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Ref: 10CFR50.90

CPSES-200401948
Log # TXX-04147
File # 00236

October 13, 2004

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
LICENSE AMENDMENT REQUEST (LAR) 04-009
REVISION TO TECHNICAL SPECIFICATION (TS) 5.6.5
CORE OPERATING LIMITS REPORT (COLR)**

Gentlemen:

Pursuant to 10CFR50.90, TXU Generation Company LP (TXU Power) hereby requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. This change request applies to both units.

The proposed change will revise TS 5.6.5 entitled "Core Operating Limits Report (COLR)." This proposed amendment to the CPSES Unit 1 and 2 Technical Specifications is a request to make administrative editorial changes and to:

- incorporate two additional topical reports into the list of analytical methods used to determine the core operating limits, and
- delete four topical reports, one reference to a Westinghouse letter to the NRC, and one reference to NUREG 0800 no longer used to support the CPSES core operating limits.

Attachment 1 provides a detailed description of the proposed changes, a safety analysis of the proposed changes, TXU Power's determination that the proposed changes do not involve a significant hazard consideration, a regulatory analysis of the proposed changes and an environmental evaluation. Attachment 2 provides the affected Technical Specification pages marked-up to reflect the proposed changes.

ADD

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Attachment 3 provides retyped Technical Specification pages that incorporate the requested changes.

TXU Power requests approval of the proposed License Amendment by May 24, 2005 to be implemented within 60 days of the issuance of the license amendment. This approval date was selected to support fuel fabrication for Unit 1, Cycle 12.

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

This communication contains no new or revised commitments.

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.

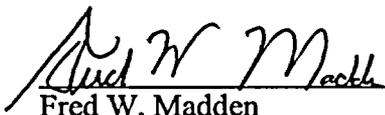
Executed on October 13, 2004

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC
Its General Partner

Mike Blevins

By: 
Fred W. Madden
Director, Regulatory Affairs

jds

Attachments: 1. Description and Assessment
2. Markup of Technical Specifications pages
3. Retyped Technical Specification Pages

c - B. S. Mallett, Region IV
W. D. Johnson, Region IV
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Resident Inspectors, CPSES

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ATTACHMENT 1 to TXX-04147
DESCRIPTION AND ASSESSMENT

LICENSEE'S EVALUATION

- 1.0 DESCRIPTION
- 2.0 PROPOSED CHANGE
- 3.0 BACKGROUND
- 4.0 TECHNICAL ANALYSIS
- 5.0 REGULATORY SAFETY ANALYSIS
 - 5.1 No Significant Hazards Consideration
 - 5.2 Applicable Regulatory Requirements/Criteria
- 6.0 ENVIRONMENTAL CONSIDERATION
- 7.0 REFERENCES

1.0 DESCRIPTION

By this letter, TXU Power requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. This Technical Specifications proposed change, LAR 04-009, is a request to make administrative editorial changes and to:

- add two additional topical reports into the list of analytical methods used to determine the core operating limits, and
- delete four topical reports, one reference to a Westinghouse letter to the NRC, and one reference to NUREG 0800 no longer used to support the CPSES core operating limits.

There are no changes to the Technical Specification Bases related to this change.

No changes to the CPSES Final Safety Analysis Report are anticipated at this time as a result of this License Amendment Request.

2.0 PROPOSED CHANGE

The proposed change would revise the CPSES Units 1 and 2 Technical Specifications to 1) add WCAP-10444-P-A, "Reference Core Report VANTAGE 5 Fuel Assembly" and WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17x17 Rod Bundles for Modified LPD Mixing Vane Grids" to the list of approved analytical methods in TS 5.6.5b, 2) delete the analytical methods no longer used to determine the core operating limits, and 3) sequentially renumber the remaining items in the list of approved analytical methods in TS 5.6.5b.

3.0 BACKGROUND

The analytical methods used by TXU Power to determine the core operating limits are listed in TS 5.6.5b. The methods relevant to the proposed change are the core subchannel analyses. When necessary, core subchannel analyses are performed to demonstrate that specified acceptable fuel design limits are met; specifically, the departure from nuclear boiling ratio (DNBR) shall be maintained greater than the 95/95 DNB criterion. The 95/95 DNB criterion is derived from General Design Criterion (GDC) 10 and requires that specified acceptable fuel design limits are not exceeded during steady state operation, normal operational transients, and anticipated operational occurrences (AOOs). Compliance with GDC 10 is demonstrated by having a departure from nucleate boiling (DNB) design basis, which corresponds to a 95% probability at a 95% confidence level (the 95/95 DNB criterion) that DNB will not occur. The numerical value of the DNB ratio (DNBR) is used to satisfy the 95/95 DNB criterion. The DNBR is defined as the

ratio of the heat flux predicted to result in DNB (i.e., the critical heat flux), determined using a specific DNB correlation, to the predicted heat flux for a given set of fluid conditions in the limiting subchannel. The numerical value of the DNBR satisfying the 95/95 DNB criterion is dependent on the specific DNB correlation used with a specific core subchannel thermal-hydraulic computer code.

For fuel assembly designs currently used by TXU Power, the TUE-1 DNB correlation is used with the VIPRE-01 subchannel computer code, using modeling methods described in TS 5.6.5b, Item 12: "VIPRE-01 Core Thermal-Hydraulic Analysis Methods for Comanche Peak Steam Electric Station Licensing Applications", RXE-89-002-A. The TUE-1 DNB correlation is described in TS 5.6.5b, Items 10 and 11: "TUE-1 Departure from Nucleate Boiling Correlation," RXE-88-102-P-A, including Supplement 1. The TUE-1 correlation has been approved for application to fuel assembly designs using "R-grids" with fuel rod outer diameters of 0.360" and 0.374". The correlation has been applied to Westinghouse Standard Fuel Assembly and Optimized Fuel Assembly (OFA) designs as well as to fuel assemblies provided by Framatome-ANP. However, previous studies have shown that the TUE-1 DNB correlation is not appropriate for use with fuel assembly designs which employ intermediate flow mixing grids (IFMs).

TXU Power now intends to use alternate Westinghouse fuel assembly designs, which include IFMs, in order to achieve better fuel costs. Other benefits of IFMs include reduced susceptibility to the axial offset anomaly and incomplete rod insertion issues.

Westinghouse has developed two DNB correlations for use with their fuel assembly designs with IFMs. The WRB-2 DNB correlation (described in WCAP-10444-P-A, "Reference Core Report VANTAGE 5 Fuel Assembly") was developed for application to Westinghouse's Vantage 5 and Vantage 5H fuel assembly designs. This DNB correlation was developed for fuel rod diameters of 0.360" and 0.374" with IFMs. The mixing vane grid design of the Vantage 5 product is the same as OFA design. The WRB-2M DNB correlation (described in WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17x17 Rod Bundles for Modified LPD Mixing Vane Grids") was developed for application to Westinghouse fuel assembly designs with fuel rod outer diameters of 0.374" using Modified Low Pressure Drop structural mixing vane grids and with or without Modified Intermediate Flow Mixer Grids.

The numerical values of the DNBR corresponding to the 95/95 DNB correlation limits, as determined by Westinghouse, are 1.17 for the WRB-2 DNB correlation and 1.14 for the WRB-2M DNB correlation. TXU Power has incorporated both DNB correlations into the CPSES version of VIPRE-01 and, using the CPSES approved methods, demonstrated that the values corresponding to the 95/95 DNB limits remain valid. This demonstration consisted of modeling the same data sets used by Westinghouse to develop the WRB-2 and WRB-2M correlations and applying the appropriate statistical evaluations to calculate a limit value corresponding to the 95/95 DNB correlation. Additional statistical

evaluations were performed to ensure that the data sets, when modeled with the CPSES approved methods and the appropriate Westinghouse DNB correlation, did not exhibit any biases or other statistical abnormalities. The same methods, statistical evaluations and acceptance criteria used to demonstrate the adequacy of the TUE-1 DNB correlation with the CPSES approved analytical methods, were used in the demonstration of the acceptability of the WRB-2 and WRB-2M DNB correlations. The limitations on the application of the WRB-2 and WRB-2M DNB correlations, as described in the cited topical reports and the NRC's safety evaluation reports, will continue be observed.

Based on the results of these evaluations, TXU Power intends to use the CPSES version of VIPRE-01 modeling methods with the appropriate Westinghouse DNB correlation to demonstrate that the 95/95 DNB limit is satisfied when using Westinghouse fuel assembly designs. The proposed change to TS 5.6.5b is considered to be administrative in that the two new topical reports have been previously approved by the NRC for the intended application, the analytical methods have been demonstrated to be compatible with the approved analytical methods currently used to determine the core operating limits, and all analytical methods continue to be used within the limitations described in the topical reports and the NRC's safety evaluation reports.

The analytical methods described in the topical reports listed as TS 5.6.5b, Items 2, 3, 4, 6, 7, and 8 are no longer used to determine the core operating limits for CPSES. These topical reports are proposed to be deleted from the list of approved analytical methods, and the remaining topical reports are sequentially renumbered. This proposed change to TS 5.6.5b is also administrative in nature.

4.0 TECHNICAL ANALYSIS

The proposed changes to the documents referenced in TS 5.6.5.b are administrative as they define NRC-approved methods that will be used to establish cycle operating limits. The limits determined with the referenced methodologies will ensure that reload design, analysis, and plant operation will remain within the regulations established for fuel assembly and core designs. TXU Power has reviewed the changes and determined that the documents referenced completely address the cycle specific reload design and analysis activities required to determine the core operating limits. All referenced methodologies have been approved by the NRC for the intended application.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

TXU Power has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below:

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

Response: No

The proposed change is administrative in nature and as such does not impact the condition or performance of any plant structure, system or component. The core operating limits are established to support Technical Specifications 3.1, 3.2, 3.3, and 3.4. The core operating limits ensure that fuel design limits are not exceeded during any conditions of normal operation or in the event of any Anticipated Operational Occurrence (AOO). The methods used to determine the core operating limits for each operating cycle are based on methods previously found acceptable by the NRC and listed in TS section 5.6.5.b. Application of these approved methods will continue to ensure that acceptable operating limits are established to protect the fuel cladding integrity during normal operation and AOOs. The requested Technical Specification changes do not involve any plant modifications or operational changes that could affect system reliability, performance, or possibility of operator error. The requested changes do not affect any postulated accident precursors, do not affect any accident mitigation systems, and do not introduce any new accident initiation mechanisms.

As a result, the proposed change to the CPSES Technical Specifications does not involve any increase in the probability or the consequences of any accident or malfunction of equipment important to safety previously evaluated since neither accident probabilities nor consequences are being affected by this proposed administrative change.

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

Response: No

The proposed change is administrative in nature, and therefore does not involve any changes in station operation or physical modifications to the plant. In addition, no changes are being made in the methods used to respond to plant transients that have been previously analyzed. No changes are being made to plant parameters within which the plant is normally operated or in the setpoints, which initiate protective or mitigative actions, and no new failure modes are being introduced.

Therefore, the proposed administrative change to the CPSES Technical Specifications does not create the possibility of a new or different kind of accident or malfunction of equipment important to safety from any previously evaluated.

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

Response: No

The proposed change is administrative in nature and does not impact station operation or any plant structure, system or component that is relied upon for accident mitigation. Furthermore, the margin of safety assumed in the plant safety analysis is not affected in any way by the proposed administrative change.

Therefore, the proposed change to the CPSES Technical Specifications does not involve any reduction in a margin of safety.

Based on the above evaluations, TXU Power concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10CFR50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The proposed changes will ensure that the fuel design and core operating limits determined for the operating cycles will be developed using NRC-approved methods identified in TS 5.6.5.b, which are based on applicable regulatory criteria. In conclusion, (1) there is reasonable assurance that the health and safety of the public will not be endangered by the operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

TXU Generation Company LP has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10CFR20, or would change an inspection or surveillance requirement. TXU Generation Company LP has evaluated the proposed changes and has determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount

of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22 (c)(9). Therefore, pursuant to 10CFR51.22 (b), an environmental assessment of the proposed change is not required.

7.0. REFERENCES

- 7.1.** WCAP-10444-P-A, "Reference Core Report VANTAGE 5 Fuel Assembly," September 1985.
- 7.2.** WCAP-15025-P- A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17x17 Rod Bundles for Modified LPD Mixing Vane Grids," April 1999.

ATTACHMENT 2 to TXX-04147

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

**Pages 5.0-33
5.0-34**

5.6 Reporting Requirements (continued)

5.6.5 Core Operating Limits Report (COLR) (continued)

the condition given above allowing use of 100.6 percent of rated power in safety analysis methodology when the LEFM¹ is used for feedwater flow measurement.

The approved analytical methods are described in the following documents:

- 1) WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," July 1985 (W Proprietary).
- ~~2) WCAP-8385, "POWER DISTRIBUTION CONTROL AND LOAD FOLLOWING PROCEDURES - TOPICAL REPORT," September 1974 (W Proprietary).~~
- ~~3) T. M. Anderson To K. Kniel (Chief of Core Performance Branch, NRC) January 31, 1980 - Attachment: Operation and Safety Analysis Aspects of an Improved Lead Follow Package.~~
- ~~4) NUREG-0800, Standard Review Plan, U.S. Nuclear Regulatory Commission, Section 4.3, Nuclear Design, July 1981. Branch Technical Position CPB 4.3-1, Westinghouse Constant Axial Offset Control (CAOC), Rev. 2, July 1981.~~
- 5)2) WCAP-10216-P-A, Revision 1A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL F₀ SURVEILLANCE TECHNICAL SPECIFICATION," February 1994 (W Proprietary).
- ~~6) WCAP-10079-P-A, "NOTRUMP, A NODAL TRANSIENT SMALL BREAK AND GENERAL NETWORK CODE," August 1985, (W Proprietary).~~
- ~~7) WCAP-10054-P-A, "WESTINGHOUSE SMALL BREAK ECCS EVALUATION MODEL USING THE NOTRUMP CODE," August 1985, (W Proprietary).~~
- ~~8) WCAP-11145-P-A, "WESTINGHOUSE SMALL BREAK LOCA ECCS EVALUATION MODEL GENERIC STUDY WITH THE NOTRUMP CODE," October 1986, (W Proprietary).~~
- 9)3) RXE-90-006-P-A, "Power Distribution Control Analysis and Overtemperature N-16 and Overpower N-16 Trip Setpoint Methodology," June 1994.

(continued)

5.6 Reporting Requirements (continued)

5.6.5 Core Operating Limits Report (COLR) (continued)

- 40)4) RXE-88-102-P-A, "TUE-1 Departure from Nucleate Boiling Correlation," July 1992.
- 41)5) RXE-88-102-P, Sup. 1, "TUE-1 DNB Correlation - Supplement 1," December 1990.
- 42)6) RXE-89-002-A, "VIPRE-01 Core Thermal-Hydraulic Analysis Methods for Comanche Peak Steam Electric Station Licensing Applications," September 1993.
- 43)7) RXE-91-001-A, "Transient Analysis Methods for Comanche Peak Steam Electric Station Licensing Applications," October 1993.
- 44)8) RXE-91-002-A, "Reactivity Anomaly Events Methodology," October 1993.
- 45)9) ERX-2000-002-P, "Revised Large Break Loss of Coolant Accident Analysis Methodology," March 2000.
- 46)10) TXX-88306, "Steam Generator Tube Rupture Analysis," March 15, 1988.
- 47)11) RXE-91-005-A, "Methodology for Reactor Core Response to Steamline Break Events," February 1994.
- 48)12) RXE-94-001-A, "Safety Analysis of Postulated Inadvertent Boron Dilution Event in Modes 3, 4, and 5," February 1994.
- 49)13) RXE-95-001-P-A, "Small Break Loss of Coolant Accident Analysis Methodology," September 1996.
- 20)14) Caldon, Inc. Engineering Report-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power level Using the LEFM^v System," Revision 0, March 1997 and Caldon Engineering Report - 160P, "Supplement to Topical Report ER-80P; Basis for a Power Uprate With the LEFMtm System," Revision 0, May 2000.
- 21)15) ERX-2001-005-pP, "ZIRLOTM Cladding and Boron Coating Models for TXU Electric's Loss of Coolant Accident Analysis Methodologies," October 2001.

Insert

- 16) WCAP-10444-P-A, "Reference Core Report VANTAGE 5 Fuel Assembly," September 1985.
- 17) WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17x17 Rod Bundles for Modified LPD Mixing Vane Grids," April 1999.

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

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ATTACHMENT 3 to TXX-04147

RETYPEP TECHNICAL SPECIFICATION PAGES

**Pages 5. 0-33
5. 0-34**

5.6 Reporting Requirements (continued)

5.6.5 Core Operating Limits Report (COLR) (continued)

the condition given above allowing use of 100.6 percent of rated power in safety analysis methodology when the LEFM^v is used for feedwater flow measurement.

The approved analytical methods are described in the following documents:

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- 2) WCAP-10216-P-A, Revision 1A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL F₀ SURVEILLANCE TECHNICAL SPECIFICATION," February 1994 (W Proprietary).
- 3) RXE-90-006-P-A, "Power Distribution Control Analysis and Overtemperature N-16 and Overpower N-16 Trip Setpoint Methodology," June 1994.
- 4) RXE-88-102-P-A, "TUE-1 Departure from Nucleate Boiling Correlation," July 1992.
- 5) RXE-88-102-P, Sup. 1, "TUE-1 DNB Correlation - Supplement 1," December 1990.
- 6) RXE-89-002-A, "VIPRE-01 Core Thermal-Hydraulic Analysis Methods for Comanche Peak Steam Electric Station Licensing Applications," September 1993.
- 7) RXE-91-001-A, "Transient Analysis Methods for Comanche Peak Steam Electric Station Licensing Applications," October 1993.
- 8) RXE-91-002-A, "Reactivity Anomaly Events Methodology," October 1993.
- 9) ERX-2000-002-P, "Revised Large Break Loss of Coolant Accident Analysis Methodology," March 2000.

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5.6 Reporting Requirements (continued)

5.6.5 Core Operating Limits Report (COLR) (continued)

- 10) TXX-88306, "Steam Generator Tube Rupture Analysis," March 15, 1988.
 - 11) RXE-91-005-A, "Methodology for Reactor Core Response to Steamline Break Events," February 1994.
 - 12) RXE-94-001-A, "Safety Analysis of Postulated Inadvertent Boron Dilution Event in Modes 3, 4, and 5," February 1994.
 - 13) RXE-95-001-P-A, "Small Break Loss of Coolant Accident Analysis Methodology," September 1996.
 - 14) Caldon, Inc. Engineering Report-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power level Using the LEFM^v System," Revision 0, March 1997 and Caldon Engineering Report – 160P, "Supplement to Topical Report ER-80P; Basis for a Power Uprate With the LEFMtm System," Revision 0, May 2000.
 - 15) ERX-2001-005-P, "ZIRLO™ Cladding and Boron Coating Models for TXU Electric's Loss of Coolant Accident Analysis Methodologies," October 2001.
 - 16) WCAP-10444-P-A, "Reference Core Report VANTAGE 5 Fuel Assembly," September 1985.
 - 17) WCAP-15025-P- A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17x17 Rod Bundles for Modified LPD Mixing Vane Grids," April 1999.
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

(continued)