



Log # TXX-98241
File # 916 (6.0)
Ref. # 10CFR50.90
10CFR50.36

C. Lance Terry
*Senior Vice President
& Principal Nuclear Officer*

November 13, 1998

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 CONFIGURATION RISK MANAGEMENT PROGRAM
LICENSE AMENDMENT REQUEST 98-08 SUPPLEMENTING
LICENSE AMENDMENT REQUEST 96-06

- REF:**
- 1) NRC Letter to TU Electric logged NRR-9665, from T. J. Polich, NRR to C. Lance Terry dated July 30, 1998
 - 2) TU Electric letter logged TXX-98215, from C. L. Terry to the NRC dated October 2, 1998
 - 3) TU Electric letter logged TXX-96434, from C. L. Terry to the NRC dated August 2, 1996
 - 4) TU Electric letter logged TXX-97105, from C. L. Terry to the NRC dated May 15, 1997

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 changes into the CPSES Units 1 and 2 Technical Specifications. The NRC requested additional information related to License Amendment Request LAR 96-06 in Reference 1. TU Electric responded to the request for additional information in Reference 2 providing, in part, additional plant-specific analyses for core damage frequency and large early release frequency. These additional analyses are not specifically discussed in the Analysis Section of Attachment 2 of this submittal, however, the analysis as described in Attachment 2 remains bounding. In Reference 2, TU Electric also committed to supplement License Amendment Request LAR 96-06 with the inclusion of a configuration risk management program.

The purpose of this submittal is to supplement License Amendment Request LAR 96-06 submitted per Reference 3 by revising the Administrative Controls Section to include a configuration risk management program into the CPSES Technical Specifications. This submittal proposes including the configuration risk management program into the Technical

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Specifications and completes the commitment TU Electric provided to the NRC in Reference 2. As these changes are a supplement to License Amendment Request LAR 96-06, the original description and assessment provided in Reference 3 has been revised (including addressing the no significance hazards consideration standards set forth in 10CFR50.92) to reflect the addition of the configuration risk management program and included as Attachment 2 to this submittal. These changes are equally applicable to CPSES Units 1 and 2.

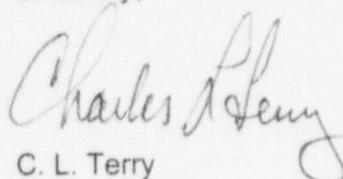
TU Electric requests that the configuration risk management program, described in the attachments of this submittal, be incorporated into the Technical Specifications. Attachment 1 is an affidavit; Attachment 2 provides a revised detailed description and assessment of License Amendment Request LAR 96-06 to include the proposed changes in this submittal; Attachment 3 provides the proposed changes to the CPSES Technical Specifications; and Attachment 4 provides a markup of the Improved Technical Specifications submitted per Reference 4.

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

TU Electric requests implementation of this change to be concurrent with the implementation of License Amendment Request 96-06.

Should you have any questions, please contact Mr. J. D. Seawright at (254) 897-0140.

Sincerely,



C. L. Terry

JDS/jds

- Attachments:
1. Affidavit
 2. Description and Assessment
 3. Affected Technical Specifications pages
 4. Affected ITS Technical Specification pages

c - Mr. E. W. Merschoff, Region IV
Mr. T. J. Polich, NRR
Mr. J. I. Tapia, Region IV
Resident Inspectors, CPSES

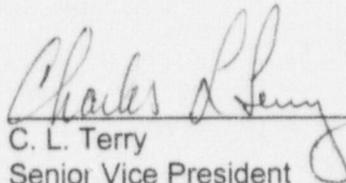
Mr. Arthur C. Tate
Bureau of Radiation Control
Texas Department of Public Health
1100 West 49th Street
Austin, Texas 78704

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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

AFFIDAVIT

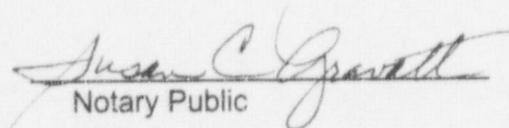
C. L. Terry being duly sworn, hereby deposes and says that he is Senior Vice President and Principal Nuclear Officer of TU Electric, that he is duly authorized to sign and file with the Nuclear Regulatory Commission this License Amendment Request 98-08; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



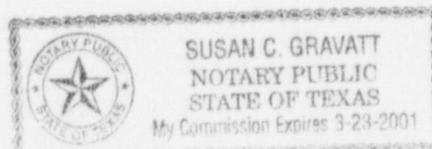
C. L. Terry
Senior Vice President
and Principal Nuclear Officer

STATE OF TEXAS)
)
COUNTY OF SOMERVELL)

Subscribed and sworn to before me, a Notary Public, on this 13th day of
November, 1998.



Notary Public



ATTACHMENT 2 TO TXX-98241
DESCRIPTION AND ASSESSMENT

DESCRIPTION AND ASSESSMENT

I. BACKGROUND

The affected Technical Specifications are 3/4.1.2.4, "CHARGING PUMPS - OPERATING," AND 3/4.5.2, "ECCS SUBSYSTEMS - $T_{avg} > 350^{\circ}\text{F}$." Currently, these specifications allow a centrifugal charging pump to be inoperable for an allowed outage time (AOT) of 72 hours. In response to recent failures of charging/safety injection pump shafts (Information Notice 94-76), TU Electric has prepared preplans for replacing the rotating element of a centrifugal charging pump. The 72 hour allowed outage time is not sufficient to accomplish such emergent repairs on an inoperable centrifugal charging pump. TU Electric used a risk informed argument to justify the proposed AOT extension for the centrifugal charging pumps (CCPs). The amendment request generally follows Regulatory Guides 1.174 and 1.177, in which a three-tiered approach has been identified for licensees to evaluate the risk associated with risk-informed modifications to technical specifications (TS). In short, Tier 1 is an evaluation of the impact on plant risk, Tier 2 is an identification of potentially high risk configurations, and Tier 3 is the establishment of an overall configuration risk management program (CRMP).

The proposed change will increase the allowed outage time for a centrifugal charging pump from 72 hours to 7 days. The 7 days is judged sufficient to perform most repairs (including replacing a rotating element) on an inoperable centrifugal charging pump and could avoid an unnecessary plant shutdown without a significant effect on the health and safety of the public. The proposed change has been supplemented by providing changes to the BASES section of Technical Specifications 3/4.1.2.4 and 3/4.5.2, and to the Administrative Controls section of the Technical Specifications to describe the CPSES CRMP.

II. DESCRIPTION OF TECHNICAL SPECIFICATIONS CHANGE REQUEST

The proposed amendment would modify Technical Specification Limiting Condition for Operation (LCO) 3.1.2.4 by revising the ACTION statement to allow a centrifugal charging pump to be out of service for 7 days. LCO 3.5.2 would be revised by adding a new ACTION statement 'a' which would allow a centrifugal charging pump to be out of service for 7 days. ACTION 'b' would be modified to exclude an inoperable centrifugal charging pump from the ACTION for an ECCS subsystem inoperable.

Changes to the BASES and the Administrative Controls sections of the CPSES Units 1 and 2 Technical Specifications are proposed to reflect a configuration risk management program. The BASES for Technical Specifications 3/4.1.2.4 and 3/4.5.2 would be revised to reference the configuration risk management program. The Administrative Controls section of the Technical Specifications would be revised to include a configuration risk management program. In summary, these proposed changes revise the Administrative Controls in the CPSES Technical Specifications to include a configuration risk management program (CRMP) and revise appropriate BASES sections to reference the CRMP where applicable.

III. ANALYSIS

The proposed change would increase the AOT from 72 hours to 7 days for one centrifugal charging pump declared inoperable while in MODES 1, 2, 3, or 4. Because compliance with the Technical Specifications LCOs preserves the assumptions of the accident analyses, the proposed change has no effects on the accident analyses. Only one train is required to successfully meet the assumptions of the accident analyses. Therefore, the effect of the proposed change can be considered in a probabilistic manner in order to assess the potential effects on the health and safety of the public. The centrifugal charging pumps are part of the fully redundant ECCS.

Increasing the AOT of the centrifugal charging pump from 72 hours to 7 days would potentially increase the unavailability of the centrifugal charging pumps. The centrifugal charging pump unavailability is categorized by maintenance unavailabilities and random failures of the centrifugal charging pumps. Both of these unavailabilities were considered in this analysis.

The average maintenance unavailability of centrifugal charging pumps is the product of:

- the frequency of entering the ACTION statement for maintenance and repair of the pump and
- the average duration of the maintenance/repair.

The average maintenance unavailability of a centrifugal charging pump, as used in the CPSES Individual Plant Examination, is $1.75E-3$ (i.e. about 0.2 percent). Increasing the AOT would have no impact on the frequency of maintenance and repair, but it may affect the average duration of the maintenance/repair activity. Most of the maintenance/repair situations where the ACTION statement is entered result in using less than the currently allowed 72 hours. Increasing the AOT from 72 hours to 7 days should not result in a proportional increase in the average duration of maintenance and repair. Many of the maintenance/repairs would still be of short duration. However, for this analysis, the maintenance duration was increased based on the data correlation between duration and AOT, a factor that is slightly greater than the AOT ratio.

The change does not significantly affect the availability of the ECCS functions for accident mitigation. A calculation was performed in which the impact of the increased unavailability was evaluated, using the existing fault tree analysis for ECCS injection and recirculation functions during a loss-of-coolant accident (LOCA). This assessment was conservative and bounding in nature. It was assumed that the centrifugal charging pump unavailability (and failure probabilities) increased proportionately to the increase in AOT for all failure modes except corrective maintenance. Corrective maintenance was assumed to increase by a larger amount based on the data correlation between outage duration and AOT.

The analysis shows a 17.3% increase in the CCP injection unavailability and a 9.1% increase in CCP recirculation unavailability. However, the ECCS functions were deemed the most appropriate functions to consider because of the equivalence of the CCPs and SI for these

functions. The results of the reanalysis of ECCS injection for LOCA mitigation, using the increased charging system unavailabilities, show an increase of 5.2 percent. ECCS recirculation shows an increase of 3.0 percent. These changes are insignificant. The primary reasons for the relatively small increases are that:

- the assumed unavailability of the centrifugal charging pumps attributed to maintenance and repair is low,
- the overall unavailability of the charging system is dominated by failure modes such as valve failures and postulated common mode failures in the probabilistic risk assessment (PRA) model, and contributors other than centrifugal charging pump maintenance unavailability.

The impact of the change on the estimated core damage frequency (CDF) has been evaluated. For internal events, the CDF would conservatively increase by $4.60E-7/\text{yr}$, less than 1 percent of the current (internal events) CDF of $5.72E-05/\text{yr}$ from the Individual Plant Examination (IPE). It is conservative because the value is based on the assumption that all centrifugal charging pump outages are increased by at least the AOT ratio. This increase has an insignificant impact. Random failures are only of "significant" concern during the maintenance/repair outage on a redundant train or component. This remains relatively unchanged by the AOT extension. For the infrequent occasions where one might expect to enter the ACTION statement for greater than the currently allowed 72 hours, the centrifugal charging pump in the opposite train would be available. To analyze this, random failure probabilities were also increased by the AOT ratio. The difference in failure-to-run probability between 72 hours and 7 days for the charging pump in the opposite train is low, $3.28E-3$. The increase in the frequency of loss of all centrifugal charging pump events was determined to be negligible. Therefore, the change would have no measurable impact on normal plant operations.

The charging system unavailability was also examined to determine the impact of this extended AOT on the reactor coolant pump (RCP) seal cooling function. RCP seal injection via charging, or RCP thermal barrier cooling via component cooling water, is required to maintain RCP seal integrity. The increase in the charging system unavailability was found to be insignificant. The evaluation found the impact of the change on the probability of RCP seal cooling function failure to be insignificant (i.e., a very small change in the failure probability of RCP seal injection via charging and no effect on RCP thermal barrier cooling via component cooling water).

An evaluation was also performed to determine the CDF due to external events (fire, tornado, seismic). The CDF due to external events is generally dominated by an external event-induced loss of support systems, in combination with insufficient time to perform operator actions, or random failure of support equipment. For these events, it is concluded that the increase would be approximately $6.40E-07/\text{reactor year}$, or 2 to 3 percent of the current external events CDF. Thus, the increased AOT would have small impact on the CDF and a change of this magnitude is not considered to be significant.

The addition of a configuration risk management program is the result of additional information required to support extending the allowed outage time for the centrifugal charging pumps from 72 hours to 7 days. The configuration risk management program applies to Technical Specification structures, systems, or components for which a risk-informed allowed outage time has been granted. Currently, this is the only request for a risk-informed Allowed Outage Time extension requested by TU Electric. The addition of a configuration risk management program is considered to be minor in nature as explained by the following:

The configuration risk management program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program includes provisions to perform a risk assessment for planned and unplanned entries into Limiting Condition for Operation (LCO) Actions as well as the need for additional compensatory measures while the equipment is out of service. The CRMP requires provisions for the control and implementation of a Level 1, at-power, internal events PRA-informed methodology capable of evaluating the applicable plant configurations. In addition, the CRMP requires consideration of other applicable risk significant contributors such as Level 2 issues, and external events, either qualitatively or quantitatively.

The Level I PRA consists of plant systems analysis of events leading to core damage. An assessment of this type consists of the definition and quantification of accident sequences, component data, and human reliability. This scope is similar to that performed for the systems part of the IPE, however, it may also include other internal and external events. For the CRMP, the core damage frequency provides an appropriate measure of Level I performance.

The Level II PRA consists of the systems analysis and a containment analysis. An assessment of this scope includes all of the subjects covered in the Level I as well as the physical processes of core-melt accidents and radionuclide. For the CRMP, the large early release frequency provides an appropriate measure of Level II performance.

The proposed changes to the BASES sections for Technical Specifications 3/4.1.2.4 and 3/4.5.2 are provided to reference the CRMP.

This license amendment request is being proposed by TU Electric to reduce the risk of an unnecessary plant shutdown to perform centrifugal charging pump repairs. Use of PRA insights constitutes the principle justification for this proposed change. This approach is consistent with one of the philosophies put forth in the Commissions' Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors. In part, the final policy statement says ". . . the Commission . . . will continue to consider methods to make better use of risk and reliability, information for defining future generic Technical Specification requirements." (July 22, 1993, 58FR39138). We believe this proposed amendment is an appropriate application of this concept.

IV. SIGNIFICANT HAZARDS CONSIDERATION

TU Electric has evaluated whether or not a significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10CFR50.92 as discussed below:

1. *Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?*

There is no effect on the probability of an event; the only potential effect is on the capability to mitigate the event. The centrifugal charging pumps are credited in the Final Safety Analysis Report Chapter 15 LOCA analysis for ECCS injection and for the containment sump recirculation mode for the design-basis LOCA. Increasing the AOT for the centrifugal charging pumps does not affect analysis assumptions regarding functioning of required equipment designed to mitigate the consequences of accidents. Further, the severity of postulated accidents and resulting radiological effluent releases will not be affected by the increased AOT.

A reliability analysis of the charging system found the change to have no significant impact on normal operation or on the RCP seal cooling function. Therefore, the change would not significantly increase in the probability of a seal LOCA.

The increase in the AOT potentially affects only the availability of the charging system for accident mitigation and has no effect on the ability of other ECCS systems to perform their functions. Through the use of a probabilistic risk assessment, it was determined that the proposed change would have an insignificant effect on the core damage frequency.

The proposed changes to the Technical Specification BASES are administrative in nature and do not change the specific Technical Specifications requirements. The changes to the BASES sections of the Technical Specifications ensure that when the centrifugal charging pumps are taken out of service, administrative controls are in place to consider and manage risk associated with the specific configuration of the plant. Changes to the Administrative Controls section of the Technical Specifications are administrative in nature and reflect addition of a configuration risk management program. These administrative changes provide additional assurance that risk is appropriately considered and managed during changing plant configurations in order to assure that intended plant design/safety functions will be maintained. No design basis accidents are affected by these proposed administrative changes as they do not impact nor affect accident analysis assumptions.

Therefore, the proposed change does not involve a significant increase in 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?*

Unavailability of one centrifugal charging pump for a finite period of time is currently allowed by the Technical Specifications. Increasing the AOT from 72 hours to 7 days would not change the method that TU Electric operates CPSES, thus would not create a new condition. Further, the proposed change would not result in any physical alteration to any plant system, and there would not be a change in the method by which any safety related system performs its function. The ECCS would still be capable of mitigating the consequences of the design-basis accident LOCA with the one centrifugal charging pump operable. No new unanalyzed accident would be created.

The proposed changes to add a configuration risk management program and reference to that program in the BASES section of the Technical Specifications for the Centrifugal Charging pumps will not delete any specification requirement or function already designated in the Technical Specifications. The administrative changes retain adequate regulatory basis to ensure that intended plant design/safety functions will be maintained. These changes are administrative in nature and do not affect the design or operation of any system, structure, or component in the plant. Accordingly, no new failure modes have been defined for any plant system or component important to safety, nor have any new initiating events been identified as a result of the proposed changes.

In summary, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Do the proposed changes involve a significant reduction in a margin of safety?*

The proposed increase in the AOT does not impact either the physical protective boundaries or performance of safety systems for accident mitigation. There is no safety analysis impact since the extension of the centrifugal charging pump AOT interval will have no effect on any safety limit, protection system setpoint, or limiting condition of operation. There is no hardware change that would impact existing safety analysis acceptance criteria, therefore there is no significant change in the margin of safety.

The proposed changes involve the addition of a configuration risk management program and reference to that program in the BASES section of the Technical Specifications for the Centrifugal Charging pumps affected by License Amendment Request 96-06. These changes are administrative in nature and do not directly affect any protective boundaries nor impact the safety limits for the protective boundaries. The addition of the configuration risk management program provides additional assurance that adequate regulatory basis for continued proper administrative review and plant configuration control to ensure that actions prescribed in plant operating procedures are maintained so as not to impact the plant's margin of safety. Therefore, there is no significant reduction in the margin of safety.

In summary, the proposed change would not have a significant impact on 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 and accordingly, a no significant hazards consideration finding is justified.

V. ENVIRONMENTAL EVALUATION

TU Electric has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10CFR20, or would change an inspection or surveillance requirement. TU Electric has determined that the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), an environmental assessment of the proposed change is not required.