



5.2 Salt Water related distress

Description:

Concrete exposed to salt water can, over time, lose its ability to protect the embedded iron from corrosion. Concrete exposed to wetting/drying by salt water can suffer deterioration related to chemical reactions and cycles of shrinkage/expansion.

Data to be collected and Analyzed:

1. Determine areas where salt water is utilized.
2. Evaluate concrete samples for effects of salt water exposure. (Petrographic reports in FM 5.2 Exhibit 1, 2 and 3)

Verified Refuting Evidence:

- a. Salt water used for cooling is separate from the containment structure. There is no direct exposure of the containment concrete to raw sea water.
- b. Review of inspection reports over the years did not reveal any reference to rebar corrosion.
- c. Visual observations during and after demolition in 2009 did not note any significant corrosion of rebar.
- d. Concrete cores obtained from the structure showed no evidence of salt water exposure. (FM 5.2 Exhibit 1, 2 and 3 – Petrographic reports by CTL, Mactech, and Erlin & Hime)

Verified Supporting Evidence:

None

Discussion:

Petrographic analysis did not note any signs of salt water related distress. CTL (FM 5.2 Exhibit 3) concluded that “no evidence is exhibited of any deleterious chemical reactions involving the cement paste and/or aggregates.” The other two Petrographic reports are included as exhibits for completeness and do not include direct reference to distress typical of sea water exposure.

Conclusions:

Salt water did not impact the structure and did not cause distress related to the delamination.

May identify additional perspective on this issue as RCA related efforts proceeds

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