TXU Power
Comanche Peak Steam
Electric Station
P. O. Box 1002 (E01)
Glen Rose, TX 76043
Tel: 254 897 5209
Fax: 254 897 6652
mike.blevins@txu.com

Mike Blevins
Senior Vice President &
Chief Nuclear Officer

Ref: 10CFR50.90

CPSES-200601951
Log # TXX-06167

September 28, 2006

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
SUPPLEMENT TO LICENSE AMENDMENT REQUEST (LAR) 05-010 AND RESPONSE TO REQUEST FOR INFORMATION
(TAC Nos. MC9494 and MC9495)

REF: 1. Letter logged TXX-05199, dated December 16, 2005 from Mr. Mike Blevins of TXU Power to the NRC
2. Letter logged TXX-06097, dated June 26, 2006 from Mr. Mike Blevins of TXU Power to the NRC
3. Letter logged TXX-06144, dated August 25, 2006 from Mr. Mike Blevins of TXU Power to the NRC
4. Letter logged TXX-05162, dated September 1, 2005 from Mr. Mike Blevins of TXU Power to the NRC

Gentlemen:

In Reference 1, TXU Generation Company LP (TXU Power) requested an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) to revise Technical Specifications 3.3.2, 3.5.2, and 3.6.7 entitled "ESFAS Instrumentation," "ECCS—Operating," and "Spray Additive System," respectively, in the CPSES Units 1 and 2 Technical Specifications (TS). TXU Power supplemented the License Amendment Request via References 2 and 3. This proposed License Amendment was requested to support resolution of Generic Safety Issue (GSI) 191 pursuant to the requirements of NRC Generic Letter 2004-02 as described in Reference 4.

During teleconferences on September 20 and 25, 2006, the NRC requested that additional information be provided to support NRC review. The information requested is attached.

In accordance with 10CFR50.91(b), TXU Power is providing the State of Texas with a copy of this proposed supplement.

This communication contains no new licensing basis commitments regarding CPSES Units 1 and 2.

Should you have any questions, please contact Mr. J. D. Seawright at (254) 897-0140.

I state under penalty of perjury that the foregoing is true and correct.

Executed on September 28, 2006.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC
Its General Partner

Mike Blevins
By: _____
Fred W. Madden
Director, Oversight and Regulatory Affairs

JDS

Attachment

c - B. S. Mallett, Region IV
M. C. Thadani, Region IV
Resident Inspectors, CPSES

Ms. Alice Rogers
Bureau of Radiation Control
Texas Department of Public Health
1100 West 49th Street
Austin, Texas 78756-3189

Response to NRC Request for Additional Information Regarding LAR 05-010

NRC Request:

1. In the License Amendment Request (LAR 05-010), the licensee proposes to decrease the RWST "Lo-Lo" alarm from 45% to 33%. In a previous license amendment LA 73 (LAR 98-01) TXU Power changed RWST Lo-Lo from 40% to 45% to support operator actions for RWST switchover to cold leg recirculation. Please explain these differences

CPSES Response:

The change in delivered water volume between the current RWST Low-Low nominal setpoint at 45% and the proposed 33% is necessary to support the design of the new strainers for GSI-191. Design modifications are being implemented to support the change. In the previous license amendment LA 73 (LAR 98-01), TXU Power changed RWST Lo-Lo from 40% to 45% to support operator actions for RWST switchover to cold leg recirculation without the modifications now being performed to support GSI-191. The procedure and operator actions for ECCS switchover on which LA 73 (LAR 98-01) is based are not being changed. The criterion to complete ECCS switchover prior to the Empty alarm is also unchanged.

Changes to RWST setpoints and alarm logic are based on the RWST Setpoint calculation. The previous design with Lo-Lo set at 45% and empty at 12% was based on the fact that the existing analysis of a RWST Lo-Lo setpoint of 40% did not show enough water below the empty alarm to complete ECCS pump protection precautions and containment spray switchover prior to depleting the useable water in the tank. In order to complete ECCS and containment spray switchover before the empty alarm, a Lo-Lo setpoint of 45% was required. The primary problem was slow closing containment spray RWST isolation valves (e.g. 90 second stroke times).

In response to GSI-191 Generic Letter 2004-02 (TXX-05162 dated September 1, 2005), CPSES committed to install new sump strainers in 2RF09 and 1RF12. Proper functioning of strainers is enhanced by full submergence. The containment water levels based on Lo-Lo at 45% and spray switchover prior to Empty at 12% are inadequate for the new strainers. Since the ECCS and spray injection in a Large Break LOCA will stop when the respective sump isolation valves open due to containment overpressure closing the RWST isolation check valves, the lower the setpoints, the higher the actual water level in containment. Therefore, CPSES committed to revise setpoints to ensure complete submergence of the strainers at the completion of RWST injection.

The RWST setpoint calculation was revised using revised input from Westinghouse on the required ECCS switchover volume with Lo-Lo assumed at 38% in lieu of 45% and the sump at a

Response to NRC Request for Additional Information Regarding LAR 05-010

corresponding coincident level. The 38% assumption is conservative with respect to the 33% final setpoint. Although no containment overpressure is assumed, the water head in containment relative to the RWST level is considered. When both the tank and sump isolation valve are open, the level in containment and the level in the RWST determine the percentage of pump flow provided by each. This refinement to the ECCS analysis reduces the calculated RWST outflow since there is more water provided by the ECCS sump and less by RWST outflow. This showed the benefit of more accurate calculations. Therefore, the calculation of Containment Spray Flowrates for RWST draindown was also revised to credit the water head in containment relative to the RWST level to reduce the calculated RWST to Containment Spray outflow with no credit for containment overpressure. It was then determined that containment spray switchover could start at 6% and be completed before depleting the useable water in the tank if the RWST isolation valve stroke time was reduced from 90 seconds to 30 seconds and the Transfer to Cold Leg Recirculation procedure was revised to make spray switchover a continuous action step (i.e. one step in lieu of two). Each of the isolation valve switches on the main control board is a two position (maintained) switch. The calculation assumes that the operator is anticipating the start of spray switchover at 6% and will begin within 10 seconds of the indication and be complete in one minute (70 seconds total).

The draft procedure was tested on the CPSES simulator on September 21, 2006. Training of the operator consisted of a pre-job brief on the procedure change. At 6% indication, the operator repositions the switches in order: HS-4782 to open, HS-4783 to open, HS-4758 to closed, and HS-4759 to closed. HV-4782 and HV-4783 open in less than 20 seconds. The replacement valves for HV-4758 and HV-4759 (Containment Spray RWST isolation valves) close in less than 30 seconds. Adequate pump suction flow is maintained even if all four valves were switched simultaneously due to the flow versus position characteristics of the valves. On the first trial run, the operator completed switchover in 47 seconds. No failures were simulated. A bounding single active failure of one sump isolation valve to open is assumed in the analysis. On the second run simulating the single failure, the operator completed switchover of the operable train in 36 seconds and stopped the affected pump within the time assumed in the analysis. Starting spray switchover at 6% will ensure tank isolation complete before 3% indicated.

Although not credited in the design basis cases or in the safety analysis, the failure to isolate the RWST or stop the affected spray pump was evaluated. The calculation of Containment Spray Flowrates for RWST draindown also shows that once the sump isolation valves are open, the pumps will have adequate NPSHa even if the RWST is not isolated and is completely depleted. The sump will provide 100% of the required flow while the flow from the RWST will decrease to zero as level drops. This demonstrates the conservatism and margin in the design for containment spray switchover with no credit for containment overpressure. In addition,

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Containment backpressure from a real event will significantly reduce or terminate RWST outflow.

The spray switchover change from 24% to 6% significantly increases the total RWST injection volume. The increase is (24%-6%) X 513 inches X 989 gallons per inch is approximately 91,324 gallons. This increase is needed to support the new strainer design for GSI-191.

The change in spray switchover is being made under the rules of 10CFR50.59.

NRC Request:

2. In section 4.1 RWST Setpoint, on page 3 of the submittal, the licensee states that: "In addition, the tank Empty alarm logic will be changed from a 1/4 logic to a 2/4 logic to match the 2/4 logic for the Low-Low alarm. These changes are required to provide consistency between the 'Low-Low' and the 'Empty' alarm logic and to ensure that there is enough water to preclude air entrainment in the suction of the ECCS pumps and sufficient time between receipt of the 'Low-Low' and the 'Empty' alarms for performance of the required manual actions to complete ECCS switchover." Please explain how the empty alarm logic change benefits sump performance.

CPSES Response:

The CPSES design for the RWST "low-low" level alarm (start of ECCS switchover) is a 2/4 logic. However, the current "empty" level alarm logic is 1/4. Because of this difference, the uncertainty in the alarms has a greater effect on the volume between the "low-low" level alarm and the "empty" level alarm setpoints. The total loop uncertainty for each channel is +/- 12 inches. Since one channel could be at +12 inches and the other three at -12 inches, the uncertainty in the volume between the setpoints for 1/4 logic is +/- 24 inches of water (i.e. the 2/4 lo-lo could occur at the nominal setpoint minus 12 inches and the 1/4 empty could occur at nominal empty setpoint plus 12 inches). Therefore, the volume between setpoints must be increased by 24 inches to assure the required deliverable volume.

If the empty alarm was also a 2/4 logic, the uncertainty in the volume of water between the setpoints would be the uncertainty in the alarm bistables. No matter which two level instruments actuate the 2/4 Lo-Lo alarm, the same two will actuate the 2/4 Empty alarm. Loss of one of the two instrument loops when the RWST level is between the Lo-Lo and empty setpoints will only increase the deliverable volume. The only uncertainty in the volume between the setpoints is the setability of the alarm bistables. The uncertainty in the bistables is much less than the total

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loop uncertainty and results in a lower uncertainty in the deliverable volume (2.6 inches vs 24 inches for the 1/4 logic). This consideration justifies a setpoint 4% lower than the 1/4 logic. By revising the "empty" level alarm logic to 2/4, the uncertainty in the volume between the setpoints is significantly reduced, thereby allowing an overall lower "low-low" level alarm setpoint and adding over 21,000 gallons to the containment before the start of switchover to cold leg recirculation. This increase is needed to support the new strainer design for GSI-191.

The change in alarm logic is being made under the rules of 10CFR50.59.