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10010  
Ref. # 10CFR50.90  
10CFR50.36

April 25, 1994

William J. Cahill, Jr.  
Group Vice President

U. S. Nuclear Regulatory Commission  
Attn: Document Control Room  
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NOS. 50-445 AND 50-446  
SUBMITTAL OF LICENSE AMENDMENT REQUEST 94-010  
EMERGENCY DIESEL GENERATOR SLOW START SURVEILLANCE TESTING

Gentlemen:

Pursuant to 10CFR50.90, TU Electric hereby requests an amendment to the CPSES Unit 1 Facility Operating License (NPF-87) and CPSES Unit 2 Facility Operating License (NPF-89) by incorporating the attached change into the CPSES Units 1 and 2 Technical Specifications. This change reduces the number of "fast starts" required by the emergency diesel generator (EDG) surveillances.

Technical Specification Surveillance Requirement 4.8.1.1.2 requires, in part, that each EDG be demonstrated OPERABLE, in accordance with the frequency specified in Table 4.8-1 on a staggered test basis, by verifying that the diesel starts from ambient condition and accelerates to at least 441 rpm in less than or equal to 10 seconds. This is commonly called the "monthly surveillance" for the EDGs. Based on Generic Letter 84-15, NUREG-1431, NUREG-1366 and vendor recommendations, TU Electric requests that this "monthly surveillance" be modified to only require a 10 second fast start every 184 days and to allow slow starts of the EDGs the remainder of the times that this "monthly surveillance" is performed. Implementing this change is expected to increase EDG reliability and availability.

Attachment 1 is the required affidavit. Attachment 2 provides a detailed description of the proposed change, a safety analysis of the change and TU Electric's determination that the proposed change does not involve a significant hazard consideration. Attachment 3 provides the affected Technical Specification pages, marked up to reflect the proposed change. Also enclosed are copies of applicable portions of Generic Letter 84-15, NUREG-1431, "Standard Technical Specifications, Westinghouse Plants", NUREG-1366, "Improvements to Technical Specification Surveillance Requirements" and "Safety Evaluation, Inspection Requirements for Transamerica Delaval, Inc. Diesel Generators (TAC No. M85325)".

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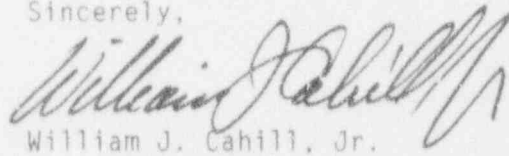
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In accordance with 10CFR50.91(b), TU Electric is providing the State of Texas with a copy of this requested amendment.

TU Electric requests approval as quickly as reasonably possible in order to reduce wear and tear on the EDG. In parallel with the review and approval of this LAR, TU Electric is evaluating design modifications which will allow the performance of "slow" starts on the CPSES EDGs. TU Electric requests a 30 day implementation period following the date of license amendment issuance or implementation upon approval and completion of the appropriate design modifications, whichever comes later.

Should you have any questions regarding the requested amendment, please contact Mr. Manu Patel at (214) 812-8298.

Sincerely,



William J. Cahill, Jr.

MCP/grp

Attachments:

1. Affidavit
2. Description and Assessment
3. Affected Technical Specification pages (NUREG-1468) as revised

Enclosures:

1. Applicable portions of NUREG-1431
2. Applicable portions of NUREG-1366
3. Applicable portions of Generic Letter 84-15
4. Applicable portions of Generic SER on TDI Diesel Generator

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

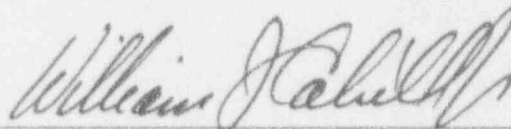
Mr. D. K. Lacker  
Bureau of Radiation Control  
Texas Department of Public Health  
1110 West 49th Street  
Austin, Texas 78704

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
Texas Utilities Electric Company	)	Docket Nos. 50-445
	)	50-446
(Comanche Peak Steam Electric	)	License Nos. NPF-87
Station, Units 1 & 2)	)	NPF-89

AFFIDAVIT

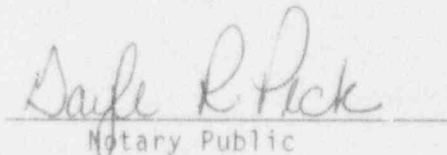
William J. Cahill, Jr. being duly sworn, hereby deposes and says that he is Group Vice President, Nuclear of TU Electric, that he is duly authorized to sign and file with the Nuclear Regulatory Commission this License Amendment Request 94-010; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



William J. Cahill, Jr.  
Group Vice President,  
Nuclear Production

STATE OF TEXAS    )  
                          )  
COUNTY OF DALLAS )

Subscribed and sworn to before me, a Notary Public, on this 25th day of  
April, 1994.

  
Notary Public

ATTACHMENT 2 TO TXX-94118

DESCRIPTION AND ASSESSMENT

## DESCRIPTION AND ASSESSMENT

### I. BACKGROUND

The Comanche Peak Steam Electric Station (CPSES) design employs Emergency Diesel Generators (EDGs) to provide on site AC power in the event that offsite AC power is not available. These EDGs are required to be tested on a periodic basis (normally monthly) to demonstrate operability. These tests require the engine to start and be ready to accept load in 10 seconds or less. This requirement to verify start times of 10 seconds or less on a monthly basis may be reducing the reliability of the EDG. TU Electric believes that gradual acceleration of the EDG during "monthly" surveillance starts will improve the reliability of the EDG.

NUREG-1431 (reference 1) and Generic Letter 84-15 (reference 2) provide "slow start" criteria which allow the gradual acceleration of the EDGs for "monthly" surveillances. "Fast starts" (in 10 seconds or less) are only required every 184 days. CPSES used these documents as a model to prepare this change.

Comanche Peak Steam Electric Station (CPSES) employs a design consisting of two EDGs per unit to provide onsite AC power in the event that offsite AC power is not available. Each EDG powers one of two vital AC trains for its respective unit. The "slow start" for the EDG should provide a more reliable EDG with less outage related maintenance.

### II. DESCRIPTION OF TECHNICAL SPECIFICATION CHANGE REQUEST

A footnote which refers to Surveillance Requirement (SR) 4.8.1.1.2a.4) is being added. The footnote reads, "The diesel generator start time (10 seconds) shall be verified at least once per 184 days. All other engine starts for performance of this surveillance may use a diesel generator start involving gradual acceleration to synchronous speed as recommended by the manufacturer."

### III. ANALYSIS

The functional requirement for EDGs is to provide electric power for safe shutdown of the plant during loss of offsite power. To provide this requirement, the EDGs must be reliable. Reliability is assured by a comprehensive maintenance program and by periodic testing. Since the issuance of Generic Letter 84-15, periodic testing (generally monthly) has been preceded by prelube. This was done to reduce the wear on the engine.

In an evaluation of the failed cylinder liners found on EDG 1DG01 during the third refueling outage on CPSES Unit 1, TU Electric and the diesel's vendor, Cooper Energy Services, concluded that "fast" starts with the fuel racks in the full fuel position are a probable contributing factor. The effect of having the fuel rack booster on the engine is that excess fuel ends up in the cylinder and the exhaust header. The excess fuel in the cold cylinder or exhaust header creates conditions that degrade the engine reliability. The cold cylinder condition cokes the fuel. This coke may have broken loose and scored the cylinder liners in 1DG01. The excess fuel in the exhaust header can combust which wears the turbocharger thrust bearing prematurely. Such conditions are generic to all models of EDGs with turbochargers.

Because the start time for the EDG for a "slow start" may exceed 10 seconds, it may be necessary to consider the EDG inoperable when performing a "slow start" test. Under such circumstances, the "slow start" method of testing would only be used when it is acceptable to take the EDG out of service. Under most normal conditions, however, the short periods during which the EDG is inoperable to perform "slow start" testing will have only minimal impact on overall EDG availability.

Recent refueling outages at other utilities have resulted in blackouts due to engine outages combined with transmission line maintenance. Any changes, such as this one, which reduce EDG wear may reduce the maintenance required during refueling outages. The shorter outage times will increase the availability of EDGs during refueling outages. Increased EDG availability will reduce overall shutdown risk during refueling outages.

In summary, reducing the number of "fast starts" on the diesel generator is expected to improve the reliability and availability of the EDGs. The slight reduction in the "fast start" feature due to a decreased test frequency and the potential need to take the EDG out of service for a short period to perform a "slow start" test are outweighed by the improved reliability from reducing coking problems and reducing premature wear of the turbocharger thrust bearing. These conclusions are supported by reference 4 in which the NRC staff notes that the EDG component life is expected to increase when licensees implement the "slow start" option.



#### IV. SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Does the proposed change:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated?

This change reduces the number of "fast starts" required on the EDGs and allows the EDGs to be tested using "slow starts." Reducing the number of "fast starts" (required to start in 10 seconds or less) will reduce the wear on the EDGs primarily by minimizing coking of fuel in the cylinder and preventing premature wearing of the turbocharger thrust bearing. This increases engine reliability and availability. A "slow start" may require that the EDG be taken out of service to perform the test if the EDG start time is not 10 seconds or less. TU Electric feels that testing the "fast start" capability of the EDG every 184 days will maintain its present level of reliability. The period of time in which the EDG is actually inoperable due to testing (i.e., may not start and be ready to load in 10 seconds) is quite short. Overall the reliability and the availability of the EDG will be increased.

The impact of the EDGs on the postulated accidents is directly related to their reliability and availability. Therefore, the proposed reduction in the number of "fast starts" does not involve a significant increase in the probability or consequences of any previously evaluated accident.

- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated?

The revised testing allowed by this Technical Specification change does not create a new or different kind of accident. The EDGs are primarily accident mitigation components. The potential failure of EDGs have already been assessed in the CPSES design.

- 3) Involve a significant reduction in a margin of safety?

The only aspect of this change that could adversely affect the margin of safety is the potential impact on the start time of the engine. The start time of the engine is not expected to exceed the assumption in the accident analyses except possibly in the short period of time required to perform the "slow start" test. If the EDG does not start in 10 seconds or less under these conditions, the EDG is declared inoperable, as allowed by the Technical Specifications, to perform the "slow start" test. Because these periods of inoperability are only implemented as allowed by the Technical Specifications, there is no impact on the margin of safety. The margin of safety established by the assumed EDG availability will be enhanced by the increased reliability and availability of the EDGs.

Based upon the above evaluation, 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 proposed changes and has determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c). Therefore, pursuant to 10CFR51.22(b), an environmental assessment of the proposed changes is not required.

VI. REFERENCES

1. NUREG-1431, Standard Technical Specifications Westinghouse Plants, Rev. 0, September 28, 1992.
2. Generic Letter 84-15, Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability.
3. NUREG-1366, Improvements to Technical Specification Surveillance Requirements, Rev. 0, December 1992.
4. NRC letter from James A. Norberg (Chief, Mechanical Engineering Branch, Division of Engineering, Office of Nuclear Reactor Regulation) to Mr. R. C. Day (TDI Diesel Generators Owners' Group Clearinghouse), dated March 17, 1994, and titled, "SAFETY EVALUATION, INSPECTION REQUIREMENTS FOR TRANSAMERICA DELAVAL, INC. DIESEL GENERATORS (TAC NO. M85325)"