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Ref: 10 CFR 50.55a

CPSES-200101590
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July 20, 2001

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) DOCKET NOS. 50-445 AND 50-446 RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUEST FOR APPLICATION OF AN ALTERNATIVE TO THE ASME BOILER AND PRESSURE VESSEL CODE SECTION XI EXAMINATION REQUIREMENTS FOR CLASS 1 AND 2 PIPING WELDS (TAC NOS. MB 1201 AND MB1202)

REF: 1) TXU Electric Letter, logged TXX-01026, from Mr. C. L. Terry to the NRC dated February 15, 2001

2) NRC Letter to Mr. C. L. Terry from Mr. D. H. Jaffe dated July 9, 2001

Gentlemen:

Via Reference 1 TXU Electric submitted a request for relief from Section XI examination requirements of the American Society of Mechanical Engineers (ASME) Code for Inservice Inspection (ISI) of Class 1 and 2 piping welds. The proposed alternative of a risk informed ISI program is to provide an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i).

The NRC staff provided a request for additional information (RAI) in reference 2. The requests from this RAI and TXU Electric's responses are provided herein.

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NRC Request:

Page 4 of the submittal states that portions of the Unit 1 containment spray and residual heat removal systems contain piping that is less than 0.375 inches thick. It also states that, in response to NRC SSER-26, the licensee committed to performing volumetric examinations on 7.5 percent of the welds in this piping during each ten-year interval. The submittal also states that this piping was included in the scope of the RI-ISI application and that this augmented inspection program is subsumed by the RI-ISI program. This appears to be a deviation to the Electric Power Research Institute (EPRI) topical report TR-112657 methodology. Justify the inclusion of these welds within the scope of the RI-ISI program.

TXU Electric Response:

Please note that the commitment in response to NRC SSER-26 was revised using the site approved methodology for revising the commitments, which is consistent with NEI 99-04 "Guidelines for Managing Commitment Changes." The commitment now states that, in lieu of selecting 7.5 percent of the thin wall (less than 0.375 inch) discharge piping welds for the residual heat removing and containment spray system pumps, the selection of welds will be based on the EPRI RI-ISI methodology.

NRC Request:

Page 4 of the submittal states that for CPSES, a deviation to EPRI RI-ISI methodology has been implemented in the failure potential assessment for thermal stratification, cycling and striping (TASCS). Discuss if the revised methodology for assessing TASCS potential is in conformance with the updated criteria described in EPRI letter to NRC dated March 28, 2001. Also, confirm that as stated in the submittal, once the final MRP guidance has been developed, the RI-ISI program will be updated for the evaluation of susceptibility to TASCS, as appropriate.

TXU Electric Response:

The methodology for assessing thermal stratification, cycling and stripping (TASCS) used in the CPSES RI-ISI submitted is identical to the methodology described in the EPRI letter dated March 28, 2001. TXU Electric will update the RI-ISI program based on the final EPRI MRP guidance if warranted.

NRC Request:

> Page 14 of the submittal states that for CPSES Unit 2, 53 percent of the ASME XI examinations have been completed during the first two periods of the first interval and, therefore, 47 percent of the RI-ISI examinations will be performed during the third period so that 100 percent of the selected examinations are performed during the course of the interval. Specify which 47 percent of the RI-ISI examinations will be performed and what will be the basis of the selection.

TXU Electric Response:

The remaining 47 percent RI-ISI examinations will be scheduled and inspected based on risk categorization. The more risk significant welds will be selected first.

NRC Request:

> The NRC staff safety evaluation (SE) issued March 10, 1997, on the CPSES Individual Plant Evaluation (IPE) states that the staff noted that the licensee credited local repair of various equipment and systems. The staff noted that the credit given to local repair of equipment and systems did not appear to take into account certain plant-specific factors. Page 3 of the submittal states that recovery/repair of failed equipment was addressed in the CPSES 2000 update. Did the modeling of equipment repair in the update take into account plant-specific factors?

TXU Electric Response:

Plant specific factors were considered. A subsequent review was done in support of the PRA update to consider plant specific factors such as timing and recovery crew availability. These reviews indicated that the original methodology used by CPSES was appropriate. The HRA calculation was clarified. The following describes the approach and the bases for this conclusion.

The approach employed at CPSES was a combination of the industry experience with recoveries of failed equipment and the application of the EPRI Recovery Methodology. In many cutsets, there are potentially multiple recovery actions. It is customary to consider only one recovery per cutset. However, based on having experienced actual operating crews in simulator sessions, the operators would attempt several recoveries in parallel to recover the loss of system function or equipment. At CPSES there are a sufficient number of Plant Equipment Operators (PEO) making it possible to effect several recoveries. The current minimum shift crew composition when one or both units are in Mode 1, 2, 3 or 4 includes eight (8) PEOs. From the simulator sessions, the crews were conceiving many recovery actions outside the scope of the Abnormal (ABN) procedures. However, no "heroic" recovery actions have been modeled, only those recovery actions that were stated within the ABNs were applied. Application of multiple HRA were reviewed for dependency, manpower requirements, and accident conditions.

The NSAC-161 report represents a credible method of quantifying recovery of faulted equipment. Although the values obtained are generally 0.2 or higher, the possibility of recovering faulted equipment is reasonable. An example of failure recovered by the station staff would be the failure of both diesel generators due to their individual faults. If this were to occur, the operators would dispatch two different teams of PEOs to attempt to recover the diesels. One PEO would be sent to each diesel, and one would be sent to each safeguards bus. Additionally, a call to maintenance (which is staffed 24 hours/7 days a week) would be made to request assistance. Therefore, it is an accurate reflection of actual operator response to place two separate, parallel recovery actions into cutsets containing multiple equipment failures. Application of multiple recovery actions were evaluated for dependencies between actions and recovery values adjusted accordingly. For example, in the case above simultaneous recovery of two diesel generators involves dependent events. In this case a single recovery that accounts for this dependency was applied.

The NSAC-161 data and methodology allowed recovery to be categorized in terms of factors such as time to return to service, the urgency to recover, the extent of failure, the failure mode, the cause of failure and the method of recovery. Cumulative distribution curves provided in NSAC-161 to characterize the recovery experience and mostly cover a recovery of two hours – the period of most interest for PRAs. The NSAC report indicates that early recovery of local faults of pumps and valves in sufficient time to avert core damage generally appears feasible. Most failures involving a loss of function or system did not involve damage of a major component such as a pump or valve. Rather, they involved operational errors, such as a valve left out of position, or the failure of a component or instrument, that could be bypassed or reset to achieve early recovery.

For events in which it is possible to effect recoveries after about one hour, the potential for station resources/manpower is increased markedly. After events have progressed such that the declaration of an Alert (an Emergency Preparedness Action Level) is necessary, three ERDC (Emergency Repair and Damage Control) teams are staged in an area just outside the RCA (Radiological Controlled Area) in accordance with EPP-205, "Activation and Operation of the OSC". The purpose is to repair-failed equipment, or make temporary changes to systems to enable them to function. Since there are multiple teams, it is reasonable to postulate simultaneous repair of faulted equipment.

NRC Request:

> Page 2 of the submittal states that the evaluation of the consequences of pipe rupture for the RI-ISI assessment for CPSES was based on Revision 1 of the CPSES Safety Monitor. Page 3 of the submittal discusses the updates made in the CPSES 2000 update to the probabilistic safety assessment (PSA) for Comanche Peak. Is Revision 1 of the CPSES Safety Monitor the same as the CPSES 2000 update to the Comanche Peak PSA? If not, what is the relationship between the two?

TXU Electric Response:

Revision 1 of the CPSES Safety Monitor is essentially the same as the CPSES 2000 update referred to in the CPSES RI-ISI submittal, however, there are some slight differences. The following describes the relationship of these models.

In February 2000, an extensive update of the CPSES PRA was completed. That PRA model was then incorporated into the CPSES Safety Monitor. The models (the CPSES PRA model and the CPSES Safety Monitor Model) are essentially the same, however, the CPSES PRA model has more detailed modeling to describe the plant damage states for the Level 2. The Safety Monitor uses essentially the same top logic and system logic but does not contain the Plant Damage State (PDS) detail.

In the process of doing the incorporation for the updated PRA model into the Safety Monitor, some additional modifications and improvements were made to the 2/2000 PRA model. These were documented in both a revision to the CPSES PRA model and the CPSES Safety Monitor calculations and notebooks as the 8/2000 model. The basis for the CPSES RI ISI submittal is the 8/2000 Safety Monitor model which conforms to the 8/2000 PRA model.

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This communication contains the following commitments which will be completed as noted.

Commitment 27238 (One time action)

TXU Electric will update the RI-ISI program based on the final EPRI MRP guidance if warranted.

Commitment 27239 (On going action to be incorporated)

The remaining 47 percent RI-ISI examinations required for the CPSES Unit 2 first interval will be scheduled and inspected based on risk categorization. The piping welds associated with the reactor vessel automated examinations will be performed by the end of the interval; the selection of the remaining welds of the 47 percent will be from the more risk significant categories. The more risk significant welds will be selected first.

Should you have any questions, please contact Mr. Obaid Bhatty at (254) 897- 5839.

Sincerely,

C. L. Terry

By: DRWoodlan

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Docket Licensing Manager

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