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Ref. # 10CFR50.90
10CFR50.36

C. Lance Terry
Group Vice President

December 19, 1994

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
SUBMITTAL OF LICENSE AMENDMENT REQUEST 94-024
BYPASS TESTING OF RPS AND ESFAS INSTRUMENTATION

Gentlemen:

Pursuant to 10CFR50.90, TU Electric hereby requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NSF-89) by incorporating the attached changes into the CPSES Units 1 and 2 Technical Specifications. The changes to the Action Statements of Tables 3.3-1 and 3.3-2 would allow testing of Reactor Protective System (RPS) and Engineered Safety Features Actuation System (ESFAS) with the channel under test in bypass. The changes apply equally to CPSES Units 1 and 2.

Attachment 2 provides a detailed description of the proposed changes, a safety analysis of the changes, and TU Electric's determination that the proposed changes do not involve a significant hazards consideration. Attachment 3 provides the affected Technical Specification pages from the operating licenses, marked-up to reflect the proposed changes.

TU Electric requests approval of this proposed license amendment, by April 30, 1995, with implementation of the Technical Specification changes to occur within 30 days after NRC approval. In parallel with the review and approval of this License Amendment Request (LAR), TU Electric is processing design modifications which will allow performing surveillance testing with the channel under test in bypass.

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

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Should you have any questions, please contact Mr. Jose' D. Rodriguez at
(214) 812-8674.

Sincerely,

C. L. Terry

C. L. Terry

By:

Roger D. Walker

Roger D. Walker
Regulatory Affairs Manager

JDR/gp

Attachments:

1. Affidavit
2. Description and Assessment
3. Affected Technical Specification pages (NUREG-1468)
as revised by all approved license amendments.

c - Mr. L. J. Callan, Region IV
Resident Inspector, CPSES
Mr. T. J. Polich, NRR
Ms. D. D. Chamberlain, Region IV


Mr. D. K. Lacker
Bureau of Radiation Control
Texas Department of Public Health
1100 West 49th Street
Austin, Texas 78704

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)	License Nos. NPF-87
Station, Units 1 & 2))	and NPF-89

AFFIDAVIT

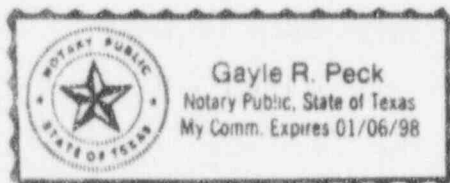
Roger D. Walker being duly sworn, hereby deposes and says that he is Regulatory Affairs Manager of TU Electric, the Licensee herein; that he is duly authorized to sign and file with the Nuclear Regulatory Commission this License Amendment Request 94-024; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

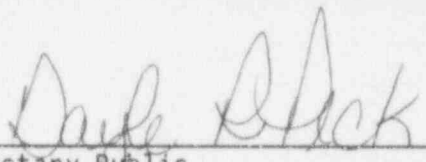


Roger D. Walker
Regulatory Affairs Manager

STATE OF TEXAS)
)
COUNTY OF DALLAS)

Subscribed and sworn to before me, on this 19 day of December, 1994.





Notary Public

DESCRIPTION AND ASSESSMENT

I. BACKGROUND

In 1985, the Westinghouse Owners Group (WOG), commissioned a study to reduce the number of inadvertent trips during surveillance testing and maintenance. This study (WCAP 10271) proposed decreases in the frequency of testing of Reactor Protection System (RPS) and Engineered Safety Features Actuation System (ESFAS) instrumentation channels by increasing the surveillance test intervals and increasing the time allowed for having an instrument out of service for either testing or maintenance. The CPSES Technical Specifications incorporate these changes to decrease the frequency of testing. WCAP 10271 postulated the risk for these changes for a plant where the channel under test or maintenance was in a tripped condition and for a plant where the channel was bypassed. CPSES Unit 1 and Unit 2 are licensed on the basis that the channels being tested are in the tripped condition (except where the technical specifications specifically allow the channel being tested to be in bypass). At CPSES Units 1 and 2 when an instrument is placed in test, a trip condition for that instrument is inserted into the Reactor Protection System. This action decreases the two-out-of-four trip logic to one-out-of-three, and the two-out-of-three trip logic to one-out-of-two. These modified trip logic schemes place the affected unit under a special vulnerability to inadvertent or spurious trips.

In order to further decrease the vulnerability to spurious or human error trips, while one channel is out of service or when placing an inoperable channel in bypass to allow surveillance testing of another channel, TU Electric proposes to change the technical specifications to allow surveillance testing with channels in bypass rather than in trip.

II. DESCRIPTION OF TECHNICAL SPECIFICATION CHANGE REQUEST

The specific proposed changes to the CPSES Technical specifications are:

Change Action Statement 2b. and 6b. of Table 3.3-1 to read;

"The minimum Channels OPERABLE requirement is met; however, the inoperable channel or another channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1."

Change Action Statement 12b. of Table 3.3-1 to read;

"The minimum Channels OPERABLE requirement is met; however, the inoperable channel or another channel may be bypassed for up to 4 hours for surveillance testing per Specifications 4.3.1.1 or 4.2.5.4."

Change Action Statement 17b. of Table 3.3-2 to read;

"The Minimum Channels OPERABLE requirement is met; however, the inoperable channel or another channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1."

These changes amend the CPSES Technical Specifications to allow surveillance testing of RPS and ESFAS functions in bypass. If a protective function has an inoperable channel, three Action Statements (2b., 6b., and 12b.) allow the inoperable channel to be bypassed to test another channel. These Action Statements do not currently allow the channel being tested to be bypassed. The proposed changes will allow the channel being tested to be bypassed when these Action Statements are applicable. Action Statement 17b. does not allow an inoperable channel to be bypassed but does allow the channel being tested to be bypassed. The changes being proposed will allow the inoperable channel to be bypassed when Action Statement 17b. is applicable.

In summary, the proposed changes revise those Action Statements which limit the use of bypass while testing. The Actions Statements each concern testing with a channel inoperable and are being revised to allow testing with either the inoperable channel or the channel being tested (but not both) in bypass.

III. ANALYSIS

At CPSES Units 1 and 2, the Reactor Protection System (RPS) and Engineered Safety Function Actuation System (ESFAS) utilize a two-out-of-three or a two-out-of-four coincidence logic from redundant channels to initiate protective actions. These instruments (with the exception of the Nuclear Instrumentation (NIS) one out of two functions, the ESFAS containment spray function and the Reactor Water Storage Tank Level channels) are currently placed in the tripped state for testing or when declared inoperable. With a channel placed in a tripped state, either for maintenance or because it is out of service, other channels cannot undergo testing or maintenance unless either the tripped channel or the channel being tested is placed in bypass. The current CPSES Technical specifications limit which channels can be placed in bypass. The proposed Technical Specification changes would allow channels from the Nuclear Instrument System (NIS), the 7300 process system, the Reactor Trip System and the Engineered Safety Features Actuation System to be bypassed for testing or maintenance. Each channel will need to be placed in trip for a short period of time during testing to exercise the input Solid State Protection System (SSPS) relay.

When one channel is placed in trip, a two-out-of-three channel protection function will change to a one-out-of-two protective function. Likewise, a two-out-of-four channel protective function will, with one channel in trip, change to a one-out-of-three protective function. Such modified protective schemes leave the affected unit especially vulnerable to inadvertent protective function actuation (e.g., reactor trips, Emergency Core Cooling System actuation, etc.) due instrument failure or personnel error.

When one channel is placed in bypass, a two-out-of-three channel protection function will change to a two-out-of-two protection function; thus the function will continue to require two coincident channels trips for a valid protection system trip (as is required when no channels are bypassed). Likewise, a two-out-of-four channel protective function will, with one channel in bypass, change to a two-out-of-three; thus, the function will continue to require two coincident channel trips for a valid protective

system trip (as is required when no channels are bypassed). The bypass test capability does not affect the number of coincident signals required for a valid trip but yet it reduces the vulnerability to spurious or inadvertent trips.

Testing while in bypass was evaluated by the NRC during its review of WCAP-10271 and its various revisions and supplements. In the Safety Evaluation for the WCAP, the NRC concluded that testing of analog channels in a bypassed condition was acceptable as long as it did not fail to the bypass position and did not involve lifting of leads or installing jumpers. Although placing a channel in bypass at CPSES currently requires in many cases the use of jumpers or lifted leads, TU Electric intends to install modifications which will provide additional circuitry to facilitate placing these channels in bypass. The design of the additional circuitry needed to implement the bypass capability will be such that a bypassed channel will be annunciated in the main control room and will be indicated on local status lights. Instrument channels will retain the ability to be placed in trip and will comply with the requirement that an inoperable channel be placed in trip within 6 hours of declaring it inoperable. Administrative controls will prevent redundant channels from being simultaneously bypassed such that they defeat the protective function. Until these modifications have been made, TU Electric will continue to use trip-to-test and when a channel is inoperable, the inoperable channel will be bypassed for testing (except for those functions covered by Action Statement 17 where the current technical specifications allow the channel being tested to be bypassed).

WCAP 10271 and its various revisions and supplements established that bypass testing was an acceptable method of testing. In the WCAP, the effects of the decrease in the frequency of testing were analyzed in a bypass-to-test configuration as well as a trip-to-test configuration. The results were a slight increase in the instrumentation yearly unavailability as well as a slight increase in the core damage frequency and public health risk. An assessment of the CPSES Individual Plant Examination (IPE) confirms these results. These results were primarily due to the increased time between surveillances. Comanche Peak has already implemented the decrease in test frequency. The proposed plant configuration of bypass testing and decreased test frequencies was found to be a valid and acceptable plant configuration. These technical specification changes propose to attain a configuration which has been found acceptable in the WCAP and the associated SER from the NRC. The testing of protective channels while in bypass is an acceptable and safe configuration for CPSES Units 1 and 2.

IV. SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

TU Electric has evaluated the no significant hazards consideration involved with the proposed changes in accordance with the three standards set forth in 10 CFR 50.92(c) as discussed:

- (i) Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed changes will revise those Action Statements which limit the use of bypass while testing for Reactor Protection System (RPS) and Engineered Safety Feature Actuation System (ESFAS) functions. The Actions Statements concern testing with a channel inoperable and will be revised to allow testing with either the inoperable channel or the channel being tested (but not both) placed in bypass.

Testing in a bypass condition when all channels are operable will not introduce new operating configurations. The number available channels with one channel in bypass for testing will remain the same as the minimum number of channels and is the same as the number of channels available when testing in trip. The number of channels to trip will be unchanged when testing in bypass while the number of channels to trip is reduced to one when testing in trip. Although there may be a slight increase in possibility that the failure of a channel could prevent the actuation of a function (because testing in bypass could result in two-out-of-two logic while testing in trip would have resulted in one-out-of-two logic), testing in bypass will reduce the vulnerability to inadvertent actuation of a function while maintaining the normal channels to trip and the minimum channels operable requirements per the current technical specifications. Overall TU Electric concludes (and WCAP-10271 with its associate SER from the NRC supports) that testing in bypass when all channels are operable does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Testing in bypass with one channel inoperable will not introduce new configurations. The current Actions Statements for ESFAS already allow testing in bypass if one channel is inoperable. Under the current Technical Specifications for an RPS function, an inoperable channel is placed in bypass (via leads and jumpers) while surveillance testing another channel (the channel under test is placed in trip). Under the proposed changes, either the inoperable channel or the channel being tested may be bypassed. In either case, the result is one channel in bypass and the other in trip, which leaves one-out-of-two operable channels to initiate the protective function (if the initial logic was two-out-of-four) or one-out-of-one operable channels to initiate the protective function (if the initial logic was two-out-of-three). Thus, testing in bypass with one channel inoperable does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed technical specification changes will also allow certain ESFAS functions to be tested with an inoperable channel in bypass and the channel being tested in trip. The current technical specifications require that the inoperable channel be in trip and that the channel being tested be in bypass. Per the same logic provided above on testing in bypass with an inoperable channel, this change has no impact on the capability of the system to respond to plant conditions and does increase the potential for inadvertent actuation of a function.

In summary, the proposed changes to the technical specifications and testing in bypass do not increase the probability or consequences of an accident previously evaluated.

- (2) Do the proposed changes create the possibility of a new or different type of accident from any accident previously evaluated?

No new operating configurations and no new failure modes are being introduced by testing in bypass or by the proposed technical specification changes; therefore, no new or different type of accident from any accident previously evaluated is being created.

- (3) Do the proposed changes involve a significant reduction in the margin of safety?

Testing in bypass does not affect accident configurations, sequences, or response scenarios as modeled in the safety analyses. Testing or maintenance in a bypass configuration does not cause any design or analysis acceptance criteria to be exceeded, nor does it affect the integrity of the fission product barriers. The severity of any accident previously evaluated is not increased. Bypass testing does not affect the functional integrity of the Reactor Protection System (RPS) or the Engineered Safety Features Actuation System (ESFAS). Bypass testing and the proposed technical specification changes do not involve a significant reduction in the margin of safety.

Based on the above evaluations, TU Electric concludes that the activities associated with the proposed changes satisfy the no significant hazards consideration standards of 10CFR50.92(c) and accordingly, a no significant hazards consideration finding is justified.

V. ENVIRONMENTAL EVALUATION

TU Electric has evaluated the requested changes and has determined that the changes do not involve (1) a significant hazards consideration, (2) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (3) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the requested changes meet the eligibility criterion for categorical exclusion set forth in 10CFR51.22 (c)(9). Therefore, pursuant to 10CFR51.22(b), an environmental assessment of the requested changes is not required.

V. REFERENCES

- 1) WCAP 10271-P-A, "Evaluation of Surveillance Frequencies and out of Service Times for the Reactor Protection Instrumentation System," May 1986.
- 2) WCAP 10271 Supplement 1-P-A, "Evaluation of Surveillance Frequencies and out of Service Times for the Reactor Protection Instrumentation System," May 1986.