Analysis Report stated that the outside portion of the fuel storage tank fill line is protected from missiles. On March 16, 1988, CPS Condition Report (CR) No. 1-88-03-041 was written to document a condition discovered in which the fuel oil fill adapters had not been removed from the fill lines in accordance with step 8.1.6.8. of CPS No. 3506.01, Diesel Generator and Support Systems. The CR also noted that the missile doors were not shut. In fact, the missile doors could not be shut with the fill adapters installed. The CR was dispositioned on the same day by removing the fill adapters but the missile doors were not closed. On April 19, 1988, the inspectors pointed out to the QA department staff that the missile doors were still open. QA Department investigation determined that CR 1-88-03-041 was improperly dispositioned and they wrote a revision to the CR stating that the missile doors were still open. On May 12, 1988, the inspectors noted that the missile doors were still open and informed the Manager - Clinton Power Station who took immediate action to close and bolt the doors.

Failure to promptly correct an identified condition adverse to plant safety and/or quality was a violation of 10 CFR 50, Appendix B, Criterion XVI and IP Operational Quality Assurance Manual, Chapter 16 (50-461/88009-04(DRP)).

- (9) The position for DG 1C control switch in CPS No. 3506.01E001 should have been "Auto with a blue light" instead of "Normal with a white light" to match the actual switch position indication.
- (10) The position for the Generator Voltage Regulator in CPS No. 3506.01E001 should have been "Neutral" instead of "Normal" to match the actual position.

For items (1) through (10) above, the inspectors determined that the discrepancies had not affected system operability. Item (8) had the potential to render the diesel generators inoperable had tornado missile damage to the fuel oil fill lines allowed water or debris to enter the fuel oil tanks.

- b. In conjunction with the above, the inspectors reviewed the results of current surveillances on the HPCS system to verify Technical Specification requirements were met. The most recent of the following surveillance test results were reviewed:

Surveillance No.

CPS No. 9051.01	HPCS System Pump Operability, Revision 23
CPS No. 9051.02	HPCS Valve Operability, Revision 25
CPS No. 9051.03	HPCS System Functional Test, Revision 23
CPS No. 9051.05	HPCS Discharge Header Filled and Flow Path Verification, Revision 21

No discrepancies were noted in the surveillances.

One violation was identified.

7. Monthly Maintenance Observation (62703)

Selected portions of the plant maintenance activities on safety-related systems and components were observed or reviewed to ascertain that the activities were performed in accordance with approved procedures, regulatory guides, industry codes and standards, and that the performance of the activities conformed to the Technical Specifications. The inspection included activities associated with preventive or corrective maintenance of electrical, instrumentation and control, mechanical equipment, and systems. The following items were considered during these inspections: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibration was performed prior to returning the components or systems to service; parts and materials that were used were properly certified; and maintenance of appropriate fire prevention, radiological, and housekeeping conditions.

The inspectors observed/reviewed the following work activities:

<u>Maintenance Work Procedure No.</u>	<u>Activity</u>
MWR C-46275, Revision 2	Repair Shaft Seals on 828' Containment Air Lock.
MWR C-49630	Field Alteration RHF003
MWR C-45214	Repair of Bisco Seal in Penetration 1FB-0140

As discussed above in Paragraph 5.c., work performed in accordance with MWR C-45214 resulted in a violation of Technical Specification requirements for secondary containment. Inspectors' observation of that maintenance activity documented in this paragraph noted that after recognition of the degraded secondary containment, the licensee complied with the action statement of the applicable Technical Specification.

No violations or deviations were identified.

8. Monthly Surveillance Observation (61726)

An inspection of inservice and testing activities was performed to ascertain that the activities were accomplished in accordance with applicable regulatory guides, industry codes and standards, and in conformance with regulatory requirements.

Items which were considered during the inspection included whether adequate procedures were used to perform the testing, test instrumentation was calibrated, test results conformed with Technical Specifications and procedural requirements, and that tests were performed within the required time limits. The inspector determined that the test results were reviewed by someone other than the personnel involved with the performance of the test, and that any deficiencies identified during the testing were reviewed and resolved by appropriate management personnel.

The inspectors observed/reviewed the following activities.

<u>Surveillance/Test Procedure No.</u>	<u>Activity</u>
CPS No. 9443.03	Leak Detection System Drywell Air Particulate, Iodine, and Gas Radiation Monitor Calibration.
CPS No. 9861.02D003	Local Leak Rate Test
CPS No. 9861.02D004	Local Leak Rate Test

No violations or deviations were identified.

9. Training and Qualification Effectiveness (41400 & 41701)

The effectiveness of training programs for licensed and nonlicensed personnel was reviewed by the inspector during the witnessing of the licensee's performance of routine surveillance, maintenance, and operational activities and during the review of the licensee's response to events which occurred during the months of April/May 1988. Personnel appeared to be knowledgeable of the tasks being performed.

The inspectors participated in the licensee's annual Emergency Preparedness Exercise on April 27, 1988. The exercise included participation by the NRC Region III site and base teams as well as NRC observers. Comments from those inspectors were documented in Inspection Report 50-461/88012.

The inspectors participated in the licensee's training program by attending the Radiation Self Monitoring course. The inspectors noted that the training classes were well organized and the material presented was accurate and complete.

No violations or deviations were identified.

10. Onsite Followup of Events at Operating Reactors (93702)

a. General

The inspectors performed onsite followup activities for events which occurred during the inspection period. Followup inspection included one or more of the following: reviews of operating logs, procedures, condition reports; direct observation of licensee actions; and interviews of licensee personnel. For each event, the inspectors reviewed one or more of the following: the sequence of actions; the functioning of safety systems required by plant conditions; licensee actions to verify consistency with plant procedures and license conditions; and the nature of the event. Additionally, in some cases, the inspectors verified that licensee investigation had identified root causes of equipment malfunctions and/or personnel errors and the licensee was taking or had taken appropriate corrective actions. Details of the events and licensee corrective actions noted during the inspectors' followup are provided in Paragraph b. below.

b. Details

(1) ESF Actuation - Isolation of Containment Instrument Air Due to Lifting of Wrong Lead During a Surveillance [ENS No. 11913]

On April 1, 1988, the licensee reported an unexpected containment instrument air isolation of valves IIA006 and IIA007. The event was caused by utility Control and Instrumentation (C&I) technicians lifting the wrong lead while performing maintenance procedure CPS No. 8630.31, Nuclear System Protection System (NSPS) Untested Island Load Driver, for the Division II Residual Heat Removal System. The cause of this event was attributed to personnel error in that the lead to be lifted was identified only on the surveillance impact matrix form, which was not an approved work document. Use of the impact matrix, intended only to provide information, bypassed the normal procedural review process. The C&I technicians who prepared the impact matrix used an improper drawing to determine the lead to be lifted and thus listed the wrong lead on the form. In addition to the ENS notification, the licensee reported this event as LER No. 88-009-00 dated May 2, 1988.

(2) Inattentive Watchman [ENS No. 11940]

On April 4, 1988, the licensee reported that they had discovered an inattentive watchman who had been posted as a compensatory measure at a vital area access. This event was the subject of Inspection Report 50-461/88011 by regional specialists for which Notice of violation EA 88-111 was issued.

(3) Significant Loss of Offsite Notification Ability [ENS No. 11949]

On April 5, 1988, the licensee reported that 12 of 41 sirens in their Alert and Notification System (ANS) had failed to actuate during a routine monthly test of the system. This was preliminary data and further investigations determined that 30 of 41 sirens had not activated. With the assistance of the system vendor, it was determined that the probable cause of the failure for most of the sirens was that the amplitude of the encoder output signal of the transmitter encoder unit in the Clinton Fire Department was too low. The exact cause of the low output could not be determined, but was believed to have been caused by natural aging of the components. A compounding cause of the failures was that the activation signal transmitting antenna was located at the Clinton Fire Department which is located about 7.5 miles from the center of the 10 mile ANS grid. Two of the sirens would not have activated in any case because they were found with their utility line fuse switches open. This was believed to be due to recent electrical storms. After adjusting the gain of the transmitter and completing an inspection of all 30 sirens which had not activated, the licensee declared the ANS operable on April 8, 1988. The licensee initiated Centralized Commitment Tracking (CCT) #47627 to evaluate improvements to the siren activation system. In the next regularly scheduled test performed on May 3, 1988, 100% of the sirens activated.

(4) Reactor Coolant System Leak Detection System Not Installed in Accordance With Design [ENS No. 11975]

On April 7, 1988, the licensee reported that they had discovered that the Drywell Cooler Condensate Flow Rate Turbine Meters, a part of the Reactor Coolant System Leak Detection System, had been installed backwards.

Subsequent to the ENS notification, the licensee determined that the flow rate turbines would work equally well installed in either configuration but that both the Drywell Cooler Condensate Flow Rate Turbine Meters were inoperable due to clogged inlet lines. The inlet lines were clogged with debris consisting of tape, plastic, and mud. The flow meters had been inoperable for an indeterminate period of time but the licensee believed it may have been since construction. Technical Specification 3.4.3.1 required that grab samples of drywell atmosphere be taken periodically when the drywell air cooler condensate flow rate meters are inoperable if the drywell atmosphere gaseous radioactivity monitoring system is also inoperable. These grab samples were required in OPERATIONAL CONDITIONS 1, 2 and 3. On March 11, 1988, while in Condition 1,

the drywell atmosphere gaseous radioactivity monitoring system was taken out of service due to a failed surveillance. Since the licensee was unaware of the inoperability of the cooler condensate flow meters at that time, no grab samples were taken between March 11, 1988, and March 19, 1988, when the plant was placed in OPERATIONAL CONDITION 4 for a scheduled outage. At that point the Technical Specification was no longer applicable. The licensee reported the event as LER 88-011-00 dated May 6, 1988.

(5) Contaminated Water Spill [ENS No. 12006]

On April 13, 1988, the licensee reported a press release concerning a spill of approximately 500 to 1000 gallons of contaminated water from the Residual Heat Removal (RHR) system. The spill had occurred on April 12, 1988, and had resulted in contamination of the Low Pressure Core Spray Pump Room. One employee received some low level contamination on his shoes and one hand and another employee received some contamination on his clothing. The spill was caused by RHR valve manipulations while restoring from a local leak rate test which released water from a dead leg inside the boundaries of a tagout for repairs on the RHR train A test return valve to the suppression pool (1E12-F024A). The root cause of the spill was inadequate isolation and draining of the boundaries of the 1E12-F024A repair job and inadequate control of valve manipulations inside the tagout boundaries. A followup of the licensee's corrective action for this event will be performed by a Region III specialist inspector. Results of that inspection will be documented in a separate report.

(6) Weed Thermocouples Not Environmentally Qualified [ENS No. 12084]

On April 22, 1988, the licensee reported that some Weed thermocouples did not meet their environmental qualification requirements due to damaged insulation and missing sealant. This event is discussed below in Paragraph 11.

(7) Plant Shutdown Required By Technical Specifications  
[ENS No. 12156]

On April 30, 1988, the licensee reported that they had performed a plant shutdown from Mode 2 to Mode 4 after they discovered that dampers in their Standby Gas Treatment System had not been cycled in accordance with environmental qualification requirements. After placing the plant in Mode 4, the licensee performed the required cycling and no failures were indicated. This event is discussed below in Paragraph 11.



(8) Unexpected Actuation of Instrument Air Containment Isolation Valves [ENS No. 12159]

On April 30, 1988, the licensee reported that instrument air containment isolation valves 1IA005 and 1IA008 had closed while performing a routine surveillance. The closure was caused by a spurious trip of the Division I Reactor Vessel Water Low Level Analog Trip Module (ATM) during a surveillance involving an adjacent ATM, Division I Drywell Pressure. An investigation determined the cause of the trip was due to a faulty card select decoder card in the Division I ATM cabinet. The faulty card was replaced and sent to the vendor for analysis. In addition to the ENS notification, the licensee reported this event via LER 88-013-00 dated May 18, 1988.

(9) Significant Secondary Containment Bypass Leakage [ENS No. 12186]

On May 3, 1988, the licensee reported that they had determined that a significant secondary containment bypass leakage path existed due to a simultaneous failure of a shaft packing in the outer bulkhead of the containment 828' personnel air lock and a failure of the equalizing valve on the inner bulkhead of the same air lock. The leakage rate was in excess of the 5 standard cubic feet per hour total air lock leakage allowed by Technical Specifications. The leakage was discovered during the performance of the air lock barrel leak rate tests discussed above in paragraph 5.b. The packing and equalizing valves were repaired and the air lock retested satisfactorily later the same day.

No violations or deviations were identified.

11. Environmental Qualification (71707/93702)

During this report period, the licensee identified a number of "as-installed" conditions that required corrective action to restore equipment to the requirements of the licensee's Environmental Qualification (EQ) program.

a. Background

While performing planned preventive maintenance (PEM15A379) on Main Steam Isolation Valve Leakage Control System (IS) motor operated valve 1E32F002J, the licensee identified water in the limit switch compartment. The licensee initiated Condition Report (CR) 1-88-04-018, dated April 4, 1988, to initiate corrective action on the identified condition and to investigate the root cause (i.e. source of the water). The IS motor operated valve (1E32F002J) was located in the main steam tunnel which was a high humidity

environment during plant operation. The licensee's root cause investigation identified discrepancies between the as-installed configuration of electrical equipment and the programmatic EQ requirements as detailed below.

b. Weed Thermocouple

Following identification of water in the limit switch compartment for IS valve 1E32F002J, the licensee performed an inspection of electrical equipment in the main steam tunnel. During the inspection of Weed thermocouples, the licensee identified insulation damage to the field and internal wiring which was most probably due to the installation technique. In addition, the licensee identified that sealant was not applied to the thermocouple gasket before its installation nor was sealant applied to the threads of the terminal head body and cap.

The licensee initiated Condition Report (CR) 1-88-04-095, Revision 0, dated April 20, 1988, to provide for corrective action and investigation of the root cause for the damaged wire. On April 22, 1988, the licensee identified that required sealant was not installed (e.g., thermocouples not potted) on the Weed thermocouple per the EQ program requirements and initiated CR 1-88-04-114 to initiate an investigation. The licensee reported the identified condition to the NRC operations center via the ENS in accordance with 10 CFR 50.72 on April 22, 1988. The ENS notification was documented above in Paragraph 10.b.6.

The licensee's justification for the as-installed configuration of Weed thermocouples was provided to the inspectors and Region III. Calculation No. CQD-039466, dated April 25, 1988, performed an evaluation of the as-installed Weed thermocouple by similarity to Pyco temperature measuring devices. That evaluation concluded that the Weed thermocouples installed at Clinton were qualified in the as-installed configuration. The inspectors noted that the subject Weed thermocouples were potted at the terminal block during the report period in accordance with the EQ requirements.

At the conclusion of the report period, a Region III specialist was reviewing the evaluation presented by the licensee to justify the as-installed configuration of the Weed thermocouples. The subject of Weed thermocouples meeting the requirements of 10 CFR 50.49 will remain an Unresolved Item pending completion of that review (461/88009-05).

c. Weed Resistance Temperature Detectors (RTDs)

As part of the initial root cause investigation initiated in response to the water found in motor operated valve 1E32F002J, the licensee inspected RTDs installed in high humidity environments.

That inspection identified 42 Weed RTDs that were not potted at the terminal blocks as recommended by the vendor's installation instructions. The licensee initiated revision 01 to CR 1-88-04-095 on April 27, 1988, to document the identified discrepancies, provide corrective action, and to evaluate the root cause.

The Weed RTDs that had not been potted at the terminal blocks were part of the Containment Monitoring System (CM) and were passive instruments which provided input to temperature recorders for the Suppression Pool Water Temperature (8), Drywell Atmosphere (8), Containment Atmosphere (8), ECCS/RCIC Pump Rooms (9), Auxillary Building Atmosphere (3), Reactor Water Cleanup Pump Room (3), and Main Steam Tunnel (3).

The licensee completed immediate corrective action by potting all 42 Weed RTDs prior to plant restart on May 5, 1988. At the conclusion of this report period, the licensee had not completed their evaluation of the operational impact for the as-installed condition of these 42 Weed RTDs. The subject of "unpotted" Weed RTDs will remain an Unresolved Item pending the inspectors' review of the licensee's evaluation (461/88009-06).

d. EQ Program Review

In response to the deficiencies discussed above, the licensee performed a review of EQ Manual maintenance requirements. That review initiated CR 1-88-04-141 dated April 29, 1988, which identified a failure to perform stroking of ITT General Controls damper actuators a minimum of ten times every 90 days. The licensee identified the affected damper actuators to be in the Standby Gas Treatment System (SGTS). Since the required stroking was not performed in accordance with the licensee's EQ preventative maintenance program, the licensee declared both trains of SGTS inoperable and complied with the applicable Technical Specification by conducting a plant shutdown. The shutdown was reported to the NRC Operations Center via the ENS as discussed above in Paragraph 10.b.(7).

The immediate corrective action to the identified damper stroking deficiency was to stroke the affected dampers ten times. That was successfully accomplished under maintenance work request (MWR) C-50713 on April 30, 1988.

As documented in CR 1-88-04-141, the licensee's investigation identified seven issues for which a corresponding EQ maintenance requirement had not existed:

	<u>MS-02.00 Number</u>	<u>Requirement</u>
1.	MEQ-CL022-09	Inspect 1E51-F040 valve internals
2.	MEQ-CL024-11	Cycle valve 1FC-048 each refueling outage
3.	MEQ-CL034A-02	Change IRM teflon connector each 1.5 years
4.	MEQ-CL034B-01	Calibrate power range detectors every 1000 EFPH and perform life expectancy
5.	MEQ-CL044-01 THRU 06	Cycle VG system dampers every 90 days
6.	MEQ-CL076-01	Rotate SLC pumps every 3 months
7.	MEQ-CL091-01 THRU 03	Energize hydrogen ignitors monthly and verify igniter operating temperature

The licensee's evaluation of the above issues identified that Item 4 (MEQ-CL034B-01) and Item 6 (MEQ-CL076-01) were being satisfied by existing plant surveillance procedures and the licensee's ISI program respectively. The remaining Items (1,2,3,5 & 7) were evaluated by the licensee and proposed EQ changes were initiated to delete those requirements from the scope of the EQ program.

At the conclusion of the report period, the inspectors were reviewing with Region III specialists the justification provided by the licensee for changes made in the EQ maintenance program. The EQ change packages promulgated in CR 1-88-04-141 will remain an Open Item pending completion of the inspectors' review (461/88009-07).

Two unresolved items and one open item were identified.

#### 12. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which will involve some action on the part of the NRC or the licensee or both. One open item disclosed during the inspection was discussed in Paragraph 11.d.

#### 13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Two unresolved items disclosed during this inspection were discussed in Paragraphs 11.b and 11.c.

14. Exit Meetings (30703)

The inspectors met with licensee representatives (denoted in Paragraph 1) throughout the inspection and at the conclusion of the inspection on May 18, 1988. The inspectors summarized the scope and findings of the inspection activities. The licensee acknowledged the inspection findings.

The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any documents/processes as proprietary.

The inspectors attended exit meetings held between regional/headquarters based inspectors and the licensee as follows:

<u>Inspector</u>	<u>Date</u>
W. Kropp	4/6/88
J. Belanger	4/8/88
B. Mendelsohn	4/8/88
P. Rescheske	4/15/88
J. Patterson	4/27/88
J. Foster	4/28/88
M. Huber	4/29/88
J. Kramer	5/12/88
R. Westberg	5/12/88