

Part 50 requires that P-T limits be established for reactor pressure vessels during normal operation and vessel hydrostatic testing. As stated in Appendix G, "The appropriate requirements on . . . the pressure-temperature limits . . . must be met for all conditions." In order to avoid approaching these P-T limit curves and provide pressure relief during low temperature overpressurization (LTOP) events, pressurized water reactor licensees have installed protection systems (COMS/LTOP) as part of the reactor coolant system (RCS) pressure boundary. STP Nuclear Operating Company is required, as part of the STP Technical Specifications, to develop, update, and submit reactor vessel P-T limits and COMS setpoints for NRC review and approval.

STP Nuclear Operating Company determined that the exemption request from the provisions of 10 CFR 50.60 and Appendix G was necessary since these regulations require, as previously noted, that reactor vessel conditions not exceed the P-T limits established by Appendix G. In referring to 10 CFR 50.12 on specific exemptions, STP Nuclear Operating Company cited special circumstances regarding achievement of the underlying purpose of the regulation as its basis for requesting this exemption [10 CFR 50.12(a)(2)(ii)].

STP Nuclear Operating Company noted in support of the 10 CFR 50.12(a)(2)(ii) criteria that the underlying purpose of the subject regulation is to establish limits to protect the reactor vessel from brittle failure during low temperature operation and that the COMS provides a physical means of assuring that operation remains within these limits. STP Nuclear Operating Company proposed that establishing the COMS pressure setpoint in accordance with the N-514 provisions, such that the vessel pressure would not exceed 110 percent of the P-T limit allowables, would still provide an acceptable level of safety and mitigate the potential for an inadvertent actuation of the COMS. The use of N-514 was based on the conservatism that have been explicitly incorporated into the procedure for developing the P-T limit curves. This procedure, referenced from Appendix G to Section XI of the ASME Code, includes the following conservatisms: (1) a safety factor of 2 on the pressure stresses; (2) a margin factor applied to RT_{NDT} using Regulatory Guide 1.99, Revision 2, "Radiation Embrittlement of Reactor Vessel Materials"; (3) an assumed $1/4$ thickness flaw with a 6:1 aspect ratio; and (4) a limiting material toughness based on dynamic and crack arrest data.

In addition, STP Nuclear Operating Company stated that a COMS pressure setpoint must be sufficiently high to prevent the inadvertent actuation of the COMS as a result of normal operating pressure surges. STP Nuclear Operating Company requests use of Code Case N-514 to incorporate pressure instrumentation uncertainty in P-T limit calculations, while providing an operating band that permits system makeup and pressure control. Such an inadvertent actuation could lead to the unnecessary release of reactor coolant inside containment and could introduce undesirable thermal transients in the RCS.

The Commission has determined that the application of 10 CFR 50.60 in these particular circumstances is not necessary to achieve the underlying purpose of that rule and that the use of Code Case N-514 would meet the underlying intent of the regulation. Based upon a consideration of the conservatisms, which are explicitly defined in the Appendix G methodology, it was concluded that permitting the COMS setpoint to be established such that the vessel pressure would not exceed 110 percent of the limit defined by the P-T limit curves would provide an adequate margin of safety against brittle failure of the reactor vessel. This is also consistent with the determination that has been reached for other licensees under similar conditions based on the same conditions. Therefore, the exemption requested under the special circumstances of 10 CFR 50.12(a)(2)(ii) was found to be acceptable. The staff also agrees that limiting the potential for inadvertent COMS actuation may improve plant safety.

IV

The Commission has determined that, pursuant to 10 CFR 50.12, this exemption is authorized by law, will not present an undue risk to the public health and safety, is consistent with the common defense and security, and is otherwise in the public interest. Therefore, the Commission hereby grants STP Nuclear Operating Company an exemption from the requirements of 10 CFR 50.60 in order to apply ASME Code Case N-514 for determining STP's cold overpressurization mitigation system pressure setpoint.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant effect on the quality of the human environment (64 FR 23689).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 4th day of May 1999.

For the Nuclear Regulatory Commission.

John A. Zwolinski,

Director, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. 99-11997 Filed 5-11-99; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-445 and 50-446]

Texas Utilities Electric Company (Comanche Peak Steam Electric Station, Units 1 and 2); Exemption

I.

Texas Utilities Electric Company (the licensee/TU Electric) is the holder of Facility Operating Licenses No. NPF-87 and No. NPF-89, which authorize operation of the Comanche Peak Steam Electric Station (CPSES), Units 1 and 2. The licenses provide, among other things, that the licensee is subject to all rules, regulations, and orders of the Commission now or hereafter in effect.

These facilities consist of two pressurized-water reactors at the licensee's site located in Somervell County, Texas.

TU Electric seeks this exemption to the 2 percent above licensed power level assumption to allow for uncertainties specified by Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix K, "ECCS [Emergency Core Cooling System] Evaluation Models," Section I.A., to support license amendments for modest increases of up to 1 percent in the licensed power levels for both units. This will result in an exemption from the requirements of 10 CFR Part 50, Appendix K to allow ECCS evaluation model assumptions to be conducted at no less than 1.01 times licensed power level. The licensee seeks this exemption based on its proposed use of a new feedwater flow measurement system to allow more accurate measurement of thermal power (known as the Leading Edge Flowmeter (LEFM) System), manufactured by Caldon, Inc. The LEFM is described in Caldon, Inc., Topical Report ER-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM System." The subject topical report was approved subject to the limitations stated in a letter and Safety Evaluation (SE) dated March 8, 1999.

II.

Part 50, Appendix K, Section I. A. states, in part, that "it shall be assumed that the reactor has been operating continuously at a power level at least 1.02 times the licensed power level (to allow for such uncertainties as instrument error)." The Appendix K rule was written to ensure that adequate margin for ECCS performance would be available if a design-basis loss-of-coolant accident (LOCA) ever occurred (39 FR 1002, January 4, 1974). The margin was provided by incorporating several conservative features into the ECCS performance criteria as well as maintaining conservative requirements and recommendations for evaluation models.

The basis for the requirement is discussed in background documentation, such as the Statement of Consideration for Appendix K (39 FR 1002, January 4, 1974). The 102 percent assumption is one of several items listed as conservative factors used to model the energy available from reactor operation. The Statement of Consideration also associates the preaccident power level assumption with the modeling of the rate of heat generation after the LOCA occurs. A comparison is made between the estimated uncertainty associated with the decay heat assumption (i.e., 20 percent above the American Nuclear Society (ANS) standard) and the estimated effect on heat generation resulting from the 102 percent power assumption. This is a natural connection since the preaccident power level directly affects the decay heat generation rate after reactor shutdown.

When it was considering changes to Appendix K to accept the use of best-estimate evaluations, the staff understood that the rule incorporated substantial conservatism (see SECY 83-472, "Emergency Core Cooling System Analysis Methods," November 17, 1983). These conservatisms were necessary when the rule was written because of limited experimental evidence. The major analysis inputs and assumptions that contribute to the conservatism in Appendix K are grouped together under Sections A through D of the rule: (A) Sources of Heat During the LOCA (the 102 percent power provision is one factor); (B) Swelling and Rupture of the Cladding and Fuel Rod Thermal Parameters; (C) Blowdown Phenomena; and (D) Post-blowdown Phenomena: Heat Removal by ECCS. In each of these areas, several assumptions are typically used to assure conservatism in the analysis results. For instance, under sources of heat during

the LOCA, in addition to the 102 percent requirement, decay heat is modeled on the basis of an ANS standard with an added 20 percent penalty, and the power distribution shape and peaking factors expected during the operating cycle are chosen to yield the most conservative results. As discussed in SECY-83-472, experimental programs provided ample data, which shed light on the considerable margin provided by Appendix K, giving the staff confidence to consider alternative ECCS evaluation models.

III

Section 50.12(a), states that . . .

The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are—

(1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

(2) The Commission will not consider granting an exemption unless special circumstances are present. . . .

Section 50.12(a)(2), states that special circumstances are present whenever . . .

(ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule; or

(iv) The exemption would result in benefit to the public health and safety that compensates for any decrease in safety that may result from the grant of the exemption; or

(vi) There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption. . . .

IV

The staff has reviewed the applicable regulations and the regulatory history for Appendix K as well as for Section 50.46, and finds that those regulatory documents do not prohibit the licensee's proposal to use Caldon Inc.'s, Leading Edge Flowmeter System (Caldon LEFM System) instrument. Accordingly, the exemption is authorized by law, as required by 10 CFR 50.12(a)(1).

The staff used Regulatory Guide 1.174 and Standard Review Plan Chapter 19 to review the application for the exemption. Specifically, the staff reviewed the application considering the defense-in-depth philosophy, the maintenance of sufficient safety margin, and the fact that the increase in risk was small and consistent with the Commission safety goals. A slightly higher power level will result in a small increase in decay heat load that could

affect required response time of the ECCS and the available operator response time following transients and accidents. Results of core and containment consequence analyses from higher power levels could also be affected. However, NUREG-1230, "Compendium of ECCS Research for Realistic LOCA Analysis," considered the risk impact of changes associated with the revised ECCS rules, including power increase, and considered a power increase of 5 percent or less to have little risk significance. The staff concludes that this increase of 1 percent is bounded by the NUREG-1230 considerations.

In the safety evaluation for the Caldon topical report ER-80P dated March 8, 1999, the staff accepted statistical treatment of uncertainties attributed to the LEFM and venturi-based flow measurement instruments and the uncertainty values associated with these two types of flow measurement instruments at CPSES. The use of the Caldon LEFM System and quantification of power measurement uncertainty do not raise inconsistencies with the Commission's safety goals. Further, the Commission has determined that, pursuant to 10 CFR 50.12, the requested exemption is authorized by law, will not result in an undue risk to the public health and safety, and is consistent with the common defense and security and is otherwise in the public interest.

The Commission also finds that special circumstances exist. By seeking to apply a smaller margin for power measurement uncertainty, the exemption does not violate the underlying purpose of Appendix K. The application of 1.02 times the licensed thermal power is not necessary to achieve the underlying purpose of Appendix K. Indeed, by quantifying a contributor to the uncertainty where the uncertainty was not specifically known, the exemption may better serve the underlying purpose of the requirement. The use of the Caldon LEFM System and the quantification of power measurement uncertainty appear to offer safety benefits.

By requesting this exemption, the licensee has undertaken to quantify a contributor to the uncertainty in power measurement. Although there is a small safety impact expected from the associated power increase, it is not considered significant. The use of the LEFM system and the quantification of power measurement uncertainty appear to offer safety benefits.

The Caldon LEFM System and the quantification of power measurement uncertainty associated with use of the Caldon LEFM System constitute

material circumstances that did not exist when the rule was written. The current Appendix K rule presumes that the 2 percent margin accounts for uncertainties associated with measurement of thermal power. Contributors to the uncertainty were not identified at the time the rule was written and the magnitude of the uncertainty was not demonstrated by experiment or analysis. The rule does not require quantification of actual uncertainties, nor does the regulatory history reflect any detailed technical basis for the choice of a 2 percent margin. Therefore, the Commission has determined that special circumstances as defined in 10 CFR 50.12(a)(2)(ii), (iv), and (vi) are present.

The Commission hereby grants the licensee an exemption from the requirements of 10 CFR Part 50, Appendix K to allow ECCS evaluation model assumptions to be conducted at no less than 1.01 times licensed power level when the quantification of power measurement uncertainty can be justified by the use of the Caldon LEFM System instrumentation. The granting of this exemption does not, however, provide authority to increase the licensed power of CPSES, Units 1 and 2. A separate license amendment to increase licensed power level, for each licensed unit, will be required to be submitted and approved before such authority may be provided for that unit.

Pursuant to 10 CFR 51.32, the Commission has determined that granting of this exemption will have no significant effect on the quality of the human environment (64 FR This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 6th day of May 1999.

For the Nuclear Regulatory Commission.

John A. Zwolinski,

Director, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. 99-11996 Filed 5-11-99; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-445 and 50-446]

Texas Utilities Electric Company, et al. Comanche Peak Steam Electric Station, Units 1 and 2; Notice of Consideration of Issuance of Amendments to Facility Operating Licenses, Proposed no Significant Hazards Consideration Determination, and Opportunity for a Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. NPF-87 and NPF-89 issued to Texas Utilities Electric Company, et al. (the licensee), for operation of the Comanche Peak Steam Electric Station (CPSES), Units 1 and 2, respectively. The CPSES facility is located at the licensee's site in Somervell County, Texas.

The proposed amendments would revise the Technical Specifications for fuel storage to increase the spent fuel storage capacity, to add fuel pool boron concentration, and to revise the storage configurations in the spent fuel pool.

Before issuance of the proposed license amendments, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendments would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

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

This proposed license amendment includes changes which are (1) editorial and (2) provide the criteria for acceptable fuel storage in high density racks. The editorial changes are purely administrative changes and have no impact on the probability or consequences of an accident. The revised criteria for acceptable fuel storage in the high density racks are discussed below.

The high density racks differ from the low density racks in that the center to center

storage cell spacing is decreased from a nominal 16 inches to a nominal 9 inches and the high density racks are free standing whereas the low density racks are bolted to the pool. Administrative controls are used to maintain the specified storage patterns and to assure storage of a fuel assembly in a proper location based on initial U-235 enrichment, burnup, and decay time. The increased storage capacity results in added weight in the pools and additional heat loads.

There is no significant increase in the probability of an accident concerning the potential insertion of a fuel assembly in an incorrect location in the high density racks. TU [Texas Utilities] Electric has used administrative controls to move fuel assemblies from location to location since the initial receipt of fuel on site. Fuel assembly placement will continue to be controlled pursuant to approved fuel handling procedures and will be in accordance with the Technical Specification spent fuel rack storage configuration limitations.

There is no increase in the probability of the loss of normal cooling to the fuel storage pool water due to the presence of soluble boron in the pool water for subcriticality control because a concentration of soluble boron similar to that proposed has always been maintained in the fuel storage pool water. The amount of soluble boron required to offset the reactivity increase associated with water temperature outside the normal range was established for the proposed storage configurations.

The consequences of all of these changes have been assessed and the current acceptance criteria in the licensing basis of CPSES will continue to be met. The nuclear criticality, thermal-hydraulic, mechanical, material and structural designs will accommodate these changes. Potentially affected analyses, including a dropped spent fuel assembly, a loss of spent fuel pool cooling, a seismic event, and a fuel assembly placed in a location other than a prescribed location, continue to satisfy the CPSES licensing basis acceptance criteria. The analysis methods used by TU Electric are consistent with methods used by TU Electric in the past or methods used elsewhere in the industry and accepted by the NRC.

Based on the acceptability of the methodology used and compliance with the current CPSES licensing basis, TU Electric concludes that the full use of the high density racks and the increase in storage capacity do 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 kind of accident from any accident previously evaluated?

The editorial changes to the Technical Specifications have no impact on plant hardware or operations and therefore cannot create a new or different kind of an accident.

The potential for criticality in the fuel storage pool is not a new or different type of accident. The potential criticality accidents have been reanalyzed in the criticality analysis (Enclosure 1 [to the application]) to demonstrate that the pool remains subcritical.