

SSER

Task: Allegation A-256

Reference No.: 4-84-A-06-140c

Characterization: It is alleged that Chicago Bridge & Iron (CB&I) had problems with protective coatings and material traceability for the inside of the containment vessel.

Assessment of Allegation: The NRC staff's review of this allegation indicated that CB&I did not have available any documentation concerning material certification, painter certification, quality control (QC) certification, or work activity inspections.

The NRC staff's review of EBASCO Contract No. NY-403405 with CB&I indicated that CB&I had no requirement that committed them to a quality assurance (QA) program for nuclear protective coatings. There was no objective evidence made available by CB&I which would support the acceptability of the coatings material or its application. The NRC staff was informed by LP&L that Carboline, the coating manufacturer, maintained material certification for coatings for only 5 years. It has been approximately 7-8 years since the initial application of coatings by CB&I to the containment vessel. Carboline gave only oral compliance to LP&L that the coating material purchased was acceptable for the intended service conditions.

The only documentation available for coatings applied to the containment vessel were the EBASCO QC surveillance inspection reports. However, there appeared to be no established method of documenting the coating work until flaking and delamination of Carbo Zinc 11 (Primer) occurred after post-weld heat treatment was completed by CB&I. The EBASCO corrosion engineers, CB&I, and Carboline held meetings and had discussions on the method of repair of the containment vessel; as a result, EBASCO QC monitored the coatings operation by CB&I on a daily basis

from approximately August to December 1977. Inspection reports by EBASCO QA indicated that they inspected dry film thickness, ambient conditions, and surface cleaning and preparation.

Approximately 2 years later Sline Industrial Painters, Inc., the paint contractor, identified areas with coating problems inside the containment vessel. Again, EBASCO corrosion engineers performed an onsite evaluation of the entire coating system inside the containment vessel. At this time a 100% inspection plan was initiated by EBASCO and LP&L. All defective areas were marked, and Sline repaired them using approved procedures in accordance with ANSI N101.2, N5.12, and N101.4.

There was some question about the integrity of the coating system applied by CB&I. To address these concerns, an in-situ design basis accident (DBA) test was conducted by Ken Tator Associates and EBASCO corrosion engineers on the inside of the containment vessel to verify the integrity of the coating system. The results of this test indicated that the protective coating system would remain intact during a DBA and would have no impact on safety.

The NRC staff's review of the allegation established that EBASCO's contract with CB&I did not require CB&I to commit to a QA program for interior coatings. Moreover, the staff's assessment revealed that LP&L had failed to fully review EBASCO's contract for a CB&I QA program for protective coatings for the inner surface of the containment vessel.

In addition, both the preliminary safety analysis report (PSAR) and the final safety analysis report (FSAR) commit to ANSI N101.2 and N5.12 (formerly N5.9 in the PSAR). LP&L had acknowledged that it had not fully complied with these standards concerning the containment vessel plate (inside), and had submitted an FSAR change (Amendment No. 33, September 1983) and a potential 10 CFR 50.55(e) item.

This allegation has neither safety significance nor generic implications.

Potential Violations: The NRC staff concluded that LP&L's failure to establish a QA program pertaining to the containment vessel inner coatings, which are to be safety grade materials and which must withstand accident conditions, is a violation of 10 CFR 50, Appendix B, Criterion II.

Actions Required: None.

References

1. Ebasco Surveillance Report W3-NY-403405 SH-1, dated May 10, 1983.
2. NCR-W3-3648 "Nuclear Coatings - RCB Liner Plate" and attachments.
3. Significant Construction Deficiency (SCD) Report #56, "RCB Liner Plate Nuclear Coatings Failure."
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7. Interoffice Correspondence; COR-LW3-81-1M, dated August 10, 1981.
8. Letter No. COR-LW3-77-49M, dated July 20, 1977.
9. Discrepancy Notice (DN) C-376, dated September 14, 1977.
10. Letter No. COR-LW3-77-57M.
11. NRC Report No. 50-382/84-08.

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Task: Allegation A-256

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The only documentation available for coatings applied to the containment vessel were the EBASCO QC surveillance inspection reports. However, there appeared to be no established method of documenting the coating work until flaking and delamination of Carbo Zinc 11 (Primer) occurred after post-weld heat treatment was completed by CB&I. The EBASCO corrosion engineers, CB&I, and Carboline held meetings and had discussions on the method of repair of the containment vessel; as a result, EBASCO QC monitored the coatings operation by CB&I on a daily basis



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In addition, both the preliminary safety analysis report (PSAR) and the final safety analysis report (FSAR) commit to ANSI N101.2 and N5.12 (formerly N5.9 in the PSAR). LP&L had acknowledged that it had not fully complied with these standards concerning the containment vessel plate (inside), and had submitted an FSAR change (Amendment No. 33, September 1983) and a potential 10 CFR 50.55(e) item.

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Actions Required: None.

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Task: Allegation A-256

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The only documentation available for coatings applied to the containment vessel were the EBASCO QC surveillance inspection reports. However, there appeared to be no established method of documenting the coating work until flaking and delamination of Carbo Zinc 11 (Primer) occurred after post-weld heat treatment was completed by CB&I. The EBASCO corrosion engineers, CB&I, and Carboline held meetings and had discussions on the method of repair of the containment vessel; as a result, EBASCO QC monitored the coatings operation by CB&I on a daily basis

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In addition, both the preliminary safety analysis report (PSAR) and the final safety analysis report (FSAR) commit to ANSI N101.2 and N5.12 (formerly N5.9 in the PSAR). LP&L had acknowledged that it had not fully complied with these standards concerning the containment vessel plate (inside), and had submitted an FSAR change (Amendment No. 33, September 1983) and a potential 10 CFR 50.55(e) item.

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Actions Required: None.

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Assessment of Allegation: The NRC staff's review of this allegation indicated that CB&I did not have available any documentation concerning material certification, painter certification, quality control (QC) certification, or work activity inspections.

The NRC staff's review of EBASCO Contract (No. NY-403405) with CB&I indicated that CB&I had no requirement that committed them to a quality assurance (QA) program for nuclear protective coatings. There was no <sup>DOCUMENTATION</sup> ~~objective evidence~~ made available by CB&I <sup>ON THE BASIC MATERIALS</sup> which would support the acceptability of the coatings material or its application. The NRC staff was informed by LP&L that Carboline, the coating manufacturer, maintained material certification for coatings for only 5 years. It has been approximately 7-8 years since the initial application of coatings by CB&I to the containment vessel. Carboline gave only oral <sup>statement</sup> ~~compliance~~ to LP&L that the coating material purchased was acceptable for the intended service conditions.

The only documentation available for coatings applied to the containment vessel were the EBASCO QC surveillance inspection reports. However, there appeared to be no established method of documenting the coating work until flaking and delamination of Carbo Zinc 11 (Primer) occurred after post-weld heat treatment was completed by CB&I. The EBASCO corrosion engineers, CB&I, and Carboline held meetings and had discussions on the method of repair of the containment vessel; as a result, EBASCO QC monitored the coatings operation by CB&I on a daily basis

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This allegation has neither safety significance nor generic implications.

COMPLIANCE WITH THE ABOVE STANDARDS  
IN REGARD TO COATING OF

Potential Violations: The NRC staff concluded that LP&L's failure to establish a QA program pertaining to the containment vessel inner coatings, which are to be safety grade materials and which must withstand accident conditions, is a violation of 10 CFR 50, Appendix B, Criterion II.

Actions Required: None.

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