

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-461
License No: NPF-62

Report No: 50-461/99016(DRP)

Licensee: AmerGen Energy Company

Facility: Clinton Power Station

Location: Route 54 West
Clinton, IL 61727

Dates: October 23 - December 1, 1999

Inspectors: P. L. Loudon, Senior Resident Inspector
K. K. Stoedter, Resident Inspector
C. E. Brown, Resident Inspector
D. E. Zemel, Illinois Department of Nuclear Safety

Approved by: Thomas J. Kozak, Chief
Reactor Projects Branch 4
Division of Reactor Projects

EXECUTIVE SUMMARY

Clinton Power Station NRC Inspection Report 50-461/99016(DRP)

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection.

Operations

- Initiatives to address operator performance weaknesses were developed and implemented prior to the plant restart in May 1999. This resulted in improved operator performance which has been sustained to this point. However, the failure to fully evaluate rod control and information system troubleshooting activities indicated that improvement is still needed in the command and control of plant activities (Section O1.1).
- The inspectors concluded that the licensee effectively managed allowed outage times during Division III planned maintenance activities. Delays were encountered following a high pressure core spray system breaker trip due to the need to acquire testing equipment from another facility. The inspectors determined that one of the licensee's work week critiques did not provide sufficient details of problems encountered during the work week. As a result, the value of the critiques was limited (Section O1.2).
- The licensee implemented an effective program to ensure that plant equipment was adequately protected from cold weather (Section O2.2).
- An unplanned Technical Specification entry occurred due to a system knowledge deficiency on the part of the licensee and a lack of attention-to-detail. Specifically, operations personnel did not question the operability impact on reactor water cleanup (RT) system pump room monitoring and isolation instrumentation from leaving the "A" RT pump room door open (Section O4.1).

Maintenance

- The inspectors determined that the communication methods used during the calibration of a radiation monitor did not meet the licensee's conduct of operations standards. Control room supervision did not correct this issue until they were questioned by the inspectors (Section M1.2).
- Through a review of the main control room deficiency (MCRD) tracking log and an inventory of maintenance tags in the main control room, the inspectors determined that the tracking of MCRDs was consistent and classifications were appropriate. In addition, no concerns were identified with the prioritization of maintenance activities to address previously identified MCRDs (Section M2.1).
- During this reporting period, the licensee experienced multiple RT system pump seal failures. To date, the cumulative personnel dose associated with RT system pump work

is about 6 percent of the total station dose. At the end of the inspection period, the licensee was attempting to better understand the cause of the premature seal failures. Vendor and staff assistance from other nuclear plants was being provided to address the issue (Section M2.2).

Engineering

- The inspectors identified a potential vulnerability in the licensee's temporary modification and troubleshooting processes in that malfunctions related to connecting troubleshooting equipment to operable plant components were not evaluated before commencing troubleshooting activities. The licensee revised its maintenance work order process to address this vulnerability. The revised process included steps to ensure that potential failure mechanisms were evaluated before connecting troubleshooting equipment to operable plant components (Section E1.1)

Plant Support

- Based on observations during a recent emergency preparedness drill, the inspectors concluded that the licensee adequately demonstrated that its emergency response staff could assemble in a timely manner and take appropriate actions in response to plant accident conditions (Section P5.1).
- During a drill, fire brigade members exhibited fire fighting skills which would be effective in extinguishing a real fire while maintaining their own personal safety (Section F5.1).

Report Details

Summary of Plant Status

The licensee operated the unit at 100 percent power for most of the inspection period. On November 13, 1999, the licensee lowered power to 90 percent to remove the 5A feedwater heater from service to repair a steam leak on the extraction steam system. The licensee returned the feedwater heater to service and restored reactor power to 100 percent on November 16. On November 21 and 27, the licensee lowered power to 80 percent for a control rod sequence exchange and turbine valve testing before returning to full power.

I. Operations

O1 Conduct of Operations

O1.1 Continuous Main Control Room Observations

a. Inspection Scope (71707 and 71715)

The inspectors conducted 72 hours of continuous main control room (MCR) observations. The inspectors primarily observed operator performance with respect to the key attributes described in NRC Information Notice 87-21, "Shutdown Order Issued Because Licensed Operators Asleep While On Duty." The inspectors also observed all or portions of activities conducted in accordance with the following Conduct of Operations procedures:

Procedure 1401.03, "Control Room Professionalism"
Procedure 1401.04, "Shift Turnover and Relief"
Procedure 1401.05, "Operator Logs and Records"
Procedure 1401.06, "Procedures and Operator Aids"
Procedure 1401.07, "Communicating Information"
Procedure 1401.09, "Control of System and Equipment Status"
Procedure 1401.11, "Planning and Control of Evolutions"
Procedure 1401.15, "Alarm and Plant Transient Response"

b. Observations and Findings

In general, the inspectors determined that the operator performance improvements initiated before unit startup in May 1999 had been sustained. Specific observations and findings for selected conduct of operations focus areas are discussed below.

Communications:

Throughout the observation period, the inspectors observed consistent use of three-way communications in the MCR. These communications included the transfer of information between operators in the MCR and via radios to equipment operators in the plant.

Early in the inspection period, the inspectors observed that instrument and calibration (I&C) technicians working in the MCR would not always inform licensed operators of alarms caused by their work. Later in the inspection period, operators became insistent that I&C technicians announce all alarms that their work activities generated and required the use of three-way communication consistent with conduct of operations standards. Subsequently, the inspectors observed that I&C personnel adhered to conduct of operations communication standards while working in the MCR.

Shift Turnovers and Pre-Job Briefings:

In general, inspector-observed shift turnovers were conducted in a professional and concise manner. Control room supervisors led the turnovers and operators discussed equipment status and planned activities in their respective areas of responsibility. Shift managers emphasized shift priorities and safety responsibilities. The pre-job briefing before a Reactor Core Isolation Cooling (RCIC) system surveillance test was particularly effective. A licensed reactor operator clearly defined roles and responsibilities and led a discussion on communication issues, contingency plan details, and industry operating experience.

Peer Checks:

The inspectors observed licensed operators consistently using peer checking before conducting control board manipulations. Operators requested peer checks from other operators in a manner indicating that the checks were a normal operating practice. The inspectors have observed that the practice of peer checking by MCR operators has been consistent and effective since unit startup in May 1999.

Annunciator Response and Evaluation of Abnormal Conditions:

The inspectors observed frequent use of annunciator response procedures (ARPs) to evaluate conditions following the receipt of unexpected alarms. All alarms were consistently announced to the CRS, and the appropriate ARP was referenced for followup instructions. During planned evolutions, the inspectors observed that work was stopped and re-assessed, or if applicable, the appropriate off-normal procedures were implemented, when unexpected or abnormal situations were encountered.

Log Keeping:

The inspectors observed that MCR logs contained sufficient details for plant evolutions and pertinent plant parameters were recorded in the logs. The implementation of a computerized log keeping system has resulted in an improvement in the quality of MCR logs over the past few months.

Main Control Room Atmosphere:

In general, operations department staff maintained the MCR environment in a quiet, professional state. The number of non-operations department workers entering the

MCR was kept to a minimum. One exception to this norm is discussed in Section M1.2 of this report.

Control Room Panel Walkdowns:

Control room panel walkdowns were generally conducted in a deliberate manner with changes in indications noted and evaluated by the operators. Typically, following the conduct of a mid-shift walkdown, the responsible operator made a station log entry reflecting the completed walkdown. However, the inspectors observed that day shift log entries during the 72-hour observation period did not include an entry that the middle of shift board walkdown had been completed. The licensee acknowledged this observation and discussed the issue with the operators.

Control Room Supervisor/Shift Manager Oversight:

The inspectors determined that CRS and shift manager (SM) oversight of operational activities was usually effective. However, the inspectors identified one example where the SM and CRS did not fully evaluate the potential impacts on the plant associated with the installation of a logic analyzer in the MCR.

On November 2, 1999, the rod control and information system (RC&IS) became inoperable during installation of a logic analyzer. This condition prevented operations personnel from manually moving control rods and resulted in the control rod drive accumulator pressure indications being unreliable. Operations personnel immediately restored the RC&IS and thus regained the ability to manually move control rods.

Before recommencing the logic analyzer installation, the CRS informed operations personnel that if the RC&IS was rendered inoperable again, the system would not be restored until installation of the logic analyzer was completed approximately 1.5 hours later. This decision concerned the inspectors in that leaving the RC&IS inoperable would have resulted in operations personnel being unable to manually move control rods for an extended period of time.

During discussions with the SM and the CRS regarding the decision not to restore the RC&IS to an operable status, the inspectors determined that the SM did not fully understand the scope of the activities occurring in the MCR. The SM assumed that maintenance personnel were troubleshooting the rod gang drive system circuitry rather than installing a logic analyzer in the RC&IS. Additional questioning by the inspectors and an operations department management member revealed that the crew had not identified and developed contingencies for potential reactivity control issues which could occur with the RC&IS system in lock out. For example, if a transient such as a loss of feedwater heating occurred while the RC&IS was inoperable, proceduralized operator response actions could not be completed. Operations personnel directed that the work be suspended and initiated Condition Report (CR) 1-99-11-028 to document the ineffective evaluation of the RC&IS work activities and the failure to develop alternate operator actions. The licensee reevaluated the work activity and developed an alternate method to obtain the desired information. The activity was subsequently completed with no further impact on the RC&IS.

c. Conclusions

Initiatives to address operator performance weaknesses were developed and implemented prior to the plant restart in May 1999. This resulted in improved operator performance which has been sustained to this point. However, the failure to fully evaluate RC&IS troubleshooting activities indicated that improvement is still needed in the command and control of plant activities.

O1.2 Online Maintenance Limiting Condition for Operation (LCO) Management

a. Inspection Scope (71707)

The inspectors monitored the licensee's work control efforts to effectively manage and limit time used to accomplish online maintenance.

b. Observations and Findings

The inspectors assessed the licensee's execution of a scheduled Division III outage which included work on the emergency diesel generator (EDG), diesel fuel oil, diesel generator ventilation, and high pressure core spray (HPCS) systems. The inspectors verified that appropriate probabilistic risk considerations were factored into the outage planning and that the correct Technical Specification (TS) LCOs were entered. Specific observations included:

- Division III EDG -- The EDG was inoperable for 69 hours versus a scheduled inoperable time of 65 hours. The TS allowed outage time is 14 days in conjunction with the HPCS system being inoperable. Numerous activities, including first time calibrations of local electrical meters, were accomplished with little delay despite a large number of different work disciplines being involved.
- HPCS system -- The HPCS system was inoperable for 96 hours versus a scheduled inoperable time of 65 hours (the time scheduled for Division III EDG inoperability). During surveillance testing of the HPCS system minimum flow valve (1E22F012), its electrical supply molded case circuit breaker tripped due to excessive amperage. The licensee incurred an additional 31 hours of inoperable time due to the need to obtain diagnostic testing equipment from another facility and the subsequent troubleshooting activities. The licensee determined that the molded case circuit breaker was undersized for its application and replaced it with a higher rated molded case circuit breaker.

The other work planned for the Division III outage was completed as scheduled or ahead of schedule. The inspectors observed that the licensee's work week critique did not include a detailed discussion or analysis of problems encountered during the week. Therefore, limited information was provided for lessons learned. The work control director stated that the work week critique process was still in a developmental stage and that revised critique guidelines would be implemented in an effort to improve critique quality.

c. Conclusions

The inspectors concluded that the licensee effectively managed LCO allowed outage times during Division III planned maintenance activities. Delays were encountered following a HPCS system breaker trip due to the need to acquire testing equipment from another facility. The inspectors determined that the licensee's work week critiques did not include sufficient discussion of problems encountered during the work week to support a lessons-learned approach. As a result, the value of the critiques was limited.

O2 Operational Status of Facilities and Equipment

O2.1 Emergency Core Cooling System Walkdowns (71707)

a. Inspection Scope

The inspectors conducted a detailed system walkdown of accessible portions of the reactor core isolation cooling (RCIC) system. Documented outstanding deficiencies and corrective action items were also reviewed. The RCIC system was chosen since it is one of the top five systems of importance in the licensee's probabilistic risk assessment.

b. Observations and Findings

The inspectors assessed the material condition of RCIC system components during the detailed walkdown. The RCIC system was discovered to be in good material condition with no leaks or obvious degradation noted. Motor-operated valves (MOVs) associated with the RCIC system were in good condition and all valve packing areas were dry (indicating no packing leaks). Valve stems on the MOVs appeared to be adequately lubricated. Through inspections of the RCIC system room ventilation units, the inspectors determined that the coil areas were very clean.

The RCIC system pump and turbine area was well maintained with no concerns noted. The pump's mechanical seal area was dry with no stains or corrosion which would indicate a seal leak. The pump and turbine were adequately marked to show where vibration probes should be attached to obtain inservice inspection data. The interface between the turbine and the pump was kept free of debris. All of the bolting materials were clean and proper thread engagement was apparent.

The inspectors observed that a radiological controls posting rope was lying on the linkage for the turbine mechanical overspeed trip device for the trip throttle valve. The licensee concluded that the rope did not present an operability concern; however, the rope was promptly removed. It appeared that the rope had been in place for several days and equipment operators could have identified the problem during previous operator rounds.

During an inspection of the RCIC system tank room, the inspectors identified that the bolts on a flange were corroded. At the flange, the piping material transitions from aluminum to stainless steel. Normal industry practice for this type of transition is to use

stainless steel bolts which are resistant to corrosion. However, the bolts appeared to be constructed of carbon steel which is susceptible to corrosion. The inspectors also observed that the bolts were not thoroughly engaged to the flange. The licensee initiated CR 1-99-12-014 to evaluate the inspectors' concerns. Based on the initial engineering assessment and operability determination, the licensee concluded that the flange and bolting issues did not affect system operability.

c. Conclusions

The RCIC system was in good material condition and recently completed surveillance results indicated the system was capable of performing its safety function.

O2.2 Cold Weather Preparations

a. Inspection Scope (71714)

The inspectors conducted a review of the licensee's program to prepare for the onset of winter weather. The following licensee procedures were reviewed and referenced as part of this inspection activity:

Procedure 1860.01, "Cold Weather Operations"

Procedure 1860.01c001, "Cold Weather Preparations Checklist"

Procedure 3800.02C001, "C-Area Daily Rounds"

Procedure 3800.02C002, "D-Area Daily Rounds"

Procedure 3800.02C003, "E-Area Daily Rounds"

Quality Assurance Assessment Report 1999-10-10-39, "Cold Weather Operations"

b. Observations and Findings

The inspectors determined that the procedures included operability checks for essential heating units for the make-up water building and the service water screen house. Checklists also included verification that chemistry department and mechanical maintenance preventive maintenance activities had been accomplished. Overall, the procedures appeared to thoroughly address equipment susceptible to cold weather.

The inspectors conducted independent walkdowns of the make-up water building, service water screen house, and various other room ventilation areas. The inspectors observed that space heater units were energized and that the thermostats were appropriately set. Cooling coils for ventilation units had been drained to ensure the lines would not freeze and rupture the cooling coils. The inspectors also noted that weather sensitive items were discussed in the area equipment operator's daily rounds sheets to raise sensitivity to potential weather related impacts on plant systems.

Based on a recently completed Quality Assurance (QA) Department review of the program for cold weather preparations, the licensee concluded that the cold weather program had improved in recent years and that the program was effective to ensure

proper cold weather protection of plant equipment. The inspectors did not identify any concerns with the licensee's basis for this conclusion.

c. Conclusions

The inspectors concluded that the licensee had implemented an effective program to ensure that plant equipment was adequately protected from cold weather.

O4 Operator Knowledge and Performance

O4.1 System Knowledge Deficiency Results in Unplanned TS Entry (71707)

On November 22, 1999, at 9:39 p.m., operations personnel restored the "A" reactor water cleanup (RT) system pump to service following a pump re-build. At approximately 2:00 a.m. the following day, the operations group leader identified that the door to the "A" RT pump room was propped open to allow a hose and cable for equipment inside the pump room to pass through the doorway. Propping open this door compromised the accuracy of TS-related pump room monitoring equipment. Main control room personnel immediately entered TS 3.3.6.1.4.d, "Reactor Water Cleanup Pump Room Temperature High Isolation Instrumentation," Action K.1, since the instrumentation had been unable to accurately monitor pump room temperature and initiate the required system isolations for approximately 5 hours. Action K.1 required operations personnel to place the unit in Mode 3 within 12 hours and Mode 4 within the following 36 hours. Operations personnel removed the hose and cable from the "A" RT pump room, closed the door, and exited TS 3.3.6.1.4.d. The TS action statement requirements were met and, therefore, no actions were taken to initiate a plant shutdown. Operations personnel initiated CR 1-99-11-123 to document this issue. The inspectors concluded that this unplanned TS entry occurred due to a lack of attention-to-detail and a system knowledge deficiency on the part of the operations personnel who had restored the "A" RT system pump to service. Specifically, operations personnel did not question the operability impact on monitoring and isolation instrumentation from leaving the "A" RT pump room door open. In addition, operators did not notice a sign placed on the RT "A" pump room door alerting them not to prop the door open. The licensee was developing corrective actions for this issue at the conclusion of the inspection period.

O7 Quality Assurance in Operations

O7.1 Facility Review Group (FRG) Activities (71707)

The inspectors attended portions of FRG meetings throughout the inspection period. The purpose of the FRG is to provide onsite technical reviews of nuclear safety issues/items and advise the Manager - Clinton Power Station on appropriate actions to address the issues/items. The types of items reviewed by the FRG include changes to procedures, safety evaluations, proposed TS changes, and facility modifications. The inspectors observed that FRG members asked probing questions regarding documents under review and rejected proposed documents if all FRG questions could not be adequately addressed. The inspectors determined that the FRG was effective.

07.2 Nuclear Review and Audit Group (NRAG) Activities (71707)

The inspectors attended portions of the quarterly NRAG meeting held on October 21, 1999. The purpose of the NRAG is to conduct an independent off-site review of nuclear safety issues/items. The NRAG reports directly to the Vice President. The inspectors determined that the NRAG members frequently asked questions of plant departmental managers to ascertain the breadth and depth of programmatic problems. The NRAG pointed out that the corrective action program implementation, engineering work backlog, and organizational self-assessments continue to require management attention.

08 Miscellaneous Operations Issues (92901)

08.1 (Closed) Inspection Followup Item 50-461/99011-01: Review of long-term corrective actions to improve operations department and work control center interface. The inspectors have observed for the past several months that the coordination and interface between on-shift operations personnel and the work control work week managers and supervisors have improved. This improvement was largely facilitated by the designation of an operations department work coordinator who directly interfaces with the work control work week manager. No other concerns were identified.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments (61726 and 62707)

The inspectors reviewed or observed portions of the following maintenance and surveillance activities:

Procedure 2708.01, "Diesel Generator Regulator and Governor Test"
Procedure 9031.06, "Main Turbine Stop Valve and Combined Intermediate Valve Tests"
Procedure 9069.01, "Shutdown Service Water Operability Test"
Procedure 9437.40, "Heating, Ventilation, and Air Conditioning [HVAC] System Exhaust Process Radiation Monitor 0RIX-PR001/002 Calibration"
Action Request (AR) F09505, "Attach Logic Analyzer to Rod Gang Drive System"
AR F13764, "Troubleshoot Division IV Reactor Protection System Alarm on Turbine Stop Valve Closure"
AR F13879, "High Pressure Core Spray Minimum Flow Valve Breaker Tripped During Testing"
AR F14104, "Inspect 12 Cylinder Engine for Fuel Oil Leakage"
AR F13982, "Troubleshoot Division 1 Load Driver Power Supply"
Preventive Maintenance (PM) PCIDGM059, "Calibrate Emersion Heater Temperature Switch"
PM (PMMDGM115), "Eighteen-Month Diesel Generator Maintenance and Inspection"
PM (PMMDGM121), "Inspect Circulating Oil Pump and Soakback Pump Motors"

The inspectors concluded that observed surveillance testing and maintenance activities were conducted in accordance with procedures.

M1.2 Conduct of Process Radiation Monitor Calibration

a. Inspection Scope (61726)

On October 20, 1999, the inspectors observed I&C personnel conduct a calibration on HVAC system exhaust process radiation monitor PR002 in accordance with Procedure 9437.40, "HVAC System Exhaust Process Radiation Monitor ORIX-PR001/002 Calibration." This procedure required an I&C technician to be stationed in the MCR while another technician was located in a high noise area in the control building. Communications were accomplished through the use of sound powered headphones.

b. Observations and Findings

During the calibration activity, the inspectors observed the technician in the MCR shouting into the sound powered headphones multiple times. At no time did the control room supervisor or reactor operators question or correct the I&C technician's behavior. The observed behavior did not meet MCR operator conduct expectations and was becoming a distraction. After several minutes, the inspectors questioned the I&C technician and the CRS regarding the appropriateness of shouting in the MCR. The CRS stated that shouting was not appropriate in the MCR and that he would provide both technicians with amplifiers for their headphones. The calibration was subsequently completed without any further distractions.

c. Conclusions

The inspectors determined that the communication methods used during the calibration of PR002 did not meet management expectations. Control room supervision did not correct the problem until questioned by the inspectors.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Review of Main Control Room Deficiency Program (62707)

The inspectors conducted a review of the main control room deficiency (MCRD) program to determine if the tracking of MCRDs was consistent, if deficient conditions located in the MCR and the plant were appropriately classified as MCRDs, and if the maintenance activities required to address current MCRDs was appropriately prioritized. At the beginning of the inspection, the MCRD program contained approximately 10 non-outage-related deficiencies and 23 outage-related deficiencies. Through a review of the MCRD tracking log and an inventory of maintenance tags in the main control room, the inspectors determined that the tracking of MCRDs was consistent and classifications were appropriate. In addition, no concerns were identified with the prioritization of maintenance activities to address previously identified MCRDs.

M2.2 Repetitive RT System Pump Failures

During this reporting period, the licensee experienced multiple RT pump seal failures. These failures were premature in nature. The typical service life of the RT system pump seals was 10 months. Based on a maintenance history review, the licensee identified that the "A" pump seal was replaced in early November and failed with less than 1 month of service. The "B" pump was overhauled in May 1999 and experienced a seal failure in November. The "C" pump was overhauled in November and the seal began leaking after about 1 week of service. To date, the cumulative personnel dose associated with RT system pump work is about 6 percent of the total station dose for the year. At the end of the inspection period, the licensee was attempting to better understand the cause of the premature seal failures. Vendor and staff assistance from other nuclear plants was being provided to address the issue.

III. Engineering

E1 Conduct of Engineering

E1.1 Review of Temporary Modification and Troubleshooting Processes

a. Inspection Scope (37551)

The inspectors reviewed the implementation of the temporary modification and troubleshooting processes during licensee troubleshooting of spurious Division IV turbine stop valve closure trip alarms in the MCR.

b. Observations and Findings

On November 13, 1999, operations personnel received multiple actuations of the "Division I or IV Turbine Stop Valve Closure Trip" alarm. On November 15, I&C personnel connected a recorder to the nuclear system protection system to monitor the operation of the Division IV turbine stop valve closure trip circuitry and to determine the cause of the spurious alarms. At the time the recorder was installed, the nuclear system protection system was operable. At Clinton Power Station, the nuclear system protection system is equivalent to the reactor protection system installed at other nuclear plants. The recorder was installed for approximately 8 hours.

On November 16, the inspectors were informed that I&C personnel planned to re-install the recorder once a temporary modification (TM) safety screening and/or evaluation was completed. The inspectors questioned engineering, maintenance, and operations personnel to determine why a TM safety screening and/or evaluation was not needed before installing the recorder on November 15. Engineering personnel stated that Procedure 1040.01, "Troubleshooting," did not require the completion of a TM safety screening and/or evaluation if the troubleshooting equipment was installed for less than or equal to 24 hours. The inspectors concluded that although the completion of a TM safety screening and/or evaluation was not procedurally required, this practice could

result in the missed identification of possible failure mechanisms created when connecting troubleshooting equipment to operable plant components. Through subsequent discussions, the inspectors learned that the licensee was revising the troubleshooting process to require a safety screening and/or evaluation to assess potential failure mechanisms before connecting troubleshooting equipment to operable plant components. The licensee implemented the new maintenance work order process on November 30, 1999.

c. Conclusions

The inspectors identified a potential vulnerability in the licensee's TM and troubleshooting processes in that malfunctions related to connecting troubleshooting equipment to operable plant components were not evaluated before commencing troubleshooting activities. The licensee revised its maintenance work order process to address this vulnerability. The revised process included steps to ensure that potential failure mechanisms were evaluated before connecting troubleshooting equipment to operable plant components.

IV. Plant Support

P5 Staff Training and Qualification in Emergency Preparedness (EP)

P5.1 EP Drill (71750)

The inspectors participated in and observed the conduct of an integrated facility EP drill conducted on October 29, 1999. The inspectors observed that all response facilities were activated in an acceptable time frame. The inspectors provided their observations to EP staff, who indicated that their critiques captured similar issues. Overall, the drill illustrated that the emergency response staff could effectively assemble and take actions in response to plant accident conditions.

F5 Fire Protection Staff Training and Qualification

F5.1 Observation of Fire Brigade Drill (71750)

The inspectors observed the conduct of a fire brigade drill on November 19, 1999. Fire brigade members responded to the simulated fire promptly and properly donned fire protection clothing. The fire brigade arrived at the scene of the simulated fire area in 7 minutes and the fire brigade members exhibited fire fighting skills which would be effective in extinguishing a real fire while maintaining their own personal safety.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 1, 1999. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Baker, Manager - Nuclear Support Services
P. Walsh, Manager - Nuclear Station Engineering Department
M. Coyle, Vice President
K. Gallogly , Director - Corrective Action
J. Goldman, Manager - Work Management
P. Hinnenkamp, Plant Manager - Clinton Power Station
W. Maguire, Director - Operations
M. Moore, Manager - Quality Assurance
M. Reandeau, Director - Licensing
R. Schenck, Manager - Maintenance
D. Smith, Director - Security and Emergency Planning

INSPECTION PROCEDURES USED

IP 37551: Engineering Observations
IP 61726: Surveillance Observations
IP 62707: Maintenance Observation
IP 71707: Plant Operations
IP 71711: Extended Control Room Observations
IP 71714: Cold Weather Preparations
IP 71750: Plant Support and Observations
IP 92901: Followup: Operations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

| | | |
|-----------------|-----|--|
| 50-461/99011-01 | IFI | Review of long term corrective actions to improve operations department and work control center interface. |
|-----------------|-----|--|

Discussed

None

LIST OF ACRONYMS

| | |
|-------|---|
| AR | Action Request |
| ARP | Annunciator Response Procedure |
| CR | Condition Report |
| CRS | Control Room Supervisor |
| DRP | Division of Reactor Projects |
| EDG | Emergency Diesel Generator |
| EP | Emergency Preparedness |
| FRG | Facility Review Group |
| HPCS | High Pressure Core Spray |
| HVAC | Heating, Ventilation and Air Conditioning |
| I&C | Instrumentation and Controls |
| LCO | Limiting Condition for Operation |
| MCR | Main Control Room |
| MCRD | Main Control Room Deficiencies |
| MOV | Motor Operated Valves |
| NRAG | Nuclear Review and Audit Group |
| PM | Preventive Maintenance |
| QA | Quality Assurance |
| RC&IS | Rod Control and Information System |
| RCIC | Reactor Core Isolation Cooling |
| RT | Reactor Water Cleanup |
| SM | Shift Manager |
| TM | Temporary Modification |
| TS | Technical Specification |