U.S. NUCLEAR REGULATORY COMMISSION REGION I

Report No. <u>50-24//89-01</u>	
Docket No. <u>50-247</u>	
License No. DPR-26 Priority Category C	
Licensee: <u>Consolidated Edison Company of New York, Inc.</u> Broadway and Bleakley Avenue Buchanan, New York 10511	
Facility Name: <u>Indian Point Unit 2 - Nuclear Power Plant</u>	
Inspection At: <u>Buchanan, New York</u>	
Inspection Conducted: January 3-6, 1989	
Inspectors: $\frac{C Q}{R. J. Paolino, Sr. Reactor Engineer - EB/DRS} \frac{2/13/8}{date}$	
Clater A. Della Greca 2/13/89 A. Della Greca, Reactor Engineer - EB/DRS date	
Approved by: C. J. Anderson, Chief, Plant System Section date EB/DRS	>0

Inspection Summary: Inspection on January 3-6, 1989 (Inspection Report No. 50-247/89-01)

Areas Inspected: Unannounced inspection to determine the status of outstanding open items in Equipment Qualification (EQ).

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Results: The NRC inspectors reviewed twenty-six EQ related open items. All items were determined to be in compliance with NRC requirements and were technically closed.

DETAILS

1.0 Persons Contacted

1.1 Consolidated Edison Company of New York, Inc.

A. Adinolfi, Manager Project and Planning

S. Bram, Vice President - Nuclear Power

*E. Corini, Chief Plant Engineer

J. Curry, Chief Plant Engineer

G. Dahl, Engineer - Regulatory Affairs

J. Del Percio, Manager - Regulatory Affairs

R. Eifler, Supervising Engineer

J. Ellwanger, Principal Engineer

*E. Everett, Assoicate Engineer

*W. Grassie, Acting Manager Support Services G. Hinricks, Systems Engineer

*F. Inzirillo, Operations Training Manager

L. Kawula, I&C Engineer

B. Marguglio, Manager - NPQA

*M. Miele, General Manager - Technical Services

- B. Nichols, GMS Maintenance
- F. Phillips, QAD Supervisor

*N. Prezion, Maintenance Supervisor

S. Quinn, General Manager - Operations

M. Selman, Senior Vice President

T. Walsh, Manager Nuclear Training

T. Wong, Electrical Engineer

1.2 Ebasco Services, Inc.

G. Hofer, Principal Engineer

1.3 U.S. Nuclear Regulatory Commission

N. Blumberg, Chief, Operational Program Section - DRS

P. Kelley, Resident Inspector

G. Napuda, Senior Reactor Engineer

W. Olivera, Reactor Engineer

L. Rossback, Senior Resident Inspector

*Denotes personnel not present at exit meeting of January 6, 1989.

2.0 Introduction

The following items were previously identified either by the licensee or the NRC and recorded as violations or unresolved items in NRC inspection reports. Corrective actions taken by the licensee to comply with NRC requirements are noted in the following paragraphs.

2.1 Status of Previously Identified Items

- <u>(Closed) Violation No. 86-05-01</u> relating to the discovery of Westinghouse 12-point terminal blocks in Instrument Rack 19 without a protective cover inside the reactor containment. The Westinghouse blocks were replaced with qualified Buchanan blocks and protective enclosures were installed, according to the Licensee's Maintenance Work Request No. 25297, dated January 31, 1986. An operability review was performed by the licensee and it was determined that the Westinghouse blocks would have performed their intended function. Actions taken by the licensee to prevent a recurrence of this deficiency include training of craft personnel, tagging of the EQ equipment and revision of the applicable procedure. This item is closed.
- (Closed) Unresolved Item No. 86-09-01 relative to a missing RTV seal on steam flow transmitters FT-439A/B and FT-449A/B. The licensee replaced the missing RTV seal and performed an analysis of the potential consequences of the missing seal. The analysis showed that, for a steam line break inside the containment, the high steam generator differential pressure would have initiated a safety injection. This item is closed.
- (Closed) Unresolved Item No. 86-09-02 regarding the apparent lack of control of the ambient temperature in the Pipe Penetration Area following a high energy line break. During the original document review, the inspector found the applicable area temperature switches were not on the EQ Master List and that no procedures existed to instruct the Control Room Operator on the actions required following a high temperature alarm. Corrective actions taken by the licensee include revision of the EQ Master List to add the area temperature switches and the development of a procedure for operator actions in the event of a high temperature alarm. In addition, the licensee performed an accident analysis of the area in question and updated the EQ Program Plan, accordingly. This item is closed.
- (Closed) Unresolved Item No. 86-11-01 pertaining to the apparent lack of qualification of the Lewis Engineering Company's silicone rubber insulated cable, in that the licensee had failed to specify appropriate functional requirements and to adequately evaluate the test data. Subsequent qualification testing by the licensee (SE Report No. P803-09-3, dated November 1986) demonstrated that the cable is qualified for the intended application. This item is closed.

- (Closed) Violation No. 86-11-02 relating to the omission of various cables and RTV sealant from the EQ Master List. The licensee acknowledged the omission and revised the IP-2 EQ Master List (Rev. 3) to include the omitted items. Additional licensee's corrective actions include a memorandum, dated August 1, 1986, which provides specific clarification regarding Okonite cable and the preparation of IP-2 Procedure for Maintenance and Control of EQ Master List and Document File, which defines the methodology for updating the EQ Master List. This item is closed.
- (Open) Violation No. 86-11-03 relative to the apparent lack of qualification of the Westinghouse RHR Pump Motor. This item was contested by the licensee in its letter to the NRC, dated December 2, 1988. Documents supporting the licensee's position were provided. Based on these documents, it was determined that sufficient data were available to technically establish qualification. The technical aspects of this issue are resolved. Resolution of the enforcement issue will be provided in future correspondence.
- (Closed) Violation No. 86-11-04 pertaining to the apparent failure by the licensee to establish appropriate functional performance criteria for its safety-related cables. Subsequent to the inspection, the licensee provided a test report prepared by Wyle Laboratories showing that the minimum cable insulation resistance is well above the specified requirement. In addition, the licensee performed an analysis to evaluate the effects of maximum leakage current of the terminal blocks combined with the lowest IR values measured, also compensating for cable length. The documentation furnished by the licensee was determined to be acceptable. This item is closed.
- (Closed) Violation No. 86-11-05 concerning improperly installed electrical conduit seals and an improperly secured solenoid valve housing cover plate. The installation method used by the licensee rendered the seals ineffective and the qualification of the associated solenoid and limit switches questionable. The licensee undertook an inspection program to tighten the housing cover plates and condulet connectors and to ensure that proper sealing had been performed. In addition, the licensee revised the applicable procedure to assure that the EQ activities receive the proper attention. Other corrective actions taken by the licensee include tagging of EQ equipment, training of craft dealing with EQ equipment and enhancement of QA requirements to identify deficiencies. This item is closed.

- (<u>Closed</u>) Unresolved Item No. 86-11-06 regarding the apparent lack of qualification of the Limitorque's internal wiring and inadequate implementation of corrective actions subsequent to Information Notice IN 83-72. The licensee, in response to the qualification concerns discussed in IN 83-72, evaluated the Limitorque operators at IP-2 and performed the corrective actions which were believed necessary at the time of the evaluation. Upon issuance of Information Notice IN 86-03 the licensee performed an additional evaluation of the Limitorque operators and immediately replaced all internal wiring which was not readily identifiable. The required corrective actions were completed in early March, 1986, during the plant shutdown. This item is closed.
- <u>(Closed)</u> Unresolved Item No. 86-11-07 pertaining to the apparent use of unqualified Amerlink wiring connected to the limit switch of safety-related MOV No. HCV-640. The licensee's evaluation and analysis showed the wiring to be non-safety-related and properly segregated from the safety-related wiring. This item is closed.
- (Closed) Unresolved Item No. 86-11-11 relative to the identification of improperly installed Raychem splices in conjunction with safety related Limitorque operators. The splices in question were found to use heat shrinkable tubing type WCSF-N over braided jacketing material. The licensee's analysis showed that the practice, although not in conformance with the manufacturer's tested conditions, is acceptable for this specific application since tests performed by Limitorque indicate that moisture intrusion does not affect the performance of the motor operator. To prevent further recurrence of the problem the licensee revised the applicable portion of Procedure EI-6009, emphasizing the need for removal of the braiding from the cable prior to the application of the Raychem splice. This item is closed.
- <u>(Closed) Unresolved Item No. 86-11-12</u> pertaining to the minimum required thickness of qualified RTV sealant to be used in conjunction with conduit seals. This item is the result of conflicting requirements between the installation procedure $(\frac{1}{4}")$ and the qualification documentation $(\frac{1}{2}")$. The licensee's evaluation demonstrates that, in spite of the discrepancy, it would be physically difficult to apply RTV sealant of only $\frac{1}{4}"$ thickness. Nonetheless, the licensee revised its Modification Procedure No. EGP-84-15743-07 as well as the applicable drawings to show the requirement for a minimum RTV sealant thickness of $\frac{1}{2}"$. This item is closed.

(Closed) Unresolved Item No. 86-11-14 relative to deficiencies found in the EQ files for the Westinghouse Model 5224 terminal blocks. The deficiencies resulted from information contained in the SCEW sheet which could not be found in the EQ files. In particular, the qualified life of the terminal blocks and radiation qualification requirements appeared to have no supporting documentation in the EQ files. With regard to the qualified life, the licensee revised the document evaluation form to specifically refer to the applicable Report No. P803-01-08, Rev. 1. With regard to the radiation concern, the licensee added to Report No. 7161-180E, in the files, three pages which were missing and apparently misplaced during the handling of the file. This item is closed.

(Closed) Unresolved Item No. 86-12-05 pertaining to the licensee's discovery of 15 junction boxes and associated terminal blocks not included in the licensee's qualification program. A field walkdown further confirmed that six of the identified junction boxes had not been properly qualified. The licensee attributed the oversight to the fact that the junction boxes had been listed in the Remarks section of the terminal box list. The licensee took immediate corrective action by replacing the potentially unqualified terminal blocks. This item is closed.

(Closed) Violation No. 87-23-01 regarding the incorrect installation of the Raychem splices associated with PT-922, 923, and 927 over cable braiding. The licensee's analysis determined that the particular splices were not in a steam environment and would be subjected only to radiation harsh conditions. They were determined to be qualified for the intended application. The licensee, nonetheless, revised the applicable section of splice Procedure EI-6009 to emphasize the need for removal of braiding from the cable prior to the application of the splices. This item is closed.

- (Closed) Violation No. 87-23-02 relative to the selective use of IR values for qualifying cable splices. The licensee acknowledged the error resulting from the use of low IR values and recalculated the applicable instrument loop setpoints, allowing for additional error in the loop analysis. The applicable IP-2 Emergency Operating Procedures were accordingly revised. This item is closed.
- (Closed) Violation No. 87-23-03 concerning the use of apparently unqualified cables in the auxiliary feedwater pump room. The licensee identified these cables to be Amerlink type. Samples were obtained and sent to Wyle Laboratories for qualification testing. The cables were found to be qualified and appropriate documentation completed. This item is closed.

- <u>(Closed)</u> Unresolved Item No. 87-23-04 pertaining to the qualification of electrical junction boxes and terminal blocks EWH-9 and EWI-1. The licensee replaced the terminal blocks with qualified Buchanan blocks and modified the junction box by adding the required $\frac{1}{4}$ " weep hole. The corrective actions were verified by the NRC inspector to be complete. This item is closed.
- (Closed) Violation No. 87-37-03 concerning the apparent lack of environmental qualification of wide range resistance temperature detectors, in that the installation did not meet the manufacturer's requirement for a vapor tight connection. The licensee achieved full compliance by December 31, 1987 by replacing all terminal lead wires and terminal blocks with qualified splices in sealed condulets. In addition, the Engineering Procedure and the EQ file were revised to require a detailed review of design requirements. This item is closed.
- <u>(Closed)</u> Unresolved Item No. 87-38-01 regarding the licensee's failure to demonstrate qualification of Crouse-Hinds containment penetration instrument cable splices. To rectify this deficiency, the licensee modified all Crouse-Hinds instrument cable splices by covering them with Raychem NJRS tubing. The modification was tested and environmentally qualified by Wyle Laboratories. This item is closed.
- (Closed) Unresolved Item No. 87-38-02 relative to the licensee's identification of 30 Crouse-Hinds control cable splices which did not meet the installation requirements in that the seal length was shorter than the one tested and were, hence, unqualified. The licensee corrected the deficiency by replacing the splices with qualified Raychem type WCSF-N heat shrinkable tubing. Concurrently, the licensee elected to replace, without investigation, all Crouse-Hinds power cable splices with the same type of Raychem tubing. The applicable qualification documents were reviewed by the inspector and found acceptable. This item is closed.
- (Closed) Violation No. 87-38-03 pertaining to the licensee's identification of several UE&C instrumentation and control cable splices whose length did not meet the qualification requirements. To remedy the deficiencies, the licensee added a qualified Raychem type NJRS sleeve to all of the UE&C instrument cable splices. For the UE&C control cable splices the licensee installed Raychem type NJRS sleeves with RTV sealant. This configuration is qualified as per the documentation included by the licensee in its EQ file. In addition to the above, the licensee opted to replace all UE&C power cable splices with environmentally qualified Raychem type WCSF-N heat shrinkable tubing. This item is closed.

- (Closed) Unresolved Item No. 87-38-04 relating to the licensee use of 39 black tape splices in conjunction with 13 safety-related motors. The qualification of these splices was unknown in that no test report existed in the licensee's files to support qualification. The deficiency was corrected by replacing the splices with qualified Raychem type WCSF-N heat shrinkable tubing. This item is closed.
- (Closed) Violation No. 87-38-05 regarding the use of unqualified Weidmuller terminal blocks in conjunction with 8 safety-related resistance temperature detectors. Although the blocks had been tested for a LOCA environment, no insulation resistance readings had been taken during the test. Therefore, the capability of the terminal blocks to perform their function under accident environmental conditions could not be proven. The licensee replaced the Weidmuller terminal blocks in question with qualified Buchanan blocks. This item is closed.
- (Closed) Violation No. 87-38-06 pertaining to the discovery of several junction boxes with conduit penetrations which did not use RTV sealant according to the licensee's applicable procedure. The licensee justified the practice explaining that, in the particular application, the sealant's function was not that of preventing moisture intrusion. Instead, the procedure's requirement was intended to provide the crafts with good workmanship practices. The licensee revised Maintenance Procedure MP-16.77 and Engineering Specification EI-6009 to clarify the type of openings requiring RTV sealant. The item is closed.
 - (Closed) Violation No. 87-38-07 relating to the licensee's identification of several Raychem splices inside containment which did not meet the manufacturer's minimum seal length requirements for effective splice sealing. The licensee replaced or repaired the deficient splices and revised the applicable installation procedures to reflect the qualified splice configuration. In addition, the licensee conducted a training program for the craft to highlight the proper splice installation requirements. This item is closed.

3.0 Exit Meeting

The inspector met with licensee representatives (denoted details, paragraph 1.0) at the conclusion of the inspection on January 6, 1989. The inspector summarized the scope of the inspection and the inspection findings. At no time during this inspection was written material given to the licensee or his representatives.