

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I

RO Inspection Report No: 50-289/74-02

Docket No: 50-289

Licensee: Metropolitan Edison Company

License No: CPPR-40

Three Mile Island Unit 1

Priority: -

Category: B-1

Location: Middletown, Pennsylvania

Type of Licensee: PWR, 871 MWe (B&W)

Type of Inspection: Routine, Announced

Dates of Inspection: January 28-February 1, 1974

Dates of Previous Inspection: January 10, 1974

Reporting Inspector: *ABD Davis*
for R. L. Spessard, Reactor Inspector

2/26/74
Date

Accompanying Inspectors: _____

_____ Date

_____ Date

_____ Date

_____ Date

Other Accompanying Personnel: *ABD Davis*
A. B. Davis, Senior Reactor Inspector
(January 31 and February 1 only)

2/28/74
Date

Reviewed By: *ABD Davis*
A. B. Davis, Senior Reactor Inspector, Reactor
Operations Branch

2/28/74
Date

1486 221

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SUMMARY OF FINDINGS

Enforcement Action

A. Violations

None identified

B. Safety Items

None identified

Licensee Action on Previously Identified Enforcement Items

Not inspected

Unusual Occurrences

A. Failure of Makeup Pump MU-P1B. (Details, Paragraph 10)

B. Inadvertent Actuation of the Pressurizer Electromatic Relief Valve. (Details, Paragraph 11)

Other Significant Findings

A. Current

1. Failure of the Static Auto Transfer Switch Associated with the 1A Inverter during Preoperational Testing (RO Inspection Report No. 50-289/73-27) - Licensee's investigation revealed that this switch was not designed to transfer automatically when aligned to regulated a-c power source and this power source is lost. By design if this condition occurs, manual transfer is required. The design of this switch has been verified by testing, i.e., automatic transfer of load from the inverter to the regulated a-c power source on simulated failure of the inverter and manual transfer of load from the regulated a-c power source to the inverter. This item is closed.
2. Hot function testing (Phases I-IV) has been completed. As a result of problems experienced during Phase III (532°F, 2155 psig testing) which included a Reactor Coolant Pump Seal (No. 1) failure and Main Condenser tube failures, many of the tests included under Phases III and IV were not performed due to an early shutdown to perform corrective maintenance. These tests

were rescheduled. At the time of this inspection the maintenance outage had been completed and Phase V (Second RCS Heatup to 532°F, 2155 psig) was in progress. Testing during this period was observed by the inspector. (Details, Paragraph 2.f)

3. All preoperational test procedures have been approved for performance with 3 exceptions. (Details, Paragraph 2.a)
4. Several previously identified preoperational test procedure deficiencies have been resolved. (Details, Paragraph 2.d)
5. 49% of the initial startup test procedures have been preliminary and/or final approved. (Details, Paragraph 3.a)
6. The licensee has established a program for performing plant emergency procedures during the testing program. (Details, Paragraph 4)
7. The licensee has established a program for verification and/or performance of surveillance test procedures during the testing program. (Details, Paragraph 5)
8. The licensee's Operational Quality Assurance group has identified deficiencies relative to drawing control practiced by Met Ed, and corrective actions are in progress. (Details, Paragraph 8)

B. Status of Previously Reported Unresolved Items

1. Test program for primary coolant leak detection and measurement systems (RO Inspection Reports No. 50-289/72-17, 73-01 and 73-06) - Item is resolved based on further review of the licensee's testing program. (Details, Paragraph 2.c)
2. Part-length rod effectiveness test at 75% power (RO Inspection Report No. 50-289/73-22) - Item is resolved based on inclusion of this test in the licensee's initial startup testing program. (Details, Paragraph 3.b(2))

Management Interview

An exit interview was conducted on February 1, 1974 at the conclusion of the inspection. Items discussed and personnel in attendance were as follows:

1486 223

Licensee Representatives

J. Herbein, Station Superintendent, Met Ed
W. Potts, QC Supervisor, Met Ed
G. Miller, Test Superintendent, GPUSC
S. Levin, Unit 1 Project Engineer, GPUSC
W. Shepherd, Unit 2 Project Engineer, GPUSC
M. Stromberg, Site Auditor, GPUSC
G. Roshy, QA Specialist, GPUSC

RO:I Representatives

L. Spessard
B. Davis

A. Preoperational Test Procedures

Inspection findings relative to the review of preoperational test procedure and testing status, preoperational test procedures, previously reported test procedure deficiencies, preoperational test results and performance of preoperational tests were discussed. (Details, Paragraph 2)

Additionally, the inspector asked the representatives what type of access would be provided for valves DH-V38A and B (Decay Heat Pump Discharge Manual Operated Cross Connect Valves) and when would this be completed. A licensee representative indicated that these valves would be equipped with remote manual operators and that installation would be completed prior to initial criticality. The inspector indicated that he had no further questions on this matter at this time.

With respect to GPU startup's program for reviewing instrument calibration for inclusion of static head correction, as appropriate, on a generic basis during hot functional and initial startup testing, as committed to the inspector during this RO inspection, the inspector asked the licensee representatives to more fully describe their program with an emphasis on providing reasonable assurance that safety related instruments were properly calibrated prior to fuel loading. A licensee representative stated that instrumentation in the Primary System, Secondary Plant (supplied by B&W), and Engineered Safeguards Systems would be reviewed to determine if static head corrections needed to be included in individual calibration procedures, and that this would be completed prior to fuel loading. GPU startup's program, as previously described, is to be applied to the remaining systems. The inspector indicated that he had no further questions on this matter at this time. (Details, Paragraph 2.f(1))

B. Initial Startup Testing Program

Inspection findings relative to the review of initial startup test procedure status and initial startup tests were discussed. (Details, Paragraph 3)

C. Emergency Procedures

Inspection findings relative to this subject were discussed. (Details, Paragraph 4)

D. Surveillance Testing Program

Inspection findings relative to this subject were discussed. (Details, Paragraph 5)

E. STE Log Book

Inspection findings relative to this subject were discussed. (Details, Paragraph 6)

F. TWG Meeting Minutes

Inspection findings relative to this subject were discussed. (Details, Paragraph 7)

G. Drawing Control

Inspection findings relative to this subject were discussed. (Details, Paragraph 8)

H. Malfunction of Diesel Generators

Inspection findings relative to this subject were discussed, and the licensee's commitment to provide RO:I with the results of their evaluation when completed was acknowledged. (Details, Paragraph 9)

I. Failure of Makeup Pump MU-PlB

Inspection findings relative to this subject were discussed. A licensee representative stated that a great deal of experience had been gained as a result of this occurrence, and that corrective actions to prevent recurrence would be completed by February 28, 1974. A report describing the details of this occurrence and the corrective actions taken is to be submitted pursuant to 10 CFR 50.55(e). (Details, Paragraph 10)

1486 225

J. Inadvertent Actuation of the Pressurizer Electromatic Relief Valve

Inspection findings relative to this subject were discussed. (Details, Paragraph 11)

K. Tour of TMI Unit No. 1

Inspection findings relative to this subject were discussed. (Details, Paragraph 12)

Additionally, the inspector asked the representatives if the scheduled fuel load date of March 13, 1974 (obtained from Met Ed) had slipped, and if so when would the date in the Regulatory Operations Status Summary Report (Yellow Book) be updated. A licensee representative stated that GPU's official fuel load date, as indicated in the Yellow Book, was March 1974, that this date had not slipped, and that this date was expected to be met. He further indicated that if it becomes apparent that the date has slipped, then the Yellow Book date will be revised by GPU.

The inspector asked the representatives when construction forces would be out of the Reactor Building and the Auxiliary Building. A licensee representative stated that construction forces would be out of the Reactor Building by February 17, 1974 and out of the Auxiliary Building by late March 1974.

The inspector informed the licensee representatives that RO:I expected TMI Unit No. 1 to meet or exceed the housekeeping standards set forth in Regulatory Guide 1.39, Housekeeping Requirements for Water-Cooled Nuclear Power Plants. The licensee representatives acknowledged the inspector's statement.

1486 226

DETAILS

1. Persons Contacted

Metropolitan Edison Company

J. Herbein, Station Superintendent
J. Floyd, Supervisor of Operations
J. O'Hanlon, Nuclear Engineer
E. Bulmer, Lead Mechanical Engineer
B. Getty, Mechanical Engineer
W. Poyck, Plant Engineer
W. Potts, QC Supervisor
J. Wallace, Shift Supervisor
M. Ross, Shift Supervisor
J. Chwastyk, Shift Supervisor
R. Porter, Shift Supervisor

General Public Utilities Service Corporation

J. Barton, Startup and Test Manager
G. Miller, Test Superintendent
R. Toole, Assistant Test Superintendent
M. Nelson, Technical Engineer
W. Behrle, HFT and PET Program Coordinator
T. Faulkner, Senior Test Planner
S. Poje, Shift Test Engineer
I. Porter, Shift Test Engineer
T. Hawkins, Shift Test Engineer
C. Gatto, Shift Test Engineer

2. Preoperational Test Procedures

a. Status of Test Procedure Preparation, Review, and Approval

Based on a review of records and discussions with cognizant licensee representatives, the inspector determined that all preoperational test procedures had been approved for performance with the following exceptions:

- (1) TP 150/3 Initial Reactor Building Leak Rate Test (ILRT)

This procedure was scheduled to be approved by the TWG on February 6, 1974.

1486 227

(2) SP 267/5 Flow Balance for FCR 218

This procedure was added to the MTX by TCN-43 dated January 23, 1974 in order to test a design change made to the Nuclear Service Closed Cooling Water System. This procedure was scheduled to be approved by the TWG on February 13, 1974.

(3) TP 302/1 In-Core Monitoring System Handling Test

This procedure had not been written because the in-core monitor chopper has design problems and is still at the vendor's shop. Consideration was being given to delete this procedure from the MTX in favor of a test performed at the vendor's shop.

b. Status of Preoperational Testing

Preoperational Tests Completed and Accepted	26%
Preoperational Tests Completed and Under Review	14%
Preoperational Tests in Progress	33%
Preoperational Tests Not Started	27%

c. RO:I Review of Preoperational Test Procedures

TP 600/10 Reactor Coolant System Hot Leakage Test

This procedure was approved by the TWG on January 3, 1974. The inspector's review of this procedure disclosed some minor deficiencies, which the licensee representatives agreed to correct by test exception changes. This procedure is consistent with the testing method described by the licensee during a previous RO inspection.* Additionally, systems containing reactor coolant are examined to identify leakage during the performance of this procedure, and a value for "normal evaporative losses" as used in Technical Specification 3.1.6.2 will be established by this test. Met Ed's surveillance procedure SP 1303-1.1, Reactor Coolant System Leakage Test (Daily), is to be performed concurrently with a part of this test.

Based on a review of the preoperational test program, as described in the Master Test Index-Section II, the inspector determined the following with respect to testing of other leak detection systems:

* RO Inspection Report 50-289/73-01, Paragraph 6.c.

- (1) The level indication system associated with the Reactor Building coolers, the Reactor Building sump, and Auxiliary Building sump, the Safeguards Cubicle leak detectors, and the Auxiliary Building sump pumps are to be functionally tested to verify FSAR design basis.
- (2) The Process Radiation Monitoring System (includes liquid monitors for closed cooling water systems and fixed atmospheric monitors for the Reactor Building, the Auxiliary Building and the Condenser Vacuum Pump Exhaust) is to be functionally tested and calibrated (using external calibration sources) to verify FSAR design basis.

The previous RO:I finding relative to the licensee's proposed program for testing the primary coolant leak detection and measuring systems is resolved.*

d. RO:I Review of Previously Reported Test Procedure Deficiencies

(1) TP 160/2 Reactor Building Emergency Cooling Water System

The 1 deficiency, as identified in RO Inspection Report No. 50-289/73-11, Paragraph 2.c(1), is resolved based on the inspector's review of TP 310/3, Safeguards Detection and Actuation Test.

(2) TP 273/3 Emergency Feedwater System Functional Test

The 1 deficiency, as identified in RO Inspection Report No. 50-289/73-11, Paragraph 2.c(5), is resolved based on the inspector's review of TP 600/11A, Emergency Feed System and OTSG Level Control Test. The operating time for valves MSV-13A and 13B vice MSV-10A and 10B is to be determined since these are the valves which open during the auto start sequence of the steam driven emergency feedwater pump.

(3) TP 203/4 Decay Heat Removal System Functional Test

The 1 deficiency, as identified in RO Inspection Report No. 50-289/73-11, Paragraph 2.c(7), is resolved based on the inspector's review of TP 600/24, Unit Cooldown Test.

* RO Inspection Reports No. 50-289/72-17, Paragraph 3.a, 50-289/73-01, Paragraph 6.c, and 50-289/73-06, Management Interview Item A.

(4) TP 263/4 Decay Heat River Water System Functional Test

The 2 deficiencies, as identified in RO Inspection Report No. 50-289/73-06, Paragraph 5.d(5), are resolved based on the inspector's review of TP 600/21, Integrated E. S. Actuation Test and TP 600/24, Unit Cooldown Test.

(5) TP 264/4 Decay Heat Closed Cooling System Functional Test

The 2 deficiencies, as identified in RO Inspection Report No. 50-289/73-06, Paragraph 5.d(6), are resolved based on the inspector's review of TP 600/21, Integrated E. S. Actuation Test and TP 600/24, Unit Cooldown Test.

RO:I has no further questions on the procedures listed above at this time. All previously reported test procedure deficiencies have been resolved with the exception of those relative to TP 150/3, Initial Reactor Building Leak Rate Test and TP 256/3, Loss of Instrument Air Test, as described in RO Inspection Reports No. 50-289/73-09, Paragraphs 3 and 4 and No. 50-289/72-17, Paragraph 3.c, respectively. These procedures will be reviewed during subsequent RO inspections.

e. RO:I Review of Completed Preoperational Tests

The inspector conducted a detailed review of the following completed preoperational test procedures (Official Field Copy) which have been accepted by the licensee:

TP 263/4 Decay Heat River Water System Functional Test
TP 267/4 Nuclear Service Closed Cooling Water Functional Test
TP 200/4 Reactor Coolant System Hydro Test
TP 240/3 Intermediate Cooling System Functional Test
TP 273/3 Emergency Feedwater Turbine and Motor-Driven Pumps
Functional Test

No apparent deficiencies were identified with respect to the requirements of the Test Manual and Test Instructions No. 9 and No. 18. Test results were satisfactory, and all test requirements were satisfactorily performed or were properly identified for retest by another procedure which will be reviewed by RO:I.

Additionally, the inspector verified that the following completed preoperational test procedures (Official Field Copy) have been accepted by the licensee in accordance with the requirements of the Test Manual:

1486 230

F1106/15 Main and Auxiliary Condensers Functional Verification
F1104/24M Diesel Generator Building Ventilation Functional
Verification

f. RO:I Review of the Performance of Preoperational Tests

(1) TP 203/7 Decay Heat Removal E. S. Test

The purpose of this test is to verify the following relative to L. P. Injection: sequence and time lapse, design requirements (3000 gpm injection flow at 100 psig Reactor Vessel pressure), operation of alarms, and no excessive piping movement. With the Reactor Coolant System (RCS) at ambient temperature conditions and pressurized to approximately 50 psig with nitrogen in the pressurizer, each loop is tested separately by manual E. S. actuation from the Control Console which starts the selected D. H. pump and opens its suction valve (from the BWST) and injection valve (to the Reactor Vessel).

The inspector witnessed the performance of a part of this procedure, namely the test of Loop "A" (DH-PIA) E. S. Mode. This included observations of the Shift Test Engineers (STE) and Met Ed shift personnel before, during, and after test performance, observations relative to the starting and operation of DH-PIA while in its cubicle in the Auxiliary Building, observation of plant response during the retest while in the Control Room (due to Brush Recorder problem), and review of the Official Field Copy of the procedure including the raw test data. No deficiencies were identified relative to the requirements of Test Instruction No. 9.

Raw test data indicated the following:

- (a) Opening times for valves DH-V5A and DH-V4A (obtained by stop watch) were 10.5 seconds and 11.0 seconds, respectively and met the acceptance criteria of < 13 seconds and < 12 seconds, respectively.
- (b) Elapsed time from initiation of E. S. to D. H. Flow \geq 3000 gpm (obtained by Brush Recorder) was about 4.5 seconds and met the acceptance criteria of < 15 seconds.
- (c) D. H. Flow when Reactor Vessel pressure = 100 psig (obtained by Brush Recorder) was 3050 gpm and met the acceptance criteria of \geq 3000 gpm.

1486 231

- (d) Excessive piping movement (pump suction in the vicinity of valve DH-V12A) was identified by Met Ed shift personnel, and this was documented as a deficiency. Additionally, GAI engineers were present to observe piping movement during the test and to inspect the piping system after test completion. The inspector observed one hanger in the vicinity of valve DH-V12A to be displaced laterally about 4 inches and the hanger was no longer set properly. This problem was being actively pursued by the licensee and its resolution will be examined during a subsequent RO inspection.

Prior to the performance of this test, a disparity of about 38 psig in RCS pressure, as indicated by the low range pressure transmitter (RC3A-PT5) and the wide range pressure transmitters (RC3B-PT2 and RC3A-PT1 and PT2), was identified following calibration of these instruments. Investigation by licensee representatives showed that a static head correction for RC3A-PT5 was necessary due to its elevation difference with respect to the other transmitters. The calibration record for RC3A-PT5 was revised to include this correction, and the disparity between transmitters was corrected before starting the test. This matter was discussed with cognizant GPU startup representatives, who indicated it would be treated as a generic I&C problem which would be pursued during hot functional and initial startup testing.

Testing of the B Loop was delayed pending the completion of a field change affecting manually operated valve DH-V19B (located on the discharge side of cooler DH-C1B). This valve (same type used at Oconee 1) is to be replaced with one more appropriately designed for throttling flow on a long term basis. A similar change was completed on the A Loop prior to performing the test witnessed by the inspector, and the raw test data discussed above was obtained with this valve (DN-V19A) fully open.

(2) TP 202/7 Makeup and Purification System E. S. Test

The purpose of this test is to demonstrate emergency MU injection flow to the RCS for each MU pump, to verify that operating times of MU&P system E. S. related equipment are within FSAR limits, and to verify no excessive piping movement. With the RCS at a temperature of between 118°F and 150°F and pressurized to about 500 psig, each

pump is tested separately by manual E. S. actuation from the Control Console which starts the selected MU pump, opens its suction valve (from the BWST) and two injection valves (to RCS cold legs), and closes one of the two series valves in the MU pump recirculation line. Additionally, water in the BWST and MU Tank is maintained at a temperature of between 118°F and 150°F to minimize thermal stresses.

The inspector witnessed the performance of a part of this procedure, namely the test of MU pump MU-PlA. This included observations of the STE's and Med Ed shift personnel before, during, and after test performance, observation of plant response during the test while in the Control Room, and review of the Official Field Copy of the procedure including raw test data. Additionally, the inspector observed preparations relative to the test of MU pump MU-PlC; however, the test was delayed due to flow instrument problems and was rescheduled for a later date. MU pump MU-PlB, which was found to be inoperable, was dismantled for inspection and will be tested at a later date (refer to Paragraph 10). No deficiencies were identified relative to the requirements of Test Instruction No. 9.

Raw test data indicated the following:

- (a) Opening times for valves MU-V16A and B (obtained by stop watch) were between 10.6 seconds and 11.5 seconds for two separate tests and did not meet the acceptance criteria of ≤ 10 seconds. This matter was documented as a deficiency and was being evaluated by the licensee. Resolution of the problem will be examined during a subsequent RO inspection.
- (b) Opening time for valve MU-V14A (obtained by stop watch) was 9.2 seconds and 9.3 seconds for two separate tests and met the acceptance criteria of ≤ 13 seconds.
- (c) Closing time for valve MU-V36 (obtained by stop watch) was 9.0 seconds and 9.2 seconds and met the acceptance criteria of ≤ 10 seconds.
- (d) Elapsed time from initiation of E. S. to total MU Injection Flow ≥ 500 gpm (obtained by Brush Recorder) was 4.0 seconds and 4.6 seconds for two separate tests and met the acceptance criteria of < 15 seconds.

1486 233

- (e) Total MU Injection Flow when RCS pressure = 600 psig (obtained by Brush Recorder) was 575 gpm for two separate tests and met the acceptance criteria of ≥ 500 gpm (FSAR limit); however, the acceptance criteria established by the vendor for pump runout (≤ 550 gpm) was exceeded by 25 gpm for both tests. During both tests the injection valves (MU-16A and B) were throttled to prevent pump runout, and injection flow to both RCS cold legs ranged between 275 gpm and 280 gpm. This matter was documented as an exception and will be evaluated by the licensee. Resolution of this item will be reviewed during a subsequent RO inspection.
- (f) No excessive piping movement was identified by Met Ed shift personnel; however, prior to test performance one of the points in the MU&P system piping identified for observation was found to be in contact with another object and this was documented as a deficiency. Additionally, GAI engineers were present to observe piping movement during the test and to inspect the piping system after test completion. This problem was being evaluated by the licensee and its resolution will be examined during a subsequent RO inspection.

3. Initial Startup Testing Program

a. Status of Test Procedures*

Approved for Performance by TWG	-	7%
Preliminary Approved by TWG	-	42%
Under Review by TWG	-	48%
Written - Undergoing Inhouse Review	-	3%

The licensee's schedule relative to the status of each procedure in the review and approval circuit was reviewed with a cognizant representative, and the inspector observed that the licensee was slightly ahead (on an overall basis) of the schedule established to have all procedures preliminary and/or final approved by February 15, 1974, as previously committed to RO:I.**

* Total of 31 procedures.

** RO Inspection Report No. 50-289/73-27, Management Interview Item D.

b. Initial Startup Tests

(1) TP 800/21 Unit Startup and Power Escalation Test

The inspector reviewed this procedure, which had been written and was ready for review by the TWG, and discussed its contents with a cognizant licensee representative. This procedure is the controlling document for testing the unit from hot zero power through the various test plateaus up to commercial operation at licensed power. The inspector observed that previous licensee commitments to RO:I, as described in RO Inspection Report No. 50-289/73-22, Paragraphs 3.1 (1) through (4), were included in this procedure.

(2) Part-Length Rod Effectiveness Test at 75% Power

During a previous RO inspection,* licensee representatives indicated that a test for part-length rod insertion and removal to determine their effectiveness in controlling a xenon transient at 75% power was not included in their program and that test results obtained at Oconee 2 would be used as the basis for not performing this test. During this RO inspection, the inspector was informed that this test would be conducted as a part of TP 800/18, Power Imbalance Detector Correlation Test. The inspector reviewed TP 800/18, which was preliminary approved by the TWG on January 16, 1974, and verified that axial xenon control following an induced in-core imbalance by insertion and removal of the Axial Power Shaping Rods (Part-length rods) will be demonstrated at 40% and 76% power. This matter is resolved.

4. Emergency Procedures

The inspector reviewed the licensee's program for performing plant emergency procedures during the Hot Functional and Initial Startup Testing Programs. The inspector determined that each procedure would be actually performed or dry run and that the schedule for performance was established by TP 600/28, Controlling Procedure for HFT and TP 800/21, Unit Startup and Power Escalation Test Program. The licensee representatives were informed that the previous RO:I findings on this matter were resolved.**

* RO Inspection Report No. 50-289/73-22, Paragraph 3.h(5).

** RO Inspection Report No. 50-289/73-22, Paragraph 3.i.

5. Surveillance Testing Program

The inspector reviewed the licensee's system for integrating the surveillance testing program into the preoperational and initial startup testing program. The inspector determined that tests described in Met Ed's Surveillance Procedure Index, Revision 0, dated August 1, 1973 were scheduled for verification and/or performance during the test program by the following procedures: TP 600/28, Controlling Procedure for HFT, SP 710/2, Controlling Procedure for Post Fuel Load Pre-Critical Testing, TP 710/1, Zero Power Physics Testing, and TP 800/21, Unit Startup and Power Escalation Test Program. Additionally, the Surveillance Procedure Index was compared with the Technical Specifications (FSAR Section 15, Amendment 41) and no discrepancies were identified. The licensee representatives were informed that the previous RO:I findings on this matter were resolved.* Implementation of the program scheduled by the previously described procedures will be reviewed during subsequent RO inspections.

6. STE Log Book

The inspector reviewed the contents of this log for the period of December 28, 1973 through January 30, 1974. During this review, the inspector identified certain entries which required further clarification. These items were discussed with cognizant licensee representatives, and additional clarifying information was added to the log. No deficiencies relative to Test Instruction No. 17 were identified.

7. TWG Meeting Minutes

The inspector reviewed the contents of the meeting minutes for the period of January 3-23, 1974 (4 meetings). No deficiencies relative to the Test Manual were identified.

8. Drawing Control

The inspector reviewed drawing control being practiced within Med Ed. For this review the inspector selected 34 GAI drawings listed in TP 203/7 and 202/7 (Official Field Copy) and compared these drawings with those on file in the Control Room Shift Supervisor's Office. With the exception of one drawing (SS-208-690, Revision 2A), all drawings were up to date, and this included revisions dated in mid-January 1974. Additionally, 3 cases were observed where superseded drawings were still on file with the corresponding up to date

* RO Inspection Report No. 50-289/73-22, Paragraph 4.d.

drawing; these were promptly removed by the Shift Supervisor on duty following identification by the inspector. A review of Administrative procedures on file in the Control Room by the inspector disclosed that the area of drawing control had not been addressed in these procedures.

These findings were discussed with cognizant Met Ed personnel, and the inspector was informed that Met Ed QC had audited this area in October and November 1973 and had identified the same types of deficiencies. Corrective actions to resolve the Met Ed QC identified deficiencies were in progress. Administrative Procedure 1001, which only addressed Control of Facility Procedures, is being revised to provide document control, e.g., procedures, drawings, Tech Manuals, FSAR, Tech Specs, AEC Regulatory Guides, etc. The revision to Administrative Procedure 1001 relative to drawing control is to be issued and implemented by February 15, 1974, and a complete issuance of this procedure is scheduled for March 1, 1974. An audit of drawing control by Met Ed QC is scheduled for the week of March 4, 1974. With respect to Audits by Met Ed QC, a total of 14 were conducted in 1973 with the first audit occurring in September 1973 and 3 audits had been conducted in 1974 as of the date of this RO inspection. The licensee representatives were informed that the inspector had no further questions on this matter at this time.

9. Malfuction of Diesel Generators

The inspector discussed with cognizant licensee representatives malfunctions of Diesel Generators experienced at other facilities.* For these cases, a common design feature consisting of a relay lock-out following a manual shutdown was involved. The applicability of this problem to Three Mile Island is to be reviewed by the licensee. Cognizant licensee representatives did not believe the problem existed; however, a Problem Report addressing this matter was prepared and sent to GAI. The results of this review are to be provided to RO:I.

10. Failure of Makeup Pump MU-PlB

A cognizant licensee representative informed the inspector on January 29, 1974 that the subject pump had been found to be inoperable during preoperational testing and that an investigation was in progress. He further stated that extensive pump damage was expected and that vendor representatives would be onsite to inspect the pump. The representative stated that this event was considered reportable pursuant to 10 CFR 50.55(e).

* Letter, Licensee to Giambusso, dated September 18, 1973, Power Failure, Oyster Creek and Letter, Licensee to O'Leary, dated September 14, 1973, Failure of No. A Emergency Diesel Generator to Start, Turkey Point Unit No. 3.

A special PORC Subcommittee was appointed to investigate this event, and on February 1, 1974 their findings, as discussed in a draft report to the Station Superintendent, dated January 31, 1974, were reviewed by the inspector and discussed with 2 of the 3 subcommittee members. The following information was obtained:

On January 15, 1974 the subject pump was operated to verify its availability as a backup pump to support the preoperational test program; however, at the time of operation the pump's manual operated suction and discharge valves were closed. The pump was operated about 5 seconds, and then shut down when no flow was observed. A second attempt to start the pump was made when it was thought flow indication had been obtained just prior to tripping the pump; however, the breaker tripped automatically.

One week prior to this occurrence two separate tagging applications were issued for this pump to allow UE&C to perform a hydro; one was for the pump breaker and the other was for the valves. Three days prior to the occurrence the tag on the pump breaker was cleared, but the breaker was left racked out because the tag on the valves was still in force. Investigation as to whether or not the remaining tag could be cleared was initiated, but as a result of breakdown in communications between responsible parties the tag remained in force. No action to protect the pump (by tagging) was taken by cognizant Met Ed personnel although the pump was identified in the CRO Log Book (midnight entry) as being out of service for the remaining tagging application. Some time during the two day period preceding this event the tagged valves were forgotten and the pump breaker was racked in. Met Ed cognizant personnel, who operated the pump as discussed previously, did not notice the midnight entry in the CRO Log relative to the pump, and there was no indication from the Control Room of any problem on this pump at the time it was operated. Following pump operation, a new tagging application was issued for the pump breaker because of the existence of the tags on the valves; however, no thought was given to the existence of possible pump damage. The tag issued for the pump breaker was cleared 10 days after it was issued and following the clearing of the tags on the valves. Two days later (January 27, 1974), the pump was found to be inoperable during the performance of a preoperational test, i.e., upon starting the breaker tripped, and a work request was issued to determine the problem.

This event resulted from a cumulative series of errors by several individuals and from apparent weaknesses in administrative controls relative to tagging, equipment status, watch relief, and documentation and reporting requirements of unusual events. The licensee's proposed corrective actions consisting of repair and testing of the

pump, upgrading of administrative controls in the areas of apparent weakness by issuance of new Standing Orders or Operations Memos and by revision of Administrative Procedures 1002 and 1012, and reviewing this event with Met Ed operations and UE&C startup personnel will be examined during subsequent RO inspections.

11. Inadvertent Actuation of the Pressurizer Electromatic Relief Valve

The inspector reviewed a GPU Unusual Occurrence Report (No. 8) dated January 12, 1974 describing this event and discussed the details of this event with cognizant licensee representatives. This report was prepared in accordance with the requirements of Test Instruction No. 8. The following information was obtained:

On December 13, 1973 during testing of ESAS alarms by a UE&C Startup Engineer, the subject event occurred when the Reactor coolant pressure test circuit of ESAS Bistable No. 1 was placed in the calibration mode and pressure was raised to 1000 psig. The setpoint for valve actuation was 550 psig, as established by procedure for the existing plant conditions, namely Reactor Coolant System filled, vented and pressurized to approximately 50 psig with nitrogen in the pressurizer. No major systems were in operation at the time of the occurrence. The Startup Engineer did not realize that testing this circuit would result in valve actuation. After notifying the STE on duty, the ESAS Bistable No. 1 was placed in the operation mode until the relief valve could be isolated.

The licensee's evaluation disclosed that no Technical Specifications were violated and that no unresolved nuclear safety questions were involved. The only consequence of this occurrence was that the Reactor Coolant System had to be repressurized to establish original conditions.

The corrective action taken to prevent recurrence consisted of informing all UE&C startup personnel in writing to contact the STE on duty prior to testing any system and/or operating any valve. Since this action was taken, a similar event has not occurred. The licensee representatives were informed by the inspector that RO:I had no further questions on this matter at this time.

12. Tour of TMI Unit No. 1

The inspector made a physical inspection of the facility to determine the licensee's apparent readiness to load fuel on their previously published date of March 13, 1974 (obtained from Met Ed). The inspector concentrated on the state of cleanliness in the Reactor Building

and the Auxiliary Building as well as the construction activities in progress in both buildings. As a result of these observations, the inspector concluded that the March 13, 1974 would be most difficult to meet.

While in the Reactor Building, the inspector visually examined at random several pipe hangers in Core Flood, Feedwater, Emergency Feedwater, Makeup and Purification, and Intermediate Cooling Systems and several supports on the Reactor Coolant Pump Motors for proper setting. Approximately 15 hangers and 6 supports were examined and all were observed to be properly set.

While in the area of the Control Room and STE's office, the inspector observed that the Test Manning Assignment Document for HFT (Phases V-VIII) had been prepared, approved, issued and posted in accordance with the requirements of Test Instruction No. 3. Additionally, this document was identified in the current Test Plan in accordance with the requirements of Test Instruction No. 2. The inspector also observed that the sequential logic schedule for Phases V-VII of TP 600/28, Controlling Procedure for HFT had been approved by the TWG and was being maintained (Phase V of HFT was in progress) in accordance with the requirements of Test Instruction No. 9. Additionally, the inspector observed 3 separate shift turnovers between STE's and no deficiencies were identified with respect to the requirements of Test Instruction No. 9.

1486 240