



TU ELECTRIC

Log # TXX-96114
File # 10035
Ref. # 10CFR50.54(f)
GL 96-01

April 17, 1996

C. Lance Terry
Group Vice President

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, DC 20555-0001

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446 UNITS 1 AND 2
RESPONSE TO GENERIC LETTER 96-01, "TESTING OF SAFETY-RELATED
LOGIC CIRCUITS"

- REF:
- 1) Generic Letter 96-01, "Testing of Safety-Related Logic Circuits," dated January 10, 1996
 - 2) NRC Letter to NEI dated February 14, 1996.
 - 3) TU Electric letter logged, TXX-95292 from C. L. Terry to the NRC dated November 28, 1995

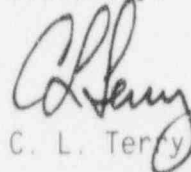
Gentlemen:

On January 10, 1996, the NRC issued Generic Letter 96-01, "Testing of Safety-Related Logic Circuits" (Reference 1). Included in this letter was a request for a 60 day response from all addressees. In reference (2), the due date for that response was extended to April 18, 1996.

Pursuant to Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), TU Electric is submitting a response under affirmation (Attachment 1) to the requested information and requested actions as stated in Reference 1. The response is provided in Attachment 2.

If you have any questions, please contact Dennis Buschbaum at (817) 897-5851.

Sincerely,


C. L. Terry

240030

DEB/deb
Attachments

c - Mr. L. J. Callan, Region IV
Resident Inspectors, CPSES (2)
Mr. T. J. Polich, NRR

9604240180 960417
PDR ADOCK 05000445
P PDR

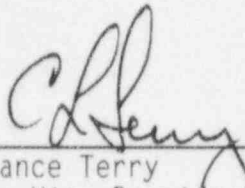
A067
11

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
Texas Utilities Electric Company) Docket Nos. 50-445
) and 50-446
(Comanche Peak Steam Electric)
Station, Units 1 & 2))

AFFIDAVIT

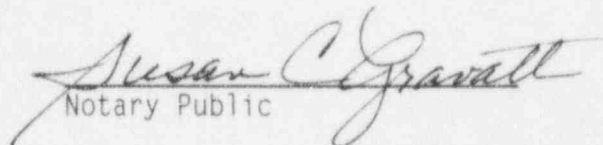
C. Lance Terry being duly sworn, hereby deposes and says that he is the Group Vice President, Nuclear Production of TU Electric, the licensee herein; that he is duly authorized to sign and file with the Nuclear Regulatory Commission this Response to Generic Letter 96-01, "Testing of Safety-Related Logic Circuits"; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

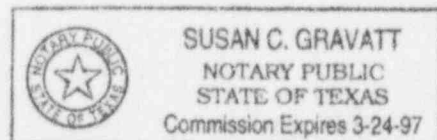


C. Lance Terry
Group Vice President,
Nuclear Production

STATE OF TEXAS)
)
COUNTY OF Somervell)

Subscribed and sworn to before me, on this 17th day of April,
1996.


Notary Public



RESPONSE TO GENERIC LETTER 96-01,
"TESTING OF SAFETY-RELATED LOGIC CIRCUITS"

INTRODUCTION

CPSES is a two unit, four-loop Westinghouse Pressurized Water Reactor (PWR). Both units are essentially identical and share a common control room and some supporting systems. The Reactor Protection System (RPS) and Engineered Safety Features (ESF) utilize the Westinghouse 7300 process system and Solid State Protection System (SSPS). Original Balance of Plant (BOP) design was by Gibbs and Hill with Stone and Webster later replacing Gibbs and Hill as Architect Engineer of record.

Unit 1 received an operating license in 1990 and Unit 2 in 1993.

REQUESTED ACTIONS

- (1) Compare electrical schematic drawings and logic diagrams for the reactor protection system, EDG load shedding and sequencing, and actuation logic for the engineered safety features systems against plant surveillance test procedures to ensure that all portions of the logic circuitry, including the parallel logic, interlocks, bypasses and inhibit circuits, are adequately covered in the surveillance procedures to fulfill the TS requirements. This review should also include relay contacts, control switches, and other relevant electrical components within these systems, utilized in the logic circuits performing a safety function.
- (2) Modify the surveillance procedures as necessary for complete testing to comply with the technical specifications. Additionally, the licensee may request an amendment to the technical specifications if relief from certain testing requirements can be justified.

REQUIRED RESPONSE

- (1) Within 60 days of the date of this generic letter, a written response indicating whether or not the addressee will implement the actions requested above. If the addressee intends to implement the requested actions, submit a schedule for completing implementation. If an addressee chooses not to take the requested actions, submit a description of any proposed alternative course of action, the schedule for completing the alternative course of action (if applicable), and the safety basis for determining the acceptability of the planned alternative course of action.
- (2) Within 30 days of completion of the requested actions, a response confirming completion.

TU ELECTRIC RESPONSE

TU Electric intends to implement the requested actions for logic system testing as discussed and clarified below:

Conversion to Standard Technical Specifications:

TU Electric is in the process of converting to the Improved Standard Technical Specifications (ISTS) with a submittal planned for late 1996. Both CPSES Unit 1 and 2 are undergoing refueling outages during 1996. Per the guidance provided at the March 19, 1996 workshop, all reviews will be done to the ISTS.

Identical Units/Safety Trains:

Based on the similar design and features of both units, most CPSES Surveillance procedures for Unit 1 have a similar counterpart for Unit 2 with only minor differences in equipment tag numbers, location etc. Further, the systems and components within the scope of this Generic Letter are typically identical redundant trains or channels and therefore use essentially identical, but separate procedures for the individual train or channel. It is TU Electric's intent to group these similar procedures and to perform a review of one of the common group. If there are differences between the trains or channels, these differences, as a minimum, will be reviewed in the applicable procedures. If deficiencies are noted in the reviewed procedure, then the remainder of the procedures in that group will be reviewed for existence of that deficiency and revised as necessary to comply with the Technical Specifications. This is consistent with the response to workshop question #11.

Schedule:

The requested completion of these actions is by startup following the first refueling outage commencing after January 10, 1997. This correlates to 1RF06 for Unit 1 in the spring of 1998, and 2RF03 for Unit 2 in the fall of 1997. Based on the similarity of design and surveillance procedures discussed above, it is TU Electric's intent to complete the actions of this Generic Letter consistent with startup from the latter refueling outage of Unit 1 in the spring of 1998. This schedule provides for an orderly and efficient review of surveillance procedures in conjunction with the implementation activities of the ISTS. Surveillances with fuel cycle frequencies are scheduled to implement by the refueling outage following the effective date of the ISTS (Reference 3) which is planned in the fall of 1997. 1RF06 in the spring of 1998 is consistent with this implementation. As indicated in Reference 3) the ISTS submittal is a joint effort of CPSES, Wolf Creek, Calloway, and Diablo Canyon plants; additional cooperative efforts during implementation are also envisioned. This schedule will facilitate this joint collaboration. This implementation schedule is based on a December 1996 ISTS submittal and NRC approval by June 1, 1997 (Reference 3)). Reviews not inherently completed as a result

of ISTS implementation will complete by the spring of 1998. Response to item (2) will be submitted within 30 days of the completion of the reviews.

Scope:

The reactor protection system, EDG load shedding and sequencing, and actuation logic for the engineered safety features systems are currently contained in Technical Specification Sections 3.3.1, 3.8.1.1, and 3.3.2, respectively. For the RPS and ESF logics, current Technical Specification required testing is bounded by testing of Tables 4.3-1 and 4.3-2 defined as ACTUATION LOGIC TEST, TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT), MASTER RELAY TEST, and SLAVE RELAY TEST. EDG load shedding and sequencing testing required by current Technical Specifications is defined by Surveillance Requirements 4.8.1.1.2f.4), 4.8.1.1.2f.5), 4.8.1.1.2f.6), 4.8.1.1.2f.7), 4.8.1.1.2f.9), 4.8.1.1.2f.10), and 4.8.1.1.2f.12). TU Electric intends to perform reviews of logic testing to the equivalent sections of the ISTS.

Credit for Previous Review Efforts:

CPSES Technical Specifications are one of the most updated versions available in the industry (except for plants that have converted to the ISTS) and were used to develop the current surveillance procedures. The significant development of these procedures occurred in the late 1980s to support the February 1990 licensing of Unit 1 and had the advantage of Industry Operating Experience available at that time. Many of the personnel involved in surveillance procedure development and use are still involved or are available to determine the scope and philosophy used in the current procedures. At this time, TU Electric believes that the following areas have been adequately reviewed in accordance with the intent of the Generic Letter:

- Westinghouse 7300 Process Instrument Loops: Although only the bistable inputs to the SSPS are within the scope of the Generic Letter (Workshop Questions #12, #20), the entire process loops have been confirmed to be adequately tested. The design and testing methodology have been well developed and documented by Westinghouse and are described in FSAR 7.2.2.2.3 and 7.3.2.2.5. The FSAR, vendor technical manuals and schematics, and site specific interconnect drawings were used to develop the surveillance procedures. The actuation of the bistables and the inputs to the SSPS are confirmed by the surveillance procedures. Additionally, CPSES has completed installation (March 1996) in Unit 2 of design modifications that permit surveillance testing of the RPS and ESF inputs to SSPS in bypass rather than in the tripped condition. Associated with implementation of the modification, extensive reviews and modification to surveillance procedures were conducted with no deficiencies in the testing identified. Full functional testing in addition to surveillance testing was completed following installation.

- Westinghouse SSPS: The design of the SSPS includes semiautomatic testing of the logic. The design and testing methodology have been well developed and documented by Westinghouse and are described in FSAR 7.2.2.2.3 and 7.3.2.2.5. The FSAR, vendor technical manuals and schematics, and site specific interconnect drawings were used to develop the surveillance procedures. The procedures for logic tests overlap the 7300 process instrument tests and test through the master relays and coil continuity of the slave relays. The modification and testing associated with bypass testing described above also confirm overlap on the input to SSPS.
- Westinghouse Slave Relays: These relays are designed with a test feature to individually actuate the relays. The design and testing methodology have been well developed and documented by Westinghouse and are described in FSAR 7.3.2.2.5. The FSAR, vendor technical manuals and schematics, Information Notice (IN) 88-83 "Inadequate Testing of Relay Contacts in Safety-Related Logic Circuits," and site specific drawings were used extensively to develop the surveillance procedures. The procedures for slave relay tests actuate the testable actuation devices to the extent possible and use contact continuity for the remaining testable actuation devices.

If additional portions of the reviews within the scope of the Generic Letter are later identified to already have been performed consistent with the Generic Letter intent, the response due within 30 days of completion of the requested actions will provide the appropriate discussion.