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U.S. Nuclear Regulatory Commission Operations Center Event Report

10/19/2001

P21 m 1340

Power Reactor

Event # 38408

Site: VERMONT YANKEE Unit: 1 Region: 1 State: VT Reactor Type: [1] GE-4 Containment Type: MARK I		Notification Date / Time: 10/19/2001 16:39 (EDT) Event Date / Time: 10/19/2001 (EDT) Last Modification: 10/19/2001				
NRC Notified by: MICHAEL HAMER HQ Ops Officer: BOB STRANSKY Emergency Class: NON EMERGENCY 10 CFR Section: 21.21 UNSPECIFIED PARAGRAPH		Notifications: R1 IRC TEAM MANAGER R1 Vernon Hodge NRR				
Unit	Scram Code	RX Crit	Init Power	Initial RX Mode	Curr Power	Current RX Mode
1	N	Yes	100	Power Operation	100	Power Operation

10 CFR PART 21 REPORT

"During RFO-22, Carboline Carbozine CX-11SG paint primer was applied to the drywell shell (inner wall) to the floor joint as part of a qualified seal design. The purpose of this seal is to provide a moisture barrier to mitigate water entering the shell to concrete interface. In preparation for and during subsequent applications of the primer, significant gelling/premature set-up of the paint was exhibited (ref. ER20011169, dated 5/11/01). Within 24 hours of the paint application, the paint began to lift and blister. This paint was supplied under an Appendix B Vendor QA Program in accordance with VY PO 011040. Failure analysis received from Carboline and an independent test lab indicated the paint was defective. Carboline indicates the failure was most likely due to a moisture problem during manufacture. The problem was with part 'A' of the two-part paint. The impact of the failed paint applied in the drywell during the outage was evaluated under ER 20011169. The seal was then coated with a single coat of Carboline 890. Carboline Corporation has verified this to be an acceptable application until a permanent remedy is achieved."

INTEROFFICE MEMORANDUM – REGULATORY COMPLIANCE

TO: DON LEACH, VY RESPONSIBLE OFFICER
 FROM: MIKE HAMER, REGULATORY COMPLIANCE ANALYST
 SUBJECT: ER 2001222: 10CFR21 EVALUATION FOR CARBOLINE PAINT FAILURE ANALYSIS
 DATE: OCTOBER 19, 2001

EVENT DESCRIPTION:

During RFO-22, Carboline Carbozine CX-11SG paint primer was applied to the drywell shell (inner wall) to the floor joint as part of a qualified seal design. The purpose of this seal is to provide a moisture barrier to mitigate water entering the shell to concrete interface. In preparation for and during subsequent applications of the primer, significant gelling/premature set-up of the paint was exhibited (ref. ER20011169, dated 5/11/01). Within 24 hours of the paint application, the paint began to lift and blister. This paint was supplied under an Appendix B Vendor QA Program in accordance with VY PO 011040. Failure analysis received from Carboline and an independent test lab indicated the paint was defective. Carboline indicates the failure was most likely due to a moisture problem during manufacture. The problem was with part "A" of the two-part paint. The impact of the failed paint applied in the drywell during the outage was evaluated under ER 20011169. The seal was then coated with a single coat of Carboline 890. Carboline Corporation has verified this to be an acceptable application until a permanent remedy is achieved.

The following regulation was considered when determining reportability of this event.

10CFR21.21 "Notification of failure to comply or existence of a defect and its evaluation.

- (a) Each individual, corporation, partnership, dedication entity, or other entity subject to the regulations in this part shall adopt appropriate procedures to:
- (1) Evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) of this section, in all cases within 60 days of discovery, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected. (emphasis mine)

DISCUSSION/BASES:

§21.3 Definitions:

Basic component. When applied to nuclear power plants licensed pursuant to 10 CFR Part 50 of this chapter, basic component means a structure, system, or component, or part thereof that affects its safety function necessary to assure:

- (A) The integrity of the reactor coolant pressure boundary;

- (B) The capability to shut down the reactor and maintain it in a safe shutdown condition;
or
- (C) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in

Substantial safety hazard means a loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety for any facility or activity licensed, other than for export, pursuant to parts 30, 40, 50, 60, 61, 70, 71, 72 of this chapter.

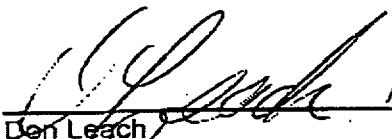
To substantiate this event to be reportable in accordance with Part 21, the Carboline Paint must meet the definition of a *basic component* and represent a *substantial safety hazard* as stated above. Part 21 requires the reporting of a "defect or failure to comply that could create a substantial safety hazard were it to remain uncorrected".

Defects per §21.3 Definitions pertain to a basic component. The Primary Containment and all of its associated parts meet the definition of a basic component because the CZ-11 primer is part of a qualified seal design, which insures the integrity of the Primary Containment.

Technical Specification 4.7.A. requires the interiors of the drywell and suppression chamber to be painted with an inorganic zinc primer to prevent rusting that could lead to degradation of the containment pressure boundary. Inspection of the painted surfaces as part of inservice inspection under 10 CFR 50.55a(b)(2)(vi) assures that the paint and the underlying base metal have not degraded. The failure of the CZ-11 primer could cause significant degradation to the integrity of the primary containment, potentially leading to a major reduction in the degree of protection for public health and safety and therefore, could create a substantial safety hazard were it to remain uncorrected [§21.21(a)(1)]. The inspections described in §50.55a are performed once every ten years.

CONCLUSION: This event is reportable pursuant to 10CFR21.21.

RECOMMENDED: , 10-19-01
 Michael J. Hamer Date
 Regulatory Compliance Analyst

APPROVED: , 10/19/01
 Don Leach Date
 Vice President of Engineering
 Vermont Yankee Responsible Officer