U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/87016(DRS); 50-316/87016(DRS)

Docket Nos. 50-315; 50-316 Licenses No. DPR-58; DPR-74

Licensee: American Electric Power Service Corporation
Indiana & Michigan Power Company
1 Riverside Plaza
Columbus, OH 43216

Facility Name: D. C. Cook Nuclear Plant, Units 1 & 2

Inspection At: D. C. Cook Site, Bridgman, Michigan

Inspection Conducted: July 7-17 and September 15, 1987

Inspectors: Joseph M. Ulie for Tony Fresco — 9-27-87 Date

Jeff Holmes — 9/18/87 Date

Joseph M. Ulie — 9-27-87 Date

Approved By: Ronald N. Gardner, Chief
Plant Systems Section — Ronald N. Gardner — 9-28-87 Date

Inspection Summary

Inspection on July 7-17 and September 15, 1987 (Report No. 50-315/87016(DRS); No. 50-316/87016(DRS)

Areas Inspected: Special, announced inspection by Region III inspectors and contractor personnel of the technical status of outstanding fire protection and safe shutdown procedure issues and a followup of certain licensee event reports (30703, 92700, 92701, 92702, and 90712).

Results: Of the areas inspected, two violations were identified (failure to provide firewatch coverage as required when isolating carbon dioxide systems - Paragraph 2.r and failure to provide firewatch coverage as required for inoperable fire barriers - Paragraph 2.s).

DETAILS

1. Persons Contacted

D. C. Cook Nuclear Plant

*J. D. Allard, Maintenance Superintendent
*K. R. Baker, Operations Superintendent
***A. A. Blind, Assistant Plant Manager
*D. M. Draper, Procedure Coordinator
*J. B. Droste, Executive Assistant Production
*L. S. Gibson, Assistant Plant Manager - Technical
***P. Jacques, Fire Protection Coordinator
*J. E. Rutkowski, Assistant Plant Manager - Production
***W. G. Smith, Jr., Plant Manager
*B. A. Svensson, Licensing Action Coordinator

American Electric Power Service Corporation

+M. P. Alexich, Division Manager - Vice President Nuclear Operations Division
*B. Auvil, Nuclear Safety and Licensing
*E. Brown, Electrical Engineer
+J. G. Feinstein, Nuclear Safety and Licensing Manager
+J. Grier, Fire Protection - Assistant Section Manager
*B. Gerwe, Fire Protection Engineer
**R. Heurter, Quality Assurance Supervisory Auditor
+T. Kwiatkowski, Manager - Design
+B. Lauzau, Nuclear Safety and Licensing Engineer
*J. McElligott, Supervisory Auditor
**E. Morse, Quality Control
*R. Shoberg, Assistant Section Manager, Instrumentation and Control
+K. Toth, Nuclear Safety and Licensing Engineer
**S. Wolf, Quality Assurance Auditor
**K. Worthington, Senior Auditor

Impell Corporation

*G. A. Weber, Manager - Technical Services

U.S. Nuclear Regulatory Commission

B. L. Jorgensen, Senior Resident Inspector

* Denotes persons attending the exit meeting of July 10, 1987, only.
** Denotes persons attending the exit meeting of July 17, 1987, only.
*** Denotes persons attending the exit meetings of July 10 and 17, 1987.
\+ Denotes persons listening in from Columbus, Ohio (AEPSC Offices) by telephone conference line to the exit meeting(s).

2. Actions Taken on Previous Inspection Findings

a. (Closed) Open Item (315/82-08-04; 316/82-08-04): The inspectors identified errors on Drawing Nos. OP-1-5104E-0 and OP-2-5104E-0 for the Unit 1 and Unit 2 Alternate Emergency Shutdown and Cooldown System Flow Diagrams. These drawings were not revised after the Auxiliary Feedwater system was modified adding an additional motor pump to each unit's system. These were the only drawing errors noted during that inspection, and the licensee stated that the errors would be corrected.

Based on a review of the current revisions of Drawing Nos. OP-1-5104E and OP-2-5104E (Flow Diagram-Alternate Emergency Shutdown and Cooldown System, Units 1 & 2, respectively), the additional Motor Driven Auxiliary Feedwater Pumps are now shown. Therefore, this item is considered closed.

b. (Open) Violation (315/82-08-06(A); 316/82-08-06(A)): Adequate written procedures were not established, implemented, and maintained covering alternate shutdown capability for Units 1 and 2 in the event of loss of control of safe shutdown equipment from the Control Room and Hot Shutdown Panel due to a fire. The "Alternate Emergency Shutdown and Cooldown Procedure Due to Loss of Normal and Preferred Alternate Methods" contained errors which could preclude the operators from satisfactorily performing the emergency procedure.

For Unit 1, Procedure No. **1-OHP 4023.001.001, Revision 4, issued June 5, 1979, with Temporary Procedure Sheet Nos. 1 and 2, both dated February 10, 1981, contained certain errors which are addressed individually as identified in the Appendix R inspection report as follows:

(1) Procedure text at page 10 of 22, Step 5.4.3, incorrectly identified the Unit 2 Motor Driven Auxiliary Feedwater Pump (MDAFP) when it should have identified the Unit 1 West MDAFP. Additionally, Attachment 3, page 15 of 37, contained the same error of identification and required the modification of the circuit breaker for the Unit 2 MDAFP vice the Unit 1 West MDAFP. With normal valve alignment, the Unit 2 MDAFP cannot provide feedwater to the Unit 1 Steam Generators.

The Unit 1 Procedure No. **1-OHP 4023.001.001, Revision 7, issued October 17, 1985, with Instruction and Procedure Change Sheet No. 1 issued November 15, 1985, references the Unit 1 West MDAFP in place of the Unit 2 MDAFP.

The step requiring modification of the circuit breaker for the Unit 2 motor driven pump, shown in Attachment 3, Revision 4, is no longer necessary given the addition of a second motor-driven pump to each unit during the time period of August 1979 to

December 1981. Therefore, this step does not appear in the current procedure, Revision 7. This portion of this item is considered closed.

(2) Procedure text at page 14 of 22, Step 5.8.2, incorrectly identified circuit breaker T11A8 as the breaker for the West Centrifugal Charging Pump Lube Oil Pump. The breaker actually supplies power to the West Centrifugal Charging Pump.

For Unit 1, Revision 7, of the procedure now correctly references breaker T11A8 as the breaker for the West Centrifugal Charging Pump Lube Oil Pump. This portion of this item is considered closed.

(3) Procedure text at page 15 of 22, Step 5.8.23-1, directed the operator to "Close QRV-251 and QRV-200." These valves are the charging flow control valve and the reactor coolant pump seal back pressure regulating valve, respectively. They are pneumatic flow control valves which are not to be directly operated, but rather to be supplied with control air from an emergency valve station that would have been tied into QRV-251 and QRV-200 for emergency local operation in preceding steps. Neither the procedure or any operating signs at the emergency valve station informed the operator of the amount of air pressure to be supplied from the emergency valve station regulators such that QRV-251 and QRV-200 would receive the proper pneumatic closing signal. When asked by the inspector, the licensed senior reactor operator accompanying the inspector during the procedure walk-through could not state the proper value of air pressure to be supplied.

During the July 1987 inspection visit, an inspector observed that labels were added at the local valve stations for both Units 1 and 2, and that 30 psig is required to close QRV-251 (Unit 1) and QRV-251 (Unit 2), and 0 psig is needed to close QRV-200 (Unit 1) and QRV-2-200 (Unit 2).

However, in Revision 7 of the procedure, Step 5.6.8.23-1 no longer directs the operator to close QRV-200, only to close QRV-251. Closure of QRV-200 is important to isolate the normal charging flow path. In discussions with licensee personnel, it was indicated that a more positive action to isolate the normal charging flow is to close Motor Operated Valves (MOVs) QMO-200 and QMO-201, the charging path isolation valves upstream of QRV-200, since QRV-200 is an air operated valve. In Steps 5.6.8.11 and 5.6.8.12, the operator is directed to "Initial If Modified" breakers 1-AM-D and 1-AZV-A for QMO-200 and QMO-201, respectively. Reference is made to Attachment 6,

which is entitled "Procedure for Modification of Motor Operated Valves." However, neither Steps 5.6.8.11, 5.6.8.12, or Attachment 6 provide specific instructions for the operator to close QMO-200 or QMO-201.

The licensee indicated that an extensive revision of Procedure No. **1-OHP 4023.001.001 (identified as Revision 8) is in progress. This revision will change the current procedure to emergency procedure format with specific actions identified for each step with the contingency actions identified in a "Response Not Obtained" column. Pending formal issuance and review of this revision for acceptability, this portion of this item remains open.

The next two portions of this item are interrelated and as such are discussed together.

(4) Attachment 1, page 1 of 8, contained a procedure to modify the control for Breaker K, a 345KV Generator Breaker. Procedure Steps 5.1 and 5.5 misidentified a knife switch as "CSI." The knife switch in the breaker control cabinet was labeled "C51."

(5) Attachment 1, page 2 of 8, contained a procedure to modify control for breaker K-1, a 345 KV Generator Breaker. Procedure Steps 5.1. and 5.5 misidentified a knife switch as "CSI." The knife switch in the breaker control cabinet was labeled "C5I."

In the current procedure, Revision 7, Attachment 1 no longer specifies opening the knife switch. Instead, Step 5.1 states, "Open control power circuit breaker check No. 4 in DC cabinet states, "Open control power circuit breaker Check No. 3 in DC cabinet No. 3."

A review of Drawing Nos. E-30292-2801-7 dated November 19, 1984, "345KV Elementary Diagram," and E-30292-2802-8 (Revision 8), dated May 28, 1986, also entitled "345KV Elementary Diagram," indicates that opening the control power circuit breaker Check No. 4 and Check No. 3 on DC cabinet No. 3 for breakers K and K-1, respectively, as shown on Drawing No. E-2681-6 (Revision 6) dated October 18, 1979, "345 KV Control Building DC Cabinets Wiring Diagram," is functionally the same as opening the knife switches. Therefore, these portions of this item are considered closed.

(6) Attachment 1, page 7 of 8, contained a procedure for modifying the control for 4KV emergency bus breaker 1EP. Step 5.3 directed that 20 amp fuses be pulled in the operating cabinet. The cabinet, one of several associated with this breaker, had no label to identify it as the operating cabinet. In addition, the

unidentified cabinet contained a fuse block labeled as 30 amp instead of 20 amp. The fuses themselves were not visible unless the fuse blocks were pulled.

A review of Revision 7 of this procedure indicates that Attachment 1, page 7 of 8, has not been significantly revised since Revision 4 was issued. The objective of the procedure at this point is to restore off-site power. Hence, none of the equipment identified is Class 1E nuclear safety-related.

A walk-down revealed that virtually no changes had occurred since the Appendix R inspection. It was still unclear which was the operating cabinet, and the label for the 48V DC cabinet was nearly illegible. The fuse block identified in the prior finding was still labeled 30 amp instead of 20 amp as shown in the procedure.

A licensee review of Drawing No. E-2847-5, "69/4 KV Elementary Diagram," Revision 5, May 6, 1985, indicated that 20 amp fuses are shown for CB-1EP Control.

This portion of the item will remain open pending licensee actions to:

(a) determine the correct amperage for the fuses,

(b) verify the fuse rating of the currently installed fuses and replace if necessary,

(c) improve the labeling of the cabinets, and

(d) revise the drawings and/or procedure as necessary, including improving references to the cabinets in the procedure.

(7) Attachment 3 of page 5 of 37, contained a procedure to modify control for the breaker which supplied power to an Essential Service Water Pump Room Exhaust Fan. The procedure in Step 5.1 directed the operator to "Remove control fuses." This step was inappropriate and should have been deleted since the first step required to actually modify this breaker's control would have been to open the breaker compartment door. An identical error, with an extraneous, inappropriate Step 5.1 directing the removal of control fuses, occurred on pages 6, 7, and 8 of 37 of Attachment 3 for other pump room exhaust fans.

In Attachment 5, pages 1 through 4 of 25, of Revision 7 of the procedure, the statement "Remove control fuses" has been replaced by "Open circuit breaker." Therefore, this portion of this item is considered closed.

(8) Attachment 3, page 19 of 37, contained a procedure to modify breaker 1-AB-D for a control air compressor. A part of Step 5.2 of this procedure directs the operator to jumper terminal points 22 to 1 in breaker compartment R3D. There is no terminal point labeled "22" in breaker compartment R3D.

Although Attachment 5, page 15, of Revision 7 of the procedure indicates certain changes in the method of modifying the breaker for local control, such as stripping of certain terminal block points, the original statement concerning jumpering of terminal point 22 needed to be addressed. A visual examination, by an inspector, of breaker compartment R3D indicated that all the referenced terminal points have now been labeled. Therefore, this portion of this item is considered closed.

(9) (Part 1) Breaker modification procedures for several 4KV and 600V breakers were included as Attachments 1A and 2 of the procedure. Modifications to each of the breakers involved lifting leads and installing jumpers on terminal block "AJ." During the walk-through of the procedure, the label for terminal block "AJ" was observed to be missing in the control cubicle for the following breakers:

1A5	Reserve Feed to 4KV Bus 1A
T11A9	Feed from 4KV Bus 1A to 4KV Bus T11A
T11A10	Feed from 4KV Bus 1A to 600V Transformer 11A
1B5	Reserve Feed to 4KV Bus T11B
T11B1	Feed from 4KV Bus 1B to 4KV Bus T11B
T11B2	Feed from 1EP to 4KV Bus T11B
1C4	Reserve Feed to 4KV Bus 1C
T11C2	Feed from 1EP to 4KV Bus T11C
1D3	Reserve Feed to 4KV Bus 1D
T11D12	Feed from 4KV Bus 1D to 4KV Bus T11D
11AC	600V Bus 11A and 11C Tie Breaker

All of the breakers mentioned above are now referenced in pages 3-5, Steps 4.2.5 and 5.1 of the procedure (Revision 7), Attachment 2, page 1 of 1, and Attachment 3, page 1 of 14.

An inspector walk-down revealed that appropriate labeling of terminal blocks "AJ" has been completed. Therefore, this portion of the item is considered closed.

(Part 2) For Unit 2, Procedure No. **2 - OHP 4023.001.001, Revision 1, issued June 5, 1979, included a Temporary Procedure Sheet No. 5 dated May 5, 1981, which changed Attachment 3, procedure M.5.4. Procedure M.5.4 modified the control for the Unit 1 MDAFP breaker. Temporary Procedure Sheet No. 5 merely changed the title of the affected component from Unit 1 MDAFP

to the West MDAFP, but did not change the breaker designation, motor control center designation, or the specific modification steps in the procedure for such items as terminal points to be jumpered and cable tag numbers for cables whose leads were to be lifted. Thus, the procedure would have required the modification of the breaker for the Unit 1 MDAFP instead of the Unit 2 West MDAFP. With normal valve alignment, the Unit 1 MDAFP cannot provide feedwater to the Unit 2 Steam Generators.

In the current procedure for Unit 2, **12-OHP 4023.100.002, Revision No. 0, issued June 9, 1986, with Change Sheet No. 1 dated October 22, 1986, and Change Sheet No. 2 dated July 8, 1987, there are no provisions for breaker modification of the Unit 1 Motor Driven Auxiliary Feedwater Pump. Such modification is no longer necessary because of the subsequent installation of a second motor driven pump to each unit. Also, the original page of the attachment (page 13 of 37) no longer appears in the current attachment of the procedure because the breaker modification instructions have been changed from specific to generic, (i.e., as covered by Attachment 2, page 1 of 1). Therefore, this portion of the item is considered closed.

c. (Closed) Violation (315/82-08-06(B); 316/82-08-06(B)): Examples which demonstrated a lack of implementation of the "Control of Combustible" Procedure Numbered PMI 2271 were observed by the inspectors during plant tours of the facility.

On July 7 and 8, 1987, during general plant tours of safety related areas, the plant cleanliness was found to be in a satisfactory condition. However, since Unit 1 is shutdown for an outage, certain in-progress work activities were observed which caused these areas to contain debris. According to the licensee's staff, clean up of this debris is done in accordance with the appropriate fire protection administrative control procedure. This item is considered closed.

d. (Open) Open Item (315/82-08-07; 316/82-08-07): During the review of the procedures, the inspectors noted several aspects of the procedures which, in the inspector's judgement, could impede the effective and timely performance of the procedures. The effective performance of these procedures would be important in the event of a severe cable vault fire which could, in some cases, lead to station blackout conditions. The timely performance of the procedures would be important if the consequences of this fire were experienced under conditions of large reactor decay heat.

The poor organization of the procedure, the lack of prioritization of key steps, and the lack of clear indications of the manpower needed to implement key steps cast doubt to the inspector's as to the feasibility of the procedures. It was recommended that the

licensee review and revise the procedures. Subsequently, the licensee agreed to do so by letter dated May 4, 1982, from R. S. Hunter to H. R. Denton.

Consequently during an October 27-29, 1986 review visit conducted by NRR, Procedure No. **12-OHP 4023.100.001 was reviewed, and the evaluation provided in a BNL Technical Evaluation Report (TER) was transmitted to the licensee by NRC letter dated January 28, 1987.

At the time of this inspection, the licensee was undertaking extensive revisions to **1-OHP 4023.001.001, Revision 7, the successor to the main procedure reviewed during the Appendix R inspection visit. The entire format has been changed to coincide with other emergency operating procedures so that the left column indicates the desired steps while the right column indicates the steps to be taken if a response is not obtained. The basic philosophy has been changed so that priority is given to utilizing as much of the fire affected units equipment as possible before proceeding to cross-tie the opposite units equipment into service.

Several lengthy attachments remain which have also been extensively revised relative to the existing procedures and appear to address the concerns about organization and prioritization of the procedural steps identified in the prior finding. A complete walk-through of this procedural revision is planned during the upcoming Appendix R reinspection visit. This item will remain open pending that review.

e. (Open) Open Item (315/82-08-08; 316/82-08-08): The inspectors examined the procedure review process and found that the review and approval of procedures does not include a walk-through to determine procedure feasibility and adequacy. This is a concern primarily with emergency procedures in that these procedures are not routinely used and evaluated as compared to surveillance testing procedures and normal operating procedures. This lack of procedure walk-through during the review and approval process resulted in major deficiencies going undetected in the alternate emergency shutdown and cooldown procedures.

During this inspection, the licensee indicated that Procedure No. PMI-2010, "Plant Manager and Department Head Instructions, Procedures, and Associated Indexes," Revision 12, dated January 22, 1987, Step 3.9.6, now reads "For original issues and major revisions to procedures, a walk-down shall be performed by the originating department to the extent practicable."

Since it may be deemed that a procedure walk-through is strongly advisable, but not practical at the time when the procedure must be issued, this response was considered to be inadequate because it does not provide for implementation of the walk-through when

conditions do permit. Also, there was no formal decision required by the Plant Nuclear Safety Review Committee (PNSRC) on whether or when a walk-through is required.

The licensee then proposed that Attachment No. 4 of PMI-1040, Procedure/Instruction Review Checklist, be revised to add as one of the checkoffs whether a walk-through is required. Since the three column headings are YES, NO, and N/A, even though this action would represent a formal decision by the PNSRC on the need for a walk-through, it is still considered inadequate because it does not provide for implementation of the walk-through when conditions do permit, if a walk-through is considered impractical at the time of procedure issuance.

As additional evidence of the need for walk-downs of the Appendix R related procedures, during a verification of the conditions specified in an exemption obtained by the licensee for the emergency lighting in the Yard Area for the nitrogen supply to the Steam Generator PORVs, it was noted that some of the valves which are required to be open to establish the nitrogen flowpath to the PORVs are shown as normally closed on Flow Diagram No. OP-12-5118B-15, "Nitrogen & Hydrogen Gas Reactor System Units No. 1 & 2," dated May 5, 1987.

In particular, valves N-132 and N-135 must be open, but are shown normally closed on the flow diagram. Yet in Step 1 of Attachment No. 4, Procedure No. **12-OHP 4023.100.01, Revision 0, dated June 10, 1986, the operator is merely instructed to "Verify high pressure nitrogen bottle(s) valved in at the nitrogen bank."

As a result of this observation, the licensee generated Change Sheet No. 3 to amplify the instructions to the operator to specifically open those valves. Therefore, this item will remain open pending additional NRC review.

f. (Closed) Violation (315/82-08-09; 316/82-08-09): On April 16, 1982, the inspectors identified three areas of the plant that did not have installed emergency lighting as follows:

(1) Unit 1, Quadrant 2 Cable Tunnel, EL 612'0". Access through this area is required to reach Local Shutdown Indication Panels and Manual Valve Control Stations.

(2) Unit 2, Quadrant 2 Cable Tunnel, EL 612'0". Access through this area is required to reach Local Shutdown Indication Panels and Manual Valve Control Stations.

(3) Auxiliary Building, EL 609'0", West End. A Manual Valve Control Station is located in this area outside the Unit 2 Volume Control Tank enclosure.

On July 7, 1987, an inspector, accompanied by the Fire Protection Coordinator, verified that the three areas mentioned above now have emergency lighting units installed. Overall adequacy of the installed emergency lighting system will be reviewed during the Appendix R reinspection.

An additional concern was raised as part of this item regarding the batteries used in the emergency lighting units not having been rated by the manufacturer to supply the lighting unit lamps for the required eight hours.

The licensee's staff provided calculations to demonstrate that the more recently installed Exide battery units having two 25w lamps installed or up to four 12w lamps which feed off of one battery will remain operable (with the proper style of lamp installed) for eight hours.

g. (Closed) Violation (315/82-08-10; 316/82-08-10): The licensee's emergency lighting preventative maintenance testing program described in Maintenance Procedure MHI-5030 did not include appropriate acceptance criteria as recommended by the lighting units manufacturer.

The inspector performed a comparison review of the licensee's in place emergency lighting units preventive maintenance procedure against manufacturer information provided by the licensee. The licensee's procedure is identified as Attachment No. 9 of Maintenance Head Instruction (MHI) 5030, Revision 9, dated October 23, 1986. The inspector determined that the in-place procedure is in accordance with the manufacturers recommendations. The licensee is planning a revision to MHI 5030 which was reviewed and agreed upon by the lighting unit manufacturer (EXIDE) as described in an Exide letter to AEP dated June 18, 1987.

The inspector requested, and was provided, the most recent annual draw down surveillance test results performed during June 1986. The test results showed all lights tested satisfactorily passed the eight hour test.

h. (Closed) Unresolved Item (315/82-08-16; 316/82-08-16): Two concerns were raised concerning the adequacy of the carbon dioxide total flooding suppression system in the Emergency Diesel Generator Rooms. The first concern was that the unprotected ventilation system openings in the Emergency Diesel Generator Room walls would prevent the accumulation of sufficient carbon dioxide to reach the design concentration. The second concern is that the air in the starting air receiver tanks will be released in the event of a fire, either through system over-pressurization relief or rupture, and prevent the accumulation of sufficient carbon dioxide to reach the design concentration.

Regarding the first concern, the licensee's staff indicated that dampers had been installed in the ventilation system openings in the Emergency Diesel Generator Room walls. The inspector verified that the dampers were installed through review of Drawing Nos. 1-5724-11 and 2-5724-10 entitled "Heating and Ventilating - Electrical Switchgear and Diesel Generator Area" for both Units 1 and 2, respectively.

Regarding the second concern, the licensee's staff performed an evaluation citing the two thermistor detection circuits located in each diesel generator room as providing early notification of a fire condition. In addition, the licensee's staff calculated that if both air receiver tanks ruptured (worst case), the carbon dioxide concentration would drop to 27%, and if one air receiver tank ruptured the carbon dioxide concentration would drop to 31%. Both of these concentrations are at approximately the theoretical minimum concentration as indicated in NFPA 12 for lube oil, kerosine, and diesel fuel. These calculations were based on the minimum 34% carbon dioxide concentration; however, the concentrations actually reached during the original carbon dioxide concentration test were between 37% for Unit 2 and 47% for Unit 1, prior to the ventilation dampers being installed. It is the inspectors conclusion, based on the ventilation dampers having been installed and the licensee's calculation results, that the carbon dioxide system is satisfactory.

i. (Closed) Unresolved Item (315/84-02-01; 316/84-02-01): During previous tours of the Auxiliary Building, including the Unit 1 and 2 Coolant Charging Pump (CCP) rooms, the inspector noted examples of the following: (1) safety related cable trays with metal covers removed; (2) opposite train cable trays and/or conduit running in close proximity with no intervening fire barrier; and (3) previously installed fire barriers between cable runs, degraded or removed. During a plant tour on May 2, 1985, the inspector observed two cable trays in the Unit 1 Control Room Cable Vault numbered 1VC164 and 1VC200 having fire resistive board covering each of these trays on three sides. However, no cover was in place nor could the licensee's staff provide the inspector information to determine if these two trays were required to be covered.

The NRC fire protection separation criteria detailed in Appendix R to 10 CFR Part 50, was used in followup of these inspector raised concerns. Relative to Appendix R, according to the licensee's staff, if enough fire damage occurred in the Unit 1 or 2 Coolant Charging Pump Rooms or either Control Room Cable Vaults, an alternate shutdown system is in place to provide for a safe and orderly plant shutdown. The alternate shutdown system is described in the licensee's submittal entitled, "Alternate Safe Shutdown Capability Assessment, Proposed Modifications, and Evaluation - 10 CFR 50, Appendix R, Section III.G," Revision 1, dated December 1986. This document has been submitted to NRR for review and approval.

Final confirmation of the adequacy of the licensee's alternate shutdown system will occur during the Appendix R reinspection.

j. (Closed) Open Item (315/85013-02(DRS); 316/85013-02(DRS)): Additional fire hose coverage of the following three areas was needed:

(1) Unit 1, Quad 3 South
(2) Unit 2, Quad 3 North
(3) Outside Unit 2 Switchgear Cable Spreading Room

An inspector observed that sufficient fire hose and station coverage is provided for the three areas identified above. In addition, the licensee's staff provided friction loss calculations for the specified hose stations showing adequate pressure and gallonage existed for these stations.

k. (Closed) Open Item (315/85013-05(DRS); 316/85013-05(DRS)): Install a pressure regulation valve on each fire hose station to reduce the pressure to 100 psig as recommended in NFPA 14. An alternative suggested by the inspector having been accepted at other Region III sites involved fire brigade hose handling training with maximum pressures expected at the plant, instructions in the General Employee Training Program indicating that the fire hose is to be used by trained personnel only, and to have signs installed on the interior hose stations cautioning hose station use by trained individuals only.

The licensee implemented the alternative method of satisfying NFPA 14 as determined by the NRC. During tours of the plant on July 7 and 8, 1987, an inspector observed the installation of signs on hose stations stating, "Caution - High Water Pressure - For Use By Trained Personnel Only."

A review of Lesson Plan GE-C-2003 (Section 6.a.18), Revision 1, dated December 4, 1985, of the General Employee Training Program indicated that the plant fire hose was to be used by trained personnel only.

Further, a review of the Fire Brigade Hose Handling Training Lesson Plan FF-0-F101, "Hose Stream Practices," indicated training with the 1½" fire hose at pressures of approximately 150 psi. According to the licensee's fire protection staff, this pressure is considered to be approximately the maximum pressures expected to be seen by the fire brigade in safety related areas of the plant.

l. (Closed) Open Item (315/85013-06(DRS); 316/85013-06(DRS)): Relocate the infrared detectors in Cable Penetration Quad 2 (both units). The inspector observed during the April/May 1985 inspection visit that these infrared detectors had not been relocated. Also two ionization detectors, one inside the tool crib and one outside the tool crib were observed to be missing the sensing portion of the

detector unit or the unit was disconnected. The inspector verified on July 8, 1987, that two infrared detectors in each Unit's Cable Penetration Quad 2 had been relocated to provide an improved range of area protection. In addition, the two ionization detectors were observed to be installed as required.

m. (Closed) Open Item (315/85013-07(DRS); 316/85013-07(DRS)): The licensee could not provide documentation to show that an engineering evaluation had been performed to determine if any adverse safety consequences could result from closed ventilation duct fire dampers addressed in LER 85-006.

The licensee's staff provided a response to the inspectors' concern dated June 9, 1987, which included a preliminary safety evaluation indicating that the areas of concern are required by Technical Specifications to be entered so as to analyze samples every shift and under certain circumstances, more frequently. In addition, the evaluation pointed out that alternate test facilities exist for performing analyses which are currently being done in the Counting Room and Hot Laboratory (areas of concern). The inspector determined that this response satisfactorily resolves the concern.

n. (Closed) Open Item (315/85013-09(DRS); 316/85013-09(DRS)): A review of the licensee's fire damper maintenance inspection procedure generated four comments relative to enhancing the procedure.

The inspector was provided a new Procedure Numbered 12 QHP 4030 STP.009, Revision 0, dated June 18, 1987, which incorporated the necessary comment changes.

o. (Closed) Open Item (315/85013-10(DRS); 316/85013-10(DRS)): During a procedure review (PMI-2270), an inspector noticed that Step 16.3 indicated that the Shift Supervisor on duty was designated as the fire brigade leader. The inspector pointed out that the NRC has taken a position as outlined in Section III.H of Appendix R which requires that the Shift Supervisor not be a member of the fire brigade (in so far as taking credit for the Shift Supervisor comprising any of the five required brigade members).

During this inspection, the licensee's staff provided two revisions to Procedure No. PMI-2270. The most recent revision, Number 16, dated July 9, 1987, states that, "the Assistant Shift Supervisor on duty was designated as the fire brigade leader and will coordinate fire fighting efforts of the fire brigade."

In addition, an earlier revision, Number 10, was implemented subsequent to the April/May 1985 inspection. This revision documented this concern and was initiated as an interim policy change. This revision indicated that for certain emergency situations where the Shift Supervisor must remain in the Control Room, designation of another brigade member must be done for that individual to serve as the Brigade Leader, usually having the Assistant Shift Supervisor so designated.

p. (Closed) Open Item (315/85013-13(DRS); 316/85013-13(DRS)): The following changes were proposed for the procedure entitled, "Alternate Emergency Shutdown and Cooldown Procedure" (Due to Loss of Normal and Preferred Alternate Methods, numbered **1-OHP 4023.001.001, Revisions 5 and 6, for Unit 1, dated June 1, 1982 and June 8, 1984, respectively, and **2-OHP 4023.001.001, Revision 3, for Unit 2, dated May 15, 1984).

(1) Wherever the procedure refers to an attachment, also designate the page number of the attachment.

(2) Add symptom 3.2, Loss of Control Capability from the Control Room and Hot Shutdown Panel.

(3) In the modification instructions, place a caution statement immediately preceding the step that requires direction from the control room.

(4) The same terminology should be used in steps 5.6.4.26, 5.6.4.29, and 5.9.2.4 when referring to turbine-driven auxiliary feedwater pumps or Terry Turbine.

(5) In Steps 5.8.1, delete the words "due to the fire."

At the time of the inspection, the licensee had yet to make these changes although after the walk-through of this procedure these changes were submitted to be included in the next revision of the Alternate Emergency Shutdown Procedures.

Based on a review of Procedure No. **1-OHP-4023.001.001, Revision 7, the following actions have been taken by the licensee:

(1) The page number of attachments referenced have been added where it is clear that only one or a few pages of a lengthy attachment are actually required. Where the entire attachment is required, page numbers have been omitted.

(2) On page 2 of 26 of the procedure text, the statement "Loss of control capability from the control room and hot shutdown panel" has been added as a symptom, line 3.2, for entry into the procedure.

(3) With the exception of Attachment 1, page 5 of 8, a note stating "Do not complete step XX unless directed to by Control Room Operator" has been added at appropriate locations in Attachments 1, 2, 3, and 5 of the procedure. A temporary instruction and procedure change sheet was issued during the inspection (Change Sheet No. 2, dated July 8, 1987) adding the note to Attachment 1, page 5 of 8.

(4) A review of the referenced steps (5.6.4.26 and 5.6.4.29, on page 13 of 26, 5.9.2.4 on page 23 of 26) indicated that all references are to the "turbine driven auxiliary feedwater pump." There were no longer any references to the Terry Turbine.

(5) Step 5.8.1, page 21 of 26 states, "Modify equipment only after it has failed and cannot be operated from either the control room on the hot shutdown panel." The words "due to the fire" have been deleted.

Based on the above, this item is considered closed.

q. (Closed) Open Item (315/86017-02; 316/86017-02): On April 24, 1986, at approximately 1300 hours, the inspector found Welding, Burning, or Grinding Permit No. 86/348 for Job Order No. 115783, and Request for Change (RFC) No. 12-2844, attached to the door for the Unit 1 turbine driven auxiliary feedwater pump (TDAFP) room. The special instructions listed at line nine stated "the welder would be his own fire watch/fire extinguisher at the job site."

During this inspection, the inspector reviewed the job order and toured the area with the licensee. The licensee indicated to the inspector where the brazing was being performed on the TDAFP Governor for which the burn permit was issued. The licensee explained that the brazing was being conducted to replace a small section of the control air tubing on the TDAFP Governor.

The licensee provided the inspector with the procedure titled, "Control of Ignition Sources," (PMI-2270, Attachment No. 6). In Section 4.3.3.1 it states, "Fire watch requirements may be modified or deleted on a case-by-case basis as directed by the Fire Protection Coordinator." It was the inspector's concern that the fire watch should have no other duties during the hot work activity. The licensee provided the inspector with an April 30, 1986 letter from P. Jacques to J. B. Allard that designated fire watch requirements as listed below:

(1) Dedicated Fire Watch Required - In these cases a dedicated, trained fire watch (or fire watches) will be required who is independent of the work crew.

(2) Members of the work crew will be fire watch trained - in these cases a member of the work crew who is trained as a fire watch is all that is required. In these cases the designated fire watch must be present whenever the WBG activity is taking place.

(3) No Fire Watch required - this category will only be authorized for work in enclosed spaces (inside MSR tanks, etc.) and certain outside areas. This category can only be authorized by the Fire Protection Coordinator and not by the inspectors assigned to work with him.

In addition, the licensee indicated that when the hot work operation is in progress, the fire watch (if required) will have no other responsibility and will be available for fire watch duties up to 30 minutes after work is complete.

Based on the licensee's April 30, 1986 letter and the licensee's statements, this open item is considered closed.

r. (Closed) Unresolved Item (315/86022-02; 316/86022-02): Technical Specification 3.7.9.3.a states, "With one or more of the above required low pressure carbon dioxide systems isolated for personnel protection to permit entry for routine tours, maintenance, construction, or surveillance testing, verify the operability of the fire detection system as per Specification 4.3.3.7 in the affected area(s) and establish a roving fire watch patrol (as defined in the bases section) in those areas affected by the isolated carbon dioxide system(s). In the event that the roving fire watch patrol cannot be maintained in the affected area, then personnel must be evacuated and the carbon dioxide system returned to its normal condition."

As identified in four Licensee Event Reports (LERs) the requirements of Technical Specification 3.7.9.3 (both units) regarding roving or continuous fire watches for areas affected by an isolated or inoperable carbon dioxide system, were not met. The inspector reviewed the LERs identified in Inspection Report (315/86022; 316/86022). The results of this review are listed below:

LER 316/84-022

On April 5, 1984, it was identified by a security officer that the Unit 2 reactor cable tunnel carbon dioxide system was isolated with no fire watch (as required by Technical Specification 3.7.9.3) for approximately two hours and forty minutes. By plant procedures utilized during this time, the fire watch was required to return the carbon dioxide isolation switch to the normal position and the security officer was to verify that the switch was in the normal position. The fire watch and the security officer erred by not ensuring that the switch was in the normal position.

Corrective measures consisted of administrative measures to eliminate this type of error going undetected.

LER 316/84-027

On September 28, 1984, the security officer identified that the Unit 2 auxiliary cable vault carbon dioxide system was isolated, with no fire watch present (as required by Technical Specification 3.7.9.3), for approximately eight hours. The fire watch (contractor) failed to return the carbon dioxide system isolation switch to the normal position.

Corrective measures consisted of discussions of this event with the fire watch supervisor and discussion of the incident at subsequent fire watch safety meetings.

LER 315/85-020

On April 29, 1985, it was identified that the reactor cable tunnel (Quadrant 1) carbon dioxide system was inadvertently isolated without fire watch coverage (as required by Technical Specification 3.7.9.3) for approximately three hours due to inadequate communication between craft personnel (requesting isolation) and security personnel (who carried out request).

Corrective action consisted of counseling the individuals involved on the importance of proper control of the carbon dioxide system.

LER 316/85-036

On October 30, 1985, a security officer identified that the Unit 2 AB emergency diesel generator room carbon dioxide system was isolated for approximately three hours without fire watch coverage, as required by Technical Specification 3.7.9.3, due to the security officer not returning the carbon dioxide system back into service and the operator not witnessing the security officer returning the system back into service as required by the upgraded procedure.

Corrective action taken to prevent recurrence consisted of appropriate administrative action with individuals involved.

Analysis Results

In the previously identified (1984/1985) LERs, carbon dioxide systems were taken out of service for plant personnel to service equipment or conduct tours in the area protected by these fire suppression systems. In each of these instances the fire watch was not available as required by Technical Specifications.

This failure to maintain or establish the required fire watch is considered a violation (315/87016-01; 316/87016-01) of Technical Specifications. No response is required for this violation as discussed in the following section.

Conclusion

The licensee has taken corrective actions consisting of security key locking the carbon dioxide as described in system administrative procedures and involving fire watch and security personnel verifying that the carbon dioxide valve is returned to the proper position.

The procedure titled "Fire Protection" (PMI 2270) indicated in Section 3.0, "Isolation Switches," that keys for the isolation switches will be maintained (in general) by the security department, and they shall have the responsibility for isolating and returning the carbon dioxide suppression systems to normal when entry is required to these areas.

The inspector requested and was provided with the training procedure for the patrol officer regarding the carbon dioxide system (AR-0-1104). Attached to the training procedure was the cardox switch sheet that the officer would utilize to record parameters such as areas isolated, whether switch is in the normal position, and when switch is checked every half an hour.

Based on the above corrective actions and the lack of recurrence in 1986, or this year, the corrective action appears adequate, and the licensee is not required to respond to this violation.

s. (Closed) Unresolved Item (315/86022-03; 316/86022-03): Technical Specification 3.7.10.a states, "With one or more of the above required fire rated assemblies and/or sealing devices inoperable, within one hour either establish a continuous fire watch on at least one side of the affected assembly, or verify the operability of fire detectors per Technical Specification 4.3.3.7 on at least one side of the inoperable assembly, and establish an hourly fire watch patrol or secure in the closed position the inoperable sealing device and establish an hourly fire watch patrol."

It was identified in seven LERs that fire barriers (doors, dampers, or foam seals) had knowingly been made inoperable. The required compensatory measures, as indicated in Technical Specification 3.7.10 (both units) consisted of a continuous or an hourly fire watch, were either not performed or were performed late. The inspector review of the seven LERs is listed below:

LER 315/84-013

On July 6, 1984, with Unit 1 at 100% power, it was identified that a fire watch was not maintained, as required by Technical Specification 3.7.10, in the northwest corner of the auxiliary building at elevation 573 where fire retardant material had been removed from a protected conduit containing safety related cables. This condition lasted for approximately four hours and 40 minutes. Contractor supervision on duty that provided the fire watch had been told by a plant employee that the fire watch was no longer needed (name of plant personnel releasing the fire watch was not recorded).

Corrective action taken consisted of sending a letter to all plant department heads and the I&M construction manager reminding them that the conduit and cable tray fire protection, applied as part of the Appendix R modifications, fall under the requirements of Technical Specification 3.7.10, and to relay this information to their personnel. In addition, the fire watch contractor's project manager has issued a letter to all of his supervisors re-emphasizing their standing orders for logging the name of personnel authorizing the release of the fire watch.

LER 315/84-027

On November 11, 1984, with Unit 1 at 100% power, a fire watch was 25 minutes late in conducting the hourly inspection of inoperable fire door No. 333 which protects the Unit 1 reactor cable tunnel (quadrant No. 1); Investigation revealed that due to inadequate job briefing and the fire watch's general unfamiliarity with the plant layout, the fire watch entered the wrong area to inspect fire door No. 333.

Corrective action to prevent recurrence consisted of the fire watch supervisors being directed to improve the completeness of job briefings and to ensure that the fire watches are familiar with areas to be inspected.

LER 315/84-028

On November 15, 1984, with Unit 1 at 100% power, a fire watch failed to make an hourly inspection of an inoperable fire door protecting the reactor cable tunnels in both units. Investigation revealed that the fire watch became involved in other duties and lost track of time.

Corrective action to prevent recurrence consisted of a discussion of the incident by the fire watch dispatcher and the contractor on site supervisor with the fire watch. The fire watch also received a written reprimand.

LER 315/84-032

Between December 6 through December 17, 1984, with the Unit 1 at 100% power, nine events occurred which involved the inability to perform the hourly inspection of inoperable fire assemblies (doors) as required by Technical Specification 3.7.10. Seven of the events involved 18 doors which were inspected from seven to nineteen minutes late. Two events involved three doors which were not checked hourly for a period of nine to sixteen hours for both units. Investigation indicated that the events were the result of coordination problems with the implementation of the fire watch program.

Corrective action to prevent recurrence included (1) administratively increasing the fire assembly inspection frequency from sixty to thirty minutes, and improved fire watch dispatcher communications including shift turnovers and the use of a log book noting inoperable fire related equipment.

LER 315/85-001

On January 5, 1985, with Unit 1 at 55% power, a fire watch failed to conduct an hourly inspection of inoperable fire barrier penetration seals and dampers in both Unit 1 and Unit 2 charging pump rooms as required by Technical Specification 3.7.10. Investigation revealed that the inspection was missed because of inadequate turnover of tour assignment during shift change.

Corrective action to prevent recurrence consisted of the contractor site supervisor (for fire watches) taking the following action:

(1) Reviewed the importance of proper turnovers with his dispatchers.

(2) Established the policy that fire watches are responsible for their tour assignments until properly relieved.

LER 315/85-036

On August 9, 1985, with Unit 1 in refueling and Unit 2 in cold shutdown, a fire watch failed to conduct the hourly inspection of inoperable fire dampers for various areas of the auxiliary building as required by Technical Specification 3.7.10. Investigation revealed that the fire watch had left the post without being properly relieved.

Corrective action to prevent recurrence consisted of the fire watch supervisor discussing the incident with the fire watch. In addition, appropriate administrative action was taken with the individual involved.

LER 315/85-051

On October 4, 1985, with Unit 1 in cold shutdown, it was discovered by an operator that fire door no. 345 separating fire area 42 (transformer, control rod drive, motor control center, and battery room, Unit 1) and fire area 41 (engineered safety systems and motor control center room, Unit 1) was open without stationing a fire watch for approximately four hours. In addition, the door was declared inoperable on July 24, 1985, due to its failure to properly close. The fire door had been shut and a clearance tag placed on the control switch breaker and manual chain operator to prevent operation of the door without the shift supervisor's permission. A one hour fire tour

was not established as plant personnel believed having the door tagged shut met the intent of the Technical Specification action statement. This was contrary to Technical Specification 3.7.10.

Corrective action to prevent recurrence consisted of:

(1) The clearance tag would remain in effect with the door shut.

(2) The one hour fire watch had been established per Technical Specifications.

Analysis Results

In the previous identified LER's, the licensee was aware of degraded fire barriers that required either a continuous or an hourly fire watch. This is considered a violation (315/87016-02; 316/87016-02) based on the recurrence of the lack of adequate compensatory measures as required by Technical Specification 3.7.10. No response is required for this violation as discussed in the following section.

Conclusion

The licensee's corrective actions included increasing the inspection frequency from 60 minutes to 30 minutes for hourly fire watches. In addition, the licensee indicated that the fire watch dispatcher communication has been improved with the use of a log book noting inoperable fire related equipment. The licensee further stated that the trend (regarding missed fire watches) is downward from six events in 1985 to two events in 1986 and no reported events (thus far) in 1987.

Based on the above corrective actions and the declining of occurrences, the corrective action appears adequate, and the licensee is not required to respond to this violation.

t. (Open) Unresolved Item (315/86022-04(DRS); 316/86022-04(DRS)): Technical Specification 3.7.10.a states, "With one or more of the above required fire rated assemblies and/or sealing devices inoperable, within one hour either establish a continuous fire watch on at least one side of the affected assembly, or verify the operability of fire detectors per Specification 4.3.3:7 on at least one side of the inoperable assembly and establish an hourly fire watch patrol or secure in the closed position the inoperable sealing device and establish an hourly fire watch patrol."

It was identified in six LERs that fire barriers were degraded due to plant personnel actions or barriers that were not installed according to plant Technical Specifications. Compensatory measures were not established as required by Technical Specification 3.7.10. The inspector review of the LERs are listed below:

LER 315/85-018

On April 16, 1985, with Unit 1 in cold shutdown, it was discovered that fire sealant material was absent from two eight inch pipe sleeves located in each of the turbine driven auxiliary feed pump (TDAFP) rooms. The subject penetrations were not listed in the surveillance program and were not previously identified during inspections of the penetrations in the TDAFP rooms.

The corrective actions consisted of sealing the penetration and updating the surveillance program to include the penetrations.

LER 315/85-024

On May 7, 1985, with Unit 1 in cold shutdown, operations personnel discovered a defective fire seal in the ceiling of the control room cable vault. The group responsible for breaching the fire seal could not be identified.

The corrective action to prevent recurrence consisted of the request for the management of both construction and maintenance departments to review this event with supervisory personnel responsible for performing similar work.

LER 315/85-027

On June 4, 1985, with Unit 1 shutdown and fuel removed from the core, three eight inch diameter fire penetrations located in the boron injection tank room (fire zones 38 and 44 N) were found to be nonfunctional (i.e., the silicone foam had been removed). The seals were last inspected on April 24, 1985, by the plant QC department as required by the 18 month Technical Specification inspections. The investigation could not ascertain why the silicone seals had been removed subsequent to this date.

The immediate corrective action taken was to seal the opening on June 4, 1985.

LER 315/85-028

On June 13, 1985, with Unit 1 shutdown for refueling and fuel removed from the core, it was discovered that the fire barrier seals located above the walls separating the control room cable vault (CRCV) and the hot shutdown panel cable (HSDPC) room were not installed in accordance with design specifications. (A similar seal configuration existed for Unit 2).

The immediate corrective action taken was to temporarily seal and the openings. The licensee indicated that the permanent seals are planned to be installed tentatively by September. The licensee indicated that several types of materials are being considered to be utilized as a fire barrier seal to be installed in these openings.

LER 315/85-056

On May 30, 1985, with Unit 1 shutdown and no fuel in the core, a technician discovered a defective fire seal in the Unit 1 control room cable vault ceiling. This is considered an inoperable fire barrier and requires compensatory measures as required by Technical Specification 3.7.10.

The licensee corrective action included repairing the seal having been declared operable on May 30, 1985.

LER 316/86-010

On March 17, 1986, with Unit 2 in cold shutdown, it was discovered that fire seal F-6801 in Unit 2 control room was found to be missing approximately nine square inches of sealing foam. The cause of the missing fire sealant could not be determined. No discrepancies were noted during the last fire seal surveillance on July 17, 1985. Licensee corrective action included a temporary repair having been completed on March 17, 1986 and a permanent repair having completed on April 3, 1986.

Analysis Results/Conclusion

In LER Nos. 315/85-024; 315/85-027; 315/85-056; and 316/86-010, barriers were degraded by plant personnel and the required compensatory measures consisting of continuous or hourly fire watches were not implemented.

In LER Nos. 315/85-018 and 315/85-028, it was identified that fire barriers were degraded because barriers were not installed according to design specifications due to lack of attention to the design details.

Based upon an in-office review of the licensee's submitted material, this Unresolved Item (315/86022-04(DRS); 316/86022-04(DRS) will remain open pending further NRC review.

3. Safe Shutdown Procedure Review

A special NRC (NRR/BNL) site audit was conducted on October 27-29, 1986, to determine the adequacy of the emergency remote shutdown and associated repair procedures. By NRC letter dated January 28, 1987, NRR determined that these procedures were workable. However, certain steps required revision or amplification to provide additional guidance to the operators. During the July 1987 inspection visit, an inspector performed a followup review of those steps identified previously as requiring revision or amplification. Certain concerns raised during the October 1986, NRC audit

were determined to have been satisfactorily resolved. However, additional concerns remain until procedural review and walk-down occurs on Revision 8 of Procedure No. 1-OHP 4023.001.001 (in progress). These additional concerns which remain open are as follows:

a. Due to the complexity and extensive number of operator actions required by the procedure, the licensee should provide a simplified chart indicating the assignment of personnel required to implement the safe shutdown procedure.

b. It was observed by the Senior Resident Inspector participating in the safe shutdown procedure walk-down that the operators did not consistently report back to the Shift Supervisor either prior to initiation or upon completion of certain attachments to the procedure. Specifically, the inspector noted for Attachment No. 2 that for initiation of Auxiliary Feedwater flow the licensee should assure independence of activities by various agents, such as, which steps require prior communications and authorization.

c. During the NRR audit walk-down, the emergency lighting required to verify that valves 1-IMO-255 and 1-IMP-256 are closed and to verify that valves 1-ICM-250 or 1-ICM-251 are open appeared to be inadequate. These actions are directed in Steps 2.2 and 2.3 of Attachment No. 1.

   During this inspection visit (July 1987), scaffolding was installed in the BIT Room (Unit 1 was in an outage) and the lighting was misaligned apparently because of the scaffolding. Thus, the licensee modifications to improve the lighting in the BIT Room could not be verified.

d. Attachment Nos. 3 and 7 relate to local manual de-energization of breakers in the Switchgear Room to prevent spurious operation of pumps and valves. If a fire occurred in the Switchgear Room, it would be necessary to implement this procedure for remote emergency shutdown, thereby necessitating the post-fire actions in the Switchgear Room. The licensee response was that the situation of a fire in the Switchgear Room is covered by the other procedure **1-OHP 4023.001.001, which is applicable when off-site power is available. There was no cross referencing to the other procedure. From the discussion, it appeared that the other procedure called for jumpering of valves and/or breakers during hot standby or hot shutdown conditions, however, these actions are considered as repairs and are prohibited under hot standby and hot shutdown conditions.

   During this inspection visit, the licensee personnel provided the results of their Safe Shutdown Analysis for Fire Zones 40A-B, 41, and 42A-D, which comprise the Fire Area bounding the Switchgear Rooms. The analysis shows that there are actions outside these fire zones which can be implemented as alternatives to those to be taken in the Switchgear rooms, and which do not involve any jumpering. While the preferred course to accomplish the objectives of preventing or correcting spurious signals is to enter the Switchgear Rooms, all of

the actions can be performed elsewhere by manual operations either locally or from the affected units control room or the Nuclear Sample Room. Local actions do include possible containment entry for cold shutdown. However, the Safe Shutdown Analysis is currently undergoing review by NRR.

e. There were numerous comments identified during the NRC site audit (October 1986), as described by the NRC letter dated January 28, 1987, addressed to the licensee. These comments concerned the completeness, technical adequacy, and prioritization of various steps in the procedure based on both a review and walk-down of the safe shutdown procedure.

These concerns are planned to be reviewed during the upcoming Appendix R reinspection. As a result, these concerns are considered an open item (315/87016-03; 316/87016-03) pending further NRC review and followup.

4. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involves some action on the part of the NRC or licensee, or both. An open item is discussed in Paragraph 3 of this report.

5. Exit Interview

The inspectors met with the licensee representatives (denoted in Paragraph 1) at an interim exit on July 10, 1987, and at the conclusion of the inspection on July 17, 1987, and summarized the scope and findings of the inspection. The inspectors discussed the likely content of the report with regard to documents reviewed by the inspectors during the inspection. The licensee did not identify any of the documents as proprietary. As requested by the licensee at the exit interviews, final categorization of any changed inspection findings were discussed between the licensee and the Region III Office on September 15, 1987.