

*TXU Generation Company LP, Docket Nos. 50-445 and 50-446, Comanche Peak Steam Electric Station, Units 1 and 2, Somervell County, Texas*

*Date of amendment request:* July 21, 2003.

*Brief description of amendments:* The proposed change would revise Technical Specification 5.5.9, "Steam Generator (SG) Tube Surveillance Program", to allow the use of Westinghouse Electric LLC (Westinghouse) leak limiting Alloy 800 sleeves to repair defective SG tubes as an alternative to plugging these tube.

*Basis for proposed no significant hazards consideration determination:* As required by Title 10 of the Code of Federal Regulations (10 CFR), Section 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

*Response:* No.

The Westinghouse Alloy 800 leak limiting repair sleeves are designed using the applicable American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code [Code] and, therefore, meet the design objectives of the original steam generator tubing. The applied stresses and fatigue usage for the repair sleeves are bounded by the limits established in the ASME Code. Mechanical testing has shown that the structural strength of repair sleeves under normal, upset, emergency, and faulted conditions provides margin to the acceptance limits. These acceptance limits bound the most limiting (three times normal operating pressure differential) burst margin recommended by NRC's [U.S. Nuclear Regulatory Commission] Regulatory Guide 1.121, "Bases for Plugging Degraded PWR [Pressurized Water Reactor] Steam Generator Tubes." Burst testing of sleeve/tube assemblies has confirmed the analytical results and demonstrated that no unacceptable levels of primary-to-secondary leakage are expected during any plant condition.

The Alloy 800 repair sleeve depth-based structural limit is determined using NRC guidance and the pressure stress equation of ASME Code, Section III, with additional margin added to account for configuration of long axial cracks. A bounding detection threshold value has been conservatively identified and statistically established to account for growth and determine the repair sleeve/tube assembly plugging limit. A sleeved tube is plugged on detection of degradation in the sleeve/tube assembly.

Evaluation of the repaired steam generator tube testing and analysis indicates no detrimental effects on the sleeve or sleeved tube assembly from reactor system flow, primary or secondary coolant chemistries, thermal conditions or transients, or pressure conditions as may be experienced at

Comanche Peak Steam Electric Station (CPSES), Unit 1 and Unit 2. Corrosion testing and historical performance of sleeve/tube assemblies indicates no evidence of sleeve or tube corrosion considered detrimental under anticipated service conditions.

The implementation of the proposed amendment has no significant effect on either the configuration of the plant or the manner in which it is operated. The consequences of a hypothetical failure of the sleeve/tube assembly is bounded by the current steam generator tube rupture (SGTR) analysis described in CPSES Updated Final Safety Analysis Report. Due to the slight reduction in the inside diameter caused by the sleeve wall thickness, primary coolant release rates would be slightly less than assumed for the steam generator tube rupture analysis and, therefore, would result in a lower total primary fluid mass release to the secondary system. A main steam line break or feedwater line break will not cause a SGTR since the sleeves are analyzed for a maximum accident differential pressure greater than that predicted in the CPSES safety analysis. The minimal repair sleeve/tube assembly leakage that could occur during plant operation is well within the Technical Specification leakage limits when grouped with current alternate plugging criteria calculated leakage values.

Therefore, TXU Energy has concluded that the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

*Response:* No.

The Alloy 800 leak limiting repair sleeves are designed using the applicable ASME Code as guidance; therefore, it meets the objectives of the original steam generator tubing. As a result, the functions of the steam generators will not be significantly affected by the installation of the proposed sleeve. The proposed repair sleeves do not interact with any other plant systems. Any accident as a result of potential tube or sleeve degradation in the repaired portion of the tube is bounded by the existing SGTR accident analysis. The continued integrity of the installed sleeve/tube assembly is periodically verified by the Technical Specification requirements and the sleeved tube will be plugged on detection of degradation.

The implementation of the proposed amendment has no significant effect on either the configuration of the plant, or the manner in which it is operated. Therefore, TXU Energy concludes that this proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Do the proposed changes involve a significant reduction in a margin of safety?

*Response:* No.

The repair of degraded steam generator tubes with Alloy 800 leak limiting repair sleeves restores the structural integrity of the degraded tube under normal operating and postulated accident conditions and thereby

maintains current core cooling margin as opposed to plugging the tube and taking it out of service. The design safety factors utilized for the repair sleeves are consistent with the safety factors in the ASME Boiler and Pressure Vessel Code used in the original steam generator design. The portions of the installed sleeve/tube assembly that represent the reactor coolant pressure boundary can be monitored for the initiation of sleeve/tube wall degradation and the affected tube plugged on detection of degradation. Use of the previously identified design criteria and design verification testing assures that the margin of safety is not significantly different from the original steam generator tubes.

Therefore, TXU Energy concludes that the proposed change does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

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#### **Notice of Issuance of Amendments to Facility Operating Licenses**

During the period since publication of the last biweekly notice, the Commission has issued the following amendments. The Commission has determined for each of these amendments that the application complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing in connection with these actions was published in the **Federal Register** as indicated.

Unless otherwise indicated, the Commission has determined that these amendments satisfy the criteria for categorical exclusion in accordance with 10 CFR 51.22. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared for these amendments. If the Commission has prepared an environmental assessment under the special circumstances provision in 10 CFR 51.12(b) and has made a determination based on that assessment, it is so indicated.