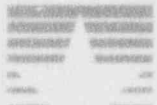

Log # TXX-93244
File # 916 (3/4.2)
10010
Ref. # 10CFR50.90
10CFR50.36

William J. Cahill, Jr.
Group Vice President

November 15, 1993

U. S. Nuclear Regulatory Commission
Attn: 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 93-005
INCREASE IN MAXIMUM PERMITTED POWER FOR PERFORMING
RCS FLOW VERIFICATION

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 (NPF-89) by incorporating the attached change into the CPSES Units 1 and 2 Technical Specifications. This change applies equally to CPSES Units 1 and 2.

The current CPSES Technical Specifications require that the post-refueling, power ascension Reactor Coolant System (RCS) flow verification, determined by precision heat balance measurement, be conducted below 75% rated thermal power (RTP). TU Electric proposes to perform the RCS flow verification prior to exceeding 85% RTP.

TU Electric requests approval of this proposed license amendment by November 1, 1994, with implementation of the Technical Specification change to occur within 30 days after NRC approval.

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

A001
1/1

Should you have any questions, please contact Mr. Bob Dacko at (214) 812-8228.

Sincerely,

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

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

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

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
	)	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 for TU Electric, the licensee herein; that he is duly authorized to sign and file with the Nuclear Regulatory Commission this License Amendment Request 93-005; 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

STATE OF TEXAS)
)
COUNTY OF SOMERVELL)

Subscribed and sworn to before me, on this 15th day of November, 1993.

Patricia Wilson
Notary Public

PATRICIA WILSON
MY COMMISSION EXPIRES
March 16, 1997

DESCRIPTION AND ASSESSMENT

I. BACKGROUND

During the post-refueling power ascension, in order to meet Surveillance Requirement 4.2.5.4 of the current CPSES Technical Specifications, a precision Reactor Coolant System (RCS) flow verification is required at a power plateau below 75% rated thermal power (RTP). In addition, note (6) to Table 4.3-1 TABLE NOTATIONS, requires an incore-excore detector calibration at a power plateau above 75% RTP. These two surveillances require that the plant stabilize at two power plateaus which may differ by only a few percent power. To expedite power ascension, a change is proposed that will allow the precision RCS flow determination at a power plateau of less that 85% RTP. Thus, the RCS flow verification can be performed at the same power plateau as the incore-excore detector calibration.

II. DESCRIPTION OF TECHNICAL SPECIFICATIONS CHANGE REQUEST

The proposed change would revise Surveillance Requirement 4.2.5.4 to require that the total RCS flow rate be determined by precision heat balance measurement "...after each fuel loading and prior to operation above 85% of RATED THERMAL POWER." The Surveillance Requirement presently requires the heat balance be performed prior to 75% RTP.

III. ANALYSIS

Technical Specification 3/4.2.5, "DNB PARAMETERS", ensures that important plant parameters are within their analyzed values prior to operation at full power. In particular, Surveillance Requirement 4.2.5.4 ensures that the RCS flow rate is within its analyzed value.

In early versions of the Standard Technical Specifications, the post-refueling RCS flow verification was performed at a power plateau of less than 75% RTP. The maximum power level for the RCS flow verification was selected to ensure that some margin was available for analyses of potential accidents, should it be determined that RCS flow is outside its analyzed value. Since the RCS flowrate supports operation at 100% RTP, the existing 75% RTP power plateau provides a 25% margin in power.

The improved Standard Technical Specifications [Reference 1] requires the RCS flow verification at a power level of greater than 90% RTP in order to ensure that the accuracy of the flow measurement is within assumed uncertainties. This represents a shift in the bases for the selection of the power level from one based on providing margin (in power) to one based on achieving an assumed level of flow measurement accuracy. In addition to the 90% RTP minimum power, the standard specification requires that the flow verification be completed within 24 hours after reaching 90% RTP. The time limit restricts the period of operation at high power prior to verifying RCS flow.

In the CPSES-specific uncertainty calculations for RCS flow, an allowance has been provided for the uncertainty associated with the precision heat balance measurement. This uncertainty is largely influenced by the uncertainty associated with the feedwater flow (venturi) measurement. Administrative controls are in place which ensure that the precision RCS flow measurement is performed at power/feedwater flow conditions which are required to support the assumed uncertainty of the heat balance measurement. Through the use of the N-16 gamma-based Transit Time Flow Meter (TTFM) and other precision instrumentation, CPSES can measure the RCS flow, to within the required accuracy, at power levels above approximately 65% RTP.

As a result, CPSES does not need the 90% minimum as provided in the improved Standard Technical Specifications [1]. Likewise, the time limit is not needed if the safety limits will not be exceeded at the maximum power allowed prior to the precision RCS flow verification. An analysis was performed at the revised power limit of 85% RTP, in which a mismatch of 20% between the expected and actual measured RCS flow is assumed. This analysis demonstrates that for the loss of forced RCS flow event (which has traditionally been one of the events which provides the most challenge to the DNB acceptance criterion), the safety analysis DNB limit will not be exceeded if the initial power is 85% RTP or less, even with a significant reduction in the RCS flow. The major assumptions upon which this analysis is based include:

- The power-dependent $F_{\Delta H}$ has been verified to be within the limits of Technical Specification 3.2.3

- An RCS flow measurement, based on elbow tap differential pressure indications and measured fluid conditions, has been performed prior to operation in Mode 1. This measurement validates the flow mismatch of less than 20% between expected and actual flow assumed in the accident analysis. The RCS flow rate normally remains constant during an operational fuel cycle, and is only affected by changes in the amount of steam generator tube plugging or by changes in the hydraulic characteristics of fuel assemblies inserted during the core refueling.

- Uncertainties on the pressurizer pressure and RCS temperature have been considered.

The methodology used for this evaluation has been approved by the NRC (see Reference 2).

In order to ensure that an adequate level of protection is provided against all DNB-limited events and to ensure that plant operation remains within the bounds of the accident analysis, it is also necessary to administratively limit the trip setpoint of the power range neutron flux - high reactor trip function. During a normal, post-refueling power ascension, this setpoint is conservatively adjusted to a low value until the power has been increased to a level at which accurate precision heat balance measurements may be taken. A reduced setpoint (typically, 90% RTP) continues to be used until all important parameters, including the RCS flow, have been verified to be within their analyzed values.

The use of the reduced high neutron flux setpoint, in conjunction with the assumptions previously described, provides assurance that reactor protection is provided for the DNB-limited events, such as the Uncontrolled Rod Withdrawal at Power, Dropped Rod, and Complete Loss of Forced RCS Flow.

Thus, as described above, the selection of a plateau below 85% RTP satisfies both the requirement for margin for DNB-limited events and for flow measurement accuracy.

IV. SIGNIFICANT HAZARDS CONSIDERATIONS ANALYSIS

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

Does the proposed change:

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

   The proposed change increases the power at which the verification of the Reactor Coolant System flow rate with a precision heat balance can be performed. The only potentially relevant concern for this change is the possibility of having insufficient flow to support the accident analyses at the higher (85%) power level. Power level and RCS flow are important parameters in determining the severity of an event but have no impact on the initiation of an event or accident. Thus, the change does not involve a significant increase in the probability of any previously analyzed accident.

Although accidents tend to be more severe at higher initial power levels, the acceptance criteria of the applicable safety analyses continue to be met. Thus, the proposed change would not involve an increase in the consequences of any previously analyzed accident.

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

The proposed change merely increases the power at which the initial post-refueling startup verification of RCS flow with a precision heat balance may be performed. Since the new power level is within the normal operating range of the reactor, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety?

The proposed change increases the power which can be attained prior to verification of the Reactor Coolant System flow with a precision heat balance. The power value is increased from 75% RTP to 85% RTP. An analysis was performed which demonstrates that the safety analysis DNB limit will not be exceeded if the initial power is 85% or less, even with a significant reduction in flow. A flow reduction significantly different from the expected flow is highly unlikely, however, since RCS flow is verified by measurement of elbow tap differential pressure prior to operation in Mode 1. This flow measurement, although less accurate than the precision heat balance, is sufficient to assure adequate flow at 85% power. Adequate limitations on power level, $F_{\Delta H}$ verification, and the power range neutron flux - high setpoint are imposed during post-refueling power ascension to ensure that if the RCS flow is not verified with a precision heat balance until 85% RTP, the results of the accident analyses would remain valid.

The evaluation of the DNB-limited events, initiated from a power level of 85% RTP, considered the limitations imposed during the power ascension. Based on this evaluation, it is concluded that, even though 85% RTP is a more severe initial condition, the applicable event acceptance criteria would continue to be met; therefore, the proposed change does not involve a significant reduction in the margin of safety.

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 amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed 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 proposed change is not required.

VI. REFERENCES

1. "Standard Technical Specifications, Westinghouse Plants" NUREG-1431, September, 1992

2. TU Electric letter logged TXX-93204, dated May 28, 1993, requesting Unit 1, Cycle 4 Technical Specifications Changes