

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

Inspection No: 50-320/74-03
Licensee: Metropolitan Edison Company
E. 542
, Pennsylvania 19603
Isle Island Unit #2
County, Pennsylvania

Docket No: 50-320
License No: CPPR-66
Priority: _____
Category: B

Type of License: PWR, 871, MWe (B&W)
Type of Inspection: Routine, Unannounced
Dates of Inspection: May 14-17, 1974
Dates of Inspection: February 20-28, 1974 (Environmental)

Reporting Inspector: A. A. Varela
A. A. Varela, Reactor Inspector

Accompanying Inspectors: NONE

Other Accompanying Personnel: NONE

Reviewed By: J. H. Tillou
J. H. Tillou, Senior Reactor Inspector

6-4-74
Date

Date

Date

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6-4-74
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SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Action

Actions taken by licensee in response to the enforcement action in RO Report 50-320/74-01 were examined. Documentation on the containment liner penetrations was found properly collated, retrievable and traceable to specific items. (Details, Paragraph 6)

Design Changes

Not inspected

Unusual Occurrences

None

Other Significant Findings

A. Current Findings

1. An inspection was made and documentation was examined of procured components and equipment in the decay heat removal and the decay heat closed-cooling systems. The only deficiency identified was an incorrect ASTM designation for material tabulation in the FSAR. (Details, Paragraph 4)
2. Concrete batching, placing, testing, curing and quality control functions were inspected on the containment building ring girder with no deficiencies identified. (Details, Paragraph 3)

B. Status of Previously Reported Unresolved Items

Resolution of the containment building dome liner's spherical out-of-tolerance, reported in RO Report 50-320/74-01, was reviewed. Modifications to the dome liner have been approved by the deficiency review board composed of licensee, A-E and constructor. (Details, Paragraph 5)

Management Interview

The management interview was held at the site on afternoon of May 17, 1974.

Personnel Attending

GFUSC

D. M. Boyes, Assistant to Resident Civil Engineer
W. T. Gunn, Site Manager
P. A. Levine, QA Auditor
W. S. Shepherd, Project Engineer
M. J. Stromberg, Site Auditor
J. E. Wright, QA Manager
J. H. Wright, Resident Civil Engineer

B&R

T. R. Block, QAE, Lead
T. Wright, QAE, Civil

UE&C

V. E. Cichocki, QA/QC Coordinating Superintendent
D. C. Lambert, QC Field Supervisor
R. L. Hawkins, Construction Coordinator
K. H. Mason, Job Engineer
J. F. Artuso, Pittsburgh Testing Laboratory Vice President

The items discussed are summarized below. In each case the licensee acknowledged the information.

A. Concrete Placement of Containment Building Ring Girder

The inspector stated he made a preplacement inspection for concreting the containment building ring girder to verify the constructor's QC functions and, inspected the batching, delivery, placing, testing, consolidation and curing of concrete on two ring girder quadrants. No apparent deficiencies were observed. (Details, Paragraph 3)

B. Audit of Documentation and Inspection of Components for Decay Heat Removal and Closed-Cooling Systems

The inspector stated he inspected the installed components and reviewed purchase, storage, installation records and material certificates on coolers, pumps and valves for the decay heat removal and closed-cooling systems. No apparent deficiencies were found. (Details, Paragraphs 4.a, b and c)

DETAILS

1. Persons Contacted

GPUSC

D. M. Boyea, Assistant to Resident Civil Engineer
W. T. Gunn, Site Manager
P. A. Levine, QA Auditor
W. S. Shepherd, Project Engineer
M. J. Stromberg, Site Auditor
G. L. Roshy, QA Auditor
A. M. Salcido, QA.E
J. E. Wright, QA Manager
J. H. Wright, Resident Engineer, Civil

B&R

T. R. Block, QAE Lead
T. Wright, QAE, Civil

UE&C

M. L. Byers, QC Inspector, Mechanical
V. E. Cichocki, QA/QC Coordinating Superintendent
W. Gaskin, QC Batch Plant Inspector
R. L. Hawkins, Construction Coordinator
R. Hawley, Construction Engineer
D. C. Lambert, QC Field Supervisor
F. R. Long, QCE, Civil
R. H. Mason, Job Engineer
N. Reitzi, QC Concrete Inspector
J. Schmidt, QC Records

J. F. Artuso, Pittsburgh Testing Laboratory, Vice President
T. Burnett, Pittsburgh Testing Laboratory QC Inspector
B. Ferguson, Pittsburgh Testing Laboratory QC Inspector
E. Swaby, National Mobile, Batch Plant Superintendent

2. Construction Progress

Construction progress on Unit No. 2 is estimated by licensee to be 50% complete.

3. Significant Details Observed in Concrete Placement of Containment Building Ring Girder

a. Design Details Benefiting Concrete Placement

1. Dome tendons terminate radially through ring girder, thereby eliminating congestion at duct cross-over.
2. Dome tendon bearing plates are perpendicular to ring girder haunch rather than boxed into outside face of ring girder.
3. Ring girder bearing plate trumpets are designed without spirals thus facilitating flow of fresh concrete and concrete consolidation.
4. Ring girder construction joints are three feet deep thus providing visibility within forms and easy access for placement and consolidation.

b. Construction Details Benefiting Placement of Concrete

1. Withholding rebar and duct installation in upper half of ring girder until placement of lower half is completed.
2. Two, diametrically opposite, quadrants of ring girder, 3' deep are placed each week.
3. Placement practice used concrete pump and bucket.
4. Spacing of pump and bucket discharge provided uniform distribution of concrete.
5. Comparative test samples of concrete taken at truck discharge and at ring girder.
6. Tight control of concrete consistency was provided at truck discharge station.
7. Coordination of batching and placing of concrete provided continuity for two 18" lifts.
8. Green cutting of concrete to expose aggregate at construction joints was undertaken before final set of concrete.
9. Wet burlap on top of placement used to cure concrete.

4. Decay Heat Removal and Closed-Cooling System Components

- a. QC and construction procedures for procurement, receipt, storage, handling and installation of these mechanical components for the decay heat removal and closed cooling systems were audited:

1. Coolers DH-C-1A and DC-C-1A
2. Pumps DH-P-1A and DC-P-1A
3. Valves DH-V-103A and DC-V-8A

The procedures appear to be adequate to implement the quality assurance program and criteria in Appendix B to 10 CFR 50.

- b. Documentary evidence was audited and evaluated for conformance to requirements as expressed in the quality control program for the above components. These records appear to satisfy the quality control procedural requirements for:

1. Special shipping instructions
2. Receipt inspections
3. Installation inspections
4. Material and fabrication certifications, including conformance with chemical, physical, NDT, and, as required in the purchase order, other specified testing.

- c. Physical inspection of the above components was made to identify and correlate records to specific pieces of equipment, to observe installation status and, to verify monthly maintenance where required. No deficiencies were observed.

- d. Decay heat closed cooling heat exchanger DC-C-1A is listed in the FSAR tabulation as having shell material ASTM B515 Grade 70. However purchase specifications and material certificates correctly identifying the shell material, ASTM A515 Grade 70. This inconsistency in the FSAR was accepted by licensee who, at management interview, replied that an audit would be conducted of the FSAR tables to ensure consistency with the applicable specifications. This is an unresolved item.

5. Containment Building Dome Liner Modification*

Modification to the dome liner is required because of its spherical out-of-tolerance. The deflected surface of the dome liner was unconditionally accepted "as built" by licensee, A-E and constructor

contingent upon strict implementation of special procedures regarding the placing of dome concrete and accomplishing any modifications to the liner that may be found necessary for concrete placement. Burns and Roe drawing number 5052, Reactor Building Dome Liner Concrete Hoop Stiffeners, modifies liner by installing ten - 8" x 12" high reinforced concrete stiffener hoops to the spherical section of dome liner. Hoop attachment to liner requires installation of two 3/4" diameter x 11" long nelson studs. Licensee informed the inspector that construction and QC procedures for installation of the nelson studs are available but modifications to concrete procedures are not written. Licensee estimates that stiffener hoop concrete placement may start in latter part of August, 1974.

6. Licensee Actions Taken to Identify Containment Liner Plate Penetrations

The licensee's response dated March 6, 1974 to enforcement action in RO Report 50-320/74-01 identified actions being taken to provide identification and retrievability of documentation on liner plate penetrations to as-built records. The RO inspector verified these actions at this inspection by auditing correspondence between licensee and the liner plate contractor, by interviewing licensee auditors and evaluating random samples. It appears that individual packages of penetrations documentation now are adequately identified and retrievable but licensee audit of conformance to specifications and code requirements is still in progress.