



**Consumers
Power
Company**

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December 13, 1979
Howe-309-79

Mr J G Keppler
Regional Director
Office of Inspection & Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR PLANT
UNIT NO 1, DOCKET NO 50-329
UNIT NO 2, DOCKET NO 50-330
CONTAINMENT INTERNAL STRUCTURES COATING DEFICIENCY

In accordance with the requirements of 10 CFR 50.55(e), this letter constitutes an interim report on in-containment coatings which have a loss of adhesion between successive layers of the coating system. The attachments to this letter provide a more complete description of the condition and the status of the actions being taken.

Another report, either interim or final, will be sent on or before February 15, 1979.

WRB/lr

- Attachments: 1. Quality Assurance Program, Management Corrective Action Report, MCAR-1, Report 35, dated November 13, 1979
2. MCAR-35, Interim Report #1, dated November 30, 1979

CC: Director of Office of Inspection and Enforcement
Att: Mr Victor Stello, USNRC (15)

Director of Office of Management
Information and Program Control, USNRC (1)

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QUALITY ASSURANCE PROGRAM
 MANAGEMENT CORRECTIVE ACTION REPORT
 MCAR-1

Attachment 1
 Howe-309-79

REPORT NO. 35

JOB NO. 7220 0028 QNo. 2.20

DATE November 13, 1979

I *DESCRIPTION (Including references): Epoxy decontaminative surfacer applied to Unit 2 containment, northwest primary shield wall and incore tunnel exterior faces from elevation 593'-6" to about 603'-0" exhibits a loss of adhesion between the Nu-Klad 117 (N) surfacer and Amercate 90 (N) top coat.

This surfacer was applied by subcontractor J. L. Manta in accordance with requirements of subcontract No. A-15 and specification 7220-A-15(Q) utilizing system no. 9 thin coat application.

This condition was first noted by CPCo resulting in issuance of CPCo NCR M01-4-9-132 (attached). (Continued on page 2)

*RECOMMENDED ACTION (Optional)

- I. Determine Root Cause:
 - A. Quantify by mapping and testing coated areas to determine extent of physical problem.
 - B. Review design specification, subcontractor procedures and Quality records for acceptability of techniques, procedures, equipment, and materials used.
 - C. Perform analysis of materials used for compliance with design and quality requirements.
- II. Determine reportability under 10CFR50.55(e) and advise QA no later than Nov. 30, 1979. (Continued on page 2)

REFERRED TO ENGINEERING CONSTRUCTION QA MANAGEMENT _____
 PROCUREMENT

ISSUED BY W. Draushbach 11-13-79
 Project QA Engineer Date

II REPORTABLE DEFICIENCY Potentially Reportable
 NO YES

NOTIFIED CLIENT 11/13/79
 Date
[Signature] 11/13/79
 Project Manager Date

III CAUSE

CORRECTIVE ACTION TAKEN

AUTHORIZED BY _____
 Date

STANDARD DISTRIBUTION
 DIVISION QA MANAGER
 MANAGER OF QA - TPO
 GPD - QA MANAGER
 LAPD QA MANAGER
 AAO QA MANAGER
 PROJECT MANAGER
 CLIENT
 AAO PROJECT OPERATIONS MANAGER
 AAO PROCUREMENT MANAGER
 AAO MGR OF ENGINEERING
 AAO MGR OF CONSTRUCTION

ADDITIONAL DISTRIBUTION - AS APPROPRIATE
 ENGINEERING MANAGER
 PROJECT ENGINEER
 AAO PROCUREMENT SUPPLIER QUALITY MGR
 CONSTRUCTION MANAGER
 PROJ SUPT. PROJ CONSTR MANAGER
 CHIEF CONSTR QC ENGINEER
 PF OCE
 DIVISION PROCUREMENT MGR
 PROJ PROCUREMENT MGR
 DIV SUPPLIER QUALITY MGR

FORMAL REPORT TO CLIENT _____
 (If Section II Applies) Date

CORRECTIVE ACTION IMPLEMENTED

VERIFIED BY 1599 228
 Project QA Engineer Date

*Describe in space provided and attach reference document

DESCRIPTION: (Cont'd)

Approximately 600 sq. ft. of surfacer is currently in question on primary shield and incore tunnel with 10-12 sq. ft. already removed during current investigation.

RECOMMENDED ACTION: (Cont'd)

- III. Based upon the results of I, provide recommended fix and accomplish repair of defective areas.
- IV. Take appropriate steps to preclude recurrence.
- V. Provide report to QA by November 30, 1979 (interim or final).

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SUBJECT: MCAR 35 (issued 11/13/79)
Containment Internal
Structures Coating

INTERIM REPORT 1

DATE: November 30, 1979

PROJECT: Consumers Power Company
Midland Plant Units 1 & 2
Bechtel Job 7220

Introduction

As requested in MCAR 35, this report summarizes project engineering's evaluation and action regarding the failure of coatings on concrete, as applied by subcontractor J.L. Manta, in the containment building to maintain adhesion between successive layers of the coating system.

Description of Deficiency

Specification 7220-A-15(Q) requires an application of a three-coat epoxy decontaminable surfacer, designated as System 9 in Specification 7220-A-15(Q), on certain concrete walls. The three-coat system consists of one coat of Ameron 117 (surfacers) followed by two coats of Ameron 90 (topcoat). The specification, allows a second coat of Ameron 117 as necessary to ensure the required coverage. It was noted in Consumers Power Company Nonconformance Report (NCR) M01-4-9-132 that there was a loss of adhesion between coats of this system on Unit 2 containment interior concrete walls. Preliminary examination of these walls by Bechtel revealed that the second coat of Ameron 117 surfacer had delaminated from the first coat of Ameron 117 surfacer.

Investigation

Investigation revealed that the deficiencies were noted mostly between elevations 595' and 650'. At this early stage of examination, there was no apparent cause identified nor was it possible to make an accurate estimate of the extent of the deficiencies.

Therefore, to establish the adequacy of the System 9 coatings, an evaluation program will be undertaken as described under Corrective Action.

Safety Implications

Project engineering's investigation of the deficiency shows an implication of an adverse effect on plant safety, and therefore is reportable under 10 CFR 50.55(e). The bases for this determination are as follow.

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1. This deficiency, were it to have remained uncorrected, could have adversely affected the safety of operations of the Midland plant at any time throughout the expected lifetime of the plant.

The loss of adhesion between the first and second layers of coating System 9 has the potential for causing paint material to be carried into the containment sump as a result of a reactor accident followed by initiation of the containment spray system. The containment sump is a safety-related structure, the function and design of which are described in FSAR Subsection 6.2.2.1.2.2. In accordance with NRC Regulatory Guide 1.82, the sump is designed to allow 50% clogging of the fine inner screen without degrading spray pump or decay heat pump npsH, and to limit hydraulic approach velocities to the inner screen to approximately 0.2 ft/sec to facilitate settling out of debris. However, it cannot be conclusively determined that the failure of the containment coatings described in MCAR 35 would result in less than 50% blockage of the inner sump screen. Therefore, adequate npsH for the spray pumps and decay heat pumps could potentially have been adversely affected, were this deficiency to have remained uncorrected.

2. This deficiency represents a significant deviation from performance specifications which will require either extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the component to meet the criteria and bases stated in the safety analysis report or construction permit, or to otherwise establish the adequacy of the component to perform its intended safety function.

FSAR Subsection 6.1.2 states that the protective coatings used inside containment have been demonstrated to withstand the design basis accident conditions and to comply with Regulatory Guide 1.54, except in certain cases where non-LOCA-qualified coatings are used on small components with a limited painted surface. At this time, the extent of the delamination indicates that it may not be restricted to a localized area or justified by a single isolated cause.

Corrective Action

Project engineering is implementing a program to accomplish the action recommended by MCAR 35, as follows.

1. Quantify, by mapping and testing coated areas to determine the extent of the physical problem.
2. Review design specifications, subcontractor procedures, and quality records for acceptability of techniques, procedures, equipment, and materials used.
3. Perform analysis of materials used for compliance with design and quality requirements.

4. Establish and implement an acceptance test procedure to demonstrate that adhesion requirements are met.

Results from the mapping, testing, document review, and material analysis will be evaluated by Bechtel. Evaluation will include the determination of root cause(s), steps necessary to preclude recurrence, and corrective action to put the coating system into compliance with Regulatory Guide 1.54.

The next report is scheduled for January 30, 1980, and will provide a status report on the testing program.

Submitted by:

J.S. Dierker

Approved by:

M. O. Rothwell

Concurrence by:

K.D. Bailey

JSC/sg
11/30/8

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