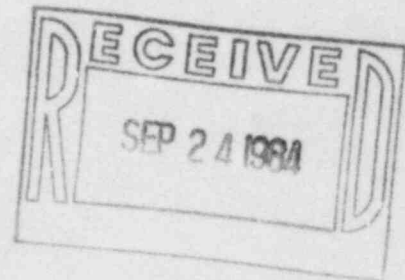


# The Light company

Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

September 21, 1984  
ST-HL-AE-1130  
File No: G12.188

Mr. John T. Collins  
Regional Administrator, Region IV  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76012



Dear Mr. Collins:

South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
First Interim Report Concerning  
Containment Spray pH

On August 21, 1984, HL&P informed the Nuclear Regulatory Commission of a potentially reportable condition related to containment spray pH. Specifically, a design error in the Containment Spray System (CSS) results in a condition whereby spray pH cannot be maintained less than equipment qualification limits during all modes of CSS operation. Based on our review, we have determined that this item is reportable pursuant to 10CFR50.55(e).

Attached is an interim report concerning this matter. HL&P will transmit the next report on this item by January 11, 1985.

If you have any questions concerning this matter, please contact Mr. Michael E. Powell at (713) 993-1328.

Very truly yours,

*G. W. Oprea, Jr.*  
G. W. Oprea, Jr.  
Executive Vice President

SMH/mg  
Attachment

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PDR ADOCK 05000498  
S PDR

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cc:

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South Texas Project  
Units 1 and 2  
First Interim Report Concerning  
Containment Spray pH

I. Summary

On August 7, 1984, Westinghouse informed Bechtel that the present containment spray system design cannot maintain the spray pH less than 10.5 under all conditions. The pH value of 10.5 is the upper limit on the design bases for the STP containment spray system (CSS). The basis for equipment qualification of non-Westinghouse equipment for chemical spray is a pH range of 8.5 to 10.5. The Westinghouse WCAP 8587, "Methodology for Qualifying Westinghouse WRD Supplied NSSS Safety Related Electrical Equipment," includes a specification of 10.5 pH for chemical spray environmental qualification.

The consequence of this condition if left uncorrected is that the environmental qualification envelope for safety-related equipment inside containment is exceeded.

II. Description of Deficiency

On August 21, 1984, Houston Lighting & Power Company (HL&P) notified the NRC Region IV that the above item concerning the inability of the current CSS to maintain the pH less than 10.5 had been determined to be potentially reportable to 10CFR50.55(e). This item was discovered during a review of the CSS design.

Westinghouse has indicated that inappropriate modeling used in the analysis of containment spray pH for the South Texas Project was the source of this design deficiency. Specifically, during the recirculation phase, sodium hydroxide is still being added to the containment spray flow from the Spray Additive Tank. This sodium hydroxide, coupled with the additive already contained in the containment sump (which is being recirculated) determines the spray pH. The Westinghouse calculation neglected sodium hydroxide present in the sump in calculating recirculation mode spray pH. Modified calculations, performed by Westinghouse, indicate that the present system cannot maintain spray pH less than the required 10.5 during the recirculation phase.

The consequence of this design deficiency if left uncorrected is that equipment qualification chemical environment limits for equipment inside containment are exceeded.

III. Corrective Action

The corrective action that will be taken to alleviate this deficiency will be identified in the final report. There are a number of design options available to resolve this problem without the need to requalify equipment to higher pH values.

IV. Recurrence Control

An isolated error in the analysis of containment spray pH by Westinghouse has been identified as the cause of the deficiency. Therefore, no recurrence control is required.

V. Safety Analysis

The environmental qualification of equipment would be suspect if this situation were left uncorrected since, with the current design, the environmental qualification parameters specified for chemicals are exceeded. Safety-related equipment (non-Westinghouse) has been qualified for pH range of 8.5 to 10.5. Westinghouse supplied safety-related electrical equipment has been qualified to a pH of 10.5.

Since the pH range falls outside the environmental qualification range for safety-related equipment, it is assumed that until corrected a safety hazard exists and that the condition is reportable under 10CFR50.55(e).