

DRP ADMIN

March 23, 2000

Mr. D. R. Gipson
Senior Vice President
Nuclear Generation
The Detroit Edison Company
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI INSPECTION REPORT 50-341/2000001(DRP)

Dear Mr. Gipson:

This refers to the inspection conducted on January 13 through February 23, 2000, at your Fermi 2 reactor. The enclosed report presents the results of this inspection.

During this inspection period, we noted that overall operation of the facility was conducted in a deliberate and conservative manner. Observed routine activities were performed in accordance with established procedures. Two safety system maintenance outages were planned and performed successfully. Operators properly conducted planned power changes.

However, we have two concerns regarding corrective actions. First, a fire-watch was not established within 1-hour, as required, upon discovery of an inoperable fire boundary door. This noncompliance was caused by untimely handling of a corrective action document. Second, the corrective actions to prevent the over tightening of packing gland nuts on motor-operated valves, a programmatic issue identified in 1998, were ineffective. As a result, the packing gland nuts for two safety-related valves were tightened to values well above the allowable torque values. Although you identified these conditions through a comprehensive review and the valves remained operable, the ineffective corrective actions could have had generic implications on other motor-operated valves.

Based on the results of this inspection, the NRC has determined that violations of NRC requirements occurred. The first violation involved failing to establish a fire watch within 1 hour upon discovery of an inoperable fire boundary door. The second violation involved two examples of ineffective corrective actions for the programmatic issue of over tightening the packing gland nuts on a core spray test valve and on a residual heat removal heat exchanger bypass valve. These violations are being treated as Non-Cited Violations (NCVs), consistent with Section VII.B.1.a of the Enforcement Policy. These NCVs are described in the subject inspection report. If you contest the violation or severity level of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region III, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

TEFL

D. Gipson

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In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be placed in the NRC Public Document Room.

Sincerely,

/s/ Mark Ring

Mark Ring, Chief
Reactor Projects Branch 1

Docket No. 50-341
License No. NPF-43

Enclosure: Inspection Report 50-341/2000001(DRP)

cc w/encl: N. Peterson, Director, Nuclear Licensing
P. Marquardt, Corporate Legal Department
Compliance Supervisor
R. Whale, Michigan Public Service Commission
Michigan Department of Environmental Quality
Monroe County, Emergency Management Division
Emergency Management Division
MI Department of State Police

Distribution:
CAC (E-Mail)
RPC (E-Mail)
Project Mgr., NRR w/encl
J. Caldwell, RIII w/encl
B. Clayton, RIII w/encl
SRI Fermi w/encl
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REGION III

Docket No: 50-341
License No: NPF-43

Report No: 50-341/2000001(DRP)

Licensee: Detroit Edison Company

Facility: Enrico Fermi, Unit 2

Location: 6400 N. Dixie Hwy.
Newport, MI 48166

Dates: January 13 - February 23, 2000

Inspectors: S. Campbell, Senior Resident Inspector
J. Larizza, Resident Inspector

Approved by: Mark Ring, Chief
Reactor Projects Branch 1
Division of Reactor Projects

EXECUTIVE SUMMARY

Enrico Fermi, Unit 2
NRC Inspection Report 50-341/2000001(DRP)

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

Operations

- No significant issues were noted during a review of Technical Specifications Limiting Condition for Operation 00-0046. The limiting condition for operation involved safety equipment impacted by the emergency equipment cooling water maintenance outage (Section O1.1).
- An operator properly conducted tours of the reactor building. Housekeeping in the reactor building was generally acceptable (Section O1.2).
- During a power reduction for a control rod swap, the inspectors noted the evolution was properly and deliberately controlled. Proper three way communication and peer checks were noted (Section O1.3).
- A non-cited violation was identified for failing to establish an hourly fire watch within 1-hour for an inoperable carbon dioxide (CO₂) fire suppression system boundary door between emergency diesel generator 13 room and the service water pump room. The violation was caused by untimely handling of a condition assessment resolution document that identified the door deficiency and resulted in the fire watch being established 3½ hours after discovery (Section O1.4).

Maintenance

- The inspectors concluded that two maintenance activities and one surveillance test were conducted properly using approved procedures. In particular, the inspectors noted effective communication and peer checks during an emergency diesel generator surveillance test (Section M1.1).
- An electrician suffered a minor burn while verifying the torque values on the security battery terminal lugs. The un-insulated torque wrench contacted another terminal and caused a short circuit. Job hazards were not identified before starting the activity. Un-insulated tools were used during the job. The licensee failed to implement lessons learned from a 1998 event where an electrician was severely burned under similar circumstances (Section M1.2).
- The licensee properly conducted critical work reviews and job briefs for the Division 1 Emergency Equipment Cooling Water/Emergency Equipment Service Water maintenance outage. During the outage, maintenance and tagging procedures were used properly (Section M1.3).

Engineering

- A drawing transcription error caused circuit logic terminal numbers to be listed incorrectly in a high pressure coolant injection schematic drawing and in post maintenance instructions. The incorrect documents caused a 12-hour delay in restoring the high pressure coolant injection system (Section M3.1).
- The corrective actions to resolve the programmatic issue of over tightening packing gland nuts on safety-related motor-operated valves were ineffective. The licensee identified torque values greater than allowable values for tightening packing gland nuts on a core spray test line valve and on a bypass valve for a residual heat removal heat exchanger. A non-cited violation was identified (Section M7.1).
- The inspectors concluded that the corrective actions for six closed condition assessment resolution documents written for the emergency diesel generators were appropriately implemented (Section E1.1).

Plant Support

- Parts of pipes and hangers were released from the radiological restricted area with fixed contamination levels between 200 and 500 counts per minute. This is an unresolved item (Section R1.1).
- Inattention to detail and failure to fully implement proper human performance techniques contributed to an inadvertent halon discharge in the secondary alarm station weapons room (Section F4.1).

Report Details

Summary of Plant Status

Unit 2 began this inspection period at 97 percent power. On January 31, 2000, power was reduced to 95 percent to insert and disarm one control rod in preparation for replacement of O-rings on F121/F122 directional control valves. After O-ring replacement, power was returned to 97 percent. On February 16, 2000, power was reduced to 95 percent to perform a control rod pattern adjustment. Power was returned to 97 percent the same day. On February 19, 2000, power was reduced to 79 percent to perform a rod swap. Power was returned to 97 percent the same day.

I. Operations

O1 Conduct of Operations

O1.1 Review of Technical Specification (TS) Limiting Condition for Operation (LCO)

a. Inspection Scope (71707)

The inspectors performed a review of LCO 00-0046 for safety equipment. The LCO involved safety equipment impacted by the Division 1 emergency equipment cooling water (EECW) maintenance outage.

b. Observations and Findings

No significant issues were identified during this review, however, the inspectors noted that the operators logged a 7-day LCO per TS 3.8.1, Action A.6 for the Division 1 emergency diesel generators (EDGs). Since station blackout combustion turbine generator 11-1 was inoperable from numerous spurious alarms, the allowed outage time should have been 72 hours per TS 3.8.1, Action A.5. The licensee subsequently restored the combustion turbine generator the same day. While operators had not logged the appropriate LCO entry, the issue was not considered significant because the EECW system LCO was also 72 hours.

c. Conclusions

No significant issues were noted during a review of ITS LCO 00-0046. The LCO involved safety equipment impacted by the EECW maintenance outage.

O1.2 Reactor Building Tours

a. Inspection Scope (71707)

On January 22, 2000, the inspectors accompanied an operator on tours of the reactor building.

b. Observations and Findings

The operator successfully completed the tours and recorded plant parameters in the equipment logs. Although the scaffolding, erected for the EECW and emergency equipment service water (EESW) systems outage, congested portions of the reactor building, the reactor building housekeeping was generally acceptable.

c. Conclusions

An operator properly conducted tours of the reactor building. Housekeeping in the reactor building was generally acceptable.

01.3 Rod Swap

a. Inspection Scope (71707)

On February 19, 2000, the inspectors observed a power reduction to 79 percent to perform a rod swap.

b. Observations and Findings

The inspectors observed operators insert four control rods into the core and withdraw eight control rods to gain reactivity for continued operation until the refueling outage. The evolution involved a power reduction from 97 to 79 percent. After the rod swap, operators successfully returned power to 97 percent. The inspectors noted the evolution was conducted properly using effective three-way communication and peer checks.

c. Conclusions

During a power reduction for control rod swap, the inspectors noted the evolution was properly and deliberately controlled. Proper three-way communication and peer checks were noted.

01.4 Untimely Evaluation of a Fire Protection Boundary

a. Inspection Scope (71707)

On February 17, 2000, the licensee entered Technical Requirements Manual (TRM) 3.12.4, Action A.2, and established an hourly fire watch for a broken latch on a carbon dioxide (CO₂) fire suppression system boundary door for the EDG 13 room. The inspectors reviewed the event.

b. Observations and Findings

On February 17, 2000, an operator was sent to investigate a problem with the CO₂ fire boundary door between the EDG 13 room and the service water pump room. The operator found the door would not latch properly and wrote Condition Assessment

Resolution Document (CARD) 00-00253. The operator delivered the CARD to another operator for submission to control room personnel.

The operator who received the CARD was involved with the EDG 13 surveillance test. After the surveillance, the operator placed the CARD in the nuclear shift supervisor's (NSS) in-basket without verbally informing the NSS. Three hours later, during a review of the in-basket items, the NSS realized that the CO₂ boundary door was not properly latched per the operability requirements of Procedure 28.597.02, "Fire Door Surveillance Test." Procedure 28.597.02 required entering TRM 3.12.4, Action A.2, and the TRM required initiating an hourly fire watch within 1-hour. Consequently, this requirement was missed by 2½ hours. The operators declared the door inoperable and followed the TRM action.

Technical Specification 5.4.1 states that written procedures shall be implemented for the fire protection program. Procedure 28.597.02, "Fire Door Surveillance Test," which is a procedure used in the fire protection program, required entering TRM 3.12.4 when a fire boundary door became inoperable. Technical Requirements Manual 3.12.4, Action A.2, required initiating an hourly fire watch within 1-hour of discovery of the inoperable door.

Contrary to the above, on February 17, 2000, an hourly fire watch was not established within the 1-hour TRM requirement when the fire boundary door between the EDG 13 room and the service water pump room was discovered inoperable. This Severity Level IV violation is being treated as a non-cited violation (NCV) consistent with Section VII.B.1.a of the NRC Enforcement Policy (NCV 50-341/0001-01(DRP)). This violation is in the licensee's corrective action program as CARD 00-00253.

c. Conclusions

A non-cited violation was identified for failing to establish an hourly fire watch within 1-hour for an inoperable CO₂ fire suppression system boundary door between the EDG 13 room and the service water pump room. The violation was caused by untimely handling of a condition assessment resolution document that identified the door deficiency and resulted in the fire watch being established 3½ hours after discovery.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707)

The inspectors observed all or portions of the following work activities:

- Work Request (WR) W840000100, "18-Month Preventive Maintenance per Procedure 34.307.001 on EDG 12,"

- WR E305940706, "480 Volt Switchgear Breaker and Relay Control Procedure," and
- Procedure 23.307, "EDG System Operation" Post Maintenance Test (PMT) Following Bearing 11 Replacement.

b. Observations and Findings

Mechanics and operators effectively performed the tasks using proper procedures. Effective communication and peer checks were used during the EDG surveillance test.

c. Conclusions

The inspectors concluded that two maintenance activities and one surveillance test were conducted properly using approved procedures. In particular, the inspectors noted effective communication and peer checks during an EDG surveillance test.

M1.2 Electrician Injured While Tightening Security Battery Terminal Lugs

a. Inspection Scope (62707)

An electrician received a minor burn while tightening terminal lugs on a security battery. The inspectors reviewed the Fermi 2 safety manual and CARDS 00-10554 and 98-18669, and work request (WR) J137000100.

b. Observations and Findings

On February 10, 2000, an electrician verified the torque values per WR J137000100, on terminal lugs for the security battery cells. While verifying the upper cells, the electrician contacted the lower terminal with an un-insulated torque wrench causing an electrical short circuit that slightly burned his hand. The licensee issued CARD 00-10554 to document the condition.

During the investigation, the licensee identified that the electrician had failed to perform an adequate job hazard analysis and did not identify the potential for a short circuit using un-insulated tools or the need for protective clothing. Also, the Fermi 2 safety manual did not require that protective clothing be worn while working on this system.

The WR did not specify that insulated tools be used. The licensee had previously procured an insulated torque wrench following a similar event in 1998. However, the wrench was not placed in the calibration program and was unavailable for use.

Although the batteries are a nonsafety system, the inspectors were concerned because in 1998, CARD 98-18669 documented an event where a worker was severely injured while using an un-insulated screwdriver on a motor control center. Corrective actions included performing effective hazard assessments before performing electrical work and using insulated tools during the jobs. The CARD corrective actions had not been completed.

c. Conclusions

An electrician suffered a minor burn while verifying the torque values on the security battery terminal lugs. The un-insulated torque wrench contacted another terminal and caused a short circuit. Job hazards were not identified before starting the activity. Un-insulated tools were used during the job. The licensee failed to implement lessons learned from a 1998 event where an electrician was severely burned under similar circumstances.

M1.3 Division 1 Emergency Equipment Cooling Water (EECW) and Emergency Equipment Service Water (EESW) Safety System Outage

a. Inspection Scope (62707)

The inspectors observed the preparation and portions of the activities associated with the Division 1 EECW/EESW maintenance outage. The inspectors attended critical work review meetings, the control room pre-job briefing and post-outage critique meeting. The inspectors reviewed applicable maintenance, tagging, and surveillance procedures. EDP (engineering design package) 29792 was also reviewed.

b. Observations and Findings

The EECW/EESW maintenance outage, conducted February 10 - 13, 2000, involved installing pipe in preparation for replacing the Division 1 EECW heat exchanger in refueling outage 7. Before the maintenance outage, the inspectors noted effective planning and thorough discussions during critical work review meetings. Operators conducted thorough pre-job briefs that involved discussing the job scope and precautions. Support by the operations personnel was effective. Maintenance and tagging procedures were followed.

While performing Procedure 24.205.08, "Division 1 Residual Heat Removal (RHR) Cooling Tower Fan Operability and RHR Service Water, EESW Valve Line-up Verification," the operators discovered a procedure discrepancy that delayed system restoration. The procedure listed EESW minimum flow valve P4500F401 as an air-operated valve and listed the minimum flow valve controller source valve P4500F008A as valves to be verified. However, the engineering design package had changed the air-operated valve to a relief valve and removed the source valve. An engineer missed identifying the need to revise the procedure while reviewing EESW procedures affected by EDP 29792. Operators issued CARD 00-11277.

c. Conclusions

The licensee properly conducted critical work reviews and job briefs for the Division 1 EECW/EESW maintenance outage. During the outage, maintenance and tagging procedures were used properly.

M3 Maintenance Procedures and Documentation

M3.1 Incorrect High Pressure Coolant Injection (HPCI) System Drawing

a. Inspection Scope (37551)

The inspectors observed the post maintenance test for HPCI turbine steam supply line bypass valve, E4150F600, and noted that the valve had failed to close on demand. The inspectors reviewed CARs 00-10539 and 00-11142, schematic drawing 61721-222-04, and work request (WR) 000Z979604 to determine the cause of the failure.

b. Observations and Findings

On January 14, 2000, during the HPCI maintenance outage, the licensee completed a breaker replacement per WR 000Z979604. The post maintenance test procedure instructed bypassing the auto closure circuits for valve E4150F600. This required installing two wire jumpers. Because schematic drawing 61721-222-04, which was used to identify the terminal points in the WR, was in error, the jumpers were installed on the wrong terminals. This error caused a failure of the valve to auto-close during two attempts and blew a fuse in the 130 Volt distribution panel R3200S064B while performing the test. Restoration of the HPCI system was delayed by 12 hours due to extensive troubleshooting of the circuits.

The drawing error occurred during a 1995 conversion to computer-aided design. Engineers performed an evaluation of the circuits with the jumpers incorrectly installed and determined no equipment or circuit damage occurred. The licensee corrected the drawing and the WR. Operators replaced the fuse and the electricians completed the post maintenance test.

c. Conclusions

A drawing transcription error caused circuit logic terminal numbers to be listed incorrectly in a HPCI schematic drawing and in post maintenance testing instructions. The incorrect documents caused a 12-hour delay in restoring the HPCI system.

M7 Quality Assurance in Maintenance Activities

M7.1 Inadequate Corrective Action for Adjusting Motor-Operated Valve (MOV) Packing

a. Inspection Scope (62707)

The inspectors assessed MOV packing torque issues and held discussions with licensee supervision.

b. Observations and Findings

On February 2, 2000, during a review of WR 000Z992653, an engineer discovered that the packing gland nuts for Division 1 core spray (CS) test line valve E2150F015A were

tightened to 29 foot-pounds. The nuts were tightened on October 5, 1999, to stop a packing leak. The maximum torque for the nuts should have been 18 foot-pounds. However, a work planner, who developed the WR, obtained the 29 foot-pound criteria from a computer program that specified torque values for newly packed valves only. Since the packing was not replaced, the torque value developed by the program was excessive. No thrust test was performed after the nuts were tightened to 29 foot-pounds.

Since the MOV had an 8 percent thrust margin, the engineer was concerned that the over tightened nuts could prevent the valve from opening on demand and initiated CARD 00-12178. Operators declared the normally closed valve inoperable and deactivated the valve in the closed position. Since the valve did not impact the CS flow path, the CS system remained operable.

On March 2, 2000, subsequent to the inspection period, the licensee performed a thrust test on the valve. The licensee determined the valve remained operable with the packing gland nuts tightened to 29 foot-pounds.

During a review of the issue, the licensee discovered that the immediate corrective actions for CARD 98-12207 (written March 28, 1998), which described a previous instance of over tightening packing gland nuts, should have prevented the issue involving valve E2150F015A. CARD 98-12207 described a discrepancy in the packing torque value in WR MV86980310 for reactor coolant isolation system turbine steam inlet isolation valve E5150F045. The CARD stated that over tightening the packing gland nuts for valve E5150F045 to the specified torque value would have invalidated the thrust test for the MOV. In discussions with the inspectors, licensee engineers described the issue of incorrect torque values as a program wide problem. The immediate corrective actions included verifying the packing gland nut torque information prior to tightening packing gland nuts on MOVs. However, this corrective action was not properly applied to the CS test line value in February 2000.

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," states, in part, that measures shall be established to assure that conditions adverse to quality such as deficiencies, deviations and nonconformances are promptly identified and corrected. The measures shall assure that the cause of the condition is determined and corrected to preclude repetition.

Contrary to the above, the corrective action for CARD 98-12207, written on March 28, 1998, to address the programmatic issue of over tightening packing gland nuts, was ineffective. On October 10, 1999, the packing gland nuts for CS test line valve E2150F015A were tightened per WR 000Z992653 above the allowable torque value of 18 foot-pounds to 29 foot-pounds. This violation is being treated as a non-cited violation (NCV) consistent with Section VII.B.1.a of the NRC Enforcement Policy (NCV 50-341/00001-02(DRP)). This violation is in the licensee's corrective action program as CARD 00-12178.

On February 4, 2000, the licensee initiated CARD 00-12491 to review the ineffective corrective actions for CARD 98-12207. As a result, the licensee reviewed WRs for 162

risk significant and safety-related valves for similar conditions. Subsequently, the licensee identified that WR 000Z983606 provided instructions to tighten the packing gland nuts on RHR Division 2 heat exchanger "B" bypass valve E1150F048B to 119 foot-pounds, which was 65 percent above the allowable value of 72 foot-pounds. Similarly, no thrust test was performed after tightening. Condition Assessment Resolution Document 00-12175 was written to document the deficiency. The inspectors considered this a second example of a corrective action violation.

The licensee determined that valve E1150F048B had a very large thrust margin of 160 percent and low running amperage (75 percent of full load) and that no operability concerns existed. Nevertheless, the licensee planned to obtain test data to confirm this determination.

c. Conclusions

An engineer identified that the packing gland nuts for a core spray test line valve were tightened above allowable torque values. Corrective actions from 1998 to resolve the programmatic issue of over tightening packing gland nuts were ineffective. The licensee identified WRs that specified torque values greater than allowable values for tightening packing gland nuts on a CS test line valve and on a bypass valve for an RHR exchanger. A non-cited violation was identified.

III. Engineering

E1 Conduct of Engineering

E1.1 Review of CARD Corrective Actions for Emergency Diesel Generators (EDGs)

a. Inspection Scope (37551)

The inspectors reviewed the following closed CARDS to determine whether the licensee effectively implemented corrective actions:

- 97-05497, "EDG 12 Outboard Bearing High Severe Wear Index,"
- 97-05650, "Kilo-Volt Amperes Reactive Motor Oscillates,"
- 97-10551, "EDG Maximum Bearing Temperature Elevated,"
- 97-11008, "Stroke Time EDG 12 Diesel Generator Service Water Pump Minimum Flow Valve,"
- 97-10975, "Procedure 24.307.11 in Error," and
- 97-11091, "Surveillance Procedure, Section 5.3 (Flush EDG13 Diesel Generator Service Water Infrequently Used Water Lines) Missing a Step."

b. Observations and Findings

The inspectors verified the corrective actions for the previously closed CARDS were properly implemented. The licensee addressed minor CARD documentation issues.

c. Conclusions

The inspectors concluded that the corrective actions for six closed CARDS written for the EDGs were appropriately implemented.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Contaminated EECW Material

a. Inspection Scope (71750)

The inspectors interviewed radiation protection (RP) personnel, and reviewed the following:

- Procedure 67.000.101, "Performing Surveys and Monitoring Work,"
- RP Conduct Manual MRP04, "Accessing and Working in the Radiologically Restricted Area (RRA)," and
- CARD 00-10794 to follow-up on the inadvertent release contaminated EECW material from the Radiological Restricted Area (RRA).

b. Observations and Findings

During the maintenance outage for the Division 1 emergency equipment cooling water (EECW) system, hangers and piping were removed and sent to a turbine building release area where RP personnel surveyed and released this material from the radiologically restricted area (RRA). On February 9, 2000, while surveying hanger pins that were previously surveyed and released from the RRA, an RP technician identified fixed contamination at 500 counts per minute (cpm). As a result, items previously released were suspected of being potentially contaminated.

A follow-up survey identified 14 pipes and hangers outside the RRA, but within the owner controlled area, with fixed contamination levels between 200 and 500 cpm. Four of the 14 pieces were pipes inside a dumpster. Radiation protection personnel installed a radiation placard on the dumpster. All of the material was moved into the RRA. Through interviews and records review, the RP personnel verified that no trash was removed from the site and determined that no potentially contaminated material left the site. Sweep surveys through outdoor site areas did not identify contaminated items.

Because several RP technicians were involved, a definite root cause for the inadvertent release of contaminated material had not been determined. The RP personnel assumed that a faulty radiation survey instrument cable or a technician error caused the condition.

Condition Assessment Resolution Document 00-10749 was initiated to document the condition. This item is considered an **Unresolved Item (URI 50-341/2000001-03)** pending additional licensee and NRC review.

c. Conclusions

Pipe segments and hanger components were released from the RRA with fixed contamination levels between 200 and 500 cpm. This is an unresolved item.

S8 Miscellaneous Security and Safeguards Activities

S8.1 (Closed Unresolved Item (50-341/97012-01): Determination of an adequate vehicle barrier system gates with inoperable tamper alarms.

The inspectors determined that acceptable compensatory measures included:

- the use of alternate detection systems,
- procedures, and
- equipment that possesses detection capabilities similar to a properly operating tamper alarm, or
- the installation of temporary barriers comparable to vehicle barrier system protection.

The licensee was advised by written correspondence of this determination. This issue is closed.

F4 Fire Protection Staff Knowledge and Performance

F1.4 Human Error While Conducting Fire Protection Activities

a. Inspection Scope (71750)

The inspectors reviewed CARD 00-12327 and job FP67000120. The inspectors interviewed fire protection personnel to follow-up on the inadvertent actuation of halon in the Secondary Alarm Station (SAS) weapons room.

b. Observations and Findings

On January 19, 2000, the fire protection technicians performed the semiannual test on the SAS weapons room halon system per job FP67000120 and a checklist. The technicians did not verify the position of a selector switch, which is used to select the main or reserve halon tanks. Because the switch was not selected to the main tank for the reserve tank test, the reserve tank discharged halon into the SAS weapon room during the test. Proper positioning of the selector switch was not listed in the procedure or the checklist. Nobody was in the room at the time of the actuation. A fire protection technician initiated CARD 00-12327 to document the error.

The inspectors interviewed fire protection personnel about the event. Before the job, the supervisor conducted a pre-job brief but all three questions (critical job phases, potential errors and consequential outcomes) from the three-question technique for human performance were not asked. All of the questions were not asked because the supervisor considered this a repetitive task that had been previously performed successfully.

c. Conclusions

Inattention to detail and failure to fully implement proper human performance techniques contributed to an inadvertent halon discharge in the SAS weapons room.

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 February 25, 2000. 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. In addition, the inspectors met with licensee management on March 27, 2000, to discuss the unresolved item documented in Section R.1.1 of this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Gipson, Senior Vice-President, Nuclear Operations
W. O'Connor, Assistant Vice-President, Nuclear Assessment
P. Fessler, Plant Manager
R. Libra, Director, System Engineering
R. DeLong, Director, System Engineering
N. Peterson, Acting Director, Nuclear Licensing
D. Cobb, Superintendent, Maintenance
K. Hlavaty, Superintendent, Operations
S. Stasek, Supervisor, Independent Safety Engineering Group
G. Scarfo, Supervisor, Plant Safety Engineering
K. Tyger, Supervisor, Assessment & Support
K. Lindsey, Supervisor, Radiation Protection
D. Bergmooser, Supervisor, Electrical
J. Plona, Manager, Technical
A. Kowalczyk, Manager, Plant Support
J. Davis, Outage Management
W. Bowser, Senior Technician, Science & Engineering
S. Booker, Work Control
P. Lynch, Work Control, Operations
P. Smith, Licensing
K. Howard, Plant Support, Engineering
D. Williams, Radiation Protection
J. Pendergast, Principal Engineer, Licensing
R. Woods, Engineer, Radiation Protection
S. Peterman, Engineer, Operations
K. Harsley, Licensing
J. Flint, Licensing

NRC

M. Ring, Chief, Reactor Projects Branch 1
S. Campbell, Senior Resident Inspector
J. Larizza, Resident Inspector

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 62707: Maintenance Observation
IP 71707: Plant Operations
IP 71750: Plant Support Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-341/2000001-01 NCV Failure to implement within 1-hour an hourly fire watch for an inoperable fire protection boundary.

50-341/2000001-02 NCV Two examples of ineffective corrective actions involving inappropriate tightening of packing gland nuts for MOVs.

50-341/2000001-03 URI Contaminated material released from the radiological restricted area.

Closed

50-341/2000001-01 NCV Failure to implement within 1 one hour an hourly fire watch for an inoperable fire protection boundary.

50-341/2000001-02 NCV Two examples of ineffective corrective actions involving inappropriate tightening of packing gland nuts for MOVs.

50-341/97012-01 URI Determination of an adequate compensatory measure for vehicle barrier system gates with inoperable tamper alarms.

Discussed

None

LIST OF ACRONYMS USED

CARD	Condition Assessment Resolution Document
CFR	Code of Federal Regulations
CPM	Counts Per Minute
CS	Core Spray
EDG	Emergency Diesel Generator
EDP	Engineering Design Package
EECW	Emergency Equipment Cooling Water
EESW	Emergency Equipment Service Water
HPCI	High Pressure Coolant Injection
ITS	Improved Technical Specification
LCO	Limiting Condition for Operation
MOV	Motor Operated Valves
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
NSS	Nuclear Shift Supervisor
PMT	Post Maintenance Testing
RHR	Residual Heat Removal
RP	Radiation Protection
RRA	Radiologically Restricted Area
SAS	Secondary Alarm Station
TRM	Technical Requirements Manual
URI	Unresolved Item
WR	Work Request