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



RO Inspection Report No. 50-289/72-15

Subject: Metropolitan Edison Company

Three Mile Island - Unit 1 License No. CPPR-40

Location: Middletown, Pennsylvania Priority

Category B

Type of Licensee: PWR 831 MWe (B&W)

Type of Inspection: Unannounced - Initial - Radiological Protection

Dates of Inspection: September 21 and 22, 1972

Dates of Previous Inspection: July 14 - 17, 1972

Principal Inspector: R. J. Meyer
R. J. Meyer, Radiation Specialist — October 2, 19 Date

Accompanying Inspectors: B K McLeod
B. K. McLeod, Reactor Inspector — 10-13-72 Date

Date

Other Accompanying Personnel: NONE

Date

Reviewed By: W R Lorenz
W. R. Lorenz, Acting Senior, Facility Radiological Section — October 2, 19 Date

Proprietary Information: NONE

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## SECTION I

### Enforcement Action

None

### Licensee Action on Previously Identified Enforcement Matters

Not applicable

### Unresolved Items

None

### Design Changes

None

### Unusual Occurrences

None

### Persons Contacted

J. Wise, Plant Superintendent
J. Herbein, Station Engineer
R. Zechman, Training Coordinator
K. Frederick, Chemical Supervisor
W. Carson, Radiation Protection Technician

### Management Interview

The following items were discussed with Mr. Wise and Mr. Herbein at the conclusion of the inspection on September 22, 1972:

A. Health Physics and Chemistry Procedures

The inspector made note of an apparent reluctance to provide information on status of procedures and availability of completed procedures. Mr.

Wise stated that current considerations relative to changes in format and manual orientation were responsible for this reluctance. Wise further stated that decisions on these matters would be made in the very near future. (See Paragraph 8)

B. Quality Control (Radiochemistry)

Mr. Wise stated that a program would be established and documented by procedure. (See Paragraph 9)

C. Radiation Monitoring Systems (Calibration)

Mr. Wise stated that the systems had been calibrated prior to installation and that the calibration would be verified when the systems are placed in service. (See Paragraph 10)

D. Line Loss Determinations (Primary Vent Monitors)

Mr. Wise stated that line loss determinations would be made when installation was complete. The installation would also have isokinetic sampling capabilities. (See Paragraph 11)

E. Bioassay Program

Mr. Wise stated that whole body counting was not being considered at this time, but a routine selective program was being considered. (See Paragraph 12)

1419 122

## SECTION II

Additional Subjects Inspected, Not Identified in Section I, Where No Deficiencies or Unresolved Items Were Found

1. General

   The health physics and the chemistry staff are on site. Equipment procurement is not complete. Health physics facilities are yet located in temporary quarters adjacent to the reactor facility. Procedure developemnt is in progress.

2. Radiation Protection - Chemistry Organization

   a. Education
   b. Background
   c. Experience
   d. Coverage

3. Training

   a. Scope of radiation protection personnel training
   b. Scope of plant personnel training (radiation protection)

4. Facilities and Equipment

   a. Portable instruments
   b. Counting equipment
   c. Radiation Monitoring systems (status)
   d. Radiation protection facility (temporary)

5. Personnel Monitoring

   a. Program
   b. Records
   c. Monitoring devices

6. Preoperational Test Procedures

   a. Radwaste systems (status and arrangement for review)
   b. Monitoring systems (status and arrangement for review)

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7. Radiation Protection Manual

In final rough draft (index obtained)

Details of Subjects Discussed in Section I

8. Radiation Protection and Chemistry Procedures

Mr. Herbein described the current philosophy and approach to formulating radiation protection procedures as one of incorporation. That is to say, these procedures are not being established into manual form that is oriented toward the radiation protection program. The said procedures are currently included in operating procedures, maintenance procedures and others rather than being available as separate entities. No index of procedures was yet available that would identify subject or location of procedures. It was noted that chemistry procedures were more oriented toward the chemistry program. An index, noted as not being complete by the chemistry supervisor, was available. A tentative completion date has been established as January 1973. Mr. Wise stated that current philosophy on procedures was under consideration by the review committees (PORC and GORB) and a resolution would be forthcoming in the near future. Mr. Wise further stated that the question of procedure orientation would be taken to the review committees.

In response to the inspector's comments on an apparent reluctance to make completed procedures available, Mr. Wise stated that this reluctance was generated by the fact that procedure philosophy was currently under study, and suggested that after this was resolved procedures would be readily available as they are completed.

9. Quality Control (Radiochemistry)

A program has not been formally defined as yet, however, one will be formulated. As described by Mr. Wise this will include, comparison of isotopic analysis with an independent laboratory, analysis of independently spiked samples and participation in a split sampling program. Mr. Herbein made note that Isotopes Incorporated, is currently providing isotopic analysis of their environmental samples. This type of program will continue after they become operational.

10. Radiation Monitoring Systems (Calibration)

The process radiation monitors reportedly have been calibrated at the manufacturers plant site. The calibration was accomplished as a joint venture with Three Mile Island personnel in participation. The calibration procedures, as described by Herbein, included the use of multiple known concentrations of radioactive liquids and gases to determine response, sensitivity and applicable curves. Calibration data has been documented but was not yet available for review. In response to questions for verifying calibration, after installation at the reactor site, Herbein stated that these were currently under study, and at the moment, a decision had not been made as to method. Mr. Wise stated that a procedure for calibration verification would be developed.

11. Line Loss Determinations (Primary Vent Monitor)

Herbein stated that sample line and sampling point had not yet been finalized, however, it would be consistent with providing capabilities for isokinetic sampling. Guidance for installation would be as defined in ANSI, N13.1-1969 document. The completed installation would also be evaluated for line losses, according to Herbein. Mr. Wise confirmed this and stated that determinations would be documented.

12. Bioassay Program

In response to questions by the inspector with respect to a bioassay program, Herbein stated that this had not yet been firmed up. He stated that they tentatively were thinking in terms of a routine urinalysis program and a whole body count of selected representative individuals. At this point in time they were not contemplating a program to establish baseline whole body count data on station personnel. He stated that whole body counting would be accomplished on individuals involved in suspected exposures to excessive air concentrations. The inspector stated that whole body counting was a good method to measure the effectiveness of their air sampling and internal exposure control programs. Mr. Wise stated that they will further review this area.