U.S. ATOMIC ENERGY COMMISSION

DIRECTORATE OF REGULATORY OPERATIONS

REGION I

RO Inspection Report No: 50-289/74-09 Docket No: 50-289

Licensee: Metropolitan Edison Company License No: CPPR-40

Three Mile Island 1 Priority:

Category: B1

Location: Middletown, Pennsylvania

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

Type of Inspection: Special, Operations Phase QA

Dates of Inspection: February 6-12, 1974
Management Meeting February 21, 1974

Dates of Previous Inspection: February 21, 1974

Reporting Inspector: R. B. Glasscock — 3-6-74 Date

Accompanying Inspectors: E. C. McCabe — 3/6/74 Date

A. B. Davis — 3/6/74 Date

R. A. Spessard — 3/6/74 Date

Date

Other Accompanying Personnel: Date

Reviewed By: E. C. McCabe, Jr. — 3/6/74 Date

E. C. McCabe, Senior Reactor Inspector, Reactor Operations Branch

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SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Items

Not Inspected

Other Significant Findings

A. Current Findings

Compliance with the below listed Appendix B, 10 CFR 50 Criteria is unresolved.

Criterion I	(Details, Paragraph 2)
Criterion II	(Details, Paragraph 3a, 3b)
Criterion III	(Details, Paragraph 4)
Criterion IV	(Details, Paragraph 5)
Criterion V	(Details, Paragraph 6)
Criterion VI	(Details, Paragraph 7)
Criterion VII	(Details, Paragraph 8)
Criterion VIII	(Details, Paragraph 9)
Criterion X	(Details, Paragraph 10)
Criterion XI	(Details, Paragraph 11)
Criterion XIV	(Details, Paragraph 12)
Criterion XV	(Details, Paragraph 13)
Criterion XVI	(Details, Paragraph 14)
Criterion XVII	(Details, Paragraph 15)
Criterion XVIII	(Details, Paragraph 16)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

The management interview was held at the Metropolitan Edison Office in Reading, Pennsylvania on February 21, 1974.

Attendees

Metropolitan Edison Company

Mr. R. C. Arnold, Vice President
Mr. J. C. Herbein, Three Mile Island I Superintendent
Mr. R. F. Jones, Jr., Manager Generation Engineering
Mr. L. L. Lawyer, Manager Operational Quality Assurance
Mr. B. M. McCutcheon, Quality Assurance Engineer
Mr. W. E. Potts, Supervisor, Quality Control

General Public Utilities Service Corporation

Mr. J. Spinak, Three Mile Island Lead Quality Assurance Engineer
Mr. J. E. Wright, Three Mile Island Quality Assurance Manager

Jersey Central Power and Light Company

Mr. D. P. Gaines, Manager, Operational Quality Assurance

The following summarized items discussed.

A. 10 CFR 50, Appendix B, Criterion I, Organization

The inspector stated that the applicant does not retain the responsibility for the Quality Assurance on Nuclear fuel, initial fuel loading and startup and test activities. (Details, Paragraph 2)

The licensee stated that he was preparing a response to the Directorate of Licensing's similar concerns on this issue, and that he also wished to be able to utilize his parent company's QA organization for modifications which may be required during plant life.

The inspector stated that resolution of this issue must await the Directorate of Licensing's decision on the licensee's position. He noted, however, that such usage may necessitate review of the parent company's QA program for compliance with 10 CFR 50 Appendix B as a licensee document.

B. 10 CFR 50, Appendix B, Criterion II, Quality Assurance Program

1. Program Documentation

The inspector stated that some policies, procedures and instructions needed to document the program are missing and that these are further identified in the comments to the appropriate criteria. (Details, Paragraph 3a)

The licensee acknowledged this information.

2. Status and Adequacy Review

The inspector stated that specific measures have not been established for regular status and adequacy review of the quality assurance program. (Details, Paragraph 3b)

The licensee agreed to include this in the program.

C. 10 CFR 50, Appendix B, Criterion III, Design Control

The inspector stated the design control procedures do not include firm requirements nor do they provide specific measures to implement the design control requirements of Criterion III. (Details, Paragraph 4)

The licensee indicated that at least part of the missing information was included in procedures that had not been included in the program. Procedure GP 1001 was given as an example. The licensee agreed to incorporate the missing items in the program.

D. 10 CFR 50, Appendix B, Criterion IV, Procurement Document Control

The inspector stated that the program does not specify that applicable requirements necessary to assure quality are to be included or referenced in procurement documents, nor does it provide that procurement documents require contractors and sub-contractors to provide a quality assurance program consistent with the pertinent provisions of Appendix B. (Details, Paragraph 5)

The licensee agreed to include these requirements in the program.

E. 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings

The inspector stated that all activities affecting quality are not described by documented instructions, procedures, or drawings, of a type appropriate to the circumstances. (Details, Paragraph 6)

The licensee stated that some of the omitted procedures required to be part of the quality assurance program were written, that he will identify all procedures required to complete the program, and that he will make all such procedures available to RO:I for evaluation against the applicable requirements of Appendix B.

F. 10 CFR 50, Appendix B, Criterion VI, Document Control

The inspector stated that measures to control the issuance, change and review of the documents (such as instructions, procedures, or drawings) which prescribe all activities affecting quality are not specified. (Details, Paragraph 7)

The licensee agreed to incorporate changes into the program to comply with Criterion VI.

G. 10 CFR 50, Appendix B, Criterion VII, Control of Purchased Material, Equipment and Services

The inspector stated the program does not establish means for evaluation of contractors to assure they are in compliance with the pertinent requirements of Appendix B, nor does it establish measures to assess the effectiveness of the control of quality by contractors. (Details, Paragraph 8)

The licensee agreed to include these requirements in the program.

H. 10 CFR 50, Appendix B, Criterion VIII, Identification and Control of Materials, Parts and Components

The inspector stated that measures are not established for the identification and control of materials, parts, and components, including partially fabricated assemblies. (Details, Paragraph 9)

The licensee agreed to include such measures in the program.

I. 10 CFR 50, Appendix B, Criterion X, Inspection

The inspector stated that a program for inspection of activities affecting quality has not been established and included in the QA program. (Details, Paragraph 10)

The licensee stated that at least part of this omission was because some of the inspection requirements were included in the procedures which had not been included in the QA program He agreed to incorporate the inspection requirement to comply with Criterion X into the QA program.

J. 10 CFR 50, Appendix B, Criterion XI, Test Control

The inspector stated that a test program has not been established to assure that all testing required to demonstrate that structures, systems and components will perform satisfactorily in service is accomplished. (Details, Paragraph 11)

The licensee stated such test procedures are in the same category as the ones described for inspection (Paragraph I, preceeding) and agreed to incorporate test control requirements to comply with Criterion XI into the QA program.

K. 10 CFR 50, Appendix B, Criterion XIV, Inspection, Test and Operating Status

The inspector stated that the evaluation of this criterion could not be completed because one of the procedures identified in the program was not available. (Details, Paragraph 12)

The licensee agreed to supply RO:I with the missing procedure.

L. 10 CFR 50, Appendix B, Criterion XV, Nonconforming Materials, Parts or Components

The inspector stated that specific measures have not been established in the QA program to control materials, parts, and components which do not conform to requirements in order to prevent their inadvertent use or installation. (Details, Paragraph 13)

The licensee agreed to incorporate the Criterion XV requirements into the QA program.

M. 10 CFR 50, Appendix B, Criterion XVI, Corrective Action

The inspector stated that specific measures have not been established in the QA Program to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. (Details, Paragraph 14)

The licensee agreed to incorporate the Criterion XVI requirements into the QA program.

N. 10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records

The inspector stated that there is no requirement in the QA program that all records contain the minimum requirements of Criterion XVII. (Details, Paragraph 15)

The licensee agreed to incorporate the minimum requirements of Criterion XVII into the QA program.

O. 10 CFR 50, Appendix B, Criterion XVIII, Audits

The inspector stated that a comprehensive system of planned and periodic audits has not been established to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the QA program. (Details, Paragraph 16)

The licensee agreed to incorporate the missing parts of Criterion XVIII into the QA program.

DETAILS

1. Persons Contacted

Metropolitan Edison Company

Mr. R. C. Arnold, Vice President
Mr. J. C. Herbein, Three Mile Island I Superintendent
Mr. R. F. Jones, Jr., Manager Generation Engineering
Mr. L. L. Lawyer, Manager Operational Quality Assurance
Mr. B. M. McCutcheon, Quality Assurance Engineer
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Jersey Central Power and Light Company

Mr. D. P. Gaines, Manager Operational Quality Assurance

2. 10 CFR 50 Appendix B, Criterion I, Organization

The applicant does not retain responsibility for the Quality Assurance on nuclear fuel, on initial fuel loading and on startup and test activities. The Quality Assurance responsibility for these functions is assigned to the parent company, General Public Utilities (GPU).

3. 10 CFR 50, Appendix B, Criterion II, Quality Assurance Program

a. Program Documentation

The total program is not documented by written policies, procedures, or instructions which are to be carried out throughout plant life, in that procedures are missing as noted in the comments to the appropriate criterion. (See Detail 6 for an example.)

Also, there are several instances where the Operational Quality Assurance Plan defined the Policy but the procedures fail to implement it. (See Detail 6 for an example.)

b. Status and Adequacy Review

Specific measures have not been established for the applicant to regularly review the status and adequacy of the quality assurance program, or for the management of other organizations participating in the quality assurance program to regularly review the status and adequacy of that part of the quality assurance program which they are executing.

4. 10 CFR 50, Appendix B, Criterion III, Design Control

Measures have not been established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2 and as specified in the license application, for those structures, systems, and components to which the appendix applies, are correctly translated into specifications, drawings, procedures, and instructions. Examples follow.

a. Procedure GP 1011 states that regulatory requirements will be "considered as appropriate" but establishes no requirements.

b. Design control measures which assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled are not specified.

c. Measures for the selection and review for suitability of application of materials, parts, equipment, and processes essential to the safety-related functions of structures, systems, and components are not specified.

d. Design control measures for independently verifying or checking the adequacy of design, such as by the performance of design reviews by use of alternate or simplified calculational methods, or by the performance of a suitable testing program, are not specified.

e. Design control measures are not specifically required to be applied to items such as the following: reactor physics, stress, thermal, hydraulic, and accident analyses; compatibility of materials; accessibility for in-service inspection, maintenance, and repair; and delineation of acceptance criteria for inspections and tests.

f. Design changes, including field changes, are not specifically made to be subject to design control measures commensurate with those applied to the original design, and are not required to be approved by the organization which performed the original design unless the applicant has designated another responsible organization.

5. 10 CFR 50, Appendix B, Criterion IV, Procurement Document Control

Measures have not been established to assure that requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment, and services, whether purchased by the applicant or by its contractors or subcontractors, nor have measures been established for procurement documents to require contractors/subcontractors to provide a quality assurance program consistent with the pertinent provisions of Appendix B.

For example, A-VI-1 Paragraph 4.5 states in part: "...The Manager of QA shall also review and approve any Vendor Requested Variances from the Requirements of Quality Control Purchase Requisitions and Purchase Orders."

This fails to define the Criteria for authorizing variances.

6. 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings

All activities affecting quality are not described by documented instructions, procedures, or drawings, of a type appropriate to the circumstances.

In addition to omissions identified in the Comments to the appropriate criteria, administrative procedures necessary to define and implement the following functions to assure that they are controlled in compliance with the applicable requirements of 10 CFR 50 Appendix B are missing.

a. Modification
b. Maintenance including Preventive
c. Operations
d. Fuel Control
e. Shipping
f. Inservice inspection
g. Chemical, Radiochemical Control
h. Security

It is recognized that some of these procedures have been partially evaluated by the AEC. However, they must also be included or referenced as part of the total quality assurance program and evaluated to determine that they are in compliance with the applicable requirements of Appendix B.

7. 10 CFR 50, Appendix B, Criterion VI, Document Control

a. Document Issue

Measures are not established to control the issuance of all documents, such as instructions, procedures, or drawings, including changes thereto, which prescribe all activities affecting quality.

b. Document Review and Approval

Measures are not established to assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are provided to and used at the location where the prescribed activity is performed. For example, Procedure GP 1000 does not define the responsibilities for review such as safety and engineering evaluations and

GP 0001 Paragraph 6 leaves the reviews to be required up to the originator.

c. Document Changes

Changes to documents are not required to be reviewed and approved by the same organizations that performed the original review and approval unless the applicant designates another responsible organization. For example, definition and control of temporary changes to procedures are not included. Also, C-VI-1 does not define the controls to assure that changes are reviewed for adequacy.

d. Procedures List

The list of procedures identified in C-VI-1 for the station is incomplete.

e. FSAR Changes and Technical Specifications

Controls for evaluation of Technical Specification and other FSAR changes for converting them into the appropriate documents for implementation are not defined.

f. Administrative Limits

The "Administrative Limits" in procedures such as the GP 1021, GP 1022 and GP 1011 statement that, "authorization to act other than in conformance with this procedure can only be given by the Manager-Generation Engineering", does not establish control since these procedures are also approved by quality assurance.

8. 10 CFR 50, Appendix B, Criterion VII, Control of Purchased Material, Equipment and Services

The Evaluation and Selection of contractors (Procedure A-VII-2) does not include measures to assure compliance with pertinent provisions of Appendix B. (See Detail 4a) The evaluation check sheets (Procedure A-VII-2) are incomplete in that they do not require compliance with Appendix B, 10 CFR 50.

There are no measures to assure that the effectiveness of the control of quality by contractors and subcontractors is assessed by the applicant or designee at intervals consistent with the importance, complexity, and quantity of the product or services.

9. 10 CFR 50, Appendix B, Criterion VIII, Identification and Control of Materials, Parts and Components

Measures are not established for the identification and control of materials, parts, and components, including partially fabricated assemblies. Measures do not assure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item, as required throughout fabrication, erection, installation, and use of the item. (Such identification and control or defective material, parts, and components). The policy in the OQA Plan states the requirements but the procedures appear to fail to implement them. As examples, GP 1011 checklist includes, as item no. 23, the requirement for identification but establishes no identification criteria. Also, C-VIII-1 defines the requirement for placing accept tags on equipment but there is no requirement to identify the tag to the item.

10. 10 CFR 50, Appendix B, Criterion X, Inspection

a. Inspection Functions

A program for inspection of activities affecting quality has not been established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity, in that the program fails to define all the functions to be included in the inspection program.

b. Indirect Control and Hold Points

The program does not provide that, when examinations, measurements, or tests of processed material or products is impossible or disadvantageous indirect control by monitoring processing methods, equipment, and personnel must be provided. Both inspection and process monitoring must be provided when control is inadequate without both. If mandatory inspection hold points, which require witnessing or inspections by the applicant's designated representative and beyond which work shall not proceed without the consent of its designated representative are required, the specific hold points must be indicated in appropriate documents.

11. 10 CFR 50, Appendix B, Criterion XI, Test Control

a. Test Program

A test program has not been established to assure that all testing required to demonstrate that structures, systems and components will perform satisfactorily in service is identified and performed in accordance with written test procedures incorporating the requirements and the acceptance limits contained in applicable design documents.

b. Proof Tests

There is no requirement for appropriate proof tests of structures, systems and components during nuclear power plant operation.

c. Test Prerequisites, Instrumentation, and Environment

Test procedures do not include provisions for assuring that all pre-requisites for the given test have been met, that adequate test instrumentation is available and used, and that tests are performed under suitable environmental conditions.

d. Test Evaluation

Test results are not specifically required to be evaluated to assure that requirements have been satisfied. For example, C-XI-2 states that post maintenance test results will be reviewed. It fails to define the requirement for the evaluation to assure the test requirements have been satisfied.

12. 10 CFR 50, Appendix B, Criterion XIV, Inspection, Test and Operating Status

This item could not be completed because C-XIV-1, identified as part of the program, was not available.

13. 10 CFR 50, Appendix B, Criterion XV, Nonconforming Materials, Parts, or Components

Measures have not been established to control materials, parts, components which do not conform to requirements in order to prevent their inadvertent use or installation. Such measures must include appropriate procedures for identification, documentation, segregation, disposition, and notification of affected organizations. Nonconforming items must be reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures.

The QQA Plan, Section XV, states in part: "It is the responsibility of anyone who detects a nonconformance to report it in accordance with the nonconformance procedure that is applicable to his part of the organization. Each Manager and the Station Superintendent are responsible for ensuring that nonconformance procedures (covering the types of nonconformances affecting his staff) are written, reviewed, approved by themselves, and implemented by their staff. Each procedure describes the specific methods for recording, identifying and segregating nonconformances, notifying affected organizations, assigning specific responsibility for corrective action, requiring followup action to ensure corrective action is accomplished, and documenting all aspects of the nonconformance including its disposition, and signature approvals of the disposition."

The Program fails to establish the procedures as defined above.

As an example, A-XV-1 states in part, 4.1 The Manager Operational QA (MOQA) is responsible for establishing the requirements to control (NSR) items, services or activities which do not conform to specified requirements.

4.2 The QC Supervisor (QCS) is responsible for developing the details for, and the implementation of, the QC program described in para. 4.1. Except for receiving inspection, the procedures do not appear to have been established.

As an example, C-XI-1 Paragraph 6.1.2 states in part "...Unsatisfactory results require notification of the supervisor of Operations, Station Superintendent and Quality Control."

Measures for accomplishment do not appear to have been established.

14. 10 CFR 50, Appendix B, Criterion XVI, Corrective Action

Measures have not been established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Comments on Criterion XV above also apply to Criterion XVI.

Section XII of the QQA Plan states in Part: "In the event a measuring instrument is found out of calibration, investigation will be conducted to determine the validity of previous measurements."

The measures to accomplish this do not appear to have been established.

Many reports are listed but measures used to initiate and process the reports are not defined. Also, it is not defined how all conditions adverse to quality are reported, or what measures are provided for taking corrective action.

In the case of significant conditions adverse to quality, measures have not been established to assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Significant conditions adverse to quality are not defined, nor are measures established to determine their cause.

Identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken is not required to be documented and reported to appropriate levels of management.

15. 10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records

Inspection and test records do not, as a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted.

16. 10 CFR 50, Appendix B, Criterion XVIII, Audits

A comprehensive system of planned and periodic audits has not been established to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. Such audits must be performed in accordance with written procedures or check lists by appropriately trained personnel not having direct responsibilities in the area being audited.

The audit check lists fail to define the procedures applicable to the activity being audited. The check lists do not specifically require audits to procedures that are being used to perform the function nor do they require an evaluation to determine that the procedures are adequate.

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