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Houston Lighting & Power

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project Electric Generating Station
Unit 1
Docket No. STN 50-498
HL&P Interpretation of ASME Code,
Section XI Evaluation Criteria For Leakage

Houston Lighting & Power Company (HL&P) has discovered that a number of small bore Class 3 aluminum bronze pipe fittings and valves of the South Texas Project Electric Generating Station Unit 1 Essential Cooling Water System (ECW) have developed through wall leakage due to corrosion. HL&P has been keeping the NRC informed about the status of the resolution of this problem. During discussions on this subject, the NRC asked HL&P to document its interpretation of ASME Section XI relative to the acceptability of leakage. HL&P has prepared the attached code interpretation which, in summary, states that leakage shall be evaluated by the owner. An evaluation was conducted by HL&P which concluded that the system was acceptable for continued operation. This evaluation will be updated as additional information becomes available.

If you have any additional questions concerning this matter, please contact S.M. Head, (512) 972-8392.

M A McBurnett

M. A. McBurnett
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MAM/SMH/dg

Attachment: HL&P Interpretation of ASME Code,
Section XI Evaluation Criteria For
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Houston Lighting & Power Co. (HL&P) Interpretation of ASME Code, Section XI Evaluation Criteria for Leakage

References

(1) ASME Boiler and Pressure Vessel Code, Section XI, 1980 Edition through Winter 1981 Addenda

(2) Section XI, 1983 Edition through Summer 1983 Addenda

(3) Section XI, 1986 Edition

Reference 1 (80W81 Section XI) is the Code basis for the STPEGS Unit 1 and Unit 2 preservice inspection (PSI) program. Reference 2 (83S83 Section XI) is the Code basis for the STPEGS Unit 1 inservice inspection (ISI) program for the first ten year inspection interval.

IWA-5250 "Corrective Measures" provides for the action to be taken for leakages detected during ISI examinations, states that "leakages...shall be located and evaluated by the Owner for corrective measures..." and provides specific acceptance criteria for buried components and components with general corrosion.

However, under the tables for examinations IWB-2500-1 for Class 1 components and IWC-2500-1 for Class 2 components, the Codes (Ref. 1 and 2) reference IWA-2500 for acceptance criteria; whereas, Table IWD-2500-1 for Class 3 components lists "no leakage" for Class 3 components in Category D-A (Systems in support of reactor shutdown) and Category D-B (Systems In Support of ECC, CHR, atmosphere cleanup, and RHR). For Class 3 systems in Category D-C (Systems in support of spent fuel storage pool RHR), the tables again reference IWA-5250.

Thus under the 1981 and 1983 Codes, there was an anomalous situation where the acceptance criteria in the tables for D-A and D-B for Class 3 systems was not consistent with those for Class 1 and 2 systems, and could be interpreted to be more restrictive.

This inconsistency was rectified in the 1986 Edition of Section XI (Ref. 3) by revised rules that provide specific acceptance criteria for leakages detected during system pressure tests that apply to all Class 1, 2, and 3 components. Visual acceptance standards for leakage detected during VT-2 visual examination (Class 1, Cat.B-P) are provided in IWB-3522 (Class 1 acceptance standards) and the Class 2 (IWC-3000) and Class 3 (IWD-3000) acceptance standards refer back to Class 1 acceptance standards.

IWB-3522 of the 1986 Section XI requires that relevant conditions (including through wall leakage of pressure retaining components) meet the requirements of 1WB-3142 and IWA-5250. IWB-3142 (b) permits components containing relevant conditions to remain in service if the component's acceptability can be demonstrated by an analytical evaluation in accordance with IWB-3142.4. This evaluation is subject to regulatory review in accordance with IWB-3144 (b).

HL&P believes that the language of IWA-5250 permitting evaluation was the generic intent of the Code for all classes. However, the Tables D-A and D-B of the 1981 and 1983 Codes represented a contradiction and oversight which was subsequently corrected in the 1986 Edition. Therefore, HL&P believes that evaluation in accordance with IWA-5250 is permissible for Class-3 systems under References 1 and 2 above.