Docketed

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

April 6, 1993

Docket No. 50-446

Mr. William J. Cahill, Jr.
Group Vice President, Nuclear
TU Electric
400 North Olive Street, L.B. 81
Dallas, Texas 75201

Dear Mr. Cahill:

SUBJECT: ISSUANCE OF FACILITY OPERATING LICENSE NO. NPF-89 FOR COMANCHE PEAK STEAM ELECTRIC STATION, UNIT 2

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Facility Operating License No. NPF-89 together with the Technical Specifications, the Environmental Protection Plan, and the Antitrust Conditions for the Comanche Peak Steam Electric Station, Unit 2 (Enclosure 1). The license authorizes operation up to 100 percent of core rated thermal power (3411 megawatts thermal). The Technical Specifications being issued with this license are also applicable to Unit 1 and are identical to the Technical Specifications issued with the low power license.

The technical basis for the license is included in the Safety Evaluation Report related to the Operation of Comanche Peak Steam Electric Station, Units 1 and 2 (NUREG-0797) and Supplements 1 through 27. Supplement No. 27 is provided as Enclosure 2 to this letter. All issues relating to full power operation have been reviewed by the staff and have been satisfactorily resolved.

Enclosure 3 is a copy of a related Federal Register notice, the original of which has been forwarded to the Office of the Federal Register for publication.

C/P DF01

Three copies of Amendment No. 11 to Indemnity Agreement No. B-96 are included as Enclosure 4. Please countersign all copies and return one signed copy of Amendment No. 11 to this office.

Sincerely,

Original Signed By

Jack W. Roe, Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Facility Operating License No. NPF-89
2. SSER 27
3. Notice
4. Amendment No. 11 to Indemnity Agreement No. B-96

cc w/enclosures:
See next page

OFFICE	LA:PDIV-2	PM:PDIV-2	PD:PDIV-2	NRR:ILPB	DIR:DRP
NAME	EPeyton:esp	BHolian	SBlack	BLambe	JRichardson
DATE	03/12/93	03/11/93	03/11/93	03/11/93	3/31/93

#1 - 3/31 esp

OFFICE	DIR:DSSA	DIR:DRCH	DIR:DRS&S	DIR:DRIL	OGC/Hearing
NAME	AThadani	BBoger	FCongel	ERossi	JMoore
DATE	3/31/93	3/12/93	3/15/93	3/15/93	3/31/93

OFFICE	OGC/Antitru	NRR:AD/R4&5	DIR:DRPW	ADP	NRR:DIR
NAME	JRutberg	MVirgilio	JRoe	JGPartlow	TEMurley
DATE	1/16/93	3/31/93	3/31/93	3/31/93	4/6/93

DD:DRIL
RZimmerman:ld
/ /93

FM 3/31

cc w/enclosures:
Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 1029
Granbury, Texas 76048

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Mrs. Juanita Ellis, President
Citizens Association for Sound Energy
1426 South Polk
Dallas, Texas 75224

Owen L. Thero, President
Quality Technology Company
Lakeview Mobile Home Park, Lot 35
4793 East Loop 820 South
Fort Worth, Texas 76119

Mr. Roger D. Walker, Manager
Regulatory Affairs for Nuclear
Engineering Organization
Texas Utilities Electric Company
400 North Olive Street, L.B. 81
Dallas, Texas 75201

Texas Utilities Electric Company
c/o Bethesda Licensing
3 Metro Center, Suite 610
Bethesda, Maryland 20814

William A. Burchette, Esq.
Counsel for Tex-La Electric
Cooperative of Texas
Jorden, Schulte, & Burchette
1025 Thomas Jefferson Street, N.W.
Washington, D.C. 20007

GDS Associates, Inc.
Suite 720
1850 Parkway Place
Marietta, Georgia 30067-8237

Jack R. Newman, Esq.
Newman & Holtzinger
1615 L Street, N.W.
Suite 1000
Washington, D. C. 20036

Chief, Texas Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756

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

DISTRIBUTION:
Docket File
NRC PDR
Local PDR
PDIV-2 Reading
PDIV-2 Plant File
TMurley/FMiraglia
JGPartlow
WRussell
JRoe
MVirgilio
EPeyton*
BHolian*
IDinitz
WLambe
OGC*
Antitrust Lawyer, OGC
Hearing Lawyer, OGC*
OC/LFDCB
DHagan*
BBoger
JRichardson
AThadani
ERossi
FCongel
CGrimes*
GHill* (2)
HSmith*
ACRS (10)
JKopeck, OPA
LYandell, Region IV*

*With Technical Specifications

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

TEXAS UTILITIES ELECTRIC COMPANY, ET AL.*

DOCKET NO. 50-446

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT NO. 2

FACILITY OPERATING LICENSE

License No. NPF-89

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for a license filed by Texas Utilities Electric Company (TU Electric) acting for itself and as agent for Texas Municipal Power Agency, (licensees), complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Comanche Peak Steam Electric Station, Unit No. 2 (the facility), has been substantially completed in conformity with Construction Permit No. CPPR-127 and the application, as amended, the provisions of the Act, and the regulations of the Commission;

   C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D below);

   D. There is reasonable assurance: (i) that the activities authorized by this operating license 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 set forth in 10 CFR Chapter I, except as exempted from compliance in Section 2.D. below;

   E. TU Electric is technically qualified to engage in the activities authorized by this operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

*The current owners of the Comanche Peak Steam Electric Station are: Texas Utilities Electric Company and Texas Municipal Power Agency. Transfer of ownership from Texas Municipal Power Agency to Texas Utilities Electric Company was previously authorized by Amendment No. 8 to Construction Permit CPPR-127 on August 25, 1988 to take place in 10 installments as set forth in the Agreement attached to the application for Amendment dated March 4, 1988. At the completion thereof, Texas Municipal Power Agency will no longer retain any ownership interest.

F. The licensees have satisfied the applicable provisions of 10 CFR 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;

H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. NPF-89 subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and

I. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, except that an exemption to the provisions of 70.24 is granted as described in paragraph 2.D below.

2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on April 6, 1993, the License for Fuel Loading and Low Power Testing, License No. NPF-88, issued on February 2, 1993, is superseded by Facility Operating License No. NPF-89 hereby issued to the licensees, to read as follows:

A. This license applies to the Comanche Peak Steam Electric Station, Unit No. 2, a pressurized water nuclear reactor and associated equipment (the facility), owned by the licensees. The facility is located on Squaw Creek Reservoir in Somervell County, Texas about 5 miles north-northwest of Glen Rose, Texas, and about 40 miles southwest of Fort Worth in north-central Texas and is described in the licensee's Final Safety Analysis Report, as supplemented and amended, and the licensee's Environmental Report, as supplemented and amended.

B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:

(1) Pursuant to Section 103 of the Act and 10 CFR Part 50 "Domestic Licensing of Production and Utilization Facilities", TU Electric to possess, use, and operate the facility at the designated location in Somervell County, Texas in accordance with the procedures and limitations set forth in this license;

(2) Pursuant to Section 103 of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities", Texas Municipal Power Agency to possess the facility at the designated location in Somervell County, Texas in accordance with the procedures and limitations set forth in this license;

(3) TU Electric, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, and described in the Final Safety Analysis Report, as supplemented and amended;

(4) TU Electric, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use, at any time, any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) TU Electric, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required, any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) TU Electric, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

TU Electric is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A 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) Antitrust Conditions

Applicants as defined in Appendix C shall comply with the antitrust conditions delineated in Appendix C to this license; Appendix C is hereby incorporated into this license.

D. The following exemptions are authorized by law and will not endanger life or property or the common defense and security. Certain special circumstances are present and these exemptions are otherwise in the public interest. Therefore, these exemptions are hereby granted:

(1) The facility requires a technical exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.2(b)(ii). The justification for this exemption is contained in Section 6.2.5.1 of Supplement 26 to the Safety Evaluation Report dated February 1993. The staff's environmental assessment was published on January 19, 1993 (58 FR 5036). Therefore, pursuant to 10 CFR 50.12(a)(1), 10 CFR 50.12(a)(2)(ii) and (iii), the Comanche Peak Steam Electric Station, Unit 2 is hereby granted an exemption from the cited requirement and instead, is required to perform the overall air lock leak test at pressure P_a prior to establishing containment integrity if air lock maintenance has been performed that could affect the air lock sealing capability.

(2) The facility was previously granted exemption from the criticality monitoring requirements of 10 CFR 70.24 (see Materials License No. SNM-1986 dated April 24, 1989 and Section 9.1.1 of SSER 26 dated February 1993.) The staff's environmental assessment was published on January 19, 1993 (58 FR 5035). The Comanche Peak Steam Electric Station, Unit 2 is hereby exempted from the criticality monitoring provisions of 10 CFR 70.24 as applied to fuel assemblies held under this license.

E. With the exception of 2.C(2) and 2.C(3), TU Electric shall report any violations of the requirements contained in Section 2.C of this license within 24 hours. Initial notification shall be made in accordance with the provisions of 10 CFR 50.72 with written followup in accordance with the procedures described in 10 CFR 50.73(b), (c), and (e).

F. In order to ensure that TU Electric will exercise the authority as the surface landowner in a timely manner and that the requirements of 10 CFR 100.3(a) are satisfied, this license is subject to the additional conditions specified below: (Section 2.1, SER)

(1) For that portion of the exclusion area which is within 2250 ft of any seismic Category I building or within 2800 ft of either reactor containment building, TU Electric must prohibit the exploration and/or exercise of subsurface mineral rights, and if the subsurface mineral rights owners attempt to exercise their rights within this area, TU Electric must immediately institute immediately effective condemnation proceedings to obtain the mineral rights in this area.

(2) For the unowned subsurface mineral rights within the exclusion area not covered in item (1), TU Electric will prohibit the exploration and/or exercise of mineral rights until and unless the licensee and the owners of the mineral rights enter into an agreement which gives TU Electric absolute authority to determine all activities--including times of arrival and locations of personnel and the authority to remove personnel and equipment--in event of emergency. If the mineral rights owners attempt to exercise their rights within this area without first entering into such an agreement, TU Electric must immediately institute immediately effective condemnation proceedings to obtain the mineral rights in this area.

(3) TU Electric shall promptly notify the NRC of any attempts by subsurface mineral rights owners to exercise mineral rights, including any legal proceeding initiated by mineral rights owners against TU Electric.

G. TU Electric shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report through Amendment 87 and as approved in the SER (NUREG-0797) and its supplements through SSER 27, subject to the following provision:

TU Electric may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

H. TU Electric shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans, previously approved by the Commission, and all amendments made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain safeguards information protected under 10 CFR 73.21, are entitled: "Comanche Peak Steam Electric Station Physical Security Plan" with revisions submitted through January 14, 1993; "Comanche Peak Steam Electric Station Security Training and Qualification Plan" with revisions submitted through June 10, 1991; and "Comanche Peak Steam Electric Station Safeguards Contingency Plan" with revisions submitted through December 1988.

I. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

J. Amendment No. 8 to Construction Permit CPPR-127, issued August 25, 1988, authorized the transfer of 6.2% ownership interest in the facility from Texas Municipal Power Agency to TU Electric, such transfer to take place in 10 installments as set forth in the Agreement attached to the application for amendment dated March 4, 1988. At the completion of such transfer of interest, Texas Municipal Power Agency shall no longer be a licensee under this license and all references to "licensees" shall exclude Texas Municipal Power Agency.

K. This license is effective as of the date of issuance and shall expire at Midnight on February 2, 2033.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas E. Murley

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:
1. Appendix A - Technical Specifications (NUREG-1468)
2. Appendix B - Environmental Protection Plan
3. Appendix C - Antitrust Conditions

Date of Issuance: April 6, 1993

APPENDIX B

TO FACILITY OPERATING LICENSE NO. NPF-89

TEXAS UTILITIES ELECTRIC COMPANY

COMANCHE PEAK STEAM ELECTRIC STATION UNITS 1 & 2

DOCKET NOS. 50-445 AND 50-446

ENVIRONMENTAL PROTECTION PLAN

(NONRADIOLOGICAL)

APRIL 6, 1993

COMANCHE PEAK STEAM ELECTRIC STATION

UNITS 1 AND 2

ENVIRONMENTAL PROTECTION PLAN

(NONRADIOLOGICAL)

TABLE OF CONTENTS

1.0 Objectives of the Environmental Protection Plan

The purpose of the Environmental Protection Plan (EPP) is to provide for protection of nonradiological environmental values during operation of the nuclear facility. The principal objectives of the EPP are as follows:

(1) Verify that the facility is operated in an environmentally acceptable manner, as established by the Final Environmental Statement - Operating License Stage (FES-OL) and other NRC environmental impact assessments.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State, and local requirements for environmental protection.

(3) Keep NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

Environmental concerns identified in the FES-OL which relate to water quality matters are regulated by way of the licensee's NPDES permit.

2.0 Environmental Protection Issues

In the FES-OL, dated September 1981, the staff considered the environmental impacts associated with the operation of the two-unit Comanche Peak Steam Electric Station (CPSES). Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

The aquatic issues identified by the State in the FES-OL were as follows:

(1) Effects of the intake structure on aquatic biota during operation (FES-OL Section 5.5.2.3).

(2) Effects of the circulating water chlorination system on aquatic biota during operation (FES-OL Sections 4.2.4.1, 5.3.4.1, and 5.11.3.1).

The second issue above, "Effects of the circulating water chlorination system on aquatic biota during operation (FES-OL Sections 4.2.4.1, 5.3.4.1, and 5.11.3.1)," no longer applies because the EPA NPDES permit no longer requires that such a study be performed.

Aquatic matters are addressed by the effluent limitations, monitoring requirements, and the Section 316(b) demonstration requirement contained in the effective NPDES permit issued by the U.S. Environmental Protection Agency (Region VI). The NRC will rely on this agency for regulation of matters involving water quality and aquatic biota.

2.2 Terrestrial Issues

The terrestrial issue identified by the staff in the FES-OL was as follows:

(1) Potential impacts resulting from the use of groundwater by the station during operation (FES-OL Section 5.3.1.2).

NRC requirements with regard to the terrestrial issue are specified in Subsection 4.2 of this EPP.

3.0 Consistency Requirements

3.1 Plant Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such activities do not involve an unreviewed environmental question and do not involve a change in the EPP*. Changes in station design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Subsection 3.3 are not subject to the requirements of this Section.

Before engaging in additional construction or operational activities which may significantly affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. Activities are excluded from this requirement if all measurable nonradiological environmental effects are confined to the onsite areas previously disturbed during site preparation and plant construction. When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activity and obtain prior NRC approval. When such activity involves a change in the EPP, such activity and change to the EPP may be implemented only in accordance with an appropriate license amendment as set forth in Subsection 5.3 of this EPP.

A proposed change, test, or experiment shall be deemed to involve an unreviewed environmental question if it concerns: (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FES-OL, in environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents or power level; or (3) a matter, not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include written evaluations which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question or constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of the Annual Environmental Operating Report (per Subsection 5.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests, and experiments.

3.2 Reporting Related to the NPDES Permit and State Certification

Changes to, or renewals of, the NPDES permit or the State certification shall be reported to the NRC within 30 days following the date the change or renewal is approved. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

*This provision does not relieve the licensee of the requirements of 10 CFR 50.59.

The licensee shall notify the NRC of changes to the effective NPDES permit that are proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC with a copy of the application for renewal of the NPDES permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, and local environmental regulations are not subject to the requirements of Subsection 3.1.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to plant operation shall be recorded and reported to the NRC within 24 hours, followed by a written report per Subsection 5.4.2. The following are examples of such events: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, fish kills, increase in nuisance organisms or conditions, and unanticipated or emergency discharge of waste water or chemical substances.

No routine monitoring programs are required to implement this condition.

4.2 Environmental Monitoring

4.2.1 Groundwater Levels and Station Water Use Monitoring

Groundwater levels in the onsite observation wells identified as OB-3 and OB-4 in the FES-OL (Figure 4-3) shall be monitored and recorded monthly when the groundwater pumpage rate by CPSES is less than or equal to 30 gallons per minute (gpm) and weekly when the CPSES average monthly rate exceeds 30 gpm for the previous month. Water levels shall be read and recorded on approximately the same day of the month when monitoring monthly and on the same day of the week when monitoring weekly (an aid in interpreting the results by minimizing the influence of cyclic water use patterns of the aquifer by others on the observed water levels).

A monthly record of the total number of gallons pumped from each of the onsite production wells shall be maintained, including an average monthly pumpage rate in gpm.

A monthly record showing the rate and total amount of surface water processed by the onsite water treatment facility shall be maintained by the licensee on a monthly basis. This record shall include the process rate in gallons per minute and the total amount in gallons.

The licensee shall include the results of this monitoring program as part of the Annual Operating Report (see Subsection 5.4.1).

4.2.2 Water Treatment Facility Outages Impact Assessment and Reporting

The following outage of the onsite water treatment facility shall be reported to the NRC:

(1) Routine or unplanned outages that exceed 30 consecutive days.

(2) Any outage of at least 24 hours duration, beginning with the third such outage in a calendar year, if these outages are accompanied by an increase in the monthly average groundwater pumpage to a rate exceeding

30 gpm. When it is determined that either routine or unplanned outages will exceed 30 consecutive days and when the groundwater pumpage rate will be greater than 30 gpm when averaged over the outage period, the licensee will prepare and submit a report to the NRC within 15 days after a determination of the extended outage is made. This report shall include (1) a discussion of the reason for the extended outage, (2) the expected duration of the outage, (3) an estimate of the date or the time required to return the onsite water treatment facility to operation, (4) a determination of the potential for lowering the groundwater levels in offsite wells, (5) an assessment of the impact of the projected groundwater level decline, and (6) a proposed course of action to mitigate any adverse effects.

5.0 Administrative Procedures

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the EPP. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organization structure utilized to achieve the independent review and audit function and the results of audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records and logs relative to the environmental aspects of station operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to NRC on request.

Records of modifications to station structures, systems, and components determined to potentially affect the continued protection of the environment shall be retained for the life of the station. All other records, data and logs relating to this EPP shall be retained for 5 years or, where applicable, in accordance with the requirements of other agencies.

5.3 Changes in Environmental Protection Plan

Requests for changes in the EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the EPP.

5.4 Plant Reporting Requirements

5.4.1 Routine Reports

An Annual Environmental Operating Report describing implementation of this EPP for the previous year shall be submitted to the NRC prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following issuance of the operating license. The period of the first report shall begin with the date of issuance of the operating license.

The report shall include summaries and analyses of the results of the environmental protection activities required by Subsection 4.2 of this EPP for the report period, including a comparison with related preoperational studies, operational controls (as appropriate), and previous nonradiological environmental monitoring reports, and an assessment of the observed impacts of plant operation on the environment. If harmful effects or evidence of trends toward irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of mitigating action.

The Annual Environmental Operating Report shall also include:

(1) A list of EPP noncompliances and the corrective actions taken to remedy them.

(2) A list of all changes in station design or operation, tests, and experiments made in accordance with Subsection 3.1 which involved a potentially significant unreviewed environmental question.

(3) A list of nonroutine reports submitted in accordance with Subsection 5.4.2.

(4) A summary list of NPDES permit-related reports relative to matters identified in Subsection 2.1 which were sent to the U.S. Environmental Protection Agency Region VI during the report period.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing results shall be submitted as soon as possible in a supplementary report.

5.4.2 Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of a nonroutine event. The report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics; (b) describe the probable cause of the event; (c) indicate the action taken to correct the reported event; (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems; and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided with a copy of such a report at the same time it is submitted to the other agency.

APPENDIX C

TO

FACILITY OPERATING LICENSE NO. NPF-89

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT 2

TEXAS UTILITIES ELECTRIC COMPANY

DOCKET NO. 50-446

ANTITRUST CONDITIONS*

LICENSE CONDITIONS FOR COMANCHE PEAK STEAM ELECTRIC STATION, UNIT NO. 2

*These are the Conformed Settlement License Conditions filed in December 1980 which were approved May 6, 1982 by the administrative law judge presiding over the consolidated antitrust proceedings for Comanche Peak Steam Electric Station. Although the text is identical, the sections have been renumbered for convenience.

A. The following definitions apply to paragraph B:

1. "Applicants" means severally and jointly Texas Utilities Generating Company, Dallas Power & Light Company, Texas Electric Service Company, Texas Power & Light Company, Texas Utilities Company, and each other subsidiary, affiliate or successor company now or hereafter engaged in the generation, transmission and/or the distribution of electric power in the State of Texas.

2. "North Texas Area" means the following Texas counties: Anderson, Andrews, Angelina, Archer, Bastrop, Baylor, Bell, Bordon, Bosque, Brown, Burnet, Cherokee, Clay, Coke, Collin, Comanche, Cooke, Coryell, Crane, Culberson, Dallas, Dawson, Delta, Denton, Eastland, Ector, Ellis, Erath, Falls, Fannin, Fisher, Freestone, Gaines, Glasscock, Grayson, Henderson, Hill, Hood, Hopkins, Houston, Howard, Hunt, Jack, Johnson, Kaufman, Kent, Lamar, Lampasas, Leon, Limestone, Loving, Lynn, Martin, McLennan, Midland, Milam, Mitchell, Montague, Nacogdoches, Navarro, Nolan, Palo Pinto, Parker, Pecos, Rains, Reagan, Red River, Reeves, Rockwall, Rusk, Scurry, Schackelford, Smith, Somervell, Stephens, Sterling, Tarrant, Terry, Tom Green, Travis, Upton, Van Zandt, Ward, Wichita, Wilbarger, Williamson, Winkler, Wise, Wood, and Young.

3. "Entity" means an electric utility which is a person, a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or an association owning, operating or contractually controlling, or proposing in good faith to own, operate, or contractually control, facilities for generation of electric power and energy; provided, however, that as used in paragraphs B.1, B.2, B.7, B.9, B.10(a) and B.10(b), B.11, B.12, and B.13, "Entity" means an electric utility which is a person, a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or an association owning or operating, or proposing in good faith to own or operate, facilities for generation, transmission and/or distribution of electric power and energy.

4. "Entity in the North Texas Area" means an Entity which owns or operates facilities for the generation, transmission and/or distribution of electric power in any area within the North Texas Area.

5. "Bulk Power" means the electric power and/or electric energy supplied or made available at transmission or subtransmission voltages.

6. "Costs" means all appropriate operating and maintenance expenses and all ownership costs where applicable.

7. The terms "connection" and "interconnection" are used interchangeably.

B. The Applicants defined in Paragraph A.1 are subject to the following antitrust conditions:

1. The Applicants shall afford an opportunity to participate in the Comanche Peak Steam Electric Station, Units 1 and 2, for the term of the instant license, or any extension or renewal thereof, to any Entity(ies) in the North Texas Area making a timely request therefor, through a reasonable ownership interest in such unit(s) on reasonable terms and conditions and on a basis that will fully compensate Applicants for their costs. It is understood that any request received prior to December 1, 1973, shall be deemed to be timely. In connection with such participation, the Applicants also will interconnect with and offer transmission service as may be required for delivery of such power to such Entity(ies) at a point or points on the Applicants' system on a basis that will fully compensate the Applicants for their costs including a reasonable return on investment. Notwithstanding the December 1, 1973, date appearing hereinabove, the Applicants' offer of participation in Comanche Peak, Units 1 and 2, to Tex-La Electric Cooperative of Texas, Inc. shall not obligate the Applicants, by virtue of such offer, to offer an opportunity to participate in Comanche Peak, Units 1 and 2, to any other Entity.

2. The Applicants, as long as they are members of the Texas Interconnected Systems (TIS), shall support reasonable requests by Entities in the North Texas Area having generating capacity for membership in TIS. The Applicants shall also propose and actively support, as long as they are members thereof, the creation of one or more additional classifications of TIS membership based on non-discriminatory criteria to afford access to data, studies and recommendations to all Entities in the North Texas Area who desire membership. The Applicants shall also support requests by qualified Entities in the North Texas Area for membership in any other electric utility planning or operating organization or of which the Applicants are members (other than one involving only the Applicants). The Applicants shall share information with other Entities with respect to, and shall, with other such entities through any electric utility planning organizations (other than one involving only the Applicants) of which the Applicants are members, conduct and/or participate in joint studies and planning of future generation, transmission and related facilities; provided, however, this condition shall not obligate the Applicants to conduct or participate in such joint studies or joint planning unless (1) the studies or planning are requested and conducted in good faith and are based on reasonably realistic and reasonably complete data or projections, (2) the studies or planning are reasonably justified on the basis of sound engineering principles, (3) appropriate protection is accorded proprietary or other confidential business and financial information, and (4) the costs for such studies or planning are allocated on a fair and equitable basis.

3. The Applicants will connect with, coordinate reserves, and sell, purchase or exchange emergency and/or scheduled maintenance bulk power with any Entity(ies) in the North Texas Area on terms that will provide for the Applicants' costs, including a reasonable return on investment, in connection therewith and allow such Entity(ies) full access to the benefits of such reserve coordination.

4. Emergency service and/or scheduled maintenance service to be provided by each party shall be furnished to the fullest extent available from the supplying party and desired by the party in need. If requested, Applicants shall exchange maintenance schedules with any Entity in the North Texas Area. The Applicants and each such Entity(ies) shall provide to the other emergency service and/or scheduled maintenance service if and when available to the extent they can do so without unreasonably impairing service to their customers including other electric systems to whom they have firm commitments. Any curtailment or refusal to provide such emergency and/or scheduled maintenance service shall be on a non-discriminatory basis.

5. The Applicants and the other party(ies) to a reserve sharing arrangement shall from time to time jointly establish the minimum reserves to be installed and/or provided under contractual arrangements as necessary to maintain in total a reserve margin sufficient to provide adequate reliability of power supply to the interconnected systems of the parties in accordance with good industry practice as developed in the area. Unless otherwise agreed upon, minimum reserve requirements shall be calculated as a percentage of each party's estimated net peak load demand (taking into account firm sales and firm purchases). No party to the arrangement shall be required to maintain greater reserves than the percentage which results from the aforesaid calculation. The reliability of power delivered into TIS-ERCOT over DC asynchronous connections shall not be treated differently by the Applicants, for purposes of spinning and installed reserve calculations and requirements, than would be the case if such power originated within TIS-ERCOT. Outages on DC asynchronous connections shall be treated by the Applicants the same as losses of generation within TIS-ERCOT. The Applicants agree to support the adoption of principles involving DC asynchronous connections contained in this paragraph within any TIS or ERCOT organization.

6. The parties to such a reserve sharing arrangement shall provide such amounts of spinning reserves as may be equitable and adequate to avoid the imposition of unreasonable demands on the other party(ies) in meeting the normal contingencies of operating its (their) system(s). However, in no circumstances shall such reserve requirement exceed the installed reserve requirement.

7. Interconnections with any Entity will not be limited to low voltages when higher voltages are requested and are available from the Applicants' installed facilities in the area where a connection is desired, when the proposed arrangement is found to be technically and economically feasible. Control and telemetering facilities shall be provided as required for safe and prudent operation of the interconnected systems.

8. Interconnection and coordination agreements shall not embody any restrictive provisions pertaining to intersystem coordination. Good industry practice as developed in the area from time to time (if not unreasonably restrictive) will satisfy this provision.

9. The Applicants shall participate in and facilitate the exchange of bulk power by transmission over the Applicants' transmission facilities between or among two or more Entities in the North Texas Area with which the Applicants are connected, and between any such Entity(ies) and any Entity(ies) outside the North Texas Area between whose facilities the Applicants' transmission lines and other transmission lines, including any direct current (asynchronous) transmission lines, form a continuous electrical path; provided, that (i) permission to utilize such other transmission lines has been requested by the proponent of the arrangement, (ii) the arrangements reasonably can be accommodated from a functional and technical standpoint, and (iii) any Entity(ies) requesting such transmission arrangements shall have given Applicants reasonable advance notice of its (their) schedule and requirements. Such transmission shall be on terms that fully compensate the Applicants for their costs including a reasonable return on investment; provided, however, that such transmission services and the rates to be charged therefor shall be subject to any regulatory agency(ies) having jurisdiction thereof. The Applicants shall not refuse to provide such transmission service merely because the rates to be charged therefor are the subject of dispute with such Entity. The Applicants shall not be required to enter into any arrangement which would unreasonably impair system reliability or emergency transmission capacity, it being recognized that while some transmission may be operated fully loaded, other transmission may be for emergency use and operated either unloaded or partially loaded. (The foregoing applies to any Entity(ies) to which the Applicants may be connected in the future as well as those to which they are now connected).

10(a) The Applicants shall include in their planning and construction programs sufficient transmission capacity as required for the transactions referred to in paragraphs B.9 and B.11, provided any Entity(ies) in the North Texas Area gives the Applicants sufficient advance notice as may be necessary to accommodate its (their) requirements from a functional and technical standpoint and that such Entity(ies) fully compensates the Applicants for their costs including a reasonable return on investment. The Applicants shall not be required to construct transmission facilities if construction of such facilities is infeasible, or if such would unreasonably impair system reliability or emergency transmission capacity. In connection with the performance of their obligations above, the Applicants shall not be foreclosed from requiring a reasonable contribution in aid of construction or from making arrangements for coordinated construction of future transmission lines such that each of the parties to the transaction would own an interest in or a segment of the transmission addition in proportion to

its share of the cost of the addition. Any such contribution made in aid of construction or ownership interest shall be properly credited in determining any wheeling charges. If the Applicants engage in joint ownership of transmission lines with any other Entity, they shall not refuse to engage in similar transactions in comparable circumstances with other Entities, subject to the provisions limiting the Applicants' obligations above.

10(b) Applicants shall provide other Entities with reasonable access to any future interstate interconnection facilities which Applicants may own, on terms and conditions comparable to the provisions of paragraph B.9 hereof, and subparagraph 10(a).

11. The Applicants shall, upon reasonable advance notice, sell full and partial requirements bulk power to requesting Entities in the North Texas Area having, on the date of this license, non-aggregated generating capacity of less than 200 MW (including no generating capacity) under reasonable terms and conditions which shall provide for recovery of Applicants' costs, including a reasonable return on investment. The Applicants shall not be required to make any such sale if they do not have available sufficient bulk power or adequate transmission to provide the requested service or if the sale would impair their ability to render adequate and reliable service to their own customers or their ability to discharge prior commitments.

12(a) In connection with the performance of their obligations herein and subject to the provisions of this paragraph, the Applicants will not disconnect from or refuse to connect their then-existing or proposed facilities with the facilities of any Entity, used or proposed to be used for the transmission of electric energy in interstate commerce by reason of the interstate character of such facilities, and the Applicants will not prevent any Entity with which they maintain connection from establishing, maintaining, modifying, or utilizing a connection with facilities used or proposed to be used for the transmission of electric energy in interstate commerce by reason of the interstate character of such facilities, provided that, anything in these license conditions to the contrary notwithstanding (but subject to paragraph 12(b) and 12(d) below), any Entity seeking to establish, maintain, modify or utilize any connection which could affect the nonjurisdictional status of the Applicants under the Federal Power Act shall have filed an application with and used its best efforts to obtain an order from the Federal Energy Regulatory Commission, applicable to the Applicants under Sections 210, 211, and 212 of such Act, requiring the establishment, maintenance, modification or utilization of such connection. In the event that an Entity files an Application pursuant to this subparagraph, the Applicants agree that they will not unreasonably oppose any such application. In the event such application is denied by a valid order of the Federal Energy Regulatory Commission, any continuing refusal by the Applicants to establish, maintain, modify or utilize such

connection with such Entity shall be subject to review by the NRC in accordance with the Atomic Energy Act of 1954, as amended, and the rules and regulations thereunder, to determine whether any such refusal would create or maintain a situation inconsistent with the antitrust laws or the policies thereunder in accordance with the standards set forth in Section 105 of such Act; provided that all factual determinations by the FERC on any cost or system reliability reason(s) for any such refusal shall not be subject to redetermination by the NRC. The burden of proof will be on the Applicants in such NRC proceeding.

12(b) Applicants shall not enter into or maintain any agreement or understanding with any other Entity(ies) to refuse to deal with another Entity(ies) with the purpose of maintaining a non-jurisdictional status under the Federal Power Act, and in the event that Applicants refuse to make an interconnection with or choose to disconnect from any Entity(ies), such decision and/or action by the Applicants will be undertaken unilaterally, not jointly, and without consultation with any other Entity(ies), provided, however, that after Applicants decide to undertake such action, they may notify any affected Entity.

12(c) In the event that an Entity files an application pursuant to subparagraph 12(a) solely by reason of the Applicants' desire to maintain their non-jurisdictional status under the Federal Power Act, Applicants agree to pay such Entity's reasonable expenses in connection with such application and the ensuing proceeding,[1/] provided, however, that Applicants shall not be required to pay for any expenses of such Entity if that Entity's application is denied by FERC for reasons advocated by Applicants at FERC, and provided further, that Applicants shall not be required to pay for any expenses of such Entity which that Entity would have incurred had it not filed an application solely by reason of Applicants' desire to maintain their non-jurisdictional status under the Federal Power Act.

12(d) Nothing in these License Conditions shall impair the right of the Department of Justice or any other Entity, public or private, to file an antitrust action in any Federal Court in the event any Applicant refuses to establish, maintain, modify or utilize any connection with any Entity(ies), provided, that nothing herein shall preclude any Applicant from raising any legal or equitable defense that may be available to it.

1/ This obligation shall not apply to the expenses of the Central & South West Corporation or Houston Industries or any of their respective subsidiaries, including, but not limited to, the expenses of Central & South West Corporation and any of its subsidiaries incurred in FERC Docket EL79-8.

13. Applicants agree to use their best efforts to amend any agreements with all Entities to ensure that such agreements are not inconsistent with paragraphs B.12(a) and B.12(b) above.

14. The Applicants will, in accordance with applicable law, allow ownership participation in future nuclear generating facilities which they may construct, own, and operate in the State of Texas on conditions similar to these License Conditions.

15. Applicants shall use their best efforts to modify the Offer of Settlement filed in FERC Docket No. EL79-8 to include each of the undertakings set forth in the letter agreement among Applicants, Central & South West Corporation, Houston Lighting & Power Company and the FERC Staff dated September 11, 1980; Applicants shall thereafter use their best efforts to secure approval thereof by the FERC, and shall abide by any valid order(s) of the FERC issued pursuant to the Offer of Settlement. Nothing herein shall preclude the Department of Justice from instituting or intervening in any proceeding at FERC, including FERC Docket No. EL79-8, and from presenting such arguments and evidence that it deems appropriate.

16. The foregoing conditions shall be implemented i) in a manner consistent with applicable Federal, state and local statutes and regulations and ii) subject to any regulatory agency having jurisdiction. Nothing herein shall preclude the Applicants from seeking an exemption or other relief to which they may be entitled under applicable law or shall be construed as a waiver of their right to contest the applicability of the license conditions with respect to any factual situation.

NUREG–0797
Supplement No. 27

Safety Evaluation Report

related to the operation of
Comanche Peak Steam Electric Station,
Unit 2

Docket No. 50–446

Texas Utilities Electric Company, et al.

U.S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

April 1993

ABSTRACT

Supplement 27 to the Safety Evaluation Report related to the operation of the Comanche Peak Steam Electric Station (CPSES), Unit 2 (NUREG-0797), has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission (NRC). The facility is located in Somervell County, Texas, approximately 40 miles southwest of Fort Worth, Texas. This supplement reports the status of certain issues that had not been resolved when the Safety Evaluation Report and Supplements 1, 2, 3, 4, 6, 12, 21, 22, 23, 24, 25, and 26 to that report were published. This supplement deals primarily with Unit 2 issues.

Supplement 5 was cancelled. Supplements 7, 8, 9, 10, and 11 were limited to the staff's evaluation of allegations investigated by the NRC Technical Review Team. Supplement 13 presented the staff's evaluation of the Comanche Peak Response Team (CPRT) Program Plan, which was formulated by the applicant to resolve various construction and design issues raised by sources external to TU Electric (applicant). Supplements 14 through 19 presented the staff's evaluation of the CPSES Corrective Action Program: large- and small-bore piping and pipe supports (Supplement 14); cable trays and cable tray hangers (Supplement 15); conduit supports (Supplement 16); mechanical, civil/ structural, electrical, instrumentation and controls, and systems portions of the heating, ventilation, and air conditioning (HVAC) system workscopes (Supplement 17); HVAC structural design (Supplement 18); and equipment qualification (Supplement 19). Supplement 20 presented the staff's evaluation of the CPRT implementation of its Program Plan and the issue-specific action plans, as well as the CPRT's investigations to determine the adequacy of various types of programs and hardware at CPSES.

Items identified in Supplements 7, 8, 9, 10, 11, and 13 through 20 are not included in this supplement, except to the extent that they affect the licensee's Final Safety Analysis Report.

This twenty-seventh supplement, which is in support of the full-power license for Unit 2, provides updated information on the issues that had been considered previously, as well as the evaluation of issues that have arisen since the twenty-sixth supplement was issued. This evaluation addresses all of the issues necessary to support the issuance of a full-power license for Unit 2.

TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION AND GENERAL DESCRIPTION OF PLANT

1.1 Introduction

The Nuclear Regulatory Commission (NRC) Safety Evaluation Report (SER), NUREG-0797, on the application of the Texas Utilities Generating Company (TUGCO)* (the applicant) for a license to operate the Comanche Peak Steam Electric Station (CPSES), Units 1 and 2, was issued in July 1981. Since then the following supplements have been issued:

- Supplement 1 (SSER 1) was issued in October 1981. It described the resolution of a large portion of the outstanding and confirmatory issues identified in the SER.

- Supplement 2 (SSER 2) was issued in January 1982. It included the report of the Advisory Committee on Reactor Safeguards (ACRS) to the NRC Chairman by letter dated November 17, 1981, which was appended as Appendix F. Applicant and staff responses to comments by the ACRS were also included.

- Supplement 3 (SSER 3) was issued in March 1983. It addressed outstanding and confirmatory issues resolved since SSER 2 was issued. The staff's evaluation of the applicant's emergency plans was also described.

- Supplement 4 (SSER 4) was issued in November 1983. It included the staff's evaluation report on design modifications made to the Westinghouse model D4 and D5 steam generators installed at CPSES.

- Supplement 5 (SSER 5) has been canceled. It was to have been limited exclusively to the CYGNA Independent Assessment Program. The issues from the CYGNA Independent Assessment Program have been addressed in the applicant's corrective action program. The staff's evaluations of the CYGNA issues are provided in the respective SSERs (14-19) for each corrective action program design workscope. Therefore, the planned supplement was never issued.

- Supplement 6 (SSER 6) was issued in November 1984. It addressed outstanding and confirmatory issues resolved since SSER 4 was issued. Noteworthy in this supplement was a partial exemption to General Design Criterion (GDC) 4 of Appendix A to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR Part 50) deleting the requirement for installing jet impingement shields for the Unit 1 primary coolant loop piping at postulated break locations.

---

*On January 16, 1987, TUGCO informed the NRC that it had adopted a new corporate signature and would be known as TU Electric (Texas Utilities Electric Company).

- Supplement 7 (SSER 7) was issued in January 1985. It was limited exclusively to the staff's evaluation of allegations investigated by the NRC's Technical Review Team (TRT) pertaining to plant electrical/ instrumentation systems and testing programs.

- Supplement 8 (SSER 8) was issued in February 1985. It was limited exclusively to the staff's evaluation of allegations investigated by the TRT pertaining to the plant's civil/structural and other miscellaneous construction and plant-readiness testing items.

- Supplement 9 (SSER 9) was issued in March 1985. It was limited exclusively to the staff's evaluation of coating requirements inside containment and allegations of coating deficiencies investigated by the TRT.

- Supplement 10 (SSER 10) was issued in April 1985. It was limited exclusively to the staff's evaluation of allegations investigated by the TRT pertaining to the mechanical and piping areas.

- Supplement 11 (SSER 11) was issued in May 1985. It was limited exclusively to the staff's evaluation of allegations investigated by the TRT pertaining to quality assurance/quality control (QA/QC) practices in the design and construction of CPSES.

- Supplement 12 (SSER 12) was issued in October 1985. It updated the SER further by providing the results of the staff's review of information submitted by the applicant by letter and in Final Safety Analysis Report (FSAR) amendments addressing several of the issues and license conditions listed in Sections 1.7, 1.8, and 1.9 of the SER that were unresolved at the time SSER 6 was issued. SSER 12 also listed several new issues that had been identified since SSER 6 was published and that were unresolved.

- Supplement 13 (SSER 13) was issued in May 1986. It presented the staff's evaluation of the Comanche Peak Response Team (CPRT) Program Plan, which was formulated by the applicant to resolve various design and construction issues raised by the Atomic Safety and Licensing Board, allegers, the Citizens Association for Sound Energy (CASE), and NRC inspections, as well as those raised by CYGNA Energy Services during its independent design assessment.

- Supplement 14 (SSER 14) was issued in March 1988. It presented the staff's evaluation of the applicant's corrective action program related to large- and small-bore piping and pipe supports.

- Supplements 15 and 16 (SSERs 15 and 16) were issued in July 1988; Supplements 17 through 19 (SSERs 17-19) were issued in November 1988. They presented the staff's evaluation of the corrective action program as related to cable trays and cable tray hangers (SSER 15); conduit supports (SSER 16); the mechanical, civil/structural, electrical, and instrumentation and controls workscopes, and systems portions of the heating, ventilation, and air conditioning (HVAC) system workscope (SSER 17); HVAC structural design (SSER 18); and equipment qualification (SSER 19).

- Supplement 20 (SSER 20) was issued in November 1988. It presented the staff's evaluation of the CPRT implementation of the CPRT Program Plan and the issue-specific action plans, as well as the CPRT's investigations to determine the adequacy of various types of programs and hardware at CPSES.

- Supplement 21 (SSER 21) was issued in April 1989. It updated the SER further by providing the results of the staff's review of information that the applicant submitted by letter and in FSAR amendments. It addressed several of the issues and license conditions listed in Sections 1.7, 1.8, and 1.9 of the SER that were unresolved at the time SSER 12 was issued. Of note from an administrative standpoint, SSER 21 renumbered items appearing in Sections 1.7, 1.8, and 1.9, and deleted all items that were previously resolved but listed in SSER 12.

- Supplement 22 (SSER 22) was issued in January 1990. It updated the SER by presenting the results of the staff's review of information that the applicant submitted by letter and in FSAR amendments. The staff review addressed several of the issues and license conditions listed in Sections 1.7, 1.8, and 1.9 of the SER that were unresolved at the time SSER 21 was issued.

- Supplement 23 (SSER 23) was issued in February 1990 with the low-power operating license for CPSES Unit 1. It documented resolution of the remaining outstanding issues appearing in Section 1.7 of SSER 22.

- Supplement 24 (SSER 24) was issued with the full-power operating license for CPSES Unit 1. Confirmatory issues remaining at the time of license issuance, as well as proposed license conditions, were listed in Sections 1.8 and 1.9, respectively.

- Supplement 25 (SSER 25) was issued in September 1992. It updated the SER and subsequent SSERs, by presenting the results of the staff's review of information that the applicant submitted by letter and in FSAR amendments; specifically documenting reviews in support of the licensing of Unit 2. The staff review also addressed the translation of the Unit 1 and common area Corrective Action Program to Unit 2.

- Supplement 26 (SSER 26) was issued in February 1993. It updated the SER and subsequent SSERs by presenting the results of the staff's review of information that the applicant submitted by letter and in FSAR amendments. Significant issues contained in this SSER included TU Electric's fire barrier qualification testing program, preservice inspection and inservice testing programs and relief requests, an optimized fuel assembly review, and the plant's dual-unit station blackout review. This evaluation addressed all of the issues necessary to support the issuance of a low-power license for Unit 2.

SSER 27 updates the SER and subsequent SSERs by presenting the results of the staff's review of information that TU Electric has submitted by letter. It addresses all of the issues necessary to support the issuance of a full-power license for Unit 2. Each section or appendix of this supplement is numbered and titled so that it corresponds to the section or appendix of the SER that has

been affected by the staff's additional evaluations and, except where specifically noted, does not replace the corresponding SER section or appendix. Appendix A is a continuation of the chronology of correspondence between the NRC and TU Electric that updates the correspondence listed in the SER and in SSERs 1 through 26. Appendix B includes references other than NRC documents and correspondence cited in this supplement.* Appendix C contains information concerning the status of Three Mile Island (TMI) issues for CPSES Unit 2. Appendix D contains a list of principal contributors to this supplement. No changes were made to SER Appendices E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, BB, CC, DD, EE, or FF by this supplement.

Copies of this supplement are available for public inspection at the NRC's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. 20555; and at the University of Texas at Arlington Library, Government Publications/Maps, 701 South Cooper, P.O. Box 19447, Arlington, Texas 76019.

The NRC Project Manager for Comanche Peak Steam Electric Station, Unit 2, is Brian E. Holian. Mr. Holian may be contacted by calling (301) 504-1334 or by writing to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

1.7 Summary of Outstanding Issues

Section 1.7 of the SER, as supplemented, identified no open issues at the time SSER 26 was issued. Those issues that were resolved in previous supplements were not listed in SSER 26.

1.8 Confirmatory Issues

Section 1.8 of the SER, as supplemented, identified no confirmatory issues at the time SSER 26 was issued.

1.9 License Conditions

In Section 1.9 of SSER 26, the staff listed three proposed license conditions. Those license conditions that were resolved in previous supplements were not listed in SSER 26.

License conditions discussed in previous SSERs that were included in the Unit 1 license, and are similarly included in the Unit 2 license, follow:

(1) The applicant shall continue to control mineral exploration within the exclusion area; that is, at distances beyond 2250 feet from safety-related structures per GDC 4, 10 CFR Part 50, Appendix A.

---

*Availability of all material cited is described on the inside front cover of this document.

(2) The applicant must implement and maintain in effect all provisions of the approved fire protection program, as described in the Final Safety Analysis Report (as amended) and as approved in the SER and its supplements, subject to the following provision: "The applicant may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire."

(3) The applicant shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans, previously approved by the Commission, and all amendments made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain safeguards information protected under 10 CFR 73.21, are entitled: "Comanche Peak Steam Electric Station Physical Security Plan" with revisions submitted through January 14, 1993; "Comanche Peak Steam Electric Station Security Training and Qualification Plan" with revisions submitted through June 10, 1991; and "Comanche Peak Steam Electric Station Safeguards Contingency Plan" with revisions submitted through December 1988.

9 AUXILIARY SYSTEMS

9.5 Other Auxiliary Systems

9.5.1 Fire Protection

In Supplement 21 to the SER (SSER 21), which was issued in April 1989, the staff reviewed the Comanche Peak fire protection program as documented in the FSAR through Amendment 71 and as described in Revision 1 to the Fire Protection Report.

In Supplement 26 to the SER (SSER 26), the staff documented a review of fire protection-related changes and modifications made to the FSAR through Amendment 87 and through Revision 6 to the Fire Protection Report. In SSER 26, the staff concluded that the fire protection program for Unit 2 adheres to the guidance in Appendix A to Branch Technical Position (BTP) APCSB 9.5-1, and with Sections G, J, and O of Appendix R to 10 CFR Part 50.

The following TU Electric commitments related to fire protection issues were documented in SSER 26:

- 36-inch wide fire barrier: Perform a confirmatory test or provide additional information addressing the staff's concerns (SSER 26, pp. 9-10 and 9-23).

  This issue is discussed in this SSER (below). The NRC staff witnessed the fire test and reviewed the preliminary test results submitted by TU Electric. The staff will review the final fire test report and will prepare a safety evaluation. This action is tracked by NRC TAC No. M85998.

- Ampacity derating testing: Perform plant-specific testing (SSER 26, pp. 9-20 and 9-32).

  This issue is discussed in this SSER (below). TU Electric provided preliminary results from their plant-specific ampacity derating tests. The staff observed a portion of the testing, and will review the final ampacity test report and will prepare a safety evaluation. This action is tracked by NRC TAC No. M85999.

- "Box enclosure" barriers: Establish qualification (SSER 26, pp. 9-22 and 9-23).

  This issue is closed in this SSER (below) based on NRC staff's onsite inspection and review of the fire barrier upgrades and a review of the engineering documentation associated with these upgrades.

- Compensatory measures: Provide fire watches in accordance with the CPSES fire protection plan until the barriers have cured for 30 days, and until the box enclosures are qualified (SSER 26, pp. 9-22 and 9-26).

  This issue is closed in this SSER (below) based on the preliminary results of the 36-inch-wide cable tray fire test, with a seven-day cure time, and the completion of "box enclosure" upgrades.

- Alternative shutdown system design enhancements: Implement design changes, as necessary, to ensure that the torque and limit switches in the affected motor-operated valve operators are electrically connected downstream of the contacts located in the motor control center (SSER 26, pp. 9-36).

  This issue is not addressed below. In SSER 26, the staff reported TU Electric's commitment to perform the necessary design changes before startup from the next refueling outage (first refueling outage for Unit 2 and the third refueling outage for Unit 1). This action is tracked by NRC TAC No. M86000.

In letters of February 26, 1993 (TU Electric letter TXX-93101 to NRC), March 10, 1993 (TU Electric letter TXX-93125 to NRC), and March 23, 1993 (TU Electric letter TXX-93136 to NRC), TU Electric submitted updated information regarding the fire barrier commitments discussed above.

In addition to the information that TU Electric submitted to the staff in the three letters, the staff visited the site on February 19 and 26, 1993. Through these letters and visits, the staff gathered the information to update the material contained in SSER 26. Four of the issues are discussed separately below.

The fifth issue is not addressed below as TU Electric's commitment to perform the necessary changes is recorded in SSER 26.

36-INCH CABLE TRAY TEST

Background

In a letter of October 29, 1992, the staff stated that TU Electric's proposed acceptance criteria, as supplemented, were acceptable. In summary, the approved fire test acceptance criteria were:

(1) External conduit, cable tray rail, and cable jacket temperatures should not exceed a temperature rise of 250 °F (139 °K) plus ambient (using thermocouple averaging), and no single thermocouple reading should exceed 30 percent above the specified average temperature rise.

(2) The fire barrier should not burn through or develop any openings through which either the test specimen raceway or cables were visible.

(3) If the temperature rise criteria were not satisfied, the cables should be inspected for visible damage. The following attributes constitute cable damage: jacket swelling, splitting, discoloration, hardening, blistering,

cracking, or melting; conductor insulation exposed, degraded, or discolored; shield exposed; or bare copper conductor exposed.

(4) If the fire barrier burned through during the fire exposure, or if a visual cable inspection revealed any of the damage attributes listed above, then the barrier was considered to have deviated from the acceptance criteria. Use of the fire test results to qualify a deviating fire barrier would require that cable functionality be demonstrated. Cable functionality test methodology and criteria were specified in the staff's October 29, 1992, letter.

In a letter of October 29, 1992, the staff concluded that TU Electric's acceptance criteria, as supplemented by the conditions stated in the October 29, 1992 letter, ensured that adequate cable and barrier tests would be performed and that satisfactory results from these tests would constitute an acceptable basis for qualifying the CPSES Unit 2 fire barriers.

In a letter of February 1, 1993 (TU Electric letter TXX-93076 to NRC), TU Electric committed to either perform a confirmatory test of a 36-inch cable tray, participate in an industry testing program to resolve concerns over a 36-inch-wide barrier, or submit additional information that adequately addresses the staff's concerns. TU Electric committed to perform one of these actions by the end of the first refueling outage for Unit 2.

Update

In a letter of February 26, 1993 (TU Electric letter TXX-93101 to NRC), TU Electric committed to perform the confirmatory fire endurance test. A 36-inch cable tray "straight run" configuration was constructed using licensee-proposed upgrades for the Unit 1 plant Thermo-Lag fire barrier configurations (stress skin reinforcement on joints instead of stress skin and stitching as used on Unit 2). The test configuration was built with the application of Thermo-Lag topcoat material approximately 72 hours following completion of the raceway envelope. The fire test was conducted four days after the topcoat was applied. Circuit integrity was not monitored during the test.

The 36" x 4" ladderback cable tray (straight run with 90 degree sweeping bends) was tested on March 4, 1993; the staff observed the test. The cable tray was protected with 1/2" (nominal) Thermo-Lag panels with longitudinal, vertical, and bottom joints reinforced with stress skin and trowel-grade material. TU Electric summarized the test data in a letter of March 10, 1993 (TU Electric letter TXX-93125 to NRC). Temperatures were below the acceptance criteria (which allows a 250 °F rise above ambient). The proper conduct of the fog hose stream test was observed. The hose stream test did not damage the barrier; no fire barrier burn-through was noted. Post-fire cable visual inspections were satisfactory. There were no signs of cable damage.

Texas Utilities Fire Barrier Testing for Comanche Peak Unit 2
(Conducted March 4, 1993, at Omega Point Laboratories)

Thermocouple locations	Average temperatures in °F (Ambient - 68 °F)	Maximum temperatures in °F (Ambient - 68 °F)
Power cable	241	277
Control cable	210	224
Instrument cable	217	240
Front tray rail	244	285
Rear tray rail	247	292

Scheme 15-1 - 36" Cable Tray

These preliminary test results meet the acceptance criteria and are indicative of a satisfactory test, subject to staff review of the final fire test report. This test was conducted in an identical method as the previous upgraded testing (documented in SSER 26), with the exception of a shorter material cure time and the absence of circuit integrity measurements. The cure time difference will be discussed below. The circuit integrity measurements were not taken for this test since TU Electric considered them unnecessary. The staff does not consider circuit integrity measurements an adequate test of cable functionality, and has determined that post-fire megger testing (described in the acceptance criteria as appropriate cable functionality testing) should be conducted as soon as possible following the test. Therefore, TU Electric's minor change to their test methodology (not performing circuit integrity measurements) is acceptable.

This 36" wide cable tray test was performed by TU Electric to satisfy the SSER 26 commitment regarding a confirmatory test of the widest cable tray. The staff will review the final test report when it becomes available and document the results of its review in a safety evaluation report. Staff actions will be tracked by NRC TAC No. M85998.

AMPACITY DERATING

Background

Cables enclosed in electrical raceways protected with fire barrier materials are derated because of the insulating effect of the fire barrier material. Other factors that affect ampacity derating include cable fill, cable loading, cable type, raceway construction, and ambient temperature. The National Electrical Code, Insulated Cable Engineers Association (ICEA) publications, and other industry standards provide general ampacity derating factors for open air installations, but do not include derating factors for fire barrier systems. Historically, ampacity derating factors for raceways enclosed with fire barrier material have been determined for specific installation configurations by

testing. In SSER 26, the staff discussed its concerns with inconsistent ampacity derating test data, but recognized that the ampacity derating concern is an aging issue rather than an immediate operability issue. In SSER 26, the staff (1) documented TU Electric's commitment to complete plant-specific ampacity derating testing by the end of the first refueling outage and (2) concluded that the use of TU Electric's interim ampacity derating factors is acceptable.

Update

After SSER 26 was issued, TU Electric conducted a series of ampacity derating tests for Thermo-Lag fire barrier configurations at Omega Point Laboratories (OPL) in San Antonio, Texas from March 3 through March 13, 1993. The NRC staff observed test preparation and testing from March 2 to 7, 1993. The first test group, conducted from March 2, 1993 to March 3, 1993, consisted of a 3/4"- diameter conduit with a single 3/C #10 AWG 600-volt copper cable and a 2"- diameter conduit with a single 3/C #6 AWG 600-volt copper cable. The second test group, conducted from March 5 to March 8, 1993, consisted of a 24" x 4" cable tray filled to a 2.95-inch depth with 3/C #6 AWG 600-volt copper cables and a free air drop (small) made of a single 3/C #6 AWG 600-volt copper cable. The final test group, conducted from March 10 to 14, 1993, consisted of a 5"- diameter conduit with four 1/C 750MCM 600-volt copper cable and a free air drop (large) made of three 1/C 750MCM 600-volt copper cable. The ampacity derating factor test results are summarized below.

The TU Electric ampacity derating test methodology followed the guidance detailed in the proposed standard IEEE-P848, "Procedure for the Determination of the Ampacity Derating of Fire Protected Cables," Draft 11, dated April 6, 1992, except for the following changes described further in TU Electric's ampacity test plan, revision 3, dated March 3, 1993:

(1) Conduit/air drop test articles were selected to be consistent with CPSES installation including the enhanced Thermo-Lag configurations.

(2) Test articles were supported by wood blocks during the performance of the tests.

(3) Type T special accuracy thermocouples were used for the conduit/air drop test articles and for all ambient temperature measurements. Type K thermocouples were used for tray configurations, with directions to make adjustments, if necessary, for the difference in accuracy.

(4) Baseline tests may be run before or after the ampacity derating test.

(5) Three thermocouples were installed at each location for the conduit/air drop test articles.

(6) Both the baseline and ampacity derating test shall utilize measured current normalized as outlined in ICEA P-46-426 for final conductor and ambient temperatures (that were not 90 °C and 40 °C, respectively).

[Note: By letter of March 23, 1993 (TU Electric letter TXX-93136 to NRC), TU Electric referenced Revision 4 of their ampacity test plan. The staff's review of this latest revision will be included in the staff's review of the final test reports, as discussed below].

In addition, the subject test plan supplemented elements of the Draft IEEE-P848 document in the following manner:

- Use a clamp-on ammeter with an accuracy of ± 1 percent to take the final current measurements.

- Base the data interpretation of the ampacity derating factor on the measured values irrespective of the published ICEA values in accordance with the TU Electric letter of February 26, 1993 (TU Electric letter TXX-93101 to NRC).

The ampacity derating test procedure used for the test articles was performed in two steps, as follows:

(1) An ampacity product (or derating) test was conducted with the Thermo-Lag material configured around the test article.

(2) Then the baseline test was conducted on the instrumented article without the Thermo-Lag product.

Each ampacity test was performed by raising the conductor temperature from ambient (i.e., 40 °C) to its rated temperature limit (i.e., 90 °C), allowing the test article to reach thermal equilibrium, and then measuring the final current or ampacity value for the test article. The ampacity derating factor was calculated as follows:

$$\text{Ampacity derating factor} = 1 - \frac{I_f}{I_o}$$

where:

I_f = ampacity value for product test

I_o = ampacity value for baseline test

TU Electric performed a series of calculations to establish the existing design margin for cable ampacity derating. These calculations were performed for the cables fed from the various switchgear, as follows:

Calculation	Cables	Calculated excess ampacity margin
#EE-CA-0008-3097	From 6.9 kV	Cable tray - 40% Conduit - 40%
#EE-CA-0008-3038	From 480 V	Cable tray - 38% Conduit - 23%
#2-EE-053	All other	Cable tray - 40% Conduit - 35%

Calculation	Cables	Calculated excess ampacity margin
#16345-EE(B)-140	Air drops	Cable tray - 39% Conduit - 35%

TU Electric letters of March 10, 1993 (TU Electric letter TXX-93125 to NRC) and March 23, 1993 (TU Electric letter TXX-93136 to NRC), supplied preliminary information regarding both TU Electric's calculated excess ampacity margin and the test result data for the plant-specific ampacity derating tests. Based on its testing, TU Electric is revising its design basis document to reflect the following derate factors: 11% for cables in conduits; and, 32% for cables in trays and air drops. The following table summarizes the preliminary test data, and provides the ampacity derate margin based on the effects of the fire barrier (calculated excess ampacity margin minus the actual test data):

Raceway	Ampacity derate test value	Excess ampacity derate margin
3/4" conduit	9.1%	25.9%
2" conduit	6.5%	28.5%
5" conduit	10.7%	12.3%
24" cable tray	31.4%	6.6%
Small air drop	23.0%	12.0%
Large air drop	31.7%	3.3%

The NRC staff finds that the preliminary ampacity test derate factor data provided by TU Electric are bounded by the calculated (design) ampacity margins. However, the NRC staff is still reviewing TU Electric's plant-specific ampacity derating program and test results. The NRC staff will complete its review of the plant-specific test program and results after TU Electric submits the final test reports (consistent with the schedule published in SSER 26). Staff actions can be tracked under NRC TAC No. M85999.

"BOX ENCLOSURE" UPGRADES

Background

In a letter of January 19, 1992 (TU Electric letter TXX-93038 to NRC), TU Electric submitted engineering report ER-ME-082, "Evaluation of Unit 2 Thermo-Lag Configurations," to the staff for review in order to (1) establish the design basis for the Thermo-Lag fire barriers installed at CPSES Unit 2 that were configured differently from the tested configurations and (2) provide reasonable assurance that these Thermo-Lag fire barrier configurations will provide sufficient fire resistance to ensure that at least one train of safe shutdown systems will remain free of fire damage.

TU Electric's fire testing program established the technical and installation attributes for most of the Thermo-Lag fire barrier configurations installed at CPSES Unit 2. TU Electric documented about 180 cases in which the application of Thermo-Lag fire barrier materials used to protect electrical raceways and structural steel varied from the tested configurations. The staff recognized that there are actual field conditions that cause the application of fire

barrier assemblies to differ from the tested configurations. These cases may require the creation of a unique fire barrier design to address structural steel, other raceways, or mechanical equipment interferences. The staff also recognized that it was not feasible to qualify all aspects of the in-plant fire barriers through configuration-specific fire endurance testing. In Generic Letter 86-10, the staff provided guidance for performing engineering evaluations of raceway fire barrier systems that differed from the tested configurations. TU Electric used this guidance to establish its fire barrier evaluation criteria for configurations that differed from the tested configurations.

The following summarizes TU Electric's criteria: the continuity of the fire barrier material applied was consistent with the tested configuration; the effective thickness of the fire barrier material applied to the unique configuration was consistent with the thickness of the fire barrier material that was tested; the nature and effectiveness of the fire barrier support assembly was consistent with the tested configurations; and the application and end use of the fire barrier material was consistent with the tested configuration. In its engineering report, TU Electric evaluated the following: unique fire barrier configurations, minor protected commodity deviations, protruding and interfering item coverage deviations, and structural steel deviations.

In reviewing TU Electric's engineering report, the staff sampled those unique configurations where the fire barrier installations on safe shutdown raceways were constructed differently from those raceway fire barrier configurations tested by TU Electric's fire test program. The staff reviewed the engineering report and selected approximately 27 configurations for onsite review. The sample represented typical and unique configurations that varied from the tested configurations.

In SSER 26, the staff documented specific reviews of six representative configurations from this sample; for three of these, the staff requested additional actions. Configurations 1 and 3 represented "box-type" configurations, which the staff determined were not adequately justified in the engineering report. Specifically, two layers of Thermo-Lag material had been used for the qualification testing of junction box barriers, and the staff determined that designs similar to Configurations 1 and 3 would be more appropriately bounded by that type of construction. The staff considered Configuration 2, consisting of two parallel horizontal cable trays (18 and 12-inches wide), acceptable subject to the confirmatory resolution of staff concerns regarding the 36-inch wide cable tray fire barrier.

Update

As discussed, the preliminary results of the 36-inch cable tray fire test appear to have been satisfactory. Subject to staff review of the final fire test report, this confirmatory test satisfies staff concerns regarding the appropriate testing of the widest span cable trays. On the basis of the preliminary test results, the staff has reasonable assurance that Configuration 2 is acceptable. Any questions arising from the staff's review of the final test report for the 36-inch cable tray will be tracked by NRC TAC No. M85998.

Regarding the "box-type" configurations (Configurations 1 and 3), in letters of February 26, 1993 (TU Electric letter TXX-93101 to NRC), March 10, 1993 (TU Electric letter TXX-93125 to NRC), and March 23, 1993, (TU Electric letter TXX-93136 to NRC), TU Electric discussed the upgrades and documented their completion. TU Electric verified that the staff's concern with "box-type" configurations was limited to 13 plant configurations. In a letter of February 26, 1993, (TU Electric letter TXX-93101 to NRC), TU Electric committed to either increase the material thickness or rework the configurations in accordance with designs bounded by the previous fire barrier testing.

The NRC staff performed "walkdowns" of the subject configurations on February 19 and 26, 1993. On February 19, 1993, various elevations in the auxiliary building were walked down to ensure that TU Electric had properly selected the configurations for upgrade. No additional examples of cable tray box-type enclosures which would necessitate an additional layer of Thermo-Lag were identified. On February 26, 1993, walkdowns of all 13 upgrades were conducted while work was in progress. TU Electric "Minor Modification Forms" 93-123 through 93-126 were reviewed; these documented the upgrades by building elevation - 810' auxiliary, 832' auxiliary, 810' safeguards, and 790' auxiliary, respectively. The minor modification forms were verified to include engineering-basis discussions addressing the acceptability of the upgrades in regard to ampacity derating and the added weight on the supports. TU Electric redesigned one of the 13 upgrades instead of adding an additional layer of Thermo-Lag material. The previous box design had covered an airdrop from two cable trays to through-wall sleeves. The redesign incorporated three layers of flexi-blanket Thermo-Lag material covering the air drops, and the installation of an elastomer fire stop material. The redesign is appropriately bounded by laboratory-tested airdrop configuration, Scheme 11-1.

In a letter of March 10, 1993 (TU Electric letter TXX-93125 to NRC), TU Electric certified the completion of these upgrades. The NRC staff concludes from its review of the engineering documents and walkdown of the specific configurations that the barriers are properly bounded by acceptable test schemes and are, therefore, acceptable.

COMPENSATORY MEASURES

Background

In a letter to the staff of October 5, 1991, the vendor stated that Thermo-Lag trowel-grade material takes about 30 days to reach its optimum properties. In a letter of January 19, 1993 (TU Electric letter TXX-93038 to NRC), TU Electric stated that it considered its Thermo-Lag fire barriers to be functional (capable of performing their design function) immediately after completion of the barrier installation and inspection. In a letter of January 25, 1993 (TU Electric letter TXX-93060 to NRC), TU Electric submitted additional information regarding cure time, stating that its vendor concurred with TU Electric's recommendation on cure time.

TU Electric cured its fire test specimens for at least 30 days preceding the conduct of the fire endurance tests. The staff was concerned that Thermo-Lag fire barriers are not functional until they are either cured for 30 days in accordance with the vendor's original recommendation or until the installed barriers reflect the tested conditions.

In a letter of January 28, 1993 (TU Electric letter TXX-93061 to NRC) TU Electric committed to provide fire watches as compensatory measures in accordance with the CPSES fire protection plan for the Thermo-Lag fire barriers installed in areas that contain fire-safe shutdown conduits or cable trays until the barriers have cured for 30 days, and where box enclosures are located, until this issue is adequately resolved with the staff.

The use of fire watches is consistent with the compensatory measures implemented by TU Electric for the CPSES Unit 1 Thermo-Lag fire barriers in response to NRC Bulletin 92-01, "Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free From Fire Damage," June 24, 1992. The staff concluded in SSER 26, therefore, that TU Electric's commitment was acceptable and ensures that an adequate level of fire protection is provided at CPSES Unit 2 until the Thermo-Lag fire barriers are cured (1) to reflect the condition of the fire test specimens and (2) the box enclosure issue is resolved.

Update

On March 4, 1993, TU Electric tested a 36-inch cable tray with a seven-day cure time (topcoat was applied after the assembly had cured for three days; four days later the fire test was conducted). The utility performed this test for two reasons: to satisfy their commitment to perform a confirmatory cable tray test bounding their widest tray, and to perform a test with a shorter cure time in order to demonstrate TU Electric's position that the configurations can be considered operable less than 30 days after completion of the installation and inspection.

The 36-inch cable tray passed its confirmatory test, demonstrating the operability of Comanche Peak fire barrier designs with a seven-day cure time. Accordingly, TU Electric informed the staff that compensatory measures such as fire watches are no longer required for configurations that have exceeded a seven-day cure time.

The staff considers TU Electric's position on cure time acceptable based on preliminary results of the 36-inch-wide cable tray fire test. A majority of the fire tests were conducted with a 30-day cure time in order to ensure that the moisture content in the Thermo-Lag material had reached equilibrium, thereby providing conservative qualification fire test results. Additionally, a test was conducted with a shorter cure time, and the fire barrier did not exhibit any seam separation.

On the basis of its findings from the fire barrier testing program, TU Electric has demonstrated that its installed configurations are bounded by test results; therefore, the staff concludes that compensatory measures are not required for fire barrier installations that exceed a seven-day cure time.

13 CONDUCT OF OPERATIONS

13.1 Organizational Structure and Qualifications

13.1.1 Management and Technical Resources

In SSER 26 the staff recorded TU Electric's commitment to submit organizational changes resulting from the change to two-unit operation in a future FSAR amendment. In a letter of February 26, 1993 (TU Electric letter TXX-93102 to NRC), TU Electric submitted an advanced change to the FSAR to revise the TU Electric corporate structure. The organization was revised to include the following divisions: Operations, Production, Bulk Power and Technical Support, and Finance and Corporate Support. The Production Division retained corporate responsibility for the design, construction, and operation of CPSES.

Within the Production Division, the nuclear group, redesignated the Nuclear Production Group (formerly the Nuclear Engineering and Operations Group), provides the design, engineering, construction, licensing, operation, and fuel management support for CPSES. The Nuclear Production Group was reorganized into four organizations to better focus resources on operation of the dual-unit CPSES facility. These four organizations are Nuclear Operations, Nuclear Engineering and Support, Nuclear Overview, and Regulatory Affairs.

All previously assigned responsibilities and duties have been reassigned to appropriate positions within the new management structure. Positions associated with construction activities have been deleted as part of the transition from Unit 2 construction completion to dual-unit operation. The description of the responsibilities for the Manager, Administrative Services has been removed because this position does not perform a safety function and, therefore, does not need to be in the FSAR. The staff finds this acceptable. The new organizational structure is shown in revised FSAR Figure 13.1-2, included as an attachment to the February 26, 1993, letter.

The changes to the corporate organization made by the licensee primarily reflect an organizational restructuring to focus resources on dual-unit operation of the CPSES facility. The new lines of management authority and communication have been clearly defined. Other changes made to the corporate organization reflect changes in name, not in function. Therefore, they do not change the staff's previous conclusion that the corporate level management structure is acceptable.

The staff concludes that the revised organization continues to meet the acceptance criteria of Section 13.1.1 of the Standard Review Plan (SRP) (NUREG-0800) for appropriate lines of authority, and is, therefore, acceptable.

13.1.2 Operating Organization

In SSER 26 the staff recorded TU Electric's commitment to submit organizational changes resulting from the change to two-unit operation in a future FSAR amendment. In a letter of February 26, 1993 (TU Electric letter TXX-93102 to NRC), TU Electric submitted an advanced change to the FSAR to revise the TU Electric operating organization structure. The Nuclear Operations organization, under the direction of the Vice President of Nuclear Operations, is responsible for plant operations and operating support. The Vice President of Nuclear Operations has assumed the duties of the Plant Manager and is responsible for the operation and maintenance of CPSES. Reporting to the Vice President of Nuclear Operations are the Manager, Operations; Manager, Maintenance; Manager, Plant Support; Manager, Work Control; and the Radiation Protection Manager. The Manager, Nuclear Training has been reassigned from the Nuclear Operations organization and now reports to the Director of Nuclear Overview.

All previously assigned responsibilities and duties have been reassigned to appropriate positions within the new operating organization. The Chemistry Manager (formerly the Chemistry and Environmental Manager) now reports to the Manager, Operations. Environmental responsibilities have been reassigned under the Manager of Design/Support Engineering, in the Nuclear Engineering and Support organization. The new organizational structure is shown in revised FSAR Figure 13.1-3, included as an attachment to the February 26, 1993, letter.

The changes to the operating organization made by the licensee primarily reflect an organizational restructuring to focus resources on dual-unit operation of the CPSES facility. The new lines of management authority and communication have been clearly defined. These changes do not affect the staff's previous conclusion that the operations organization is acceptable.

The staff concludes that the revised organization continues to meet the acceptance criteria of Section 13.1.2 of the SRP for appropriate lines of authority, and is, therefore, acceptable.

13.3 Emergency Planning

The Federal Emergency Management Agency (FEMA) evaluated the offsite radiological emergency response plans site-specific to Comanche Peak during an exercise conducted on November 19, 1991, and a remedial drill conducted on February 6, 1992. In a letter of June 24, 1992, FEMA stated that on the basis of these evaluations, the offsite radiological emergency response plans and preparedness site-specific to Comanche Peak are adequate to give reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site. Before issuing low-power and full-power licenses, the NRC confirmed with FEMA that there were no offsite emergency preparedness issues that would potentially affect startup of CPSES Unit 2.

The NRC conducted a special inspection on May 18-21, 1992 of TU Electric's emergency preparedness program as it related to the licensing of Unit 2. No areas were identified that would preclude the licensing of Unit 2. Additionally, TU Electric successfully passed the last annual exercise evaluated

by the NRC (conducted on November 18, 1992). TU Electric has responded with a corrective action plan to three onsite exercise weaknesses identified during this inspection. These issues are being tracked by the NRC's Region IV staff and will be evaluated during a future inspection.

The staff concludes that the overall state of emergency preparedness at Comanche Peak is adequate to support dual-unit operations.

14 INITIAL TEST PROGRAM

Pre-operational Test Deferral

In SSER 26, the staff documented its review of TU Electric's preoperational test program changes for Unit 2 (TU Electric letters of December 23, 1992, TXX-92586 to NRC; January 8, 1993, TXX-93011 to NRC; and January 25, 1993, TXX-93051 to NRC). TU Electric proposed to defer certain preoperational tests until after fuel load. The staff verified that TU Electric's letters contained commitments for completing the tests at the appropriate plant power levels or plant milestones. The staff determined that the schedule for performing the deferred testing ensured that systems required to prevent, limit, or mitigate the consequences of postulated accidents would be tested before the systems would be required to be operable and ensured that the safety of the plant would not be dependent on the performance of untested systems, structures, and components. Therefore, the staff considered that TU Electric's justification for deferred testing and its subsequent schedule for conducting the tests was acceptable.

In a letter of March 22, 1993 (TU Electric letter TXX-93140 to NRC), TU submitted additional information regarding the status of several deferred preoperational tests which had been reviewed by the staff before the low-power license was issued. The additional information contained updated test methodology, results, schedules and deletions regarding plant computer, plant communication system, pressurizer spray valve, and steam dump valve testing. The pressurizer spray valve re-test was completed; however, a maintenance item is being tracked to correct a slightly higher valve leak-by rate. The steam dump valves will be retested "hot," but with the downstream block valves closed (similar to Unit 1 preoperational testing). Additionally, the schedule for testing the availability of the safety parameter display system and submitting the test report was clarified.

The staff reviewed the additional information and determined that the conclusions reached in SSER 26 are still valid; that is, the systems will be adequately tested before they will be required to be operable, and the safety of the plant will not be dependent on the performance of untested systems, structures, and components. Therefore, TU Electric's additional information, including test methodology and scheduler changes, regarding the deferred testing is acceptable.

16 TECHNICAL SPECIFICATIONS

The NRC issued the "Final Draft Combined Technical Specifications for Comanche Peak Unit 1 and Unit 2" to TU Electric on September 9, 1992. TU Electric certified on November 4, 1992 (TU Electric letter TXX-92536 to NRC), that the final draft accurately reflects the as-built plant and the Final Safety Analysis Report. TU Electric also noted certain minor corrections. The staff discussed the corrections with TU Electric and appropriate changes were made to the Final Draft Technical Specifications (TS). The staff issued the Final Draft TS to TU Electric in a letter of January 22, 1993. Editorial corrections were discussed and TU Electric recertified the TS in a letter of January 30, 1993 (TU Electric letter TXX-93001 to NRC). The "Combined Comanche Peak Unit 1 and 2 Technical Specifications" were included as Appendix A to the low-power license issued on February 2, 1993. The same TS were reissued with the full-power license.

17 QUALITY ASSURANCE

The staff reviewed TU Electric's operations phase quality assurance (QA) program organization in SSER 22. In a letter dated February 26, 1993 (TU Electric letter TXX-93102 to NRC), TU Electric submitted an advance FSAR change to update the organizational structure, as discussed in Section 13.1 of this SER supplement. These changes resulted in some revisions to the description of the QA program organization described in Section 17.2 of the FSAR. The staff's reevaluation of the licensee's revised QA organization is presented below.

17.2 Organization of the QA Program

The Group Vice President, Nuclear Production, is responsible for the overall management and operation of CPSES, including the establishment of company nuclear policies. The Group Vice President has the overall responsibility for establishing and executing the CPSES QA program for operations. The Group Vice President has assigned to the Vice President of Nuclear Engineering and Support the overall responsibility for engineering and support of CPSES, and for implementation of the QA program for the nuclear engineering and support function at CPSES. The Group Vice President has assigned to the Vice President of Nuclear Operations the overall responsibility for operating CPSES and for implementing the QA program for operations at CPSES.

The Vice President of Nuclear Operations is responsible to the Group Vice President, Nuclear Production for operating activities at CPSES. Duties and responsibilities of the Vice President of Nuclear Operations include technical and administrative direction of the Manager, Operations; the Manager, Maintenance; the Radiation Protection Manager; the Manager, Work Control; the Manager, Plant Support; and the technical and administrative direction for implementing QA controls at nuclear plants operated by the licensee.

The Vice President of Nuclear Engineering and Support is responsible to the Group Vice President, Nuclear Production for providing engineering related technical services in support of CPSES operations. Duties and responsibilities of the Vice President of Nuclear Engineering and Support include technical support to the nuclear operations organization, and assistance in the procurement of equipment, materials, and services for the operation, maintenance, and modification of CPSES.

The Director of Nuclear Overview reports directly to the Group Vice President, Nuclear Production and is responsible to the Group Vice President for ensuring effective implementation of the QA program. This reporting relationship ensures that the Director of Nuclear Overview has sufficient authority, organizational freedom, and independence from undue influence from, or responsibility for, costs and schedules to effectively ensure implementation of and compliance with the CPSES operations QA requirements and controls.

The Director of Nuclear Overview communicates directly with the Nuclear Production Group supervisory and management personnel and with appropriate management levels in consultant and contractor QA organizations to identify quality problems; initiate, recommend, or provide solutions; and to verify implementation of solutions to quality problems. The Director has the authority to "stop work" during the operations phase. Specific duties of the Director of Nuclear Overview include the direction of Nuclear Overview Department personnel; technical and administrative direction of the Manager, Operations Quality Control; Manager, QA; Manager, Independent Safety Engineering Group; Manager, Plant Analysis; and Manager, Nuclear Training; verification that procedures for the control of quality-related activities comply with QA requirements; verification of the implementation of the QA program within the Nuclear Production Group; verification that consultants, contractors, and suppliers providing quality-related items or services have established and implemented an adequate QA program; and membership or representation on the Operations Review Committee.

The Nuclear Overview Department, under the Director of Nuclear Overview, functions to ensure effective implementation of the QA program. The department performs internal and external audits, surveillances, and inspections. The audits, surveillances, and inspections are performed by qualified individuals other than those who performed or directly supervised the work.

On the basis of its review and evaluation, the staff concludes that the applicant's QA organization has (a) sufficient independence from cost and schedule, (b) authority to effectively carry out the operations QA program, and (c) access to management at a level necessary to perform the QA functions. The staff concludes that the applicant's description of the QA organization is in compliance with applicable NRC regulations and is acceptable for the operation of CPSES.

22 TMI-2 REQUIREMENTS

After the accident at Three Mile Island (TMI) Unit 2, the NRC staff developed NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident," to provide a comprehensive and integrated plan to improve safety at power reactors. The Commission approved specific items from NUREG-0660 for implementation at reactors. NUREG-0737, "Clarification of TMI Action Plan Requirements," was issued in November 1980; this document included items approved by the Commission and additional information about schedules, applicability, method of implementation review, submittal dates, and clarification of technical positions.

In Chapter 22 of the SER and its supplements, the staff discussed TMI issues relative to CPSES. In the table of TMI action plan issues, included in Appendix C of this SSER, the staff summarizes each TMI item, including the SER (or supplement) that documents issue resolution and the date of inspection verification and associated inspection report number (if applicable). The staff adhered to the TMI action plan numbering scheme in SSER 24 (except where items were consolidated for inspection activity performed in accordance with Revision 2 of Temporary Instruction (TI) 2515/065, "TMI Action Plan Requirement Follow-up").

APPENDIX A

CONTINUATION OF CHRONOLOGICAL LIST OF CORRESPONDENCE

This appendix continues the chronological listing of routine licensing correspondence, regarding Unit 2 and Unit 1/Unit 2 common issues, between the U.S. Nuclear Regulatory Commission (NRC) staff and the applicant (Texas Utilities Electric Company) since Supplement 26 was issued.

January 4, 1993	Summary of November 4, 1992, meeting with applicant regarding pressurizer surge line leak-before-break analysis.
January 6, 1993	Summary of December 17, 1992, meeting with applicant regarding fire protection issues.
January 11, 1993	Letter to applicant transmitting environmental assessment for exemption from 10 CFR 70.24.
January 11, 1993	Letter to applicant transmitting environmental assessment for exemption from 10 CFR Part 50, Appendix J, Section III.D.2(b)(ii).
January 18, 1993	Letter from applicant transmitting information regarding augmented inservice testing for CVCS valves.
January 19, 1993	Letter from applicant transmitting response to Generic Letter 92-08.
January 19, 1993	Letter to applicant transmitting safety evaluation regarding topical report RXE-1-002, "Reactivity Anomaly Events Methodology".
January 20, 1993	Letter from applicant transmitting final response for Unit 2 to NRC Bulletin 88-08.
January 21, 1993	Letter from applicant transmitting information regarding ASME IST and Inservice Test Program relief request.
January 22, 1993	Letter to applicant transmitting final draft version of combined technical specifications.
January 25, 1993	Letter from applicant forwarding information regarding Thermo-Lag testing data and engineering evaluations.
January 25, 1993	Letter from applicant forwarding information regarding scheduled completion of primary plant ventilation system and plant computer testing.

January 28, 1993	Letter from applicant forwarding supplemental response to Bulletin 88-08.
January 28, 1993	Letter from applicant forwarding clarifying information regarding test scheme 1, conduit support modifications, and use of test scheme 9 results.
January 29, 1993	Letter from applicant transmitting interim change request to preservice program plan.
January 29, 1993	Letter from applicant transmitting information regarding HVAC design validation.
January 29, 1993	Letter to applicant transmitting significant findings of the Operational Readiness Assessment Team Inspection.
February 1, 1993	Letter from applicant transmitting response to concerns regarding turnover process, fire seals for piping penetrations and containment spray system nozzle completion.
February 2, 1993	Letter to applicant transmitting Facility Operating License No. NPF-88 for Comanche Peak Unit 2.
February 2, 1993	Memo to File regarding request for stay of issuance of the low power operating license.
February 3, 1993	Board Notification 93-01 regarding new information regarding Comanche Peak Unit 2.
February 3, 1993	Letter from licensee forwarding Revision 11 to Technical Requirements Manual.
February 4, 1993	Letter from licensee forwarding Revision 1 to IST plan for pumps and valves first interval.
February 5, 1993	Letter to licensee transmitting correction to Appendix B of Facility Operating License No. NPF-88.
February 9, 1993	Letter to licensee transmitting correction to Indemnity Agreement No. B-96.
February 18, 1993	Letter from licensee forwarding overview of self-assessment plans for power operation above 5 percent and above 50 percent.
February 19, 1993	Letter from licensee forwarding results of engineering review of plant record to address issues in NRC Bulletin 90-01.
February 22, 1993	Letter to licensee forwarding NUREG-1275, Volume 8, "Operating Experience Feedback Report - Human Performance in Operating Events."

February 24, 1993	Letter from licensee forwarding summary of personnel monitoring ending December 31, 1992.
February 25, 1993	Letter from licensee forwarding documentation of discussions with NRC regarding planned method of treating DNB penalties.
February 25, 1993	Letter from licensee forwarding documentation of sensitivity study performed to evaluate effect of variations in core noding on calculated peak cladding temperature.
February 26, 1993	Letter from licensee forwarding revisions to Sections 13.1.17.1 and 17.2 to FSAR reflecting organizational changes.
February 26, 1993	Letter from licensee forwarding clarification on ampacity derating test and Thermo-Lag fire endurance test.
March 2, 1993	Summary of January 21, 1993, meeting concerning Comanche Peak Steam Electric Station fire protection issues.
March 9, 1993	Letter to licensee forwarding operation readiness assessment team inspection report.
March 10, 1993	Letter from licensee forwarding an updated status of open issues in Section 9.5 of SSER 26 regarding preliminary fire endurance and ampacity test results.
March 10, 1993	Letter to licensee forwarding clarification of staff safety evaluation on Topical Report RXE-91-002, "Reactivity Anomaly Events Methodology."
March 11, 1993	Letter from licensee forwarding RXE-93-003, CPSES Unit 2 Cycle 1 Core Operating Limits Report.
March 11, 1993	Letter to licensee forwarding "Toxicological Evaluation of the Combustion Products from a Thermal Barrier Material Decomposed under Flaming and Nonflaming Conditions."
March 17, 1993	Letter from licensee forwarding supplemental information to include Unit 2 in license amendment requests 92-05, 92-06, 92-07, and 92-08.
March 22, 1993	Letter from licensee describing approach for analysis of large break LOCA with mixed cores delineated in Topical Report RXE-90-007.
March 23, 1993	Letter from licensee submitting results of ampacity testing of upgraded Thermo-Lag installations and provides information on box configurations.

March 28, 1993	Letter from licensee transmitting certification for readiness for full power operating license.
March 31, 1993	Letter to licensee transmitting documents filed by the staff with the Commission relating to Comanche Peak Unit 2 full-power licensing.

APPENDIX B

BIBLIOGRAPHY

Miscellaneous

Code of Federal Regulations, Title 10, "Energy," U.S. Government Printing Office, Washington, D.C., 1991.

National Electrical Code, Insulated Cable Engineers Association (ICEA) publications.

IEEE-P848, "Procedure for the Determination of the Ampacity Derating of Fire Protected Cables," Draft 11, April 6, 1992.

NRC Bulletins

Bulletin 92-01, "Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free From Fire Damage," June 24, 1992.

NRC Generic Letters

Generic Letter 86-10, "Implementation of Fire Protection Requirements," April 28, 1986.

NRC Letters

See Appendix A.

NRC NUREG-Series Reports

NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident," May 1980.

NUREG-0737, "Clarification of TMI Action Plan Requirements," October 1980.

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," July 1981.

APPENDIX C

TMI ACTION PLAN ISSUES

TMI ACTION PLAN ISSUES

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
I.A.1.1.1	Shift Technical Advisor; On Duty	SSER 1 & 23 [11/14/90; 50-446/90-40]
I.A.1.1.2	Shift Technical Advisor	SSERs 1 & 23 & TS 6.2.4
I.A.1.1.3	Shift Technical Advisor; Training	SSERs 1 & 23 [11/14/90; 50-446/90-40]
I.A.1.1.4	Shift Technical Advisor; Long-Term Program	SSERs 1 & 23
I.A.1.2	Shift Supervisor; Administrative Duties	SSER 1 [11/14/90; 50-446/90-40]
I.A.1.3.1	Shift Manning; Overtime	SSER 1 & TS 6.2.2.f [11/14/90; 50-446/90-40]
I.A.1.3.2	Shift Manning; Minimum Shift Crew	SSER 1 & TS T6.2-1 [11/14/90; 50-446/90-40]
I.A.2.1.1	Immediate Upgrading of Operator and Senior Operator Training and Qualifications; SRO Experience	SER & letter dated 3/8/85
I.A.2.1.2	Immediate Upgrading of Operator and Senior Operator Training and Qualifications; Training	SER & letter dated 3/8/85
I.A.2.1.3	Immediate Upgrading of Operator and Senior Operator Training and Qualifications; Facility Certification and Fitness of Applicants	SER & letter dated 3/8/85
I.A.2.1.4	Immediate Upgrading of Operator and Senior Operator Training and Qualifications; Modify Training	SER & letter dated 3/8/85 [11/14/90; 50-446/90-40]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
I.A.2.1.5	Immediate Upgrading of Operator and Senior Operator Training and Qualifications; Facility Certification	SER & letter dated 3/8/85
I.A.2.3	Administration of Training Programs for Licensed Operators	SER & SSER 23
I.A.3.1.1	Revised Scope and Criteria for Licensing Examination - Increase Scope	SER
I.A.3.1.2	Revised Scope and Criteria for Licensing Examination - Increase Passing Grade	SER
I.A.3.1.3.A	Revised Scope and Criteria for Licensing Examination - With Simulators	SER
I.B.1.2	Evaluation of Organization and Management Improvements of Near-Team Operating License Applicants	SSER 1
I.C.1.1	Procedures for Transients and Accidents, Short-Term; Small-Break LOCA	SSERs 6, 12, & 22 [3/11/93; 50-446/92-60]
I.C.1.2.A	Procedures for Transients and Accidents, Short-Term; Inadequate Core Cooling; Reanalyze Guidelines	SSERs 6, 12, & 22
I.C.1.2.B	Procedures for Transients and Accidents, Short-Term; Inadequate Core Cooling; Revise Procedures	SSERs 6, 12, & 22 [3/11/93; 50-446/92-60]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
I.C.1.3.A	Procedures for Transients and Accidents, Short-Term; Transients and Accidents; Reanalyze Guidelines	SSERs 6, 12, & 22
I.C.1.3.B	Procedures for Transients and Accidents; Short-Term; Transients and Accidents	SSERs 6, 12, & 22 [3/11/93; 50-446/92-60]
I.C.2	Shift Relief and Turnover Procedures	SSER 6 [11/14/90; 50-446/90-40]
I.C.3	Shift Supervisor Responsibilities	SSER 1 [11/14/90; 50-446/90-40]
I.C.4	Control Room Access	SSER 1 [11/14/90; 50-446/90-40]
I.C.5	Procedures for Feedback of Operating Experience to Plant Staff	SSERs 6, & 23 [11/14/90; 50-446/90-40]
I.C.6	Procedures for Verification of Current Performance of Operating Activities	SSER 1 [11/14/90; 50-446/90-40]
I.C.7.1	NSSS Vendor Review of Procedures; Low Power Test Program	SER & SSER 23 [11/14/.90; 50-446/90-40]
I.C.7.2	NSSS Vendor Review of Procedures; Low Power, Power Ascension and Emergency Procedures	SER & SSER 23 [11/14/90; 50-446/90-40]
I.C.8	Pilot Monitoring of Selected Emergency Procedures for NTOL Applicants	SSER 6
I.D.1	Control Room Design Reviews	SSER 22 (Unit 1) SSER 26 (Unit 2)

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
I.D.2.1	Plant Safety Parameter Display Console; Description	SSER 22
I.D.2.2	Plant Safety Parameter Display Console; Installed	SSER 22 (Unit 1) SSER 26 (Unit 2) [3/11/93; 50-446/92-60]
I.D.2.3	Plant Safety Parameter Display Console; Fully Implemented	SSER 22 (Unit 1) SSER 26 (Unit 2) [3/11/93; 50-446/92-60, final verification tracked as insp. item]
I.G.1.1	Training During Low-Power Testing; Proposed Tests	SSER 6
I.G.1.2	Training During Low-Power Testing; Submit Analysis and Procedures	SSER 6
I.G.1.3	Training During Low-Power Testing; Training and Results	SSER 6
II.B.1.1	Reactor Coolant System Vents; Design	SSER 6
II.B.1.2	Reactor Coolant System Vents Install	SSER 6 [3/11/93; 50-446/92-60]
II.B.1.3	Reactor Coolant System Vents; Procedures	SSER 6 & TS 3.6.1.7 [3/11/93; 50-446/92-60]
II.B.2.1	Plant Shielding to Provide Access to Vital Areas and Protect Safety Equipment for Post-Accident Operation; Design	SSERs 2 & 22
II.B.2.2	Plant Shielding to Provide Access to Vital Areas and Protect Safety Equipment for Post-Accident Operation; Corrective Actions	SSERs 2 & 22 [Incorp. in II.B.2.3]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
II.B.2.3	Plant Shielding to Provide Access to Vital Areas and Protect Safety Equipment for Post-Accident Operation; Modifications	SSERs 2 & 22 [8/22/91; 50-446/91-21] [1/27/93; 50-446/93-05]
II.B.2.4	Superseded by 10 CFR 50.49	
II.B.3.1	Post-Accident Sampling; Interim System	SSERs 6, 22, & 23 [11/14/90; 50-446/90-40]
II.B.3.2	Post-Accident Sampling; Corrective Actions	SSERs 6 & 22 [Incorp. in II.B.3.4]
II.B.3.3	Post-Accident Sampling; Procedures	SSERs 6 & 22 [3/11/93; 50-446/92-60]
II.B.3.4	Post-Accident Sampling; Plant Modifications	SSERs 6, 22, & 23 [3/11/93; 50-446/92-60]
II.B.4.1	Training for Mitigating Core Damage; Develop Training	SER & SSER 23
II.B.4.2.A	Training for Mitigating Core Damage; Initial	SER & SSER 23 [11/14/90; 50-446/90-40]
II.B.4.2.B	Training for Mitigating Core Damage; Complete	SER & SSER 23 [11/14/90; 50-446/90-40]
II.D.1.1	Relief and Safety Valve Testing Requirements; Submit	SSER 21 (Unit 1) SSER 26 (Unit 2)
II.D.1.2.B	Relief and Safety Valve Testing Requirements; Plant-Specific Report	SSER 21 (Unit 1) SSER 26 (Unit 2)
II.D.1.3	Relief and Safety Valve Testing Requirements; Block Valve Testing	SSER 21 (Unit 1) SSER 26 (Unit 2)
II.D.3.1	Valve Position Indication; Install Direct Indicators of Valve Position	SER [3/11/93; 50-446/92-60]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
II.D.3.2	Valve Position Indication; Technical Specifications	SER & TS 3.4.4 & 4.0.5
II.E.1.1.1	Auxiliary Feedwater System; Analysis	SER & SSER 21
II.E.1.1.2	Auxiliary Feedwater System Evaluation; Short-Term Modifications	SER & SSER 21 [3/11/93; 50-446/92-60, Item II.E.1.2]
II.E.1.1.3	Auxiliary Feedwater System Evaluation; Long-Term Modifications	SER & SSER 21 [3/11/93; 50-446/92-60, Item II.E.1.3]
II.E.1.2.1.A	Auxiliary Feedwater System Initiation and Flow; Control Grade	SSER 21 [4/24/89; 50-446/89-17]
II.E.1.2.1.B	Auxiliary Feedwater System Initiation and Flow; Safety Grade	SER [4/24/89; 50-446/89-17]
II.E.1.2.2.A	Auxiliary Feedwater System Flow Indication; Control Grade	SER [4/24/89; 50-446/89-17]
II.E.1.2.2.B	Auxiliary Feedwater System Flow Indication; LL Cat A Technical Specifications	SER & TS 3.7.1.2
II.E.1.2.2.C	Auxiliary Feedwater System Flow Indication; Safety Grade	SER [3/11/93; 50-446/92-60]
II.E.3.1.1	Emergency Power for Pressurizer Heaters; Upgrade Power Supply	SER & SSER 22 [3/11/93; 50-446/92-60]
II.E.3.1.2	Emergency Power for Pressurizer Heaters; Technical Specifications	SER & TS 3.4.3
II.E.4.2.1-4	Containment Isolation Dependability; Diverse Isolation	SSER 23 [4/24/89; 50-446/89-17]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
II.E.4.2.5.A	Containment Isolation Dependability; Containment Pressure Setpoint; Specify Pressure	SSER 22
II.E.4.2.5.B	Containment Isolation Dependability; Containment Pressure	SSER 22 [8/21/91; 50-446/91-46]
II.E.4.2.6	Containment Isolation Dependability; Containment Purge Valves	SSER 23 [12/31/92; 50-446/92-51]
II.E.4.2.7	Containment Isolation Dependability; Radiation Signal on Purge Valves	SSER 23 & TS 3.6.1.7 [4/24/89; 50-446/89-17]
II.E.4.2.8	Containment Isolation Dependability; Technical Specifications	SSER 23 & TS T-3.3-4.2
II.F.1.1	Accident Monitoring; Procedures	SSER 3 [Refer to II.F.1 items below]
II.F.1.2.a	Accident Monitoring; Noble Gas Monitor	SSER 3 & TS T-3.3-4.1.b [4/24/89; 50-446/89-17; (interim) [9/20/89; 50-446/89-67 (Long term); 3/11/93; 50-446/92-60]
II.F.1.2.b	Accident Monitoring Particulate Sampling	SSER 3 & TS T-3.3-4.1.a [5/18/89; 50-446/89-24 (long term); 2/1/93; 50-446/92-54]
II.F.1.2.c	Accident Monitoring; Containment High-Range Monitors	SSER 3 & TS T-3.3-6.10 [3/11/93; 50-446/92-60]
II.F.1.2.d	Accident Monitoring; Containment Pressure	SSER 3 & TS T-3.3-6.1 [3/11/93; 50-446/92-60]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
II.F.1.2.e	Accident Monitoring; Containment Water Level	SER & TS T-3.3-6.8 [3/11/93; 50-446/92-60]
II.F.1.2.f	Accident Monitoring; Containment Hydrogen	SER & TS T-3.3-7 & 3.6.4.1 [3/11/93; 50-446/92-60]
II.F.2.1	Instrumentation for Detection of Inadequate Core Cooling; Procedure	SSERs 6, 21, & 23 [Incorp. in II.F.2.2]
II.F.2.2	Instrumentation for Detection of Inadequate Core Cooling; Subcool Meter; Install	SSERs 6, 21, 23 [3/11/93; 50-446/92-60]
II.F.2.4	Instrumentation for Detection of Inadequate Core Cooling; Additional Instruments	SSER 6, 21, & 23 & TS T-3.3-6 [3/11/93; 50-446/92-60]
II.G.1.1	Power Supply for Pressurizer Relief Block Valves and Level Indication; Upgrade	SER [3/11/93; 50-446/92-60]
II.G.1.2	Power Supply for Pressurizer Relief Block Valves and Level Indication; Technical Specifications	SER & TS 3.4.4
II.K.1.5	Measures to Mitigate Small-Break LOCA and Loss-of-Feedwater Accidents; IE Bulletins; Review ESF Valves	SER
II.K.1.10	Measures to Mitigate Small-Break LOCA and Loss-of-Feedwater Accidents; IE Bulletins; Operability Status	SER
II.K.1.17	Measures to Mitigate Small-Break LOCA and Loss-of-Feedwater Accidents; IE Bulletins; Trip per Pressurizer Low Level	SER

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
II.K.2.13	Thermal-Mechanical Report on Effect of HPI on Vessel Integrity for Small-Break LOCA with no AFW	SSER 6
II.K.2.17	Analysis of Potential Voiding in RCS During Anticipated Transients	SSER 6
II.K.3.1.A	Automatic PORV Isolation System; Design	SSER 6
II.K.3.1.B	Automatic PORV Isolation System; Test/Install	SSER 6 [5/18/89; 50-446/89-24]
II.K.3.10	Anticipatory Trip H: Power	SSER 25 [5/18/89; 50-446/89-24]
II.K.3.11	Justification for Use of Certain PORVs	SSER 6
II.K.3.12.A	Confirm Existence of Anticipatory Trip Upon Turbine Trip; Proposed Modifications	SER & SSER 22 [5/18/89; 50-446/89-24]
II.K.3.12.B	Confirm Existence of Anticipatory Trip Upon Turbine Trip; Modify	SER & TS T-3.3.1-16 [5/18/89; 50-446/89-24]
II.K.3.17	Report on Outage of ECCS	SER
II.K.3.2	Report on Overall Safety PORV Isolation System	SER
II.K.3.25.A	Effect of Loss of AC Power on Pump Seals; Proposed Modifications	SER
II.K.3.25.B	Effect of Loss of AC Power on Pump Seals; Modifications	SER [5/18/89; 50-446/89-24]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
II.K.3.3	Report Safety and Relief Valve Failures Promptly and Challenges Annually	SER & TS 6.9.1.2 & 6.9.1.5
II.K.3.30.A	Schedule for Outline of Small-Break LOCA Model	SSERs 6 & 12
II.K.3.30.B	Small-Break LOCA Model; Justification	SSERs 6 & 12
II.K.3.30.C	Small-Break LOCA Model; New Analysis	SSERs 6 & 12
II.K.3.31	Plant-Specific Calculations to Show Compliance with 10 CFR 50.46	SSERs 6, 12, & 21
II.K.3.5.A	Automatic Trips of Reactor Coolant Pumps; Proposed Modifications	SSER 22
II.K.3.5.B	Automatic Trips of Reactor Coolant Pumps; Modifications	SSER 22 [9/6/91; 50-446/91-38]
II.K.3.9	Proportional Integral Derivative Controller Modification	SER & SSER 22 [12/31/92; 50-446/92-51]
III.A.1.1	Improve Emergency Preparedness	SSERs 6, 12, 22, & 24
III.A.1.2.1	Upgrade Emergency Support Facilities; Interim TSC, OSC, and EOF	SSERs 3 & 22 [11/14/90; 50-446/90-40]
III.A.1.2.2	Upgrade Emergency Support Facilities; Design (Superseded by MPAs F063, F064 and F065)	SSERs 3 & 22
III.A.1.2.3	Upgrade Emergency Support Facilities; Modifications (Superseded by MPAs F063, F064 and F065)	SSERs 3 & 22 [11/14/90; 50-446/90-40]

TMI ACTION PLAN ISSUES (Continued)

ITEM		SER/SSER resolved [Verif. rpt. no., If Applicable]
III.A.2.1	Upgrade Preparedness; Emergency Plans	SSERs 3 & 6 (App. G., Sec. 4)
III.A.2.2	Upgrade Preparedness; Meteorological Data	SSERs 3 & 6 (App. G., Sec. 4)
III.A.2.3	Upgrade Preparedness; Implement Plans	SSERs 3 & 6 (App. G., Sec. 4)
III.D.1.1.1	Integrity of Systems Outside Containment; Leak Reduction	SSERs 4, 22, & 23 [10/21/91; 50-446/91-46]
III.D.1.1.2	Integrity of Systems Outside Containment; Technical Specifications	SSERs 4 & 23 & TS 6.8.3
III.D.3.3.1	Improved Plant Iodine Instrumentation Under Accident Conditions; Determine Presence of Radioiodine	SER & SSERs 6 & 22 [4/1/91; 50-446/91-07]
III.D.3.3.2	Improved Plant Iodine Instrumentation Under Accident Conditions; Modification to Accurately Measure Iodine	SER & SSERs 6 & 22 [4/1/91; 50-446/91-07]
III.D.3.4.1	Control Room Habitability; Review	SER [11/14/90; 50-446/90-40]
III.D.3.4.2	Control Room Habitability; Schedule Modifications	SER [11/14/90; 50-446/90-40]
III.D.3.4.3	Control Room Habitability; Implement Modifications	SER & TS T-3.3-4 & 3.7.7 [11/14/90; 50-446/90-40]

APPENDIX D

LIST OF PRINCIPAL CONTRIBUTORS

Contributor	Organization
E. Baker	Office of Nuclear Reactor Regulation Project Directorate IV-2
D. Graves	Senior Resident Inspector Region IV
B. Holian	Office of Nuclear Reactor Regulation Project Directorate IV-2
R. Jenkins	Office of Nuclear Reactor Regulation Electrical Engineering Branch
P. Madden	Office of Nuclear Reactor Regulation Plant Systems Branch
I. Miller	Office of Nuclear Reactor Regulation Plant Systems Branch
E. Peyton	Office of Nuclear Reactor Regulation Project Directorate IV-2
R. Schaaf	Office of Nuclear Reactor Regulation Project Directorate IV-2
D. Skay	Office of Nuclear Reactor Regulation Project Directorate IV-2
S. West	Office of Nuclear Reactor Regulation Plant Systems Branch

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-446

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT 2

TEXAS UTILITIES ELECTRIC COMPANY, ET AL*

NOTICE OF ISSUANCE OF FACILITY OPERATING LICENSE

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission), has issued Facility Operating License No. NPF-89 (the license) to Texas Utilities Electric Company (the licensee). This license authorizes operation of the Comanche Peak Steam Electric Station, Unit 2 (the facility), by the licensee at reactor core power levels not in excess of 3411 megawatts thermal in accordance with the provisions of the license, the Technical Specifications, and the Environmental Protection Plan.

Comanche Peak Steam Electric Station, Unit 2, is a pressurized-water nuclear reactor located at the licensee's site in Somervell County, Texas approximately 40 miles southwest of Fort Worth, Texas.

The application for the license, as amended, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I, which are set forth in the license. Prior public notice of the overall action

*The current owners of the Comanche Peak Steam Electric Station are: Texas Utilities Electric Company and Texas Municipal Power Agency. Transfer of ownership from Texas Municipal Power Agency to Texas Utilities Electric Company was previously authorized by Amendment No. 8 to Construction Permit CPPR-127 on August 25, 1988 to take place in 10 installments as set forth in the Agreement attached to the application for Amendment dated March 4, 1988. At the completion thereof, Texas Municipal Power Agency will no longer retain any ownership interest.

involving the proposed issuance of an operating license authorizing full power operation was published in the FEDERAL REGISTER on February 5, 1979 (44 FR 6995).

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement (NUREG-0775), as supplemented, since the activity authorized by the license is encompassed by the overall action evaluated in the Final Environmental Statement.

Pursuant to 10 CFR 51.52, the Commission has determined that the granting of relief and issuance of the exemptions included in this license will have no significant impact on the environment. These determinations were published in the FEDERAL REGISTER on January 19, 1993 (58 FR 5035 and 58 FR 5036).

For further details with respect to this action, see (1) Facility Operating License No. NPF-89, with Technical Specifications (NUREG-1468), Environmental Protection Plan, and Antitrust Conditions; (2) the report to the Advisory Committee on Reactor Safeguards dated November 17, 1981; (3) the Commission's Safety Evaluation Report (NUREG-0797) dated July 1981; Supplement No. 1 dated October 1981; Supplement No. 2 dated January 1982; Supplement No. 3 dated March 1983; Supplement No. 4 dated November 1983*; Supplement No. 6 dated November 1984; Supplement No. 7 dated January 1985; Supplement No. 8 dated February 1985; Supplement No. 9 dated March 1985; Supplement No. 10 dated April 1985; Supplement No. 11 dated May 1985; Supplement No. 12 dated October 1985; Supplement No. 13 dated May 1986; Supplement No. 14 dated March 1988; Supplement No. 15 dated July 1988; Supplement No. 16 dated

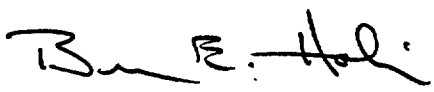
*Supplement No. 5 was never issued.

July 1988; Supplement Nos. 17 through 20 dated November 1988; Supplement No. 21 dated April 1989; Supplement No. 22 dated January 1990; Supplement No. 23 dated February 1990; Supplement No. 24 dated April 1990; Supplement No. 25 dated September 1992; Supplement No. 26 dated February 1993; and Supplement No. 27 dated April 1993; (4) the Final Safety Analysis Report through Amendment No. 87 dated December 15, 1992; (5) the Environmental Report through Amendment No. 3 dated January 8, 1981; and (6) the Final Environmental Statement dated September 1981, supplemented October 1989.

These items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. 20555 and at the local public document room located at the University of Texas at Arlington Library, Government Publications/Maps, 701 South Cooper, P.O. Box 19497, Arlington, Texas 76019. A copy of Facility Operating License No. NPF-89 may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects III/IV/V. Copies of the Safety Evaluation Report and its Supplements 1 through 27 (NUREG-0797) and the Technical Specifications (NUREG-1468) may be purchased by calling (202) 512-2249 or by writing to the Superintendent of Documents, U.S. Government Printing Office, Post Office Box 37082, Washington, D.C. 20013-7982.

Dated at Rockville, Maryland, this 6th day of April 1993.

FOR THE NUCLEAR REGULATORY COMMISSION



Brian E. Holian, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

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

Docket Nos. 50-445
50-446

AMENDMENT TO INDEMNITY AGREEMENT NO. B-96
AMENDMENT NO. 11

Effective April 6, 1993, Indemnity Agreement No. B-96, between Texas Utilities Electric Company, Texas Municipal Power Agency, and the Nuclear Regulatory Commission, dated February 14, 1983, as amended, is hereby further amended as follows:

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

SNM-1912	(From 12:01 a.m., February 14, 1983, to 12 midnight, February 7, 1990, inclusive)
SNM-1986	(From 12:01 a.m., September 27, 1989, to 12 midnight, February 1, 1993, inclusive)
NPF-28	(From 12:01 a.m., February 8, 1990, to 12 midnight, April 16, 1990, inclusive)
NPF-87	(From 12:01 a.m., April 17, 1990)
NPF-88	(From 12:01 a.m., February 2, 1993, to 12 midnight, April 5, 1993 , inclusive)
NPF-89	(From 12:01 a.m., April 6, 1993)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Marylee M. Slosson, Acting Chief
Inspection and Licensing Policy Branch
Program Management, Policy Development
and Analysis Staff
Office of Nuclear Reactor Regulation

Accepted_____, 1993

By_____
Texas Utilities Electric Company

Accepted_____, 1993

By_____
Texas Municipal Power Agency