

The Light company

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

December 21, 1982

ST-HL-AE-910

SFN: V-0500

PFN: G 9.15

Mr. Thomas M. Novak
Assistant Director for Licensing
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Novak:

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Plans for Use of Westinghouse Model E Steam Generators

This letter provides our response to your letter dated October 28, 1982, requesting information relative to Houston Lighting & Power Company's (HL&P) plans to address the potential for flow-induced vibration of tubes in Westinghouse Model D pre-heater type steam generators. Please note that the South Texas Project (STP) has procured Westinghouse Model E pre-heater type steam generators. The Model E type steam generator is similar in design to the Westinghouse Model D4 type steam generator.

In October, 1981, a nondomestic plant with Model D3 steam generators experienced a steam generator tube leak. Subsequent investigations of the steam generators of that plant, and other D2 and D3 steam generators with significant periods of operation at high power levels, showed that the steam generator tubes were experiencing vibration and wear in the pre-heater area. Since October, 1981, Westinghouse has been involved in efforts to understand the nature of the phenomena and to formulate courses of action to permit continued safe operation of pre-heat steam generators. These efforts include tube removals and examinations, periodic eddy current inspections of operating plants, analytical studies, scale model flow testing, wear testing and diagnostic instrumentation of selected operating plants.

We have met with Westinghouse on a regular basis since February, 1982, to review their pre-heat steam generator program results. With respect to the counterflow pre-heat steam generator, significant data has been obtained from one operating plant with counterflow (D4) steam generators. This plant has been

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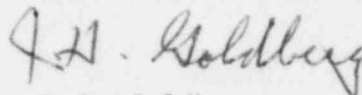
following an operational program including full power and split feed operation. Eddy current testing, tube removal and examination, and diagnostic internal and external instrumentation are being utilized to monitor the steam generators during the power ascension program. The counterflow configuration is also included in the analytical studies, scale model testing and wear testing aspects of the pre-heater program. Available data indicates that the T-slot region of the counterflow tube bundle may be more susceptible to flow-induced vibration than the remainder of the bundle.

The Westinghouse program is also proceeding with the development and evaluation of modification concepts. These concepts include split feed operation at high power levels, pre-heater inlet pass flow redistribution, pre-heater inlet pass flow bypass, and tube expansion at support plates. One, or a combination of modification concepts, would be identified for application should Westinghouse program results indicate a need for modification.

We are continuing to review the Westinghouse program and receive status reports from Westinghouse on this program. At this time, HL&P has not determined the need for any additional testing, special start-up procedures or special instrumentation of the STP steam generators. HL&P has engaged the services of a highly experienced consultant in the field of heat exchanger tube vibration to act independently of Westinghouse in the Model E design review. With the aid of the consultant, HL&P will evaluate the Westinghouse program and Westinghouse recommendations. HL&P will then establish a detailed plan for specific tests and start-up procedures if they are required.

If there are any questions, please contact Mr. M. E. Powell at (713) 877-3281.

Very truly yours,



J. H. Goldberg
Vice President
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