IE:I Form 12
(Jan 75) (Rev)

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-320/76-14 Docket No: 50-320

Licensee: Metropolitan Edison Company License No: CPPR-66

Box 542 Priority: --

Reading, Pennsylvania 19603 Category: B

Safeguards Group: --

Location: Middletown, Pennsylvania (TMI-2)

Type of Licensee: PWR 2772 MW_{Th} (B&W)

Type of Inspection: Routine, unannounced

Dates of Inspection: September 14-17, 1976

Dates of Previous Inspection: September 8-9, 1976

Reporting Inspector: A. N. Fasano 9/27/76
A. N. Fasano, Reactor Inspector DATE

Accompanying Inspectors: R. D. Hunt Jr 9/27/76
H. L. Canter, Reactor Inspector, (Part time) DATE

W. G. Colen Jr 9/27/76
T. A. Rebelowski, Reactor Inspector DATE

DATE

Other Accompanying Personnel: None

DATE

Reviewed By: A B Davis 9/28/76
A. B. Davis, Section Chief, Reactor Projects DATE
Section No. 1

75-192

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SUMMARY OF FINDINGS

Enforcement Action

None.

Other Significant Findings

A. Current

1. Acceptable Items

These are areas which were inspected on a sampling basis and findings did not involve an Item of Noncompliance, Deviation or Unresolved Item (except as noted):

a. Preventive Maintenance, Detail 3a.
b. Plant Maintenance (Corrective), Detail 3b.
c. Overload Protection, Nuclear Safety Related Motor Operated Valves, Detail 4.
d. Test Procedure Verification, Detail 6.
e. Test Procedure Review, Detail 8.

2. Unresolved Items

These are items for which more information is required to determine whether the items are acceptable or Items of Noncompliance:

76-14-1: Implementation Points, Detail 3b.

76-14-2: Vibration Assessment Program, Detail 5.

B. Status of Previously Unresolved Items (Detail 7)

The following items have been resolved:

76-05-1
76-05-2
76-05-3
76-07-2

C. Status of Previously Reported Enforcement Items

Not inspected.

Management Interview

An exit management interview was held on site on September 17, 1976. Persons in attendance were:

Mr. R. F. Fenti, GPU
Mr. J. Hilbish, Met-Ed
Mr. L. Levin, GPU
Mr. G. P. Miller, Met-Ed
Mr. M. A. Nelson, GPU
Mr. D. Shovlin, Met-Ed
Mr. R. J. Toole, GPU
Mr. N. A. Williams, Met-Ed
Mr. A. N. Fasano, USNRC
Mr. T. A. Rebelowski, USNRC

Items Discussed

A. Preventative Maintenance, Detail 3a.
B. Corrective Maintenance, Detail 3b.
C. Overload Protection, Nuclear Safety Related Motor Operated Valves, Detail 4.
D. Vibration Assessment Program, Detail 5.
E. Test Procedure Verification, Detail 6.
F. Status of Previously Unresolved Items, Detail 7.
G. Test Procedure Review, Detail 8.

DETAILS

1. Persons Contacted

Mr. J. Barton, Start Up and Testing Manager, GPU
Mr. W. Desh, Shift Foreman, Met-Ed
Mr. R. F. Fenti, QA Auditor, GPU
Mr. J. Hilbish, Reactor Engineer, Met-Ed
Mr. S. Kakarla, QC Supervisor, UE&C Start Up
Mr. S. Levin, Unit 2 Project Engineer, GPU
Mr. G. Miller, Unit 2 Superintendent, Met-Ed
Mr. M. Nelson, Technical Engineer, GPU
Mr. D. Rhyne, Group Leader Mechanical Engineer, UE&C
Mr. J. Romanski, Health Physics & Chemistry Supervisor, Met-Ed
Mr. J. Schmidt, QC Engineer
Mr. D. Shovlin, Maintenance Supervisor, Met-Ed
Mr. M. Stromberg, Senior Site QA Auditor, GPU
Mr. R. J. Toole, Test Superintendent, GPU
Miss L. Weir, Nuclear Engineer, Met-Ed
Mr. N. A. Williams, Procedure Engineer, Met-Ed
Mr. M. J. Wright, Site Quality Assurance Manager

2. Purpose and Scope of Inspection

This inspection was primarily directed toward the preoperational test program phase of construction. In addition a review of preventative and corrective maintenance administrative controls that address pre-turnover, turnover and operations was conducted. Also, the vibration assessment program and previously identified unresolved items were inspected. The inspection included a tour of the Refueling Building, Control Room, Reactor Cavity and Steam Generator areas. A check on tags in use by GPU, and Met-Ed was conducted during the tour.

3. Maintenance Program

a. Preventative Maintenance

The preventive maintenance administrative controls were reviewed to verify that equipment protection during and following preoperational testing had been established including:

-- Periodic surveillance.
-- Protection from environmental extremes.
-- Implementation of periodic maintenance.
-- Maintenance of cleanliness.
-- Retention of records.

The following procedures were reviewed on a sampling basis and this review verifies that administrative controls exist and include the above elements:

-- GCP-4-2, "Field Change to Construction Procedure - Unit No. 2," March 10, 1976 (with respect to Preventive Maintenance.)
-- SP-4, "Preventive Maintenance, TMI-Unit #2," August 16, 1976.
-- TP250/2, "Testing and Checking Mechanical and Electrical Equipment," January 30, 1975.
-- Unit No. 2, Preventive Maintenance M-82, "Maintenance of Idle Equipment."
-- Preventive Maintenance Procedure E-42, "Generic Electrical."
-- Preventive Maintenance Procedure E-30, "Stored Equipment Check."
-- QC-11-2 Rev. 2 - "Cleaning and Cleanliness Controls."
-- TP-250/4, "General Procedure for Cleaning and Flushing Systems and Components."
-- FS-II-2, "Specification - Site Cleaning and Cleanliness Control."
-- QC 3-2, "Storage Control."
-- QC23-2, "Use of Clean Rooms and Clean Areas."
-- QC27-2, "General Specification of Foreign Material Entry and Control of Tools."
-- Station Administrative Procedure 1020 "Cleanliness Requirements."
-- Three Mile Island Nuclear Station Administrative Procedure 1016, "Implementation of Control of Station Maintenance and Maintenance and Modifications."

The inspector also reviewed the computerized method that is in use for the retention of preventative maintenance schedules. This method is adopted when the equipment is turned over to the licensee (MET-Ed.).

Based on the review of the above listed procedures the inspector has verified that preventive maintenance is performed on equipment from receipt and storage to the operational phase. Controls exist over periodic surveillance, protection from environmental extremes and cleanliness. Records show that preventive maintenance has been implemented and is continued regardless of ownership of the equipment.

The inspector had no further questions on this item at this time.

b. Plant Maintenance (Corrective Maintenance)

The maintenance administrative controls were reviewed to verify that the Licensee and his representatives have a managerial system to assure that:

-- Plant maintenance is performed in accordance with administrative controls.
-- Methods are established to approve and schedule maintenance.
-- Methods are established for the control of parts receipt and storage.
-- Controls are established for use of qualified personnel.

Also, the review included a sampling of procedures to assure that:

-- There is a basis for determining when maintenance procedures will be provided.
-- Methods are available for preparing, reviewing and approving maintenance procedures.
-- Methods are available to assure use of approved procedures.
-- Inspection of Maintenance work is performed and testing is performed following maintenance.
-- Controls are available for measurement equipment.

The following procedures were reviewed on a sampling basis to verify appropriate coverage of these areas:

-- Administrative Procedure 1016, "Implementation and Control of Station Maintenance and Modifications."
-- "Stores Procedure #5."
-- GP4005, "Review of Procurement Documents," Rev. 1, August 13, 1975.
-- Job Classification
-- Administrative Procedure 1022, "Control of Measuring and Test Equipment."

Corrective maintenance during the preoperational phase on turn over to the licensee is performed under the above procedures. Where specific procedures are required for a specific maintenance effort, the maintenance supervisor determines the need for detailed approved procedures. The licensee has the option to turn back equipment to construction for maintenance.

Based on the review of the above procedures and discussions with the licensee there are procedures in use that provide for control over corrective maintenance methods during the preoperational phase.

The inspector has one concern with Administrative Procedure 1016, paragraph 2.1 concerning Implementation Points. This paragraph states that the preventive maintenance program and operational surveillance program are to be implemented at the beginning of commercial operation. This appears to be inconsistant with implementation currently in practice. This item, 76-14-1, is unresolved pending review and evaluation by the licensee and a subsequent review by the inspector.

4. Overload Protection of Nuclear Safety Related Motor Operated Valves

The inspector reviewed the licensee's action to size the Engineered Safeguards motor operated valve overloads to a value of approximately 300% of full load current during the valve operating cycles.

The licensee has documented the full load currents, based on operational data obtained from Unit 1 testing and engineering data on fractional horsepower motor service factor multipliers.

The electrical drawings reviewed under the classification of Nuclear Safety Related MCC Buses, indicated that the licensee has required a 300% overload protection for his safety related valves.

The inspector requested the licensee to determine if the criteria outlined in Regulatory Guide 1.106, Regulatory Position C2 was used to determine conservative sizing.

The licensee stated that this information would be available to the inspector at a subsequent inspection. The inspector has no further questions on this item at this time.

5. Vibration Assessment Program

Reference: (1) FSAR Supplement 2 41.7/14.1.1
(2) FSAR Supplement 2 11.6/3.9

a. Vibration Program

The licensee has stated in references (1) and (2) that his intention is to perform an applicable initial test program in conformance with regulatory position D.2 of Regulatory Guide 1.20. (Safety Guide 20), December, 1971.

The interpretation made by the licensee is that the pre hot-functional inspection of vessel internals as described in Regulatory Guide 1.20, Rev. 1 under Non-Prototype, Category 1, paragraph 2.3, is not required. Additional review of this licensee position by the inspector is necessary. This item (76-14-02) is unresolved pending discussion and final decision as to the interpretation of Regulatory Guide 1.20 (Safety Guide 20), December, 1971 with NRR.

b. Procedure 86 - "Installation of Reactor Vessel Internals"

The licensee's NSS has completed the assembly of the vessel components under Field Construction Procedure Number 86. This procedure has been approved and results accepted by the licensee.

The inspector reviewed the documentation of results of reactor component assembly. Items included in Procedure No. 86 include material certification, welder qualification, fit up readings on internal guide blocks and dimensional inspections of outer seal gap between the core support shield and the reactor vessel.

The licensee has not installed the eight internal vent valves which is to be completed prior to hot functional testing. The inspector has no furthur questions on this procedure at this time.

6. Test Procedure Verification*

The inspector verified that the licensee has the following procedures written, reviewed and approved, and that the test objectives are consistent with the test titles:

* See NRC:I Inspection Reports 50-320/76-03, Detail 12 and 76-07, Detail 3.

TP(1)	MTX(2)	TITLE	APPROVAL DATE(3)
151/1	133.5	Rx. Bldg. Isolation Valve Leak Test	7-1-76
151/2	133.6	Rx. Bldg. Penetrations Leak Test	6-23-76
160/3	135.6	Rx. Bldg. Emerg. Cooling Functional	6-3-76
160/6	138.4	Rx. Bldg. Purge Supply & Exhaust Functional	6-17-76
176/2	52.4	D/G Bldg. Ventilation Functional	5-13-76
200/1	147.3	Rx. Internals Vent Valve Insp. Test	7-1-76
204/3	141.6	Rx. Bldg. Spray System Functional	6-3-76
305/1B	151.3	RPS Preoperational Calib.	6-17-76
600/6	126.7	RCDT&Electromatic Relief Valve Op. Test	6-17-76
250/1	Generic	General Hydro. Tests	
250/2	Generic	Mechanical & Electrical Equip. Tests	
250/4	Generic	Flushes & Cleaning of Systems & Components	

(1) Test Procedure Number (Category A Tests)
(2) Master Text Index Number
(3) TWG (Test Working Group) Preliminary Review Meeting Minutes Date

7. Status of Previously Unresolved Items

a. 76-07-2: TI 250/2, Generic: Testing and Checking of Mechanical and Electrical Equipment, was changed in TCN-5 to TI 250/2 to define "Instrumentation" as "Instruments used for interlocks, alarms, and normal plant records, but not instruments used as indicators only."

This item is resolved.

b. 76-07-5: Attachment II to a letter dated February 26, 1976, R. C. Arnold, Vice President of Met Ed to the Director of NRR addresses the analysis of the effect of submerged valves (Post LOCA.) All anomolies have been explained, but WDL-V6 is still in place.

This item remains unresolved, pending the removal of the valve.

c. 76-05-1 (March 18-19, 1976)
The inspector verified that the licensee reviewed Chapter 17.3 to the FSAR and that, in addition to the specific inconsistencies mentioned in NRC:I Report 50-320/76-05 (March 18-19, 1976), other inconsistencies found between the FSAR

Chapter 17.3 and the QA Plan were apparently resolved by Amendment 41 to the FSAR (June 8, 1976) and Revisions 4 and 5 (March 1976 and July 1976 respectively) to the Metropolitan Edison Company Quality Assurance Plan for Startup and Test.

This item is resolved.

d. 76-05-2 (March 18-19, 1976)
Page 27 of the QAP for Startup and Test now addresses qualifications and training of QA/QC personnel. Revision 4 to the plan accomplished this change. This item is resolved.

e. 76-05-3 (March 18-19, 1976)
The inspector reviewed QAP-7-18-02 which was issued on June 1, 1976 and became effective on June 1, 1976.

Implementation of this procedure was verified by review of the Record of Lead Auditor Qualificaton Forms (QA-739) for the GPUSC Quality Assurance Auditors at TMI 2.

These findings resolve item 76-05-03.

8. Test Procedure Review

The inspector performed a preoperational test procedure review of TP 20[illegible]3, Reactor Building Spray System Functional Test (MTX141.6). The procedure received approval on June 3, 1976 at TWG meeting number 37. The inspector noted no discrepancies in his review. The licensee informed the inspector that design modifications are planned on this system and that revisions to TP204/3 are contemplated. The inspector stated that revisions to TP204/3 may be reviewed when appropriate.

The inspector had no further comments on this item.