Exhibit FP No. 11

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

May 11, 1995

Mr. Leslie M. Hill, Jr.
Resident Manager
New York Power Authority
Indian Point 3 Nuclear Power Plant
Post Office Box 215
Buchanan, NY 10511

SUBJECT: SPECIAL INSPECTION TO REVIEW FIRE PROTECTION AND APPENDIX R RESTART ITEMS, INSPECTION REPORT NO. 50-286/95-81

Dear Mr. Hill:

This refers to the team inspection led by Mr. R. A. Skokowski of this office from January 30 through March 24, 1995, at the Indian Point 3 Nuclear Power Plant, Buchanan, New York, and at the NRC Region I office in King of Prussia, Pennsylvania. The inspection focused on the adequacy of your efforts related to the resolution of restart issues identified in the "Restart Action Plan." Particularly, issues pertaining to your fire protection and Appendix R programs, and previously identified issues resulting from the electrical distribution system functional inspection (EDSFI) were reviewed. Mr. Skokowski discussed the findings of this inspection with you and/or members of your staff on February 10 and 17, and March 24, 1995.

The inspection was directed towards areas important to public health and safety. Areas examined during this inspection are described in the NRC inspection report enclosed with this letter. The inspection consisted of selected examinations of design documents, procedures, representative records, interviews with personnel, and observations made by the team.

Based on the team's review, your actions were considered appropriate to close both the fire protection/Appendix R and EDSFI-related restart issues. However, with respect to the fire protection/Appendix R issue, the team noted that compensatory fire watches, in place for the penetration seals, are required until the completion of your effort to verify that the generic information used in your fire seal analysis appropriately represents the cables installed at Indian Point 3 or that the cables in question are otherwise qualified. This issue was discussed during several telephone conversations between NRC and members of your staff, concluding with a conversation on May 10, 1995, between Mr. Ruland and yourself. During this conversation, you committed to maintain compensatory fire watches as described above. Additionally, during this conversation, Mr. Ruland confirmed your commitment to complete all fire protection and Appendix R-related startup labeled ACTS items and work requests prior to plant restart.

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

REPORT/DOCKET NO: 50-286/95-81

LICENSEE: New York Power Authority

FACILITY: Indian Point 3 Nuclear Power Plant

LOCATION: Buchanan, New York

DATES: January 30, 1995 - March 24, 1995

INSPECTORS: R. Bhatia, Reactor Engineer, DRS
L. Harrison, Reactor Engineer, DRS
A. Singh, Fire Protection Engineer, NRR
R. Skokowski, Reactor Engineer, DRS
E. Connell, Sr. Fire Protection Engineer, NRR

TEAM LEADER: William R. Ruland/RS 5/10/95
Richard A. Skokowski, Reactor Engineer Date
Electrical Section
Division of Reactor Safety

APPROVED BY: William H. Ruland 5/10/95
William H. Ruland, Chief Date
Electrical Section
Division of Reactor Safety

EXECUTIVE SUMMARY

Purpose: The purpose of this inspection was to review and determine the adequacy of the licensee's follow-up actions to resolve fire protection/Appendix R and electrical distribution system functional inspection (EDSFI) follow-up issues categorized by the NRC as restart issues. Acceptable solution of these issues were included in the Indian Point 3 "Restart Action Plan" (RAP) and was a prerequisite for the plant to start-up for normal operation. The NRC based the acceptability of the issues on information provided by the licensee and independent verifications of selected portions of that information.

RAP Item II.3; Fire Protection/Appendix R Programs

Overall, the team considered New York Power Authority's (NYPA) efforts to improve and gain control of the fire protection/Appendix R programs to be effective. The majority of work items reviewed were found to be extensive and well thought-out. The team did identify a few discrepancies, however. These discrepancies did not detract from the overall good performance.

Based on the team's review, NYPA's actions were considered appropriate to close the fire protection/Appendix R restart issue, with the compensatory fire watches in place for the penetration seals until the completion of their evaluation for cable ignition temperatures associated with Unresolved Item 50-286/93-24-03.

To address outstanding fire protection and safe shutdown issues, NYPA developed the "Indian Point Unit 3 Appendix R & Fire Protection Improvement Plan." To accomplish the objectives of this improvement plan, NYPA developed a number of short-term issues, which were required for restart, and other long-term issues tracked for implementation following start-up. The details of the team's review of the short-term issues is included in this report. The team also reviewed previously identified violations, unresolved items, Licensee Event Reports (LERs), and other issues. These other issues were related to the fire protection and Appendix R programs and included management oversight, the reactor coolant pump (RCP) oil collection system (OCS), the Appendix R emergency diesel generator (EDG), and system certifications.

Fire Protection/Appendix R Management Oversight

The team considered the development of the Fire Protection/Appendix R Task Force and the oversight committee as an aggressive initiative for providing technically appropriate resolutions to the fire protection issues.

The development and assignment of a safety and fire protection general supervisor was also considered a good initiative. This assignment provided needed planning, scheduling, and additional management oversight of the Fire Protection Program.

Reactor Coolant Pump Oil Collection System

The team evaluated the RCP OCS to verify compliance with Appendix R. Included in this evaluation was the performance of system walkdowns and review of applicable design and implementation documents. During the walkdowns, the team identified several material deficiencies which were subsequently corrected by NYPA. Based on the team's review of the OCS design and installation, the team concluded that the OCS was adequate to meet the requirements of 10 CFR Part 50, Appendix R, Section III.O. However, the team determined that additional management attention was needed to ensure that concerns identified during this review are properly addressed.

During the review of a recent modification to the RCP OCS, a concern regarding the use of engineering change notices (ECNs), for material substitutions and technical evaluations to support substitutions, was identified. This issue was determined to be an unresolved item. Additionally, the team identified that there was a previous concern by NYPA regarding the use of ECNs at FitzPatrick approximately two months earlier. This issue was discussed with various organizations at Indian Point 3 (IP3). These discussions indicated that no means had been established to ensure that information is shared between IP3 and FitzPatrick for common NYPA processes.

Removal of the Fire Protection Technical Specification Requirements

On February 8, 1994, the detailed requirements associated with fire protection were removed from technical specifications (TS) and re-established through administrative controls in TS 6.8.1.j. This TS required that written procedures shall be established, implemented, and maintained covering the fire protection program. The team identified that the required procedures were not in place until after the changes to the TS were completed. Subsequently, actions were taken by NYPA staff to address this issue and to assure control the fire protection program had not been compromised. Additionally, a review of the operating logs performed by NYPA staff identified no conditions that could have caused limiting conditions for operation (LCO) to be entered. This issue was considered a non-cited violation of the TS requirements.

Conclusion - RAP Item II.3; Fire Protection/Appendix R Program

Based on the team's review, RAP Item II.3, pertaining to the Indian Point 3 Fire Protection/Appendix R Programs, is closed.

RAP Item II.19; EDSFI Items

Unresolved Item 50-286/91-80-10 EDG Transient Loading

Several calculations, studies, and tests associated with this effort were reviewed. Based on this review, the team considered NYPA's actions pertaining to EDG transient loading acceptable for restart. However, the associated Unresolved Item, 50-286/91-80-10, will remain open until completion of the final validation. The team considered NYPA's efforts pertaining to the EDG

transient loading completed to date, extensive. Additionally, their retesting of the safety injection pump motor, to verify that recent work on the pump did not impact the motor model, was considered by the team as an example of a good questioning attitude.

Unresolved Item 93-18-02 EDG kW Meter Tolerance for Load Management

This issue was reviewed by the team and found to be thoroughly evaluated by the licensee. The completed work by NYPA to develop the associated calculation was considered by the team to be an example of good communications between the engineering and operations departments. This item is considered closed.

Conclusion - RAP Item II.19; EDSFI Items

Based on the team's review, RAP item II.19, pertaining to EDSFI Items, is closed.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT'D)

TABLE OF CONTENTS (CONT'D)

DETAILS

1.0 INTRODUCTION

The purpose of this inspection was to review and determine the adequacy of the licensee's follow-up actions to resolve fire protection/Appendix R and electrical distribution system functional inspection (EDSFI) follow-up issues, categorized by the NRC as restart issues. The Indian Point 3 "Restart Action Plan" (RAP) stated that acceptable solution of these issues was a prerequisite for plant start-up. Each item was uniquely identified by a RAP number in the plan, and this number was used in this report to identify the associated NRC review and evaluation. The RAP item, associated with fire protection/Title 10 Code of Federal Regulations (CFR) Part 50, Appendix R issues, is Number II.3 and the RAP item associated with EDSFI issues is Number II.19.

Inspection Methodology

The team based the acceptability of the issues on information provided by the licensee and independent verification of selected portions of this information. The information provided by the licensee included evaluations, reports, calculations, procedures, and other applicable documents. The team verified this information through selected system walkdowns, personnel interviews, independent calculations, and comparison to industry standards and NRC regulations. The items selected for independent review were based on safety significance, quality of the licensee evaluation of the issues, and scope of the licensee's review.

2.0 FIRE PROTECTION/APPENDIX R RESTART ISSUES (64150)

The team examined several issues related to both the fire protection and Appendix R programs at Indian Point 3 (IP3) to determine the acceptability for restart. This examination included previously identified violations, unresolved and inspector follow-up items, Licensee Event Reports (LERs), review of the reactor coolant pump (RCP) oil collection system (OCS), the Appendix R emergency diesel generator (EDG), system certifications of selected fire protection and Appendix R systems, and management oversight in the areas of fire protection and Appendix R programs.

2.1 Short-Term Fire Protection/Appendix R-Related Corrective Actions (Inspector Follow-up Item (IFI) 50-286/93-24-01)

To address outstanding fire protection and safe shutdown issues, New York Power Authority (NYPA) developed the "Indian Point Unit 3 Appendix R & Fire Protection Improvement Plan." To accomplish the objectives of this improvement plan, NYPA developed a number of short-term issues, required for restart, and other long-term issues. Additionally, these short-term and long-term issues were included in the Indian Point Unit 3 Performance Improvement Plan (PIP) as Items 177.1 and 177, respectively. Subsequently, the PIP was revised and renamed the Restart and Continuous Improvement Plan (RCIP). Both the PIP and the RCIP were submitted to the NRC in January 1993 and May 1994, respectively. The team reviewed the short-term issues, as tracked by the original PIP numbers. These reviews are described below. The review of the long-term issues will be completed during future NRC inspections.

2.1.1 PIP 177.1 Task 5 (RCIP Task #1); Impact of Modifications on IP3 Safe Shutdown Capability (Unresolved Item 50-286/93-24-05)

Overview

This task and Unresolved Item 50-286/93-24-05 pertained to the development of a fire protection/Appendix R modification procedure to assure adequate control of plant modifications. At the conclusion of the October 1993 fire protection and Appendix R Inspection 50-286/93-24, the inspectors identified that NYPA had no adequate measures in place to verify and review the impact of modifications on the safe shutdown capability of the plant. NYPA committed to establish a method to review all outstanding modifications and determine the impact of changes on the fire protection and Appendix R programs, and related documents, prior to plant restart.

Details

During this inspection, the team noted that NYPA had completed the review of the outstanding field modifications installed in the plant up through January 1993. NYPA, with the assistance of their contractor (Engineering Planning and Management (EPM)), Inc., as a part of this effort, had reviewed the impact of these modifications on safe shutdown capability and the impact on fire protection documents. According to the licensee, all applicable data from previously installed modifications had been updated in the Appendix R Analysis and Fire Hazard Analysis documents, with the exception of 14 modifications listed on their configuration controlled data base. In addition, the team noted that the impact of the remaining and ongoing modifications on fire protection and Appendix R-related documents was being tracked under the established procedure to assure timely updating of these documents.

The team reviewed NYPA's issued procedure ESM, FPES-04B, Revision 0, dated April 11, 1994, to evaluate the impact of ongoing modifications. The team noted that this procedure provided adequate guidance to review, evaluate, and control the process for updating Appendix R-related documents during plant modifications to ensure compliance with 10 CFR 50 Appendix R requirements. The procedure requires that the responsible design engineer complete a fire protection and Appendix R compliance checklist to ensure the design applicability to these requirements. The checklist is used to determine whether the design requires a detailed fire protection review. If needed, a fire protection engineer performs the detailed review. Based on the review of this established procedure and sample review of the completed recent modification checklist input, the team concluded that adequate controls were established to ensure that ongoing modifications and future modifications are adequately evaluated against the requirements of Appendix R.

The team noted that the installed modifications were reviewed by NYPA for fire protection impact on both the Appendix R Analysis and Fire Hazard Analysis. These modifications were listed in Attachment B of these documents.

The team reviewed two randomly selected modifications listed in each document to ensure that data was valid and appropriate. In addition, a sample of the recently completed modification fire protection checklist were reviewed and no concerns identified. The team concluded that the modification fire protection program review checklist was being completed in accordance with the established administrative procedures by the responsible design and fire protection engineers.

Conclusion

Based on the above review, the team concluded that adequate measures had been established to identify, review, and update the fire protection documents. Additionally, the team found that the applicable fire protection documents were appropriately updated to include previously-installed modifications. The team concluded that NYPA had demonstrated that adequate controls had been established and implemented in this area to restart the plant at this time. PIP 177.1 Task 5 and Unresolved Item 50-286/93-24-05 are closed.

2.1.2 PIP 177.1 Task 6 (RCIP Task #2); Primary Auxiliary Building (PAB) Heating, Ventilating, and Air Conditioning (HVAC)

Overview

The purpose of this task was for NYPA to evaluate, update, and improve the existing Primary Auxiliary Building HVAC calculations to document the consequences of a PAB loss of ventilation. In addition, the cables and components associated with the PAB ventilation were required to be assessed from an Appendix R compliance perspective.

Details

During this inspection, the team noted that NYPA had further evaluated the results of the completed PAB loss of ventilation calculations. The licensee developed test Procedure ENG-560, which was conducted on November 21, 1994, to evaluate the rise in air temperature in the PAB and its effect on equipment, including the motor control center (MCC), component cooling water (CCW), and charging pump rooms following a loss of ventilation that could occur during a postulated loss of coolant accident (LOCA) and Appendix R fire condition.

Based on the heat generation analysis and extrapolation of data obtained during the test, the licensee determined that, following a loss of PAB ventilation, the air temperature in the MCC area at the 55 ft. elevation would increase approximately 2°F in one hour during the LOCA, and then reach steady state conditions. This small temperature increase was due to the reduced electrical load that would be present during this plant condition. In the case of a postulated fire condition, when offsite power would be available, the licensee determined that the rise in air temperature would increase approximately 9°F in the MCC area after one hour. Based on the small rise in temperature compared to the original higher calculated, the licensee concluded that the original calculation results were overly conservative.

NYPA indicated that the temperature profiles calculated in the latest UE&C Calculation (6604.327-6-PAB-002, Revision 2), showed that all safe shutdown equipment in the PAB areas, except the thermal overload relays of the MCCs, would continue to remain operable for at least four hours following a loss of ventilation. Therefore, the temperature profiles calculated in the updated calculations were appropriately conservative.

Through review of licensee documents, the team determined, based on this review, that the cables and components associated with the PAB ventilation were assessed by NYPA from an Appendix R perspective and found to be acceptable.

Conclusion

Based on the above completed actions, the team concluded that the licensee had adequately resolved and completed the above task. Therefore, PIP 177.1 Task 6 is closed.

2.1.3 PIP 177.1 Task 7 (RCIP Task #3); Fire Wrap Adequacy

Refer to Section 2.3 for discussion and closure of this item.

2.1.4 PIP 177.1 Task 8 (RCIP Task #4); Installation of Marinite Board in Containment

Refer to Section 2.3 for discussion and closure of this item.

2.1.5 PIP 177.1 Task 9 (RCIP Task #5); Adequacy of Fire Doors

Overview

The purpose of this PIP Item 177.1 Task 9 was to perform a National Fire Protection Association (NFPA) Standard 80 code compliance review of installed fire doors and to take appropriate corrective actions for the nonconformances and deviations identified.

Details

During the 50-286/93-24 inspection, the inspectors concluded that PIP Task 9 was incomplete due to the hardware repairs that were not complete. In response to this task, the licensee performed a code compliance study to ensure that the fire-rated doors installed in the plant meet NFPA Code 80, "Standard for Fire Doors and Windows." This code compliance study was performed by an independent contractor. The study identified conditions that were not in strict compliance with the requirements of the standard and provided recommendations to correct the noted noncompliance issues. For those

items requiring more extensive efforts to achieve strict compliance, the recommendations made by the contractor were evaluated, and appropriate actions were taken to bring the concerned doors into compliance. The following is the summary of the noncompliance conditions identified:

(1) Minor maintenance items such as small holes in the surface of doors and frames, doors that would not close and latch when released from an open position, missing or inoperative top and/or bottom bolts on the inactive leaf of double swinging fire doors, painted or broken fusible links on doors, and unlabeled doors and frames.

(2) Gaps between doors, frames, and door latches with less than the required latch throw.

(3) Unlabeled gasket material installed on various doors and/or frames.

(4) Fire doors which were not included in procedure FP-19, "Fire Door Inspection."

During this study, the contractor found 10 of the 100 Appendix R doors installed for use as a 3-hour fire barrier. The licensee stated that although the above issues were not in strict compliance with the requirements of NFPA 80, they would perform their intended function for providing separation of fire areas as required by Appendix R. The team noted that the licensee had taken all the appropriate corrective actions to bring these doors into compliance. Additionally, the team observed several fire doors during plant walkdowns and identified no concerns.

Conclusions

Based on the above review, the team concluded that the licensee has taken appropriate corrective action to resolve this task. Therefore, this task is closed.

2.1.6 PIP 177.1 Task 10 (RCIP Task #6); Penetration Seal Adequacy (Unresolved Item 50-286/93-24-03 & LER 93-29)

Overview

The purpose of Task 10 was to perform a baseline inspection of 100 percent of plant fire barrier penetrations, document appropriate information, and initiate appropriate repairs and corrections. Fire barrier penetration seal maintenance and repair procedures were to be reviewed by the licensee and revised as necessary prior to start-up. During the 50-286/93-24 inspection, the inspectors created Unresolved Item 50-286/93-24-03, associated with this task pending the licensee's verification of the cable insulation temperature to assure that the maximum unexposed side temperatures were sufficiently below the cable insulation ignition temperature. Also related to penetration seal adequacy, NYPA submitted LER 93-29 regarding nonfunctional penetration fire seals and fire barriers located in the walls between EDG cells. To address the adequacy of penetration seals, the team reviewed this PIP task item, Unresolved Item 50-286/93-24-03 and LER 93-29.

Details

The team reviewed Engineering Acceptance Test ENG-527, "Fire Barrier Inspections," and the significance of any deficiencies identified during the inspection effort. The licensee inspected approximately 1200 fire seals of which 8% of the seals were judged to be non-functional and the remaining 92% judged to be functional. Approximately 450 of the 1200 fire seals inspected were repaired. The majority of the repaired were completed to provide a means to impede mechanical damage to seals located in high traffic areas. In addition, some of the seals were reworked to enhance their integrity and maintain consistency between installed seal configurations and typical design details. The fire seals which were repaired were determined by the licensee to be functional. For example, enhancement repairs included: filling of minor holes or voids in the seal surface, repairing existing damming material, repairing the flamemastic layer of certain fire stops, installing a protective elastomer cap on seals in high traffic areas, adding additional seal material to the existing seals, and installing smoke and hot gas seals to enhance the provided level of protection.

The licensee has established procedures associated with the installation and repair of silicone foam, silicone elastomer, and flamemastic fire stops. The team's review of these procedures did not identify any concerns. The team also reviewed the qualification of the installers and did not identify any concerns.

Additionally, the team reviewed LER 93-29 and performed a walkdown of the penetrations separating the EDGs and verified the modification completed to address these previously improperly installed penetration fire seals. The team did not identify any further concerns.

The team reviewed the licensee's evaluation provided in response to Unresolved Item 50-286/93-24-03 titled, "FIRE SEAL ANALYSIS - Self Ignition Temperature of Cable Insulation as it Relates to the Design of Fire Seals," dated January 25, 1995. Evaluation No. IP3-ANAL-FP-01392, Revision 0. The licensee concluded in this evaluation that the self-ignition temperature of the cable insulation is not less than 785°F, and that this temperature is sufficiently above the 700°F maximum allowable unexposed surface temperature criteria for penetration seal designs at IP3. The licensee based this conclusion on generic cable flammability data published by Electric Power Research Institute (EPRI). During a telephone conference with NYPA personnel, Region I and Nuclear Reactor Regulation (NRR) staff on April 3, 1995, the licensee stated that they had determined that the cables at IP3 are "similar" to the cables referenced in the EPRI reports, but they could not provide reasonable assurance, such as manufacturer, date of manufacture, and cable type, that the cables specified in the EPRI report are representative of the cables installed at IP3. The licensee also stated that plant-specific cable flammability data was not available from the manufacturer. Due to the broad range in flammability data for cables of "similar" construction, and the different test protocols for obtaining the flammability data, and the licensee was not able to provide reasonable assurance that the data referenced in the licensee's January 25, 1995, evaluation was applicable to cables installed at IP3; therefore, the team was concerned with the generic cable data used in the

licensee's fire seal analysis to adequately represent the cables installed at IP3. Subsequently, telephone conversations with NYPA, NRR, and Region I were held on April 7, April 28, and May 4, 1995, to discuss NYPA's actions to address this concern. During this conversation, NYPA stated that they intended to do further research to verify the applicability of the generic information used in their evaluation. Additionally, NYPA intends to test a sample of installed cables to verify the ignition temperatures of the cables if needed. This item remains unresolved pending the completion of NYPA's effort and subsequent NRC review. The licensee has implemented fire watches in all plant areas where the penetration seals in question are located. These compensatory measures, coupled with the other elements of the licensee's fire protection program, ensure an adequate level of fire safety is provided. The team determined that the licensee's actions were acceptable for restart.

Conclusions

Based on the above, the team concluded that NYPA has taken appropriate corrective actions to repair the degraded seals at IP3. Therefore, PIP 177.1 Task 10 is closed. Additionally, the team reviewed LER 93-29 and found it to be appropriate. However, the associated Unresolved Item 50-286/93-24-03 remains open pending the completion of the licensee's effort and subsequent NRC review. The compensatory fire watches, coupled with the other elements of the licensee's fire protection program, ensure an adequate level of fire safety is provided for restart.

2.1.7 PIP 177.1 Task 11 (RCIP Task #7); Cable Tunnel Suppression System

Overview

The purpose of this PIP Item 177.1 task was to review the electrical cable tunnel suppression system design and previous analyses for establishing suppression adequacy to meet Appendix R safe shutdown concerns.

Details

Amendment No. 24 to the Indian Point Unit 3 Facility Operating License No. DPR-64 required the licensee to complete Modifications 3.1.1 through 3.1.14 of the NRC Safety Evaluation Report (SER), dated March 6, 1979. Modification 3.1.8 required installation of dry-pipe preaction-type sprinkler systems to provide coverage of all trays in the electrical tunnels and electrical penetration area that were not already covered by the existing system. It was the NRC's staff position that the system would comply with NFPA-15.

During the October fire protection inspection (No. 50-286/93-24), the inspectors reviewed the sprinkler drawings and hydraulic calculations for the cable tunnel suppression system. At that time, the inspectors also verified the installation of the sprinkler system by performing a walkdown of the electrical cable tunnel. Based on review of the SER, hydraulic calculations, and walkdown of the system, the team concluded that the sprinkler system installed was adequate to control and/or extinguish a fire. Therefore, this suppression system was considered acceptable for plant restart.

Conclusions

Based on the above in-depth inspection results and NRC acceptance of actions taken by the licensee to complete this task, the team concluded that the electrical cable tunnel sprinkler system was adequate to control and/or extinguish a fire, and was determined to be acceptable for plant restart at this time. Therefore, PIP 177.1 Task 11 is closed.

2.1.8 PIP 177.1 Task 12 (RCIP Task #8); Instrument Sensing Line Separation

Overview

The stated purpose of this PIP Item 177.1 task was to review the separation of instrumentation lines in containment, along with cables, for effects of fire on instrument capability.

Details

This task pertains to the potential effect of fire on the performance of steam generator and pressurizer level instrumentation. This issue was identified by the licensee in their 1984 reanalysis to achieve safe shutdown conditions of the reactor in the event of fire within the non-inerted containment of IP3. Based on the 1984 configuration of sensing lines within containment for the steam generator and pressurizer level instruments, it appeared that they did not satisfy the requirements of Section III.G.2, Paragraphs D, E, and F. If an exposure fire was postulated to occur within containment, exposure of the instrument sensing lines to the resulting elevated temperatures may result in a loss of accuracy and operability of these instruments, or cause previously unanalyzed spurious actuation due to the generation of false pressurizer or steam generator level signals.

During the previous fire protection inspection in October 1993, the licensee stated that their evaluation of this concern had concluded that, due to the low probability of fire within the containment fire area, the low combustible loading in the area, and other physical aspects of the plant design and construction such as the routing of instrument sensing lines in steel Uni-Strut supports, an adequate technical basis exists to seek an exemption from the specific technical requirements of Appendix R, Section III.G.2.d, e, and f. Therefore, this task remained open pending submitting an exemption request to the NRC Office of Nuclear Reactor Regulation.

The team noted that the licensee had submitted the required exemption request to the NRC office per their letter, dated November 30, 1993, and supplemental letter dated July 6, 1994. By letter, dated January 5, 1995, NRC granted to IP3 the above exemption from the requirements of 10 CFR Part 50, Appendix R, paragraph III.G.2.f, to the extent that redundant wide-range steam generator water level sensing lines and the redundant pressurizer level sensing lines, located inside containment, need not be separated by noncombustible radiant energy shields.

Conclusion

Based on review of the above letters, the team concluded that the licensee had adequately completed the above committed task. Therefore, PIP 177.1 Task 12 is closed.

2.1.9 PIP 177.1 Task 13 (RCIP Task #9); Adequacy of Fire Dampers

Overview

The purpose of this PIP Item 177.1 task was to perform an NFPA 90A code compliance review of installed fire dampers and to make recommendations on nonconformances and deviations.

Details

During the 1993 fire protection inspection, licensee representatives indicated that the following non-Appendix R fire wall fire dampers were not inspected as required by their commitments presented in their fire protection plan. This fire protection plan was established to meet Appendix A to Branch Technical Position (BTP) 9.5-1:

DAMPER NUMBER	FIRE AREA	LOCATION
Number 6	CTL-3/11& CTL-3/35A	33 foot of the Control Building
Number 29	PAB-2/8A& PAB-2/10A	15 foot elevation of the Primary Auxiliary Building
Number 32	PAB-2/5A& PAB-2/9	34 foot elevation of the Primary Auxiliary Building
Number 38	PAB-2/5& PAB-2/21A	55 foot elevation of the Primary Auxiliary Building
Number 39	PAB-2/6& PAB-27	55 foot elevation of the Primary Auxiliary Building
Number 40	PAB-2/17A& PAB-2/7	73 foot elevation of the Primary Auxiliary Building
Number 41	PAB-2/17A& PAB-2/20A	55 foot elevation of the Primary Auxiliary Building

In addition, the licensee stated that they were in the process of improving their fire damper surveillance program and the fire damper surveillance procedures. These procedures were to be revised to include the above-mentioned dampers and all other fire dampers for a drop test to be performed once a year.

During this inspection, the team noted that the licensee had completed the NFPA 90A Code Compliance Review of all dampers by November 1993. The team reviewed the code compliance effort and verified that the above fire dampers were included in this evaluation effort. The team noted that this portion of the damper effort was included in the code compliance record of air conditioning and ventilation systems, issued on May 27, 1994. Per discussion with the licensee and review of the documentation, the team ascertained that the only open issue remaining from this effort was to repair non-Appendix R fire damper No. 40 in the PAB building. Work Order 94-525 had been issued to replace the damper fuse link and missing blade locks. At this time, the licensee was awaiting parts delivery from their order. These replacements will be completed in the near future; however, the team determined that this repair was not essential for restart. The team also noted that the licensee had completed the fire damper drop test checks in May 1994, by means of the established work order process, to satisfy the TS requirements.

Per discussion with the licensee, the team found that the Preventative Maintenance (PM) Procedure FIR-005-FIR, pertaining to damper maintenance, is under development and is expected to be completed in March 1995. This issue was being tracked under their Action Commitment Tracking System (ACTS) Item 4108.

Based on the above review of related documentation and tests presented of this effort, the team concluded that the above dampers were adequately inspected and satisfied annual code PM and TS requirements.

Conclusions

The team concluded that this task was adequate for the restart of the unit at this time. Therefore, PIP 177.1 Task 13 is closed.

2.1.10 PIP 177.1 Task 14 (RCIP Task #10); Review of Safe Shutdown Procedures

Overview

Tasks 14 and 15 was initiated to document the review of Alternate Shutdown Procedures including cooldown. The purpose of these tasks encompassed the review of ONOP-FP-1A and ONOP-FP-1B to ascertain if there were any operational concerns with the methodology stated in these procedures.

Details

The licensee formed a task force which provided detailed oversight of the fire protection program at IP3. The task force reviewed these procedures to ascertain if there were any operational concerns with the methodology stated in these procedures. In addition, the licensee walked down both Off Normal Operating Procedures (ONOPs) to ensure manual operations called out by the procedures could be performed. The licensee verified that all the procedures worked as written. However, some procedure enhancements were identified and were discussed with the operations group for incorporation and revision.

The team discussed the enhancements with the operations group and did not identify any concerns. Included in this discussion was a review of selected portions of the following procedures:

- ONOP-FP-1, "Plant Fires," Revision 7;
- ONOP-FP-1A, "Safe Shutdown from Outside the Control Room," Revision 9;
- ONOP-FP-1B, "Cooldown from Outside the Control Room," Revision 6;
- ONOP-FP-1C, "Fire Area Evaluation," Revision 0;
- SOP-ESP-1, "Local Operations of Safe Shutdown Equipment," Revision 0; and
- SOP-EL-12, "Operations of the Alternate Safe Shutdown Equipment," Revision 9.

The team also reviewed Nuclear Safety Evaluation 95-3-098FP pertaining to the updates to the Appendix R safe shutdown procedures. Additionally, the team observed an in-plant drill requiring safe shutdown of the plant from outside the control room. The watch-team performed well, demonstrating familiarity with the plant equipment, and worked smoothly through the new procedures. As a result of the training of all watch-teams, NYPA identified a number of additional enhancements to be added to the procedures. At the end of this inspection, NYPA was in the process of evaluating these enhancements and stated their intentions to revise procedures as needed.

Conclusions

Based on the above review, the team concluded that the procedures provided sufficient guidance and detail to enable the operators to perform required actions. No deficiencies were identified during the procedures review. The licensee has taken appropriate corrective actions to resolve the issues stated in the above tasks. Therefore, these tasks are closed.

2.1.11 PIP 177.1 Task 15 (RCIP Task #11); Adequacy of Cold Shutdown Repair Procedures

Refer to Section 2.1.10 for discussion and closure of this item.

2.1.12 PIP 177.1 Task 16 (RCIP Task #12); Appendix R Commitments For Compliance

Overview

This task was required to be performed by NYPA to demonstrate that commitments they made to the NRC, as summarized in the Design Basis Licensing Database for 10 CFR 50, Appendix R, Sections III.G, J, L, and O, were properly implemented.

Details

During Inspection 50-286/93-24, the inspectors determined that NYPA had made progress in the review of their commitments to ensure compliance with all committed actions. Of 80 commitments reviewed, nine (9) could not be verified as complete and were being addressed by NYPA at the completion of that inspection.

During this inspection, the team verified the completion of those remaining nine items as documented in the internal NYPA memorandum ADM-QH93-343, dated August 27, 1993. The issues pertaining to these nine commitments were reviewed in detail, and the description of these reviews are contained in the following sections of this report:

- Generic Letter 86-10 Resolution (Section 2.1.21);
- Emergency Lighting Issues (Section 2.2);
- Fire Dampers (Section 2.1.9); and
- Quality Assurance Item Resolution (Section 2.1.20)

Conclusion

The team concluded that this task was adequate for the restart of the unit. Therefore, PIP 177.1 Task 16 is closed.

2.1.13 PIP 177.1 Task 17 (RCIP Task #13); Testing of Appendix R Alternate Shutdown Equipment

Overview

This PIP task was initiated to identify, document, and/or resolve concerns associated with the testing of Appendix R safe shutdown equipment.

Details

In response to this PIP task, NYPA performed an item-by-item assessment of each Appendix R-related component versus the testing or maintenance activity associated with the components. The scope of NYPA's review was based on those components required for safe shutdown as described in the plant fire operating procedures. The results of NYPA's review identified a few components without previously developed periodic testing requirements and a few other components without PM coverage. The testing concerns were addressed by developing test procedures and subsequent satisfactory completion of these tests. The PM concerns were directed to the IP3 Site PM Coordinator and processed in accordance with plant procedures. The team reviewed the results of NYPA's effort to address this PIP task item, including a sampled review of test procedures. The team determined that licensee corrective actions were appropriate.

Conclusion

The team concluded that this task was adequate for the restart of the unit. Therefore, PIP 177.1 Task 17 is closed.

2.1.14 PIP 177.1 Task 18 (RCIP Task #14); Appendix R Emergency Battery Light Issues

Refer to Section 2.2.1 for discussion and closure of this item.

2.1.15 PIP 177.1 Task 19 (RCIP Task #15); Development of Modification for Additional Emergency Lights Turbine and Administration Buildings

Refer to Section 2.2.2 for discussion and closure of this item.

2.1.16 PIP 177.1 Task 20 (RCIP Task #16); Safe Shutdown Communication Review

Overview

The purpose of this PIP Item 177.1 Task 20 was to review the safe shutdown communications, and the maintenance and testing of the communications equipment.

Details

In response to this task, the licensee developed a procedure which included the testing of communication equipment capabilities to perform the alternate shutdown procedures. During this inspection, the team reviewed test Procedure 3PT-R152, Revision 1, "Operability Test of Safe Shutdown Instrumentation," dated October 29, 1993. The licensee stated that the safe shutdown communications will be verified prior to start-up. The licensee also verified that radio communication links required for ONOP-FP-1A were established and functioned satisfactorily. The team did not identify any deficiencies in this area.

Conclusions

Based on the above review, the team concluded that the licensee has taken appropriate corrective actions to mitigate the above concern. Therefore, this task is closed.

2.1.17 PIP 177.1 Task 21 (RCIP Task #17); Development of Fire Protection Plan

Overview

The stated purpose of this PIP task was to develop and implement an updated fire protection program plan.

Details

During Inspection 50-296/93-24, the inspectors reviewed the recently developed "Fire Protection Plan for Indian Point 3 Nuclear Power Plant," Revision 0, dated June 30, 1993, and determined it did not provide sufficient detail to determine the extent and effectiveness of the Fire Protection Program. At the time of Inspection 50-286/93-24, it was NYPA's intention to revise the Fire Protection Plan; however, due to an ongoing reorganization within the NYPA engineering organization, NYPA has yet to complete the revisions to the Fire Protection Plan. NYPA has recently established a temporary task force to resolve the numerous outstanding fire protection/Appendix R-related issues. The guidance used by this task force was provided in Indian Point 3 Standing Order EDSO-01, "Closure of Open Fire Protection Items," Revision 1, effective November 11, 1994. Further discussions of this task force are provided in Section 2.7 of this report. Additionally, NYPA initiated ACTS Item 8170 to track the revision of the Fire Protection Plan upon completion of NYPA's reorganization. During this inspection, the team reviewed EDSO-01, and other fire protection/Appendix R-related procedures and documents, and found them to provide adequate guidance to define the Fire Protection Plan at Indian Point 3 for restart. The team noted the need for revision of the Fire Protection Plan pending completion of the task force's duties and the reorganization of NYPA staff, as stated in the above mentioned ACTS item.

Conclusions

Based on the established administrative controls in place, the team concluded adequate guidance was in place to control fire protection-related activities for restart. However, it was the team's understanding that the Fire Protection Plan will be revised upon the completion of the task force's assigned duties following the reorganization of NYPA staff. Therefore, this PIP task is closed based on NYPA's assurance that this task will be completed as described.

2.1.18 PIP 177.1 Task 22 (RCIP Task #18); Validation/Confirmation of IP3 Fire Hazards Analysis

Overview

The purpose of this PIP Item 177.1 task was to validate and confirm the Fire Hazard Analysis (FHA), to check assumptions regarding low fire loading, and verify the adequacy of updated combustible loading analyses to ensure that the FHA information is properly maintained for plant needs.

Details

During this inspection, the team noted that the licensee had updated the IP3 Fire Hazard Analysis (FHA) on January 11, 1995. This analysis superseded the existing fire/area zone analysis, Section 6.0 of the Fire Protection Program Manual (FPPM). The FPPM manual, issued by NYPA, was considered as a reference fire protection document that included field modifications installed since the last update in January 1991. NYPA, as discussed in Section 2.1.1, completed this work as a part of the PIP 177.1, Task 5 effort, after reviewing all the

outstanding field modifications and had updated the FHA and the Appendix R Analysis to reflect these changes. To date, with the exception of 14 recent modifications, all applicable data have been properly reflected in this report. Per discussion with the licensee, the team noted that ongoing remaining modifications, having impact on FHA and Appendix R documentation, was being tracked under the established configuration control procedure and applicable documents would be updated on an as-needed basis.

The team noted that the licensee's FHA document clearly defined the basic objective, scope, background, and regulatory requirements to provide adequate guidance for its users. In addition, a list of installed modifications reviewed by NYPA was contained in Appendix B of the FHA. The team noted that the licensee had included all areas containing equipment or systems necessary for achieving or maintaining cold shutdown during a single fire event, and those areas representing an exposure to any of the foregoing areas in this document. A sample review by the team of the FHA data, as-built design drawings, and observation of a computer simulation demonstration for a control room fire, revealed no concerns.

Conclusions

The team concluded that the licensee had adequately validated and incorporated the outstanding modifications for fire protection impact on the FHA and Appendix R documents. Therefore, this task is closed.

2.1.19 PIP 177.1 Task 23 (RCIP Task #19); Operations Review Group Item Review

Overview

This task was initiated to identify, document, and/or resolve Operations Review Group (ORG)-identified fire protection and Appendix R start-up issues.

Details

During this inspection, the team noted that NYPA collected all fire protection and Appendix R-related issues, including the ORG tasks, and listed them as either start-up issues or not. Each issue was provided an individual ACTS number.

The team noted that the NYPA ACTS program was established by Procedure AP-37.4. This system tracks and controls all NYPA's commitments, including required fire protection restart issues of all organizations. The team reviewed the ACTS open and closed items list for the fire protection and Appendix R issues and found no concerns. The team noted the open restart issues were adequately reflected as requiring completion prior to restart.

Conclusion

Based on the above review, the team concluded that the ORG tasks have been adequately incorporated into the ACTS program, and that the remaining open restart ACTS items will be completed prior to restart. Therefore, this item is closed.

2.1.20 **PIP 177.1 Task 24 (RCIP Task #20); Quality Assurance Item Resolution (Violation 50-286/91-09-03 & Unresolved Item 50-286/93-04-07)**

Overview

The purpose of this task was to identify, document, and resolve fire protection and Appendix R start-up issues identified by the Quality Assurance (QA) Department. Previous NRC Inspection Reports 50-286/91-09 and 50-286/93-04 and NYPA QA Audits FPA-89 and 90-42 documented the ineffectiveness of the tracking system and actions to resolve QA-identified deficiencies. Some of these deficiencies had existed since 1986. NYPA's failure to take timely corrective action on issues was indicative of a weakness in their ability to prioritize issues properly, assess them for safety significance and regulatory requirements, and establish appropriate compensatory measures. These issues were presented in NRC Violation 50-286/91-09-03 and again in Unresolved Item 50-286/93-04-07.

Details

As stated in NYPA's violation response letter, dated August 1, 1991, all previously required audits were completed by the Corporate Appraisals and Compliance Group Fire Protection Organization from the White Plains office. This group utilized independent procedures and processes, and did not have the items tracked within the Site QA Corrective Action Tracking Process. This means failed to allow for an effective escalation process or complete resolution of identified issues.

Corrective actions taken by the licensee included the implementation of one station-wide corrective action system, ACTS. This system was described in Administrative Procedure AP-37.4, Revision 0, "Action and Commitment," and was administered by the IP3 ORG. This system had been in place since November 1, 1993. The ACTS report notifies station department heads, general managers, and the resident manager of unresolved corrective action items weekly.

All items identified within the 1990 QA audit report that remain open, including the issues from 1986 through 1989, were captured in the ACTS. In addition, the QA organizations were found to require that all fire protection audits are performed in a formal, planned manner within the administrative framework of the site QA group. Three general manager positions have been created to oversee station activities and report to the resident manager. These general managers receive the described reports and have been tasked to ensure prompt corrective actions.

QA has also dispositioned and resolved other fire protection deficiencies or nonconformances identified in 1991, in addition to the previous audit findings.

The team reviewed QA audits performed between 1986 and 1994 and the corrective actions taken to resolve a sample of previously identified deficiencies. The following QA findings were reviewed:

- Recommendation 832, EDG fanhouse fire protection penetration seal;
- Recommendation 725, Ventilation of paint room;
- Finding 91-14-01, Operability for non-surveilled fire damper;
- Finding FPA-88-R02, Insufficient ventilation for safe shutdown equipment; and
- Corrective Action Request 768E, Operability Criteria for smoke detector functional test.

Conclusion

Based on this review, the team concluded that appropriate measures had been taken by NYPA to track and resolve QA-identified deficiencies. NYPA has initiated LERs, where appropriate, completed evaluations, implemented modifications, and completed corrective actions described in response to Violation 50-286/91-09-03.

The team concluded that corrective actions taken have been adequately prioritized and have appropriately assessed safety impact and significance. As a result of extent of condition reviews performed during initial corrective action work, ACTS items and tasks have been assigned for tracking and future resolution of issues identified.

Based on this review, the team concluded that adequate corrective actions had been taken to resolve QA-identified deficiencies associated with fire protection. For the issues that were determined to require further action necessary for resolution, appropriate measures had been established to track them for closure. The team confirmed that commitments, made by NYPA in response to Violation 50-286/91-09-03 and as discussed under Unresolved Item 50-286/93-04-07, had been implemented. Additional discussions regarding these inspection items is provided in Section 2.2 of this report. PIP 177.1 Task 24 is closed.

that operations would have responded properly to any events that would have challenged the fire protection systems. This was considered a violation of the TS. However, the violation was not cited because the criteria for discretion specified in the NRC Enforcement Policy, Section VII.B., was met.

The team noted that the licensee had compared the 1984 Appendix R reevaluation against Generic Letter 86-10 for IP3, and concluded that the previous 1984 Appendix R analysis did not address the following two issues:

1. the vulnerability of the equipment and personnel in room or zone due to the environment created by the fire or suppression systems; and

2. the consideration of high impedance faults for all associated circuits located in the fire area of concern required to meet the separation criteria of Section III.G.2 and III.G.3 of Appendix R.

The first issue was addressed in Task 27, described in Section 2.1.23 of this report. This task required development of an exemption request to approving operator access to the instrument isolation cabinets for a postulated fire at the entryway. The team noted that such an exemption existed for this location for NYPA, as referenced in the recent NRC letter to NYPA, dated December 20, 1994. To address the second issue, the licensee had issued Task 31, which is described in Section 2.1.27 of this report.

Conclusions

Based on the above described review, NYPA appropriately addressed the Generic Letter 86-10 concerns. Therefore, PIP 177.1 Task 25 is closed.

2.1.22 PIP 177.1 Task 26 (RCIP Task #22); Request for Engineering Services Resolution

Overview

The purpose of PIP Item 177.1 Task 26 was to resolve the fire protection and Appendix R-related Requests for Engineering Services (RES) that were identified as required for start-up.

Details

During this inspection, the team noted that the licensee had reviewed all the fire protection RESs as part of the ongoing PIP task. Additionally, NYPA has replaced the RES process with the engineering work request process (EWR). The team reviewed the outstanding EWR list with the system engineer. This list contained approximately 40 items, some of which were in the process of being addressed and would be closed out prior to start-up. The team found the system engineer knowledgeable of all the open EWRs. The review of the outstanding EWRs indicated no significant issue affecting the start-up concerns.

Conclusions

Based on the above described review, the team concluded that NYPA has adequately established the control of backlogged fire protection and Appendix R-related RESs/EWRs. Therefore, the PIP Task 26 is closed.

2.1.23 **PIP 177.1 Task 27 (RCIP Task #23); Cable Tunnel Entryway Exemption Request**

Overview

This task was initiated to track the completion of an exemption request to approve operator access to instrument isolation cabinets during a postulated fire at the entryway to the cable tunnels.

Details

During this inspection, the team noted that NYPA, in their letter, dated November 17, 1993, and supplemental letter, dated September 6, 1994, submitted a request for exemption from Section III.G.3 of Appendix R to 10 CFR 50. In response to this exemption request, the NRC in a letter, dated December 20, 1994, explained that the previously existing Appendix R exemption granted pertaining to the cable tunnel fire zone area, was valid and therefore, another exemption requested was not needed. The previous exemption was reviewed and granted by the NRC in their letter, dated February 2, 1984.

Conclusion

Based on the review of the above documentation, the team concluded that NYPA had adequately addressed the above issue. Therefore, PIP Task 27 is closed.

2.1.24 **PIP 177.1 Task 28 (RCIP Task #24); Inspection of Control Building Internal Seals (Unresolved Item 50-286/93-24-04)**

Overview

The purpose of this task was for NYPA to complete the technical evaluation associated with the flamemastic seals in the control building floor and the cable spreading room. This was also identified as Unresolved Item 50-286/93-24-04.

Details

The team reviewed the licensee's response to the task and the associated unresolved item. The licensee performed the reinspection of the flamemastic fire stops of the control building and cable spreading room floors. The results of this reinspection were documented in Evaluation Number 18 of ENG-

527, "Fire Barrier Inspections." This reinspection was conducted in two stages, each consisting of thirteen random reinspections. This reinspection was limited to the fire stops in the control building and cable spreading room floors. The licensee concluded the following:

1. Fourteen fire stops did not contain any foreign material and contained acceptable quantity of fiber.

2. Ten fire stops contained relatively insignificant foreign material (both combustible and non-combustible), with acceptable quantity of fiber.

3. One fire stop was void of both foreign material and fiber glass fill, thus creating an airspace between the transite bottom and marinite top. The penetration was a spare penetration (such that, no penetrating items passing through the opening).

4. One fire stop contained a significant piece of combustible material (a 14-inch long piece of 2-inch by 4-inch wood). This penetration did contain an acceptable quantity of fill.

The team walked down these areas and did not identify any deficiencies. The team also reviewed the packages that showed that the above discrepancies had been corrected.

Conclusions

Based on the above review, the team concluded that the licensee has taken appropriate corrective actions to satisfy the above discrepancies. Therefore, Task 28 and associated Unresolved Item 50-286/93-24-04 are closed.

2.1.25 PIP 177.1 Task 29 (RCIP Task #25); Absent Fire Barrier Wrap (LER 93-038)

Overview

This task was initiated to address resolution of fire barrier wrap missing on the amplifier box for No. 31 source range flux detector penetration area. The licensee also issued LER 93-038 documenting the missing fire barrier wrap in the penetration area.

Details

On September 30, 1993, with the unit in cold shutdown, the licensee determined that the plant was not in compliance with 10 CFR 50, Appendix R, Section III. G.2, because a fire barrier wrap was not installed or barriers were deficient for some plant specific areas. The licensee stated that the probable cause was a personnel error during the plant modification. To restore compliance, the licensee took the following corrective actions:

1. Reviewed the Appendix R modifications to assure that the modifications were performed in accordance with Appendix R requirements.

2. Reviewed in detail maintenance/repair and surveillance procedures for the installed fire barrier wrap.

3. The licensee revised Surveillance Procedure, 3PT-R102, "Fire Barrier/Radiant Energy Shield Inspection," which incorporated more stringent requirements for the inspection of fire barrier wrap configurations.

4. The licensee had replaced all the missing wrap with the exception of additional 120 feet of 1-hour fire barrier wrap on N-31 conduit 1VF/JA. This additional wrap would extend from the point where the existing fire wrap stops (approximately 20 foot into the upper electrical tunnel from the upper penetration area) to the point where the existing fire wrap continues again, such that the entire conduit runs inside the upper penetration area, and the upper electrical tunnel including the entryway is protected. At the end of this inspection, this work was in progress. The licensee stated that this work will be completed prior to start-up.

The team walked down the areas where the fire barrier was being wrapped. The team did not identify any deficiencies in this area.

Conclusions

Based on the above review, the team concluded that the licensee has taken appropriate corrective actions to eliminate the above-mentioned concerns. Therefore, the Task 29 and the associated LER 93-038 are closed.

2.1.26 PIP 177.1 Task 30 (RCIP Task #26); Appendix R Compliance Summary

Overview

This task was initiated to outline the compliance summary information contained in the 1984 reevaluation report in a style and format more friendly to technical personnel not intimately familiar with Appendix R requirements, IP3, or both. The completion of this task was not required for restart.

Details

The team reviewed portions of NYPA's "IP3 Appendix R, Section III.G & III.L Compliance Summary," IP3-ANAL-FP-01251, Revision 0, dated March 1995, and found it appropriate to address this task item. Additionally, the team reviewed portions of "Appendix R Operational Specifications," dated March 27, 1995, and Nuclear Safety Evaluation (NSE) 95-3-100 used to approve these operational specifications. These operational specifications identified actions to be taken should the systems, structures, or components become inoperable, and restricts the duration for which these components can remain inoperable while the plant is at operating conditions.

Conclusion

Based on the above review, the team concluded that the licensee has taken appropriated actions to address PIP 177.1 Task 30. Therefore, this item is closed.

2.1.27 PIP 177.1 Task 31 (RCIP Task #27); Multiple High Impedance Faults

Overview

This task was initiated as a result of the review of Generic Letter 86-10 efforts in the area of fire protection and Appendix R. After NRC Inspection 50-286/93-24, a new task, PIP Item 177.1, Task 31, was undertaken by NYPA to address the potential effects of Multiple High-Impedance Faults (MHIF) on safe shutdown capability. The concern associated with MHIF is a potential tripping of incoming supply circuit breakers, used for powering safe shutdown buses, due to multiple high impedance faults resulting from a fire.

Details

The team evaluated NYPA's resolution of this concern by reviewing selected portions of Report Number IP3-RPT-FP-01383, "Multiple High Impedance Fault Study," Revision 0. Through review of this report and discussions with NYPA staff, the team considered the assumptions and methodology, used to determine the potential susceptibility of the safe shutdown buses, to be appropriate and consistent with those accepted by the NRC in the past. The results of this study indicated that 8 of 26 buses could incur a trip of the incoming breaker due to postulated fires. To address these eight concerns, the report provided a listing of the fire areas in which the bus failed, and indicated specific loads which need to be shed via manual actions to prevent the loss of safe shutdown loads associated with the bus. The team verified that these manual actions were incorporated into ONOP-FP-1, "Plant Fires," Revision 7.

The team was concerned with the review and update of the MHIF study with future modifications to the plant. In response to this concern, NYPA instituted the following ACTS items:

- ACTS Item 5575, which will update MCM-19, "Modification Closeout," to include the IP3 MHIF study as a potential affected document when performing modification closeout;

- ACTS Item 4557, which will update FPES-4B, "Fire Protection/Appendix R Compliance Procedure (IP3)," to include the IP3 MHIF study as a potential affected document when performing an Appendix R compliance review; and

- ACTS Items 7335, which will update EES-6, "Control of Electrical Distribution System Changes," to include the IP3 MHIF study as a potential affected document when reviewing changes to the IP3 electrical distribution system.

The team considered this appropriate to address this concern.

Conclusion

The team considered the MHIF study to be thorough and well documented, with the recommended manual actions appropriately captured in the plant fire procedures. Therefore, PIP Task 31 is closed.

2.1.28 PIP 177.1 Task 32 (RCIP Task #28); Temporary Modification Review

Overview

This task was initiated to review temporary modifications installed prior to AP-13, "Temporary Modification Procedure," Revision 13. Prior to Revision 13 of AP-13, no guidance was provided to verify the impact of temporary modifications on the fire protection/Appendix R programs.

Details

For this task, approximately 73 temporary modifications were reviewed by a NYPA contractor. No temporary modifications were found that adversely affected the IP3 Appendix R compliance strategy. The team reviewed the guidance used by NYPA's contractor to evaluate the impact of the temporary modification on the Fire Protection/Appendix R Programs and considered it to be comprehensive. Additionally, the team verified that AP-13, Revisions 13 and 15, contained appropriate controls to ensure subsequently installed temporary modifications would not adversely impact the Fire Protection/Appendix R Programs. The team also reviewed the currently installed temporary modifications and identified no concerns.

Conclusion

The team considered NYPA's actions to address this PIP task to be appropriate. Therefore, PIP Task 32 is closed.

2.1.29 Conclusion - Short-Term Fire Protection/Appendix R-Related Corrective Actions

Based on the above review of NYPA's efforts to address the short-term fire protection/Appendix R-Related corrective actions, Inspector Follow-up Item 50-286/93-24-01 is closed. Unresolved Item 50-286/93-24-04, pertaining to operability determination of degraded and potentially nonconforming fire barrier penetrations seals and Unresolved Item 50-286/93-24-05, pertaining to the impact of modification on Appendix R, were also closed. Unresolved Item 50-286/93-24-03, pertaining to the verification of cable insulation ignition temperatures, remains unresolved. The compensatory fire watches, coupled with the other elements of the licensee's fire protection program, ensures that an adequate level of fire safety is provided for restart. Also, the team reviewed and found appropriate NYPA's LERs 93-29 and 93-38.

2.2 Emergency Lighting Issues

The team reviewed the adequacy of installed emergency lights required during loss of normal and backup lighting for vital plant areas and equipment. Lighting for these areas and equipment are required to achieve and maintain hot shutdown. This review was performed to verify compliance with Appendix R, Section III.J. of 10 CFR Part 50, and to verify adequate illumination to execute the alternate safe shutdown actions to be taken by plant operators.

The team performed a walkdown of all plant areas required in a blackout condition to support their assessment and verify adequate illumination to execute the alternate safe shutdown actions. The team's review also included an assessment of corrective actions taken by the licensee to address previously identified emergency lighting issues.

2.2.1 PIP 177.1 Task 18 (RCIP Task #14); Appendix R Emergency Battery Light Issues (Violation 91-09-03 and Unresolved Item 50-286/93-04-07)

Overview

The purpose of this task was to resolve emergency lighting deficiencies associated with 8-hour discharge testing, blackout testing, proper aiming, and maintenance and surveillance procedures in accordance with industry and vendor recommendations. NRC concerns related to these deficiencies were identified in several inspection reports, including Violation 50-286/91-09-03 and Unresolved Item 50-286/93-04-07.

Details

NYPA has addressed these concerns by completing a design review of the installed emergency battery lighting (EBL) units, revising procedures, and by performance of a blackout test, ENG-533, Revision 3, "Appendix R Emergency Battery Lighting Area Blackout Test." Concerns related to 8-hour discharge testing, monthly functional test procedures, and the lack of adequately installed emergency lighting in the plant turbine areas were adequately resolved and were documented in NRC Inspection Report 50-286/94-29.

To address the issues regarding the illumination acceptability of installed EBLs, mispositioning of the installed EBLs, and the lack of documentation to indicate that tests had been performed to verify light adequacy, the licensee has completed detailed EBL pathway drawings and Procedure ENG-533. ENG-533 served to verify the adequacy of Appendix R lighting utilized during an alternative shutdown fire scenario that requires evacuation of the control room. Off Normal Operating Procedure ONOP-FP-1A, Revision 8, "Safe Shutdown From Outside The Control Room," presents the necessary equipment needed by plant operators to achieve and maintain safe shutdown.

During performance of ENG-533, Revision 1, the licensee identified insufficient emergency lighting to illuminate the 6.9 kV switchgear area, turbine front standard, and three standby gas turbine substation cubicles, which required manual actions to operate safe shutdown equipment. Subsequently, the licensee submitted LERs 93-055 and 93-055-01 and corrective actions to address these deficiencies.

Actions taken by NYPA to correct these deficiencies included the development and implementation of modifications for installing EBLs in those identified areas (Design Change DC94-3-212 EML, Revision 0). The team verified the adequacy of EBLs for all plant areas, equipment, and access/egress pathways required for alternate safe shutdown as presented in ONOP-FP-1A. This verification was performed by the team during execution of the blackout test Procedure ENG-533, Revision 3. This test was performed in a blackout condition using a senior reactor operator to simulate the required alternate safe shutdown actions. The team noted that EBLs were verified under this procedure for equipment and areas needed to achieve and maintain the plant in cold shutdown. This verification was above the minimum requirements for only achieving hot shutdown. EBLs were adjusted where necessary to provide maximum illumination. Almost all EBLs had alignment markings applied for ease of future verification of proper EBL orientation. Exceptions to those EBLs marked included EBL units located in areas of high clearance that require ladders to adjust and could not be disturbed easily.

Review of licensee actions to resolve fire protection and Appendix R lighting issues included a telephone conversation held between NYPA and the NRC on December 21, 1994. During this conversation, NYPA provided their position on the use of existing security lighting in lieu of installing additional exterior 8-hour emergency lighting needed during certain Appendix R scenarios. These scenarios included operator actions to read level indication for the condensate and refueling water storage tanks, cleaning of backup service water strainers, and manually backflushing main service water strainers. The team verified that ACTS numbers and tasks had been assigned for tracking and future resolution of these issues. On March 15, 1995, the licensee formally submitted an exemption request to utilize yard area lighting in lieu of 8-hour battery-powered lights in outside areas. The Office of Nuclear Reactor Regulation issued the exemption request on March 29, 1995.

Conclusion

The team concluded that the blackout testing performed properly verified EBL aiming and illumination levels required by Appendix R to ensure necessary actions can be performed. Additionally, EBLs needed to achieve and maintain cold shutdown were also verified through performance of the blackout test. Corrective actions taken by the licensee to resolve previously identified lighting deficiencies were adequate. The team determined that actions taken by NYPA appropriately resolved NRC emergency lighting concerns associated with Violation 50-286/91-09-03 and Unresolved Item 50-286/93-04-07. Additional discussion associated with these inspection items is made in report Section 2.1.20. Based on the above review, these inspection items and PIP 177.1 Task 18 (RCIP Task #14) are closed.

2.2.2 PIP 177.1 Task 19 (RCIP Task #15); Development of Modification for Additional Emergency Lights in Turbine and Administration Buildings

Overview

The purpose of this task was to resolve emergency light deficiencies identified in LER 93-007. This LER was initiated to address two specific access pathways that were found not to have 8-hour EBLs installed. These pathways were within the turbine and administration buildings. Specifically, one pathway was for senior reactor operator (SRO) egress to the primary auxiliary building needed during evacuation of the central control room during an Appendix R scenario, and the other pathway was for shift supervisor egress from the turbine building 53-foot elevation to the 15-foot level via the turbine building middle stairway. This route was required for access to alternate safe shutdown equipment located on the 15-foot level of the turbine building.

Details

Corrective actions initiated by NYPA in response to this identification included development and implementation of minor modification 93-3-253EML, Revision 0, "Emergency Battery Light Coverages in the Turbine and Administration Building." In addition, the licensee created a fire protection system engineer position at Indian Point 3, responsible for monitoring and assessing fire protection and Appendix R compliance issues, and semi-annual maintenance Procedure ELC-018-GEN, Revision 4, "Inspection, Replacement and Semi-Annual Operability Testing of Appendix R Lighting Units," for periodic verification of EBL adequacy. Furthermore, the adequacy of EBL aiming and illumination was verified by the team during performance of ENG-533, as discussed in report Section 2.2.1.

Conclusion

Based on NYPA's actions to install the 8-hour EBLs and establish measures to verify, inspect, and maintain EBLs, the team concluded that the concerns associated with this task had been adequately resolved. Also, the team verified the acceptance of these EBLs during performance of ENG-533. Based on this review, PIP 177.1 Task 19 (RCIP Task No. 15) is closed.

2.3 PIP 177.1 Tasks 7 AND 8 (RCIP Tasks #3 & 4); Fire Wrap/Penetration Related Issues (Unresolved Items 50-286/93-08-07 & 50-286/93-24-06)

Overview

The stated purpose of PIP Item 177.1 Task 7 and the associated Unresolved Item 50-286/93-24-06 was to walkdown the HEMYC wrap installed throughout the plant and credited for 10 CFR 50, Appendix R, compliance to: (1) define the purpose of the wrap; (2) detail improvements and changes needed; and (3) revise the identified procedures for the repair and surveillance of the HEMYC wrap. The purpose of Task 8 was to walk down the marinite board currently installed inside containment and credited for 10 CFR 50, Appendix R, compliance to: (1) define the board placement and purpose; (2) detail improvements and changes

needed; and (3) identify and revise the procedures for the repair and surveillance of the Appendix R-credited marinite board. Additionally, the team reviewed Unresolved Item 50-286/93-08-07, pertaining to the adequacy of NYPA's surveillance program to identify seal penetration deficiencies.

2.3.1 Fire Barrier Inside Containment

Details

During this inspection, the team reviewed engineering procedure ENG-534, dated August 31, 1993, "Fire Barrier Wrap and Radiant Shields Inspections." This procedure established the definitions and functional integrity of fire barrier wraps and radiant energy shields used to establish compliance with the requirements 10 CFR Part 50, Appendix R. The functional integrity of fire barrier wraps and radiant energy shield materials including HEMYC wrap was defined in this procedure to demonstrate the ability to perform its intended function. The licensee has used HEMYC wrap and marinite board inside containment to separate redundant safe shutdown cabling and equipment. Marinite board was an acceptable material for use as per the guidance provided in GL 86-10, as a radiant energy shield inside containment.

The team determined that the specific application of HEMYC wrap inside containment provided an acceptable level of protection against the anticipated hazards of a localized fire. Therefore, the use of HEMYC wrap was determined to be an acceptable radiant energy heat shield for the specific installed applications observed by the team.

The team visually inspected several radiant energy heat shields, installed by the licensee, containing HEMYC wrap and marinite board inside containment. The team did not observe any unacceptable conditions. The licensee also has established installation/repair and surveillance procedures for HEMYC wrap and marinite board. The team reviewed these procedures and did not identify any discrepancies in these procedures.

With respect to marinite boards, the team also investigated a concern regarding missing and damaged marinite boards that were identified following the 1989 outage. The boards in question were mostly installed to satisfy FSAR cable separation requirements, while others were installed to satisfy 10 CFR 50, Appendix R requirements. The NYPA management team, in place at that time, made a decision only to replace some of the boards at that time. A safety evaluation to support this decision was apparently not completed. Based on this inspection and previous NRC and NYPA inspections of the issue in 1991, the remaining missing and damaged boards were verified to have been replaced. The team understands that NYPA is currently in the process of determining how much, if any, of the missing or damaged boards were Appendix R-related.

Based on the team's review of the above procedure, walkdown of selected penetration seals, and review of LERs 93-18 and 93-41 performed and documented in Inspection Report 94-09, Unresolved Item 50-286/93-08-07 is closed.

Conclusions

The team concluded that the licensee has adequately addressed Unresolved Item 50-286/93-08-07.

2.3.2 Fire Barrier Wrap Outside Containment

Overview

Appendix R to 10 CFR Part 50, Sections III.G.2.a, b, and c specify fire protection methods to separate redundant safe shutdown equipment and associated nonsafety-related circuits. Section III.G.2.c allows enclosure of cable and equipment and associated nonsafety-related circuits of one redundant train in a fire barrier qualified to a 1-hour fire rating when fire detectors and an automatic suppression system has been installed. Outside containment, the licensee used HEMYC wrap to meet these 1-hour separation requirements at Indian Point 3 Nuclear Station. During the 50-286/93-24 inspection, the team identified Unresolved Item 50-286/93-24-06, concerning the use of fire barrier HEMYC wrap outside containment, based on the lack of acceptable American Society for Testing of Materials (ASTM) E-119 1-hour fire tests representative of the installed plant configuration.

Details

During this inspection, the licensee provided the team with engineering evaluations of the two fire tests to support the design and installation of HEMYC fire barrier wrap for compliance with Appendix R, 1-hour separation criteria (III.G.2.c). The team reviewed the engineering evaluation for the use of HEMYC wrap in various areas of the plant outside of containment. The differences between the tested and plant configurations were judged by NYPA to have no safety significance within this evaluation. Further, the licensee has provided automatic fire detection systems, which provide area-wide coverage and an automatic suppression and detection system covering all of the cables located in trays throughout the area. The team did not identify any concerns regarding this evaluation.

Conclusions

Based on this evaluation, the team concluded that the unresolved item was closed. However, the use of all fire barrier wrapping materials are being evaluated on a generic basis for its acceptance by the NRR staff. Therefore, the staff will follow-up on the use of this material, following NRR's completed review, during a future inspection if necessary.

2.3.3 Conclusion - PIP 177.1 Tasks 7 and 8; Fire Wrap/Penetration Related Issues

The team concluded that the licensee has adequately addressed PIP 177.1 Tasks 7 and 8, and Unresolved Items 50-286/93-08-07 and 50-286/93-24-06. Therefore, these issues are closed.

2.4 Reactor Coolant Pump Oil Collection System

Overview

The team reviewed the adequacy of the design, installation, and maintenance of the oil collection system (OCS) for each of the four reactor coolant pumps (RCPs) for compliance with Section III.O to Appendix R of 10 CFR 50. This assessment included walkdowns of the installed OCS and review of the as-built drawings, design change documentation for system installation, seismic analysis, and license conditions related to the OCS.

Details

Appendix R to 10 CFR Part 50 requires such collection systems to be capable of collecting lube oil from all potential pressurized and unpressurized leak sites in the RCP lube oil systems. Leakage shall be collected and drained to a vented closed container that can hold the entire lube oil inventory. A flame arrester is required in the vent if the flash point characteristics of the oil presents the hazard of fire flashback. Leakage points to be protected shall include lift pump and piping, overflow lines, lube oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and lube oil reservoirs where such features exist on the RCPs. The drain line shall be large enough to accommodate the largest potential oil leak.

2.4.1 Modifications

In a letter, dated March 6, 1979, the NRC issued Amendment No. 24 to the IP3 operating license. Section 3.1.12 of the Safety Evaluation Report, accompanying the license amendment, documented the requirements for the OCS. The original RCP OCS design included drip pans, enclosures, and associated piping and supports to prevent the possibility of oil making contact with the RCP components and piping and igniting. This design was purchased from Westinghouse and installed under Modification No. 80-3-083. Under the configuration and design controls in place at the time, the only documents provided for the system were the fabrication and installation drawings for the enclosures and drip pans. No drawings of the piping or piping supports were provided. The OCS is QA Category M (important to safety), but is not safety-related. It has been established to prevent an oil fire inside containment.

In a letter, dated November 16, 1981, NYPA stated that there was reasonable assurance that the OCS would remain functional during and after a safe shutdown earthquake. This assessment was based on visual examination of the system. A reanalysis of the seismic qualification of the OCS piping and associated supports was provided to the NRC in a letter, dated August 13, 1984. The results of this analysis substantiated the prior

conclusion that the OCS would not fail during a design basis event (DBE). However, NYPA stated their intentions to further enhance the seismic capability of the OCS. Seismic Calculation No. IP3-CALC-RCS-01252, Revision 0, "RCP Oil Collection Pipe Support Retrofitting," was completed for the enhancement modification to piping above elevation 65 feet, and documented the adequacy of the seismicity for the system. Based on the results of this calculation, the modification was not implemented. Based on review of the above documentation substantiating the seismic capability of the OCS, the team concluded that the design and installation of the system was acceptable to perform its intended safety function during a DBE.

The team reviewed design change DC-94-3-293, Revision 0, "RCP Oil Collection System Enclosure and Drip Pans," to evaluate the quality of the change to resolve the identified deficiencies. During this review, the team identified an engineering change notice (ECN) that did not have an engineering evaluation to support the change. ECN No. 94-3-293-001 authorized the use of a 3M epoxy gasket sealant in lieu of the originally required material, Loctite, presented on the Westinghouse installation drawings. This ECN failed to contain or reference any technical evaluation to support the product substitution. The team reviewed the procurement data for the 3M epoxy and found this epoxy to be described for uses as a pneumatic or door seal. No product data sheets were available to compare the characteristics of each epoxy. The team identified, through further discussions with engineering, that this epoxy was used for facilitating construction of the new OCS enclosures and not for use as a leak-tight sealant.

The team reviewed another ECN to DC-94-3-293 for a substitution of fastener types used to make up the joints of the drip pans and enclosures. This change was found to be supported by a technical justification/engineering evaluation. However, the team identified that other deficiencies related to ECNs have been identified. Particularly, Deviation and Event Report (DER) 94-1126, initiated from the FitzPatrick site approximately two months earlier, presented deficiencies with ECNs, including the failure to attain required reviews, incorrect drawing and ECN numbers, and missing documentation. This issue was discussed with various organizations at IP3 and it was determined that there was no means in place to ensure that information for NYPA common processes for IP3 and Fitzpatrick is shared.

The team reviewed Modification Control Manual (MCM), Procedures No. 9, Revision 5, "Engineering Change Notice," and No. 7, Revision 0, "Parts and Material Substitutions." Based on this review, the team observed that material substitutions are not prohibited from being performed under the ECN process. In addition, the team expressed concern that neither the technical evaluation nor detailed guidance provided in MCM Procedure No. 7, was presented or referenced in MCM No. 9. Based on this observation and the identification of deficiencies related to ECNs, the team considered the use of ECNs and the extent of ECNs implemented without adequate justification or evaluation, to be an unresolved issue. This issue remains unresolved pending NRC further review of the IP3 ECNs and the ECN process. The team determined that this issue was not related to start-up operations and would be reviewed during a future NRC inspection. (Unresolved Item 50-286/95-81-01)

2.4.2 Walkdowns

The team walked down each of the four RCP OCSs subsequent to the system certification, completed on November 7, 1994, and system engineer walkdowns as presented in procedure TSP-043, Revision 1. The system certification documented that the reactor coolant system, of which OCS is a part, was in acceptable working condition and available to the Operations Department. The certification also stated that additional work was required to be completed prior to declaring the system operable. The system engineer walkdown procedure presented the attributes that should be typically reviewed when conducting a walkdown. Material condition attributes listed included reference to leaking components and addressed the identification of evidence of debris in electrical enclosures. The team performed a walkdown to evaluate the installation of the OCS and to verify compliance with Appendix R.

The oil collection system for each RCP included a series of collection pans that were strategically placed to collect oil at postulated leakage points, which drained into 2-inch stainless steel piping to one of four 275-gallon collection tanks. Each collection tank had a flame arrestor located on top of the tank. The RCP motors are vertical, six-pole, squirrel cage induction motors equipped with upper and lower radial bearings and a two-way thrust bearing. The oil capacities are 175 gallons for the upper oil pot and 25 gallons for the lower. The flash point of the oil was 400°F. The upper lube oil system was considered the most significant risk for the leakage of the lube oil from the RCP motors. However, the oil lift system for the upper lube oil was found to be fully enclosed in a metal shroud designed to collect oil leakage. An ionization detector capable of detecting fire in its incipient stage was found to be located above each RCP. In addition, operators monitor RCP parameters, including oil level and thrust bearing temperatures, as indicators of pump performance. These parameters have associated annunciators located in the central control room.

The team's initial walkdown of the OCS was conducted on January 31, 1995. The team identified several discrepancies that indicated that the system did not meet the design details. These deficiencies included missing bolts, gaps in OCS enclosures, misalignment of drip pans for oil collection, leaking oil, and debris found inside the high pressure oil left pump enclosure for RCP No. 31.

The licensee initiated DER 95-0183 to address the debris found and addressed the other deficiencies by expanding the work scope of open maintenance work packages. The team verified that these open work packages and the system certification did not previously address these deficiencies. (Work Request Nos. 93-10003-00, 93-00164-08, 91-32391-08, and 93-10005-00 for each of the respective RCPs Nos. 11, 12, 13, & 14.)

Following the initial walkdown, NYPA performed corrective maintenance and closed out the repair work packages. The team performed another OCS walkdown and identified additional deficiencies. Enclosures required to be leaktight and designed to collect oil from flanges located between the RCP and upper lube oil cooler were found to have gasket material missing and gaps where some enclosures were fitted together. The licensee initiated another DER, No. 95-0283, to correct these deficiencies. The team noted that, during

Inspection 50-286/93-24, it was also observed that appropriate maintenance procedures needed to be developed for the OCS. NRC Inspection Report 50-286/93-24 also stated that licensee representatives recognized this observation and agreed to review these issues and take corrective actions, as appropriate. The team did not identify any licensee actions to address the appropriateness of maintenance procedures. However, the licensee implemented immediate corrective actions to restore the OCS to the required leak-tight design. The team concluded that the OCS for each RCP was adequately restored to fulfill Appendix R requirements. Subsequently, DER 95-0283 was closed.

The team questioned whether compliance with Appendix R had been met or maintained, considering the identified deficiencies. The licensee initiated DER No. 95-0311 to address this concern. On February 17, 1995, NYPA personnel held a critique meeting to obtain background information to address the poor material condition of the OCS and resolve DER 95-0311. The licensee determined that the root cause for the missing bolts and sealant (gasket) was the disassembly and reassembly of the OCS each time maintenance was performed on the RCP motors. In addition, the Westinghouse design drawings for the drip pans and enclosures, depicting the OCS above elevation 65 feet, were not found in the drawing system, and therefore, were not available to the maintenance department for their use in reassembling the system. In an internal letter, dated February 27, 1995, from A. Ettlinger to J. Perrotta, NYPA resolved DER 95-0311, and concluded that while the OCS did deviate from the original design, and that some of these deviations may have adversely affected its operation, the system remained and is in compliance with Appendix R. Corrective actions and associated ACTS numbers presented in this letter included the following:

- As-built drawings are being developed for all enclosures and drip pans (ACTS No. 6808);
- Maintenance procedure for disassembly/assembly of each RCP motor will be upgraded to include a formal checklist for the OCS reassembly (ACTS No. 6812); and
- A quality control inspection will be performed in lieu of a functional test of the OCS and will be included in the maintenance procedure (ACTS No. 6812).

During the inspection, the team made two additional observations. First, the team noted that a fibrous thermal barrier cloth insulation was installed in the immediate areas surrounding the RCPs. As discussed in NRC Information Notice (IN) 94-58, concerns have been identified by the NRC following a fire at Haddam Neck in 1994 regarding conditions that existed at Haddam Neck where oil that had been dispelled from the RCP, due to high velocity air currents from the RCP self cooling air and containment fans, was absorbed by the pipe insulation present in the vicinity of the RCPs. The licensee stated that ACTS Item 4178 had been issued to implement future field inspections during the next refueling outage per either a special procedure or in plant surveillance

3PT-CS-25, Revision 3, "RCP Oil Collection Tank" to verify the effectiveness of the OCS and subsequently, disposition IN 94-58. The team concluded that the licensee's assigned ACTS items to perform future field inspections of the RCPs and to evaluate the adequacy of the OCS and any oil spray patterns was appropriate.

The final observation made by the team involved the addition of oil to the RCP. The team determined that no process existed for notifying the system engineer of the quantities of oil being added by the lubrication department or operations. Therefore, trending of pump performance and amounts of oil being added cannot be adequately monitored. The licensee has assigned ACTS No. 6819 to address this issue.

The team reviewed the last two completed surveillances for determining the level in each of the four RCP oil collection tanks. Surveillance Procedure 3PT-CS-25, Revision 2, data taken on September 8, 1994, and December 9, 1994, demonstrated that the volume of oil present in each of the tanks would not affect the capability to collect the entire lube oil inventory from any RCP.

Conclusion

Based on this review of the OCS design and installation, the team concluded that the OCS was adequate to meet the requirements of 10 CFR Part 50, Section III.O. However, the team determined that management attention was needed to ensure concerns identified during this review are properly addressed. Further evaluations by the licensee were also needed to ensure the adequacy of the installed configuration for collecting oil dispelled by each RCP as described in IN 94-58. A future NRC inspection of the use and justification for supporting ECNs will be performed to address Unresolved Item 95-81-01.

2.5 Appendix R EDG

The team reviewed NYPA's response to Corrective Action Request (CAR) 828 pertaining to the adequacy of Appendix R EDG-related protective relay setpoints, and to a concern pertaining to recent reverse power trips of the Appendix R EDG due to operator error.

2.5.1 CAR 828

Overview

CAR 828 was initiated on May 23, 1993; it pertained to the adequacy of the Appendix R EDG-related protective relays. The CAR indicated that the protective relay setpoints have not been evaluated since 1985. Since that time, various modifications were implemented that could have changed the EDG loading and the required relay setpoints.

Details

NYPA performed Evaluation IP3-RPT-ED-00922, "Appendix R Diesel Generator System Evaluation," Revision 0. This evaluation included the following studies:

- Equipment Loading Analysis;
- System Voltage Drop Analysis;
- Breaker Fault Current Rating Analysis; and
- Equipment Protection and Device coordination Analysis.

Two coordination issues were identified through this evaluation; however, the impact of these issues was reviewed by the licensee and determined not to detrimentally affect the safe shutdown analysis. NYPA did initiate design document open items (DDOIs) to track the identification of these issues for possible future resolution. Additionally, future evaluations of the Appendix R EDG were planned by NYPA to enhance the protective device calibration and testing procedures, and to evaluate actual system performance. These evaluations were being tracked through ACTS Item 3669.

The team reviewed portions of Evaluation Report Number IP3-RPT-ED-00922, Revision 0. The purpose of this evaluation report was to perform a detailed system analysis calculation and evaluations to establish a sound design basis for sizing of the Appendix R diesel generator, its auxiliaries, and the associated distribution network, including the 480V MCC 312A safe shutdown equipment and protective relay setpoints. The team walked down selected components, compared the nameplate data to that used in the supporting calculations, and identified no concerns. Additionally, the team reviewed NYPA's safe shutdown determination pertaining to the coordination issues and found it to be appropriate.

The team also discussed with NYPA the root cause and corrective actions performed to ensure Appendix R-related documents are evaluated and updated during future changes to the plant. The corrective actions included the change to the electrical calculation change form, which requires the update of applicable documents associated with Appendix R EDG and associated setpoints during the modification process.

Conclusion

The team considered NYPA's action to address CAR 828 appropriate, and had no further questions regarding this issue.

2.5.2 Reverse Power Trips of the Appendix R EDG due to Operator Error

Overview

On August 23, 1993, during the performance of the Operations Department Performance Test 3PT-Q65, "Appendix R Diesel Generator Functional Test," the governor and voltage regulator switches were operated in the wrong direction, causing the generator to trip on reverse power. This incident was described in NRC Inspection Report 50-286/93-16.

Details

As documented in Inspection Report 50-286/93-16, the August 23, 1993, reverse power trip of the Appendix R EDG was the second similar trip within one year. The first trip occurred on April 23, 1993, during the performance of the test. NYPA initiated a root cause evaluation of the recurring trips and determined the cause to be the operating orientation of the two switches. Typically, the handles for these type switches are turned clockwise to raise speed or voltage. However, on the Appendix R EDG, the operator must turn the handles counter-clockwise to raise the speed or voltage. Even though the switches were appropriately labeled and the procedures provided cautions to the operation of these switches, operator errors related to these switches continued to occur. To address this concern, NYPA rewired the governor and voltage regulator switches for the Appendix R EDG to be consistent with standard industry practice. Also, the operators were informed of the switch rewiring through an Operation Shift Order, the switches were relabeled to indicate the proper configuration, and procedure cautions were removed.

The team reviewed portions of Type 1 Change 94-3-267 ARDG, "Appendix R EDG Governor & Voltage Control Switch Reversal," Revision 0, and found it appropriate. In addition, the team verified that the labels and procedures were properly updated. Discussion with the Appendix R EDG system engineer indicated that there were no subsequent testing concerns after the changes to the switches in question.

Conclusion

The team considered NYPA's actions appropriate to address the concern pertaining to the recent reverse power trips of the Appendix R EDG, due to operator error.

2.6 Fire Protection System Certification

Overview

To ensure systems were ready to exit cold shutdown conditions, IP3 systems engineers were required to perform walkdowns of their systems, and also verify the completion of open work items, or determine the acceptability to defer the work item until a later time.

Details

The team reviewed several NYPA memorandums associated with the system certification of the following systems:

- Appendix R EDG;
- Fire Protection System; and
- Emergency Battery Lighting.

The team found these memorandums identified the open work items associated with the system and provided a basis for items deferred. These memorandums were provided to all departments with the major communications between Operations Department and Technical Services. The team verified selected information from these memorandums and discussed with the licensee the controls in place to ensure all open work items required for restart would be completed and tested as needed. The team reviewed selected tests performed on various fire protection/Appendix R equipment and found them to be appropriate. The team also performed walkdowns of various fire protection/Appendix R systems and identified no concerns, with the exceptions of those in the RCP OCS described in Section 2.4.2 of this report.

Conclusion

The team concluded that the system certifications of fire protection and Appendix R-related systems provided an adequate level of assurance that the systems will be acceptable for restart.

2.7 Management Oversight

The team assessed the management oversight pertaining to the IP3 Fire Protection and Appendix R programs. The team based their assessment on discussions with various NYPA management and staff and the review of related documents. The team considered the following three areas as positive efforts:

1) The development of the Fire Protection/Appendix R Task Force. This task force was assigned the responsibility to evaluate the related open items, both NRC and NYPA-identified issues, and addressed them as needed. This task force provided concentrated resources, including the use of contracted industry specialists to act as an oversight committee to ensure adequate technical resolve for both the fire protection and Appendix R issues. Several of the NYPA-identified issues were provided to the NRC in Letter IPN-94-115, dated September 9, 1994. As documented in this letter, the resolution of issues would be complete prior to start-up. Since this letter, a number of additional potential concerns were identified by NYPA. Several of these issues and potential concerns were evaluated by the team as described in the previous sections of this report. The team also discussed the methodology used to address these issues and potential concerns with members of the task

force. The team was confident that the issues were being addressed properly. At the close of this inspection, five issues were still in the process of being resolved, but NYPA intended to complete the resolution prior to start-up.

However, NYPA is still in the process of evaluating the cumulative impact of the issues (see their 4-hour event notification of March 20, 1995). This notification requires the completion of a LER, in which NYPA intends to include the evaluation of the cumulative impact of the issues. Since the team verified the appropriate completion of the resolution to several of the issues, and the team had confidence in NYPA to appropriately address these issues and potential concerns, the NRC will evaluate the cumulative impact of these issues after the completion of the LER. This is not a restart issue.

2) The development of the Fire Protection and Safety General Supervisor position in October 1994 provided experienced supervision for the fire protection system engineer, fire protection supervisor, and the fire protection technicians. This was considered a good initiative, providing needed planning, scheduling, and additional management oversight to the fire protection program.

3) The addition of personnel with fire protection and Appendix R responsibilities to site engineering staff.

The team also noted ACTS Item 6292, requiring the development of a fire protection self-assessment program, and an implementation plan to train the staff, to be a good initiative.

2.8 Conclusion - Fire Protection/Appendix R Restart Issues

Based on the above described review, the team considered NYPA's actions appropriate to close RAP Item II.3 pertaining to fire protection and Appendix R programs, with the compensatory fire watches for the penetration seals in place until the completion of their evaluation of the cable ignition temperatures associated with Unresolved Item 50-286/93-24-03. NYPA's commitment to maintain these fire watches was confirmed during a May 10, 1995, telephone conversation between Mr. W. Ruland of Region I, and Mr. L. Hill, Indian Point 3 Resident Manager. Additionally, during this conversation, Mr. Ruland confirmed NYPA's commitment to complete all Fire Protection/Appendix R-related startup labeled ACTS items and work requests prior to plant restart.

Overall, the team considered NYPA's efforts to improve and gain control of the Fire Protection/Appendix R Programs to be effective. The majority of work items reviewed were found to be extensive and well thought-out. The team did identify a few discrepancies; however, these discrepancies did not detract from the overall good performance.

3.0 OUTSTANDING EDSFI-RELATED ISSUES (92903)

The two remaining EDSFI-related issues, Unresolved Item 50-286/91-80-10 pertaining to the EDG transient loading, and Unresolved Item 50-286/93-18-02 pertaining to EDG kW meters and associated tolerances, were reviewed. The RAP Item II.19 is associated with the outstanding EDSFI issues.

3.1 (Update) EDG Transient Loading (Unresolved Item 50-286/91-80-10)

Overview

During the EDSFI, the inspectors identified three potential concerns pertaining to the EDG transient loading capabilities. These potential concerns included: (1) the load sequencer timer tolerance acceptance criteria; (2) the recording of the EDG critical parameters; and (3) the capability of the EDGs to accelerate and load the required safety-related equipment during an accident condition.

Subsequent to the EDSFI, this issue was updated in Inspection Report 50-286/94-25, and subtasks (1) and (2) described above were reviewed and determined acceptable. Additionally, in Inspection Report 50-286.94-25, the inspector reviewed an IP3 EDG transient loading study (PTI Report IR7-93); however, the validation of the model was not complete at this time.

Details

During this inspection, the team reviewed the results of NYPA's work related to the EDG transient loading capabilities, including the following documents:

- Report No. 9780.01, "Evaluation of the Emergency Diesel Generator Limits for Their Transient Performance Capability to Ensure Safe Operation of Indian Point 3," Revision 1;
- Calculation No. IP3-CALC-480V-01412, "Evaluation of Motor Starting on Emergency Diesel Generator," Revision 0;
- NSE IP3-NSE-94-3-387, "480V Emergency Diesel Generator Units Transient Loading Capability to Start, Accelerate, and Support Safeguard Loads Sequenced During a LOCA Condition Coincident with Loss of Offsite Power," Revision 0; and
- NYPA Memorandum IP-DEE-95-58, "SI Blackout Test; Emergency Diesel Generator Transient Performance," dated March 24, 1995.

Report No. 9780.01 was completed after PTI Report No. R7-93, and incorporated the results of individual motor starting, with the exception of the containment spray pump and generator excitation system field test. In addition to the manufacturer supplied data initially used, the use of field test data allowed for the validation of the generator and the motor models. However, the diesel model still required validation. The validation of the diesel model will be described later in this section. Report No. 9780.01 contained the results of the computer simulation for all the safety-related

EDGs transient loading capabilities for various scenarios. The EDGs frequency remained above 95% rated frequency and 75% rated voltage at the motor terminal with few exceptions. The exceptions identified were determined to be acceptable in Calculation No. IP3-CALC-480V-01412; the team determined this calculation used appropriate assumptions and standard industry methodology. Additionally, the team found no concerns with the results that the identified equipment was still capable of starting with reduced voltages at the motor terminals.

The results of Report 9780.01 and Calculation IP3-CALC-480V-01412 were documented in NSE IP3-NSE-94-3-387. This NSE also documented that the overall model verification, including that of the diesels, will be performed based on the results of the safety injection (SI) Blackout Test. Correlation of discrete points between the SI-blackout test and a computer simulation of a similar scenario within $\pm$3% of predicted voltage, and $\pm$2% of predicted frequency would be considered acceptable for confirmation of the accuracy of the worst-case scenario. Subsequently, NYPA will complete a simulation utilizing the final model and document the result in a NSE to be issued within 60 days after the completion of the SI Blackout Test, as tracked by ACTS Item 1943. This upcoming simulation is to include a field test of the containment spray pump (CSP) and SI pump motors. The CSP motor field test data was needed because no earlier testing was performed, and the SI pump motor was being retested to verify that recent work on the SI pump did not alter the motor model.

The SI Blackout Test was performed on March 12, 1995; this test was observed by the resident inspector and documented in Inspection Report 50-286/95-02. The team discussed the results of this test with the licensee and reviewed Memorandum IP-DEE-95-58. As documented in the memorandum, the comparison between the SI Blackout Test results and the computer simulation indicated only two deviations from the acceptance criteria identified in the NSE. In both deviations, the test values showed better performance than the simulation and, therefore, NYPA considered these results acceptable. This memorandum also identified the following two observations as a result of the SI Blackout Tests:

1. Three auto sequencer timer actuations during the SI Blackout Test were outside their "as left" tolerances. Containment recirculation fan (CRF) 34 and residual heat removal pump (RHRP) 32 timers were marginally outside the allowable zone; however, auxiliary feeder water pump (AFWP) 31 was significantly outside the allowable tolerance.

2. The EDG output voltages under steady-state conditions were lower than 480V, indicating that the voltage regulator setpoints were below 480V. EDGs 31, 32, and 33 were found to be 470V, 475V, and 472V, respectively. These EDG voltages, lower than 480V, will be considered in the final evaluation of the "worst-case" diesel loading for the final safety evaluation.

The team discussed these two observations with NYPA, and the team was informed that the timers found out of specification were replaced and calibrated. With respect to the EDG voltage, NYPA has reviewed the methodology for setting the voltage regulator, which is performed monthly as part of the surveillance program, and will be accomplished at least once for each EDG between the time of the SBO test and restart of the plant. Additionally, NYPA is evaluating the feasibility of making enhancements to the methodology used in the setting of the voltage regulators.

Conclusion

Based on the above review, the team considered NYPA's EDG transient loading demonstrated a reasonable assurance that the final validation of the model and the evaluation results will be acceptable. Therefore, this issue is acceptable for restart. However, associated Unresolved Item, 50-286/91-80-10, will remain open until the completion of the final validation of the model and the software and evaluations of the worst-case scenario; it should include provisions for tolerances of the sequencer timers and the voltage regulators and the accuracy assumptions determined for the simulation. The team considered NYPA's effort pertaining to the EDG transient loading, completed to date, to be extensive. Additionally, their retesting of the SI pump motor, to verify that the recent work on the pump did not impact the motor model, was considered an example of a good questioning attitude.

3.2 (Closed) EDG kW Meter Tolerances (Unresolved Item 50-286/93-18-02)

Overview

Unresolved Item 50-286/93-18-02 pertained to the potential for the load management program to overload the EDG because the meter and associated circuitry tolerances were not considered.

Details

To address this issue, NYPA performed the following:

- Modified the electrical distribution system to minimize the loading of safety-related 480V buses;
- Revised the emergency operations procedures (EOPs) so that loading in accordance with the EOPs does not overload the EDGs; and
- Installed more accurate EDG kW meters and transducers.

The team reviewed NSE-94-3-380-ED, "Emergency Operating Procedures Revision Impact to Safeguards Bus Loading," Revision 1. The purpose of this NSE was to evaluate the impact of the latest revision to the EOPs and to ensure that they would not result in the 480V safeguard switchgear exceeding their design margin for load carry capacity.

Additionally, the impact of the EOP revision was evaluated to ensure they would not result in exceeding the EDG continuous rating of 1750 kW for more than 2 hours, or the maximum peak rating of 1950 kW. To verify the information provided in this NSE, the team reviewed selected portions of the following documents:

- Indian Point 3 Emergency Operating Procedures;
- Calculation IP3-CALC-ED-207, "480V Bus 2A, 3A, 5A, & 6A, and EDGS 31, 32 & 33 Accident Loading," Revision 4; and
- Calculation IP3-CALC-ED-01427, "Control Room EDG kW Meter Calibration and Loop Accuracy Limits," Revision 0.

The team found the calculations to be thorough, using standard industry methodology. NYPA also initiated ACTS items 6357 and 6598, associated with the recently installed kW meters. ACTS Item 6357 will track the development of a procedure to perform loop calibration on the control room EDG kW meters and transducers. ACTS Item 6598 will evaluate the operating performance of the new meter after installation to ensure the calibration frequency is adequate.

The team had discussions with both the engineering and operations staff. These discussions indicated that during the revision to the EOPs, the two departments worked together to ensure the procedures would not allow for overloading the EDGs without the use of load management. Additionally, the available loading margin for each EDG was greater than the EDG meter and loop tolerances. This should prevent the kW meters from indicating greater than the allowable kW due to inaccuracies, which would require operator action to needlessly reduce EDG loading during an accident.

Conclusion

The team determined NYPA's effort to address Unresolved Item 50-286/93-18-02 to be thorough. The team also considered the work between the operations and engineering staff to coordinate the EOPs and the loading calculation, to be an example of good interdepartment communications. Therefore, Unresolved Item 50-286/93-18-02 is closed.

3.3 Conclusion - Outstanding EDSFI Issues

Based on the team's review of Unresolved Items 50-286/91-80-10 and 50-286/93-18-02, RAP Item II.19 is closed.

4.0 INFORMATION NOTICE 93-33 (92903)

Overview

The team examined NYPA's review of NRC Information Notice (IN) 93-33, "Potential Deficiency of Certain Class 1E Instrumentation and Control Cables."

Details

IN 93-33 alerted all licensees to a potential deficiency in the environmental qualification (EQ) of certain Class 1E instrumentation and controls (I&C) cables. Specifically, the IN identified that Sandia National Laboratories (SNL), under contract to the NRC, conducted tests on cables to determine the long-term aging degradation behavior of typical I&C cables, and to determine the potential for using condition monitoring for assessing residual life.

The team examined NYPA's review of IN 93-33 as documented in their memorandum IP-TC-S-93-306 to file, dated May 14, 1993. NYPA's review was extended to all cables installed at IP3, and determined that the subject of the IN was applicable to some of the cables at IP3. NYPA concluded that the cables described in IN 93-33 were subjected to EQ testing which exceeded the required environmental parameters for IP3. The ability of the installed cables to withstand the IP3 harsh environment conditions has been demonstrated by test and was documented in the environmental qualification documentation packages for the specific cables. The team verified that the environmental qualification parameters for IP3 were less severe than the SNL test conditions. Additionally, NYPA re-evaluated IN 93-33 as part of their NRC IN pre-startup sample review program with no identified concerns.

Conclusion

The team concluded that the potential EQ concerns raised in IN 93-33 were not applicable to the installed EQ I&C cables at the IP3 facility. The team found the evaluation by the IP3 staff pertaining to this issue to be comprehensive.

5.0 MANAGEMENT MEETINGS

During the conduct of the inspection, the team met with the licensee representatives on February 10 and 17, 1995, to inform the licensee management of the scope and the findings of the inspection up to that date. Additionally, the team leader met with the licensee representative on March 24, 1995, to inform NYPA management of the remainder of the inspection findings. Subsequent to March 24, 1995, a number of telephone conversations were held between the NRC and members of NYPA's staff to discuss various topics, particularly, the concern associated with cable ignition temperatures, as described in Section 2.1.6 of this report, concluding with a telephone conversation with the Resident Manager on May 9, 1995. During this May 9, 1995, telephone conversation, NYPA's commitments to maintain fire watches, for seal penetrations until the completion of their to verify the generic information used in the Fire Seal Protection/Appendix R-related startup labeled ACTS items and work requests prior to plant startup. The licensee acknowledged the findings and did not indicate that any proprietary material was included within the scope of the inspection.

Attachment: Persons Contacted

ATTACHMENT 1

PERSONS CONTACTED

New York Power Authority

	*	M. Badorini	Sr. Staff Engineer
		A. Bartlik	Senior Fire Protection Engineer
	*	F. Bioise	Fire Protection Engineering Manager
#		W. Cahill, Jr.	Chief Nuclear Officer
		R. Casalaina	Electrical Engineer
#	*	J. Comiotes	General Manager
	*	+ V. Coulehan	General Supervisor
#	*	+ J. DeRoy	General Manager, Maintenance
#	*	+ T. Dougherty	Vice President, Nuclear Engineering
#	*	+ J. Dube	Fire Protection and Fire Safety Manager
#		N. Eggemeyer	Operations Manager
#	*	+ A. Ettlinger	Director, Nuclear Engineering
#	*	C. Faison	Director, Nuclear Licensing
#		R. Finger	Acting Quality Assurance Manager
	*	J. Gagliardo	Consultant
		M. Garofalo	Sr. Quality Assurance Engineer
		T. Guarnieri	Diesel System Engineer
	*	C. Hays	Technical Manager
		J. Higgins	Systems Engineer
#	*	L. Hill	Resident Manager
	*	N. Houborgon	Maintenance Manager
		R. Johnston	Information Notice Review Group Project Manager (General Physics)
		J. Kaczor	System Engineer
#	*	+ J. Kaucher	Director, Design Engineering
#	*	J. Kelly	Vice President, Regulatory Affairs
#		T. Klein	Manager of Electrical and I&C Engineering
	*	+ R. Lauricella	Fire Protection Systems Engineer
		+ J. Odendahl	Instrument and Controls Manager
#	*	N. Papaije	Sr. Quality Assurance Engineer
		K. Parkinson	Fire Protection Oversight Committee Member (Sonalyists Inc.)
		F. Pellizzari	Systems Engineer
	*	+ P. Peloquin	Quality Assurance Manager
#	*	K. Peters	Licensing Manager
		J. Raffaele	Electrical Engineer
		C. Reiniger	Operations Engineer
	*	L. Retier	Fire Protection Manager
		A. Russo	Electrical Engineer
	*	T. Storey	Fire Protection Oversight Committee Member (SAIC)
	*	+ S. Van Buren	Fire Protection Supervisor
		D. Vinchkoski	Sr. Operations Engineer
	*	+ S. Wilkie	Fire Protection Engineer
#		J. Zach	General Manager, Operations

U.S. Nuclear Regulatory Commission

	*	N. Conicella	Project Manager
		C. Cowgill	Chief, Projects Branch No. 1
#	* +	T. Frye	Resident Inspector
	*	R. Rasmussen	Resident Inspector
	*	W. Ruland	Chief, Electrical Section

* Denotes those in attendance at the February 10, 1995, meeting.

\+ Denotes those in attendance at the February 17, 1995, meeting.

\# Denotes those in attendance at the March 24, 1995, meeting.