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March 13, 1991 ST-HL-AE-3711 File No.: G9.17 10CFR 0

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

> South Texas Project Electric Generating Station Units 1 and 2 Docket Nos. STN 50-498, STN 50-499 Turbine System Maintenance Program -Proposed Revision to Safety Evaluation Report

Reference: M. A. McBurnett to Document Control Desk, dated August 28, 1990 (ST-HL-AE-3540)

Houston Lighting & Power Company (HL&P) submits this letter to propose alternative wording for the NRC Safety Evaluation Report (SER) on the South Texas Project Electric Generating Station (STPEGS) Turbine System Maintenance Program. The SER was submitted to HL&P by correspondence dated January 14, 1991.

The first change involves the specific inspection intervals for each low pressure turbine included in the Evaluation section of the SER. Specifying the number of hours of operation per low pressure turbine between inspections is not appropriate since this will change if any of the low pressure turbine totors are changed out. The proposed wording which will restore the necessary degree of flexibility to the program is indicated on the attachments.

HL&P proposes one additional change as a point of clarification of the submittal referenced above concerning the low pressure turbine rotors. The letter stated: "Inspection of these rotors includes a full non-destructive examination of the rotor assembly." However, maintenance requirements dictate only that the rotor disc be examined by ultrasonic testing, and that the rotor blade path be visually examined. Therefore, HL&P requests that the SER be revised to indicate that the turbine maintenance program requires that the turbine rotor discs are subjected to non-destructive examination, and the blade path to visual examination. Other non-destructive testing of the rotor disc or blade path is not required and was not intended to be part of the scope of a non-destructive examination of the rotor assembly. To proposed wording is indicated on the attachments

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A Subsidiary of Houston Indus, ies Incorporated

Houston Lighting & Power Company

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If there are any questions, please contact Mr. P. L. Walker at (512) 972-8392 or me at (512) 972-7298.

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A. W. Harrison Manager, Nuclear Licensing

PLW/amp

Attachment: Proposed Revisions to Safety Evaluation Report

Houston Lighting & Power Company South Texas Project Electric Generating Station

cc:

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Revised 01/29/91

In recent years, the staff has shifted review emphasis and regulatory requirements from P2 and P3 to P1. Licensees are required to show that the turbine missile generation probability, P1, satisfies turbine reliability requirements criteria. For a favorably oriented turbine, such as the South Texas turbines, Pl should be loss than 1.0E-4 pe. year. This is the general, minimum reliability requirement for loading the turbine and bringing it on line. If Pl falls between 1.0E-4 per year and 1.0E-3 per year, the turbine may be kept in service until the next scheduled outage, at which time the licensee is to take action to reduce the probability to meet the 1.0E-4 per year limit before returning the turbine to

In order to assure that the 'icensee's turbine missile probabilities satisfy the staff's turbine reliabil ty requirement, the staff requires licensees to submit, within 3 years of operation, a turbine maintenance program that includes maintenance activities and inspection intervals, which are based on the manufacturer's calculations of turbine missile generation probabilities.

EVALUATION

Insert A) Each main turbine at South Texas was manufactured by Westinghouse and consistsof a high pressure turbine and three low pressure turbines, LP1, LP2, and LP3. The licensee's schedule calls for inspection of the Unit 1 turbines after 18660hours, 20670 hours, and 35350 hours of operation for turbines LP1, LP2, and LP3, respectively. For Unit 2, the inspection schedule is 32660 hours, 34810 hours, and 34340 hours for turbines LP2, LP2, and LP3, respectively. The intervals were calculated based on the Westinghouse method. The probability calculation showed that with the above inspection schedule, the probability of missile generation for each low pressure turbine will be less than or equal to 3.33E-5 per year. This satisfies 1.0E-4 per year specified in SER Section 3.5.1.3. Thelicensee's turbine . aintenance program also requires that the Surbine rotor assembly be subjected to a full non-destructive examination according to the -above schedule.

Maintenance of the turbine overspeed protection system is also a major part of the overall program. In accordance with the plant technical specification 3/4.3.4.2, the licensee tests the turbine valves (stop, governor, reheat stop and intercept valves) once per 31 days in Modes 1 and 2 to verify operability. One of each type of these valves is disassembled and inspected at least once per 40 months. The licensee also does surface and visual inspection on valve seats, discs and stems. If unacceptable flaws or excessive corrosion are found, all other valves of that type will be inspected. The electrical overspeed protection device is calibrated at least once every eighteen months and the mechanical overspeed trip is tested following each major turbine outage.

CONCLUSION

Insert B

The staff concludes that the turbine maintenance program at South Texas Units 1 and 2 is acceptable because the licensee's turbine missile generation probability satisfies the staff's requirement of 1.0E-4 per year.

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ATTACHMENT

Insert A

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Each main turbine at South Texas was manufactured by Westinghouse and consists of a high pressure turbine and three low pressure turbines. The licensee's schedule calls for inspection of the Unit 1 and Unit 2 turbines at intervals calculated based upon the Westinghouse method of calculation of turbine missile generation probabilities.

ATTACHMENT

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PAGE ____ OF

Insert B

The licensee's turbine maintenance program also requires that the turbine rotor discs be subjected to a non-destructive examination, with visual examination of the rotor blade path, according to the schedule developed as described above.