

January 6, 2003

Mr. C. Lance Terry  
Senior Vice President  
& Principal Nuclear Officer  
TXU Energy  
ATTN: Regulatory Affairs  
P. O. Box 1002  
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES), UNITS 1 AND 2 -  
ISSUANCE OF AMENDMENTS RE: REACTOR COOLANT SYSTEM (RCS)  
SPECIFIC ACTIVITY (TAC NOS. MB4736 AND MB4737)

Dear Mr. Terry:

The Commission has issued the enclosed Amendment No. 102 to Facility Operating License No. NPF-87 and Amendment No. 102 to Facility Operating License No. NPF-89 for CPSES, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated April 8, 2002.

The amendments revise TS 3.4.16, "RCS Specific Activity," to lower the Limiting Condition for Operation and associated Surveillance Requirements for Dose Equivalent Iodine-131 in the RCS from a specific activity of 1.0  $\mu\text{Ci/gm}$  to 0.45  $\mu\text{Ci/gm}$ .

A copy of our related Safety Evaluation is enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

**/RA/**

David H. Jaffe, Senior Project Manager, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosures: 1. Amendment No. 102 to NPF-87  
2. Amendment No. 102 to NPF-89  
3. Safety Evaluation

cc w/encls: See next page

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TXU GENERATION COMPANY LP  
COMANCHE PEAK STEAM ELECTRIC STATION, UNIT NO. 1  
DOCKET NO. 50-445  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 102  
License No. NPF-87

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by TXU Generation Company LP dated April 8, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Chapter I of Title 10 of the *Code of Federal Regulations*, (10 CFR);
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-87 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 102, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. TXU Generation Company LP shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Robert A. Gramm, Chief, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: January 6, 2003

TXU GENERATION COMPANY LP

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT NO. 2

DOCKET NO. 50-446

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 102  
License No. NPF-89

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by TXU Generation Company LP, dated April 8, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Chapter I of Title 10 of the *Code of Federal Regulations*, (10 CFR);
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-89 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 102, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. TXU Generation Company LP shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Robert A. Gramm, Chief, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: January 6, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 102

TO FACILITY OPERATING LICENSE NO. NPF-87

AND AMENDMENT NO. 102

TO FACILITY OPERATING LICENSE NO. NPF-89

DOCKET NOS. 50-445 AND 50-446

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

Insert

3.4-44

3.4-44

3.4-46

3.4-46

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 102 TO

FACILITY OPERATING LICENSE NO. NPF-87

AND AMENDMENT NO. 102 TO

FACILITY OPERATING LICENSE NO. NPF-89

TXU GENERATION COMPANY LP

COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-445 AND 50-446

1.0 INTRODUCTION

By application dated April 8, 2002, TXU Generation Company LP (the licensee) requested changes to the Technical Specifications (TSs) for the Comanche Peak Steam Electric Station (CPSES), Units 1 and 2. The proposed changes would revise TS 3.4.16, "RCS [Reactor Coolant System] Specific Activity," to lower the Limiting Condition for Operation (LCO) and associated Surveillance Requirement (SR) for Dose Equivalent Iodine-131 (DEI-131) in the RCS from a specific activity of 1.0  $\mu\text{Ci/gm}$  to 0.45  $\mu\text{Ci/gm}$ . The changes were proposed to address an issue with the modeling of the iodine appearance rate used in the design basis accident (DBA) analyses to calculate the post-accident radiological consequences of the Main Steam Line Break (MSLB) accident concurrent with an accident initiated iodine spike. This issue was identified in Westinghouse Electric Company (Westinghouse) Nuclear Safety Advisory Letter NSAL-00-004 "Nonconservatisms in Iodine Spiking Calculations," and would allow the licensee to maintain the maximum benefit allowable after implementing steam generator alternate repair criteria (ARC) at CPSES, Unit 1.

2.0 REGULATORY EVALUATION

The U.S. Nuclear Regulatory Commission (NRC) staff finds that the licensee identified the applicable regulatory requirements in Section 3.0 of its April 8, 2002, submittal. The regulatory requirements for which the staff based its acceptance are 10 CFR 100.11 and 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 19. The NRC staff referred to guidance in NUREG-0800 "Standard Review Plan," (SRP) Section 15.1.5, Appendix A, "Radiological Consequences of Main Steam Line Failures Outside Containment of a PWR [Pressurized Water Reactor]," in the review of the DBA MSLB radiological consequences analysis. This section denotes regulatory dose acceptance criteria for the MSLB radiological consequences analysis that are a small fraction (i.e., 10 percent) of the 10 CFR Part 100 guideline values for an MSLB with the TS equilibrium iodine concentration for continued full power operation in combination with an assumed accident initiated iodine spike, while the 10 CFR Part 100 guideline values are the acceptance criteria for an MSLB with an assumed pre-accident iodine spike equal to the maximum TS iodine concentration in the reactor coolant. GDC-19 is the applicable requirement for the control room with regard to the radiological consequences of



DBAs, including the MSLB. Because the ARC has previously been implemented for CPSES, Unit 1, by License Amendment No. 70 to NPF-87, the licensee and NRC staff also referred to Generic Letter 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking."

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the information submitted by the licensee describing the changes made to the calculation of iodine appearance rates based on the recommendations of NSAL-00-004 as well as the proposed TS 3.4.16 RCS specific activity limit of 0.45  $\mu\text{Ci/gm}$  DEI-131. The NRC staff has determined that the licensee's revised appearance rate calculation used acceptable values for the primary coolant activity, dose conversion factors, letdown flow rate, letdown demineralizer iodine removal efficiency, primary coolant leakage, primary coolant mass, and reactor coolant density.

The licensee determined the impact that the revised iodine appearance rate would have on the thyroid dose for each potentially affected CPSES DBA. The licensee did this by determining the ratio between the existing and revised accident initiated iodine spiking rate, multiplied by the dose conversion factor for each iodine isotope, and taking the sum over all isotopes. This ratio is 0.89, which means that the additional dose due to accident initiated iodine spiking is less for the revised iodine appearance rate than it is in the existing DBA radiological consequences analysis. The licensee also evaluated the change in whole body dose due to the revised I-132 appearance rate and found the existing DBA radiological consequences analyses bound the dose due to the revised appearance rate. For the steam generator tube rupture (SGTR), reactor coolant pump locked rotor (RCPLR), control rod ejection accident (CRE), and small line break outside containment (SLBOC) events, the licensee concluded that the proposed implementation of an equilibrium RCS specific activity limit of 0.45  $\mu\text{Ci/gm}$  DEI-131 will ensure that the existing DBA radiological consequences analyses that model the accident initiated iodine spike will be conservative. Because the licensee has shown that the additional dose due to the accident initiated iodine spike for the revised iodine appearance rate calculation with an RCS specific activity of 0.45  $\mu\text{Ci/gm}$  DEI-131 is less compared to the dose contributed by the accident initiated iodine spiking in the existing analyses at 1.0  $\mu\text{Ci/gm}$  DEI-131, the NRC staff has determined, as did the licensee, that the existing DBA analyses remain bounding for the SGTR, RCPLR, CRE, and SLBOC at CPSES.

The licensee evaluated the impact of the proposed changes on the existing MSLB DBA radiological consequences analysis used to support the steam generator ARC at CPSES, Unit 1. The licensee determined that correcting the non-conservative operating inputs and calculating updated iodine appearance rates for an equilibrium RCS specific activity limit of 1.0  $\mu\text{Ci/gm}$  DEI-131 would challenge the applicable acceptance criteria for postulated DBA radiological consequences without compensating restrictions of allowable steam generator tube leakage. To retain the benefits of the existing ARC primary-to-secondary leakage criteria, the licensee proposed to reduce the RCS specific activity DEI-131 limit to less than 1.0  $\mu\text{Ci/gm}$ . In support of the proposed changes to CPSES TS 3.7.16, the licensee submitted information on the revised radiological consequences analysis of the design bases MSLB accident, which was performed by Westinghouse. The changes made were to assume the lower TS LCO limit of 0.45  $\mu\text{Ci/gm}$  DEI-131 as the baseline RCS activity and then to apply the iodine spike based on the revised iodine appearance rate. The current primary-to-secondary leakage rate criteria were retained. Additionally, the radiological consequences of the MSLB with a pre-accident

iodine spike were calculated. The licensee also updated the radiological consequence analyses to include the contribution to the control room dose due to continued exposure to radioisotopes trapped within the control room after the release from the RCS has stopped. No other changes were made in the analysis as compared to that documented by the licensee for CPSES, Unit 1, Amendment No. 70. Table 1 shows the licensee's calculated doses at the Exclusion Area Boundary, Low Population Zone, and in the control room. The licensee's calculated MSLB offsite radiological consequences remain within the applicable dose acceptance criteria as denoted in SRP 15.1.5, Appendix A. The licensee's updated analysis shows that the radiological consequences in the control room remain within the dose criteria of GDC-19.

Based on the above discussion, as supported by information provided by the licensee, the NRC staff has determined that the proposed change to TS 3.4.16 to reduce the RCS specific activity limit to 0.45  $\mu\text{Ci}/\text{gm}$  DEI-131 is acceptable with respect to the radiological consequences of postulated DBAs. The licensee has shown that for the proposed change to TS 3.4.16, CPSES continues to meet the regulatory requirements of 10 CFR 100.11 and 10 CFR Part 50, Appendix A, GDC-19. Likewise, the proposed change to SR 3.4.16, which would lower the DEI-131 limit from 1.0 to 0.45  $\mu\text{Ci}/\text{gm}$ , is acceptable. The frequency for performance of SR 3.4.16 remains unchanged<sup>1</sup>.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Texas State official was notified of the proposed issuance of the amendments. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (67 FR 40026, published June 11, 2002). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the

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<sup>1</sup>Every 14 days and between 2 and 6 hours after a thermal power change of  $\geq 15\%$  rated thermal power within a 1-hour period

Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Hart

Date: January 6, 2003

Table 1

Licensee Updated Calculated Main Steam Line Break Accident Radiological Consequences\*

	Dose (rem)	Acceptance Criterion (rem)
EAB (0-2 hr)		
Thyroid: Pre-accident Spike	43.50	300
Thyroid: Accident Initiated Spike	26.88	30
Whole Body	0.15	2.5
LPZ (0-8 hr)		
Thyroid: Pre-accident Spike	22.26	300
Thyroid: Accident Initiated Spike	21.45	30
Whole Body	0.10	2.5
Control Room (0-8 hr)		
Thyroid: Pre-accident Spike	7.45	30
Thyroid: Accident Initiated Spike	7.16	30
Whole Body	0.01	5
Beta Skin	1.5	30

EAB = Exclusion Area Boundary  
 LPZ = Low Population Zone

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\*Based on using updated iodine appearance rates assuming an equilibrium RCS specific activity limit of 0.45  $\mu\text{Ci/gm}$  DEI-131 and incorporating the conservative operating inputs recommended by NSAL-00-004.

Comanche Peak Steam Electric Station

cc:

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