

Mr. C. Lance Terry  
 TU Electric  
 Senior Vice President & Principal Nuclear Officer  
 Attn: Regulatory Affairs Department  
 P. O. Box 1002  
 Glen Rose, TX 76043

November 18, 1998

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2 -  
 AMENDMENT NOS. 61 AND 47 TO FACILITY OPERATING LICENSE  
 NOS. NPF-87 AND NPF-89 (TAC NOS. M97807 AND M97808)

Dear Mr. Terry:

The Commission has issued the enclosed Amendment Nos. 61 and 47 to Facility Operating License Nos. NPF-87 and NPF-89 for the Comanche Peak Steam Electric Station, Units 1 and 2. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated July 10, 1996 (TXX-96405), as supplemented by letters dated October 1, 1996 (TXX-96475), and July 1, 1998 (TXX-98159).

The amendment would take credit for the addition of train oriented Fan Coil Units for each UPS and Distribution Room and would provide redundancy to the existing Air Conditioning (A/C) Units (TS 3/4.7.11 and its associated bases).

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,  
**ORIGINAL SIGNED BY:**  
 Timothy J. Polich, Project Manager  
 Project Directorate IV-1  
 Division of Reactor Projects III/IV  
 Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

- Enclosures: 1. Amendment No. 61 to NPF-87  
 2. Amendment No. 47 to NPF-89  
 3. Safety Evaluation

cc w/encls: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 18, 1998

Mr. C. Lance Terry  
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Attn: Regulatory Affairs Department  
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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,

A handwritten signature in cursive script, appearing to read "Timothy J. Polich".

Timothy J. Polich, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. 50-445 and 50-446

Enclosures: 1. Amendment No. 61 to NPF-87  
2. Amendment No. 47 to NPF-89  
3. Safety Evaluation

cc w/encls: See next page

Mr. C. Lance Terry  
TU Electric Company

Comanche Peak, Units 1 and 2

cc:

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U.S. Nuclear Regulatory Commission  
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Glen Rose, TX 76403-2159

Honorable Dale McPherson  
County Judge  
P. O. Box 851  
Glen Rose, TX 76043

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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

Amendment No. 61  
License No. NPF-87

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Texas Utilities Electric Company (TU Electric, the licensee) dated July 10, 1996 (TXX-96405), as supplemented by letters dated October 1, 1996 (TXX-96475), and July 1, 1998 (TXX-98159), 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 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, 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:

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2. Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 61, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. The licensee 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 to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Timothy J. Polich, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: November 18, 1998



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

TEXAS UTILITIES ELECTRIC COMPANY  
COMANCHE PEAK STEAM ELECTRIC STATION, UNIT 2  
DOCKET NO. 50-446  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 47  
License No. NPF-89

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Texas Utilities Electric Company (TU Electric, the licensee) dated July 10, 1996 (TXX-96405), as supplemented by letters dated October 1, 1996 (TXX-96475), and July 1, 1998 (TXX-98159), 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 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, 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. 47, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. TU Electric 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 to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Timothy J. Polich, Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: November 18, 1998

ATTACHMENT TO LICENSE AMENDMENT NOS. 61 AND 47

FACILITY OPERATING LICENSE NOS. NPF-87 AND NPF-89

DOCKET NOS. 50-445 AND 50-446

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE

3/4 7-27

B3/4 7-8

B3/4 7-8a

INSERT

3/4 7-27

B3/4 7-8

B3/4 7-8a

## PLANT SYSTEMS

### 3/4.7.11 UPS HVAC SYSTEM

#### OPERATING

#### LIMITING CONDITION FOR OPERATION

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3.7.11 The Uninterruptible Power Supplies (UPS) HVAC System shall be OPERABLE such that each UPS & Distribution Room is supported by either:

- a. An OPERABLE UPS Room Fan Coil Unit, or
- b. An OPERABLE UPS Air Conditioning (A/C) Train which is the same train as the UPS in the room.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

- a. With one or more UPS & Distribution Room supported only by an OPERABLE UPS A/C Train, which is not the same Train as the UPS in that room, restore the required support for each UPS & Distribution Room to an OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one or more UPS & Distribution Room not supported by an OPERABLE UPS Fan Coil Unit or A/C Train, but with a UPS A/C Train circulating air, restore the required support to an OPERABLE status within 72 hours while complying with Technical Specification 3/4.7.10 for the UPS Room or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one or more UPS & Distribution Rooms not supported by forced cooling or circulating air, restore the required support within 1 hour, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.11.1 Each required UPS A/C train shall be demonstrated OPERABLE at least once per 18 months by verifying it actuates on an actual or simulated actuation signal.

4.7.11.2 Each required UPS A/C train shall be demonstrated OPERABLE at least once per 31 days by verifying that the train operates for at least 1 hour.

4.7.11.3 Each required UPS Room Fan Coil Unit shall be demonstrated OPERABLE at least once per 31 days by verifying that the UPS Room Fan Coil Unit operates for at least one hour.

## PLANT SYSTEMS

### 3/4.7.12 SAFETY CHILLED WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.7.12 At least two independent safety chilled water trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one safety chilled water train OPERABLE, restore at least two trains to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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- 4.7.12 The safety chilled water trains shall be demonstrated OPERABLE:
- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety-related equipment that is not locked, sealed or otherwise secured in position, is in its correct position.
  - b. At least once per 18 months\* by demonstrating that each safety chilled water train pump, chiller and electrical switchgear area emergency fan coil units start on a Safety Injection test signal.

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\*The surveillance test interval is extended to 24 months for Train A, Unit 2, to remain in effect until the completion of the second refueling outage for Unit 2.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.11 UPS HVAC SYSTEM

The UPS HVAC System ensures that the UPS & Distribution Rooms ambient air temperatures do not exceed the allowable temperatures per Specification 3/4.7.10 for continuous-duty rating for the equipment and instrumentation cooled by this equipment.

The UPS HVAC System consists of a) a dedicated 100% capacity UPS Room Fan Coil Unit (FCU) in each safety related UPS & Distribution Room and b) two, each 100% capacity, electrically independent and redundant UPS A/C Trains either of which can provide redundant and diverse backup cooling for all four UPS & Distribution Rooms.

Either a UPS & Distribution Rooms' UPS Room Fan Coil Unit or an UPS A/C Train are capable of maintaining the UPS & Distribution Room below its design temperature limits during normal and accident conditions.

The UPS HVAC system is a normally operating system. Each FCU normally provides the required temperature control to maintain its respective room below 104°F during normal plant conditions. A single A/C train can also provide the required temperature control to maintain the UPS & Distribution rooms between below 104°F during normal plant conditions.

The UPS Room FCUs are dedicated to the UPS Unit and Train they support. The UPS A/C Train components are arranged in redundant safety related trains. During emergency operation, the UPS HVAC System maintains the temperature below 104°F. Starting with minimum OPERABLE equipment required by the LCO, a single active failure of a component of the UPS HVAC System, with a loss of offsite power, does not impair the ability of the system to perform its design function.

The UPS HVAC system is OPERABLE when each UPS & Distribution Room is supported by either an OPERABLE UPS Room FCU or an OPERABLE UPS A/C Train which is the same electrical train as the UPS in that room.

A FCU is considered OPERABLE as long as it is in the "on" position and it has cooling water and its fan is operating. If a FCU is "off" for maintenance or other reasons it is not considered OPERABLE since it will not start automatically. A FCU in the "ON" position restarts when power is regained following a loss of offsite power. A UPS A/C train starts on a acuation signal and therefore is OPERABLE, if in standby.

In the event a FCU is inoperable and the respective A/C Train is also inoperable, 100% cooling can be provided by the opposite train's A/C Train. If one or more UPS & Distribution Rooms does not have "same Train" cooling, a single failure in the opposite Train could result in a loss

## PLANT SYSTEMS

### BASES

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of cooling to the affected rooms and loss of the function of the equipment in the UPS & Distribution Room of the opposite Train. As a result, the temperatures in the affected room would increase until it exceeded the maximum demonstrated operating temperature for the equipment in the room. 30 days is an acceptable completion time to restore "same Train" cooling due to the flexibility in the design with room coolers for each room and redundant UPS A/C Trains which are each capable of cooling all the UPS & Distribution Rooms.

If one or more UPS & Distribution Rooms loses all cooling, the affected rooms will begin to heat up. If either or both UPS A/C Trains is circulating air through the supported areas, the mixing will result in a much slower rate of temperature increases. The completion time of 72 hours allows restoration before the temperature rises to a level that the equipment in the affected rooms are impacted. To confirm the equipment's OPERABILITY, the temperature in the affected rooms is verified to be less than or equal to 104°F within one hour and every 12 hours thereafter.

If one or more UPS & Distribution Rooms loses forced cooling and neither UPS A/C Train is circulating air in those rooms or if both rooms lose forced cooling, the temperature rise is expected to affect equipment operability in a short period of time. One hour is allowed to restore circulating air or forced cooling.

Each acutation signal should be tested during the test frequency. The applicable signals for the UPS A/C Trains are the Safety Injection Signal (SIS) and Station Blackout Signal (BOS).

#### 3/4.7.12 SAFETY CHILLED WATER SYSTEM

The OPERABILITY of the Safety Chilled Water System ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

#### 3/4.7.13 MAIN FEEDWATER ISOLATION VALVE PRESSURE/TEMPERATURE LIMIT

The fracture toughness requirements are satisfied with a metal temperature of 90°F for the main feedwater isolation valve body and neck, therefore, these portions will be maintained at or above this temperature prior to pressurization of these valves above 675 psig. Minimum temperature limitations are imposed on the valve body and neck of main feedwater isolation valves HV-2134, HV-2135, HV-2136 and HV-2137. These valves do not need to be verified at or above 90°F when in MODES 4, 5, or 6 (except during special pressure testing) since  $T_{avg} < 350^{\circ}\text{F}$  which corresponds to a pressure at the valves of 140-150 psig or less. The maximum pressurization during cold conditions (valve temperature  $< 90^{\circ}\text{F}$ ) should be limited to no more than 20% of the valve hydrostatic test pressure ( $3375 \text{ psig} \times 20\% = 675 \text{ psig}$ ).



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 61 AND 47 TO

FACILITY OPERATING LICENSE NOS. NPF-87 AND NPF-89

TEXAS UTILITIES ELECTRIC COMPANY

COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-445 AND 50-446

1.0 INTRODUCTION

By application dated July 10, 1996 (TXX-96405), as supplemented by letters dated October 1, 1996 (TXX-96475), and July 1, 1998 (TXX-98159), Texas Utilities Electric Company (TU Electric/the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License Nos. NPF-87 and NPF-89) for the Comanche Peak Steam Electric Station (CPSES), Units 1 and 2. The proposed changes would take credit for the addition of train oriented fan coil units (FCUs) for each Uninterruptible Power Supplies (UPS) and Distribution Room and would provide redundancy to the existing Air Conditioning (A/C) Units (TS 3/4.7.11 and its associated bases). In particular, the proposed changes revise limiting conditions for operation, actions, and surveillance requirements to take credit for the addition of a CPSES unit- and train-specific FCU to each UPS and Distribution Room.

The addition of FCUs will be redundant to the existing air conditioning (A/C) equipment and provides more flexibility in the operation of the UPS heating, ventilation and A/C (HVAC) system. Therefore, the proposed TS changes will reduce the likelihood of plant transients resulting from UPS HVAC system failures and as a consequence, the simultaneous forced shutdown of both CPSES units.

The October 1, 1996, and July 1, 1998, supplemental letters were clarifying in nature and did not change the initial no significant hazards consideration determination.

2.0 BACKGROUND

The existing UPS HVAC system is a shared cooling system for the UPS and Distribution Rooms (UPSDRs), located in each of the CPSES units. The system is composed of 2 HVAC trains, including air conditioners and booster fans. Each train is electrically independent and has 100% capacity. The primary function of the system is to provide cooling support for Class 1E electrical equipment in the UPSDRs.

Cooled air is recirculated from either A/C train through all 4 UPSDRs via shared ductwork. The air conditioners are supported by component cooling water from either CPSES Unit 1 or Unit 2 by manual valve line-up.

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Class 1E grounded uninterruptible power is supplied to critical instrumentation and control circuits. There are four Class 1E static UPS for balance of plant (BOP) and reactor protection system (RPS) instrumentation and control systems. Each BOP UPS consists of an inverter, including an AC input rectifier, static (automatic) switch, and bypass (manual switch), and a bypass transformer. Each RPS UPS consists of an inverter which includes AC and DC source breakers, instrumentation and an output breaker. RPS UPS are the most limiting safety-related components in the UPSDRs. UPS and much of their associated power distribution equipment are located in the UPSDRs. There are 2 UPDRs for each CPSES unit.

With respect to UPSDR temperature and the adequacy of the cooling system, the operability of equipment in the UPSDRs is adequately addressed by TS 3/7.10, "Area Temperature Monitoring," except for the RPS UPS. Given the critical function of RPS UPS devices and the rate at which they can overheat without any cooling or ventilation, the proposed revision to TS 3/4.7.11 supports the cooling of the RPS power supplies. TS 3/4.7.11 is a plant-specific specification and is not included in Standard TS (STS). However, its basis is similar to those for CPSES TS, "Control Room Air Conditioning System," and STS 3.7.11 LCO, "Control Room Emergency Air Temperature Control System."

The proposed modification of the existing UPS HVAC system adds a 100% capacity FCU to each of the 4 UPSDRs. These rooms are CPSES unit- and train-specific (i.e., trains A and B for CPSES Units 1 and 2, respectively). The FCUs replace the UPS A/C trains as the primary source of UPS equipment cooling. Each FCU is independently powered by Class 1E safeguards buses for Unit 1 or Unit 2 using the same train as the UPS in the room that it supports.

To optimize the control and benefits of the modified UPS HVAC system, the licensee has proposed the following TS changes regarding operability of the cooling system for UPSDRs:

- (1) redefine the existing TS LCO such that the LCO is based on each UPSDR FCU with an operable "same-train" UPS A/C train, rather than requiring 2 operable A/C trains for all 4 UPSDRs (2 UPSDRs per CPSES unit).
- (2) take credit for the UPSDR FCUs to satisfy the proposed TS LCO,
- (3) change the existing TS from a CPSES unit-shared specification to a unit-specific specification,
- (4) modify the existing TS action statement regarding the loss of one train of redundant cooling to conform to the proposed support scheme; change the allowed outage time from 7 days to 30 days,
- (5) add two new TS action statements (one statement to address the condition where a UPSDR FCU and both UPS A/C trains are inoperable, but A/C train ventilation air recirculation is available; the other statement to address the condition where there is no operable system cooling or ventilation air recirculation available),
- (6) add a surveillance requirement (SR) for the UPSDR FCUs,

- (7) revise the TS 18-month SR for UPS A/C trains such that the SR applies only to "required" trains; incorporate STS wording for testing the start of a train on an actuation signal, and
- (8) revise the TS 31-day SR such that the SR applies only to "required" A/C trains; delete the requirement to start each train every 31 days.

### 3.0 OPERATION OF PROPOSED UPS HVAC SYSTEM

The proposed UPS HVAC system consists of a) a dedicated FCU with 100% capacity located in each UPSDR and b) 2 electrically independent and redundant UPS A/C trains (each with 100% capacity), either of which can provide redundant and diverse backup cooling for all 4 UPSDRs. Either a FCU or an UPS A/C train is capable of maintaining the UPSDR below its design temperature limits during normal and accident conditions. Each FCU is dedicated to the CPSES unit and train that it supports.

The UPS HVAC system is a normally operating system. Beginning with the minimum operable equipment required by the TS LCO, a single active failure of a component of the UPS HVAC system coincident with the loss of offsite power does not impair the ability of the system to perform its design function. The Attachment presents a matrix of conditions showing how the LCO can be satisfied or not satisfied by the availability of cooling system components.

The UPS HVAC system is operable when each UPSDR is supported by either an operable FCU or an operable UPS A/C train, which is powered by the same electrical train as the UPS in the UPSDR. A FCU is considered operable as long as it is in the "on" position and has cooling water, and its fan is operating. An operable FCU can be started automatically. An UPS A/C train starts on an actuation signal and therefore is operable when in standby. (The applicable actuation signals for the UPS A/C trains are safety injection (SI) and station blackout (SBO)).

In the event a FCU is inoperable and the same-train UPS A/C train (e.g., A/C train A for CPSES Unit 1) is also inoperable, 100% cooling can be provided by the opposite-train A/C train (e.g., A/C train B for Unit 1). If one or more UPSDRs does not have same-train cooling, a single failure in the opposite train could result in a loss of cooling to the affected UPSDR.

If one or more UPSDRs loses all cooling, the affected UPSDR will begin to heat up. If either or both of the UPS A/C trains is circulating air through the supported areas, the air mixing will result in a much slower rate of temperature increase. However, if one or more UPSDRs loses forced cooling and neither UPS A/C train is circulating ventilation air through those UPSDRs, the temperature increase is expected to affect equipment operability in a short period of time.

### 4.0 TECHNICAL EVALUATION

- (1) Redefine the existing TS LCO such that the LCO is based on each UPSDR FCU with an operable "same-train" UPS A/C train, rather than requiring 2 operable UPS A/C trains for all 4 UPSDRs (2 UPSDRs per CPSES unit).

The licensee stated that the revised TS LCO is based on proper cooling support for each UPSDR. The existing UPS HVAC system trains required to satisfy the LCO for a given UPSDR are changed from 2 electrically independent and redundant A/C trains (each of which can support all 4 safety-related UPSDRs) to an operable train (i.e., train consists of

a FCU and UPS A/C train) which is associated with the same CPSES unit and electrical train as the UPS equipment in the room.

Each safety-related UPSDR FCU is dedicated to the same CPSES unit and electrical train as the UPS equipment in the UPSDR that it supports. Prior to the installation of the FCUs, there was no significance in crediting same-train UPS A/C cooling because either UPS A/C train cooled all 4 UPSDRs. If one train was inoperable, at least 2 UPSDRs (1 in each CPSES unit), were left without same-train support.

With the addition of the FCUs, each of the 4 UPSDRs can be cooled individually. Consequently, if one UPS A/C train is inoperable, each UPSDR will still have operable cooling support. Therefore, it is appropriate to evaluate cooling operability based on each UPSDR FCU and require same-train cooling support, provided the UPS A/C trains are the backup cooling support for the FCUs.

Given the addition of a dedicated FCU in each UPSDR, the staff agrees with the licensee's proposal to redefine the existing TS LCO in the aforementioned manner (i.e., redefined to require cooling operability based on each UPSDR FCU and same-train UPS A/C train support). Therefore, the staff finds the proposed TS change to be acceptable.

- (2) Take credit for new UPSDR FCUs to satisfy the TS LCO.

The licensee stated that the UPSDR FCUs are added to the TS LCO as an additional method of providing sufficient cooling for the associated UPS equipment.

The staff agrees with the licensee's addition of UPSDR FCUs to the TS LCO as an additional cooling method for the associated UPS equipment. Therefore, the staff finds the proposed TS change to be acceptable.

- (3) Change existing TS from a CPSES unit-shared specification to a unit-specific specification.

The licensee stated that the reference to CPSES Units 1 and 2 is deleted from the existing action statement. This statement indicates that the action is applicable to both CPSES units because the 2 UPS A/C trains, which are required to be operable, support both of these units. Therefore, the existing TS is a unit-shared specification which applies to both CPSES units simultaneously.

With respect to the proposed TS, each UPSDR is provided with a dedicated, independent FCU. Consequently, it is not necessary for both CPSES units to enter an action statement for all events. The proposed function of each FCU is to support the same train of the UPS equipment for the unit in which it is located. Since the FCUs are not shared between Units 1 and 2, the proposed TS includes each UPSDR, where an individual room can be cooled independently of the others. The proposed TS is revised to be applicable to each CPSES unit, and not applicable to both CPSES units simultaneously.

Given the rationale as set forth above, the staff agrees with the licensee's proposal to revise the existing TS from a unit-shared specification to a unit-specific specification. Therefore, the staff finds the proposed TS change to be acceptable.

- (4) Modify the existing TS action statement with respect to the loss of one train of redundant cooling to conform to the proposed support scheme; change the allowed outage time (AOT) from 7 days to 30 days.

The licensee stated that the proposed TS action statement requirements are written to incorporate the revised system cooling operability portion of the LCO and an increase in the AOT based on the similarity between the proposed TS and the current CPSES TS for the Control Room HVAC System. The shutdown requirements remain unchanged.

The first action statement in the proposed TS is similar to the existing action statement since it addresses the scenario where the cooling for a UPSDR is supported only by a train which is not the same train as that for equipment in the UPSDR (e.g., room cooled by UPS A/C train which is not the same train as that for equipment in the room of interest).

The AOT is changed from 7 days to 30 days. The 7-day AOT in the existing TS is consistent with TS 3/4.7.7 for the Control Room HVAC System, which has a similar design and function. The 30-day AOT is consistent with comparable STS (e.g., STS for the control room emergency air temperature control system). The 30-day AOT is reasonable based on the considerations that the remaining UPS HVAC train is capable of providing the required cooling and that alternate cooling means can be made available (e.g., other cooling means made available such as use of FCU in combination with air recirculated by the UPS A/C train ventilation fans, etc.)

As provided above, the staff agrees with the modification of the existing TS action statement with respect to the loss of one train of redundant cooling to conform to the proposed cooling support scheme and the revision of the AOT. Therefore, the staff finds the proposed TS changes to be acceptable.

- (5) Add 2 new TS action statements (one action statement to address the condition where a UPSDR FCU and both UPS A/C trains are inoperable, but A/C train ventilation air recirculation (provided by ventilation fans) is available; the other statement to address the condition where there is no operable system cooling or ventilation air recirculation available).

The licensee stated that the first new action is based on the capacity of the system ventilation fans to recirculate air (cooled by operable FCUs) in other UPSDRs to maintain area temperature when a FCU and both A/C trains are inoperable. The licensee also stated that the second new action statement requires shutdown in the event the other two actions are not satisfied.

The first new action statement credits the UPS A/C train supply and return fans and cooling provided by operable FCUs as long as the temperature in the UPSDRs remains within the limits specified in TS 3/4.7.10. Air circulation reduces the rates at which UPSDR temperatures increase. As long as the temperatures are maintained below

those in TS 3/4.7.10 for these areas, the equipment in the areas will remain operable. The AOT is limited to 72 hours based on the risk from the occurrence of an event which would require service of the inoperable UPS A/C train, and the remaining UPSDR FCUs and UPS A/C train fans which provide the required protection.

The second new action statement covers the situation where there is no operable cooling or ventilation air recirculating at all. The action directs the operator to restore the required support within one hour or start shutting down the affected unit. Such a rapid response is appropriate because local UPSDR heating can affect the operability of equipment after cooling and ventilation are lost.

The staff agrees with the licensee's proposal to add two new action statements to the existing TS as set forth above. Therefore, the staff finds the proposed TS changes to be acceptable.

- (6) Add a surveillance requirement (SR) for these UPSDR FCUs.

The licensee stated that a new SR was added for the UPSDR FCUs to verify their operability monthly, when they are required to be operable.

The proposed specification adds a SR that requires UPSDR FCUs be operated for a least one hour each month. This SR will ensure that those FCUs which are relied upon to satisfy the LCO are capable of operating as required to support the equipment in their respective areas.

The staff agrees with the licensee's addition of a TS SR to demonstrate operability of UPSDR FCUs by verifying that each FCU operates for at least 1 hour each month. Therefore, the staff finds the proposed TS change to be acceptable.

- (7) Revise the 18-month SR for UPS A/C trains such that the SR applies only to "required" trains; incorporate STS wording for testing the start of a train on an actuation signal.

The licensee stated that the 18-month SR requirements for UPS A/C trains were revised to apply to required trains only. In addition, the start of a train based on an actuation signal now allows either actual or test signals and does not specifically identify the actuation signals.

The proposed changes modify the existing SR for the UPS A/C trains. The scope of the SR is clarified to only apply to the "required" UPS A/C train. The change is consistent with the proposed TS LCO requirements where a UPS A/C train may no longer be required to be operable. It is appropriate to perform the surveillance for a UPS A/C train when that train is being used to satisfy the LCO, but it is not necessary to perform the testing on equipment which is not required to be operable.

The 18-month SR was also changed to combine the Safety Injection signal with the Blackout test signal. These combined signals were then referred to as ".....actual or simulated actuation signals." This is consistent with STS wording for Westinghouse plants (The specific signals are explicitly stated in the applicable part of the TS bases, rather than in the TS.)

The actual testing of the SI and SBO test signals are not being altered by this change, but rather the format is altered for consistency with STS. All actuating circuitry is and will continue to be tested. Currently this testing is performed in conjunction with the integrated emergency diesel generator (EDG) and safeguards testing per TS SR 4.8.1.1.2f.

The staff agrees with the licensee's revision of the 18-month SR for UPS A/C trains such that the SR is only performed on trains used to satisfy the TS LCO. The staff also agrees with the manner in which the licensee revised this SR to combine SI and SBO test signals which is now referred to as actual or simulated actuation signals. This is consistent with STS wording for Westinghouse plants. Therefore, the staff finds the proposed TS changes to be acceptable.

- (8) Revise the TS 31-day SR such that the SR applies only to the "required" A/C trains; delete the requirement to start each train every 31 days.

The licensee stated that the monthly verification of operability was changed to apply to required A/C trains only and to remove the requirement that the train be started each month, as long as it operates for at least one hour during the month.

Another proposed change deletes the requirements to "start" an A/C train to perform the 31-day surveillance. The existing words, "starting the non-operating UPS A/C train," is no longer applicable since both trains may not be in operation. Operating a train for one hour each month adequately demonstrates its expected operability when required. Deleting the "start" requirement allows the operator to simply verify that a system cooling component is operating when it is already running. The component does not have to be shut down and then restarted. Such unnecessary cycling of equipment may cause unnecessary wear and reduce equipment reliability.

The staff agrees with the licensee's revision of the TS 31-day SR such that SR is only performed on the A/C train for which operability is required. Given the rationale cited above, the staff also agrees with the licensee's deletion of the TS requirement to start each train every 31 days. Therefore, the staff finds the proposed TS changes to be acceptable.

The changes in the existing TS Bases are descriptions which have been updated to match the proposed changes to the TS itself and have no impact on the control or operation of the UPS HVAC system.

#### 4.1 Station Blackout

The licensee's current SBO coping evaluation assumes that one EDG in the non-blacked-out unit operates during a station blackout. This could cause a total loss of UPS A/C cooling to the UPSDRs since the EDG may not be associated with the same unit as the CCW train lined up to supply cooling water to the UPS A/C. However, the evaluation does take credit for the air movement provided by the UPS A/C train ventilation fans. With the addition of normally operating FCUs, at least one FCU (unit capacity exceeds 82,000 BTU/hr) will be operating to provided additional cooling.

To assess the effects of a loss of cooling to the UPSDRs, the licensee calculated the maximum steady state temperatures using the methodology defined in Appendix H of NUMARC 87-00, modified by taking credit for the circulation of air by the fans powered from a EDG for the non-SBO unit. The maximum steady state temperature was calculated to be no greater than 121.8 °F provided the UPS room doors were opened within 30 minutes after the SBO.

The licensee replaced the previously installed inverters located in the USPDRs with new inverters (10 kVA) from another vendor. Although these inverters are more efficient and have a higher qualification temperature, they also result in higher heat load on the A/C system. However, even with the additional heat load, a parametric evaluation performed by the licensee confirms that the UPSDR temperatures will remain below the qualification limits of the inverter for the 4 hour duration of the SBO.

By letter dated July 1, 1998, the licensee provided vendor-certified specifications which defined the design service conditions for the new inverters as follows:

- Normal temperature range from 40 °F to 104 °F
- Abnormal maximum temperature of 122 °F for 100 days
- Temperature transient of 131 °F for 8 hours

The staff has reviewed the above information in conjunction with the cooling provided by the addition of a CPSES unit- and train-specific FCU in each UPSDR and concluded that this addition will not impact SBO battery analysis. Based on the above information, the staff agrees with the licensee that the additional load on the EDG has been evaluated and found acceptable.

Therefore, the coping capability of CPSES Units 1 and 2 is maintained during an SBO.

#### 4.2 Fire Protection

The licensee stated that the design of the UPSDR FCUs incorporates existing licensing commitments of the CPSES fire protection program. Fire safe shutdown requirements have been identified and incorporated into the system design, consistent with the fire hazards analysis, fire safe shutdown analysis, and appropriate design-basis documents, to ensure adequate train separation and protection. Combustible loading for the new FCUs is negligible due to the design of the units.

By response to a staff request for additional information, the licensee verified that associated electrical circuit analysis had been performed relative to the addition of the UPSDR FCUs. Such analysis ensures that the cooling system modification can not result in the inoperability of safe shutdown equipment due to a fire-induced electrical fault. The licensee cited the entry of the proposed FCUs in the CPSES Fire Protection Report (FPR). The staff agrees with this assessment.

The staff finds that the addition of the FCUs does not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire, and therefore, is acceptable.

## 5.0 TECHNICAL CONCLUSION

The proposed design of the UPS HVAC System with the addition of UPSDR FCUs is an enhanced design which provides improved cooling support for the safety-related equipment in the UPSDRs. With the increased defense-in-depth provided by 4 independent FCUs, the potential for complete loss of UPSDR cooling is decreased. The revised TS provide plant-specific controls to ensure the proper level of equipment availability.

The revision of TS 3.7.11 and addition of the proposed UPSDR FCUs continues to provide an acceptable level of safe operations. Therefore, the staff concludes that the proposed changes to TS 3/4.7.11 are acceptable.

## 6.0 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.

## 7.0 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 (62 FR 6579). 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.

## 8.0 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 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.

Attachment: As stated

Principal Contributor: R. Young

Date: November 18, 1998

**EXAMPLE OF LCO AND ACTION**

<u>DESCRIPTION OF AVAILABLE EQUIPMENT</u>						<u>LCO</u>	<u>ACTION</u>
XA	XB	1A	1B	2A	2B		
O	O	O	O	O	O	SATISFIED	N/A
O	O	I	O	O	O	SATISFIED	N/A
O	I	O	O	O	O	SATISFIED	N/A
I	I	O	O	O	O	SATISFIED	N/A
O	O	I	I	I	I	SATISFIED	N/A
O	I	I	O	I	O	SATISFIED	N/A
I	O	I	O	O	O	NOT SATISFIED	CREDIT FOR XB ACTION "a" FOR UNIT 1
O	I	O	I	O	O	NOT SATISFIED	CREDIT FOR XA ACTION "a" FOR UNIT 1
I	I*	I	O	O	O	NOT SATISFIED	CREDIT FOR FANS - ACTION "b" FOR UNIT 1
I*	I	I	O	O	O	NOT SATISFIED	CREDIT FOR FANS - ACTION "b" FOR UNIT 1
I	I	I	I	O	O	NOT SATISFIED	ENTER ACTION "c" FOR UNIT 1

**Notes:**

O = Operable,

XA = Train A (A/C)

1A = Unit 1, Train A (FCU)

2A = Unit 2, Train A (FCU)

FCU = Fan Coil Unit

\* UPS A/C Train ventilation fans available.

I = Inoperable

XB = Train B (A/C)

1B = Unit 1, Train B (FCU)

2B = Unit 2, Train B (FCU)

A/C = Air Conditioners

ATTACHMENT