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Comanche Peak Steam
Electric Station
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Mike Blevins
Senior Vice President &
Chief Nuclear Officer

Ref: 10 CFR 50.55a

CPSES-200700229
Log # TXX-07027

February 2, 2007

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-446
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION, RELIEF REQUEST B-6 FOR THE UNIT 1 INSERVICE INSPECTION (ISI) PROGRAM PLAN FROM THE 1998 EDITION OF ASME CODE, SECTION XI, THROUGH 2000 ADDENDA (INTERVAL START DATE - AUGUST 13, 2000, SECOND INTERVAL)
TAC NUMBER MD3315

REF: TXU Power letter, logged TXX-06154, from Mike Blevins to the NRC dated October 3, 2006.

Dear Sir or Madam:

By means of the referenced letter, TXU Generation Company LP (TXU Power) previously submitted relief from the applicable requirements of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, as identified in the referenced relief request. This request is for TXU Power's Repair/Replacement program, as established by the ASME Section XI Code, and involves utilization of an alternate approach to ASME Section XI requirements for a particular application.

Based upon questions provided by Mr. Mohan Thadani of the NRC in an email dated January 24, 2007, TXU Power hereby provides the following additional information. The attachment to this letter contains the NRC questions and TXU Power's response immediately following each question.

A047
A110

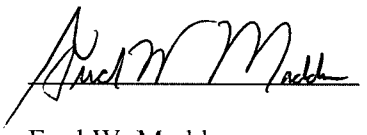
This communication contains a new licensing basis commitment for CPSES Unit 1 which is delineated in Attachment 2.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC,
Its General Partner

Mike Blevins

By: 

Fred W. Madden
Director, Oversight and Regulatory Affairs

JCH

Attachments:
1. Response To Request For Additional Information Relief Request B-6 For The Unit 1 Inservice Inspection For Applying Full Structural Weld Overlay To Pressurizer Dissimilar Metal Butt Welds Constructed Of Alloy 82/182 Weld Material, TAC Number MD3315, Docket No. 50-445
2. Licensing Basis Commitment for Unit 1

c - B. S. Mallett, Region IV
M. C. Thadani, NRR
Resident Inspectors, CPSES

TXU POWER
COMANCHE PEAK STEAM ELECTRIC STATION

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION, RELIEF REQUEST B-6 FOR THE UNIT 1 INSERVICE INSPECTION FOR APPLYING FULL STRUCTURAL WELD OVERLAY TO PRESSURIZER DISSIMILAR METAL BUTT WELDS CONSTRUCTED OF ALLOY 82/182 WELD MATERIAL, TAC NUMBER MD3315, DOCKET No. 50-445

1. **NRC Question**

On page 18 of your transmittal, you indicate that weld shrinkage caused by application of the overlays will be measured and evaluated for any system impacts, as required by Code Case N-504-2, paragraph (g)(3). It is the staff's expectation that the requirements of Code Case N-504-2 (g)(2) and (g)(3) be completed prior to startup. Please discuss your time line for completing these requirements with respect to plant startup.

TXU Response

The weld shrinkage effects on the attached piping and support systems will be assessed prior to the weld overlay based on estimated weld shrinkage. The preliminary evaluation of weld shrinkage will be completed by 3/14/07. Confirmatory analyses based on actual weld shrinkage measurements after the weld overlay will be performed, and a formal letter will be provided. The final evaluation will be completed within two weeks of the receipt of final measurements. As per current schedule, the evaluation will be completed by 4/15/2007. The plant is scheduled to re-start April 28, 2007.

2. **NRC Question:**

On page 18 of your submittal, you state in part that your basis for increasing the overlay surface area to 300 in^2 is because the staff approved a 300 in^2 at Susquehanna Steam Electric Station. Since each granting of relief is plant specific, please provide additional detail why your configuration(s) are similar in design and material to the SSES relief request as the basis why your modification to Code Case N-638-1 provides an acceptable level of quality and safety.

TXU Response

Only one of the six weld overlays within the scope of this request (the surge nozzle) will exceed the 100 square inch overlay area limitation on the ferritic base material. Review of the surge nozzle weld overlay design drawings indicates that a best estimate weld overlay surface area of 155 square inches will be applied to the nozzle material. All other nozzle weld overlay surface areas will be less than 100 square inches.

The Comanche Peak surge nozzle application is similar to the Susquehanna application in that the full structural weld overlay induces compressive stress in the original 82/182 weld, which supports mitigation of the degradation mechanism of concern (primary water stress corrosion cracking), and the geometry, consisting of a carbon steel nozzle welded to a stainless steel safe end with Alloy 82/182, is of similar size and configuration. The NRC acceptance of the Susquehanna relief request was not based on specific design and stresses but on the industry work demonstrating the acceptability of larger areas of ambient temperature temper bead welding. Because the basis was not specific to Susquehanna, Comanche Peak referred to that approval.

ASME has approved Code Case N-638-3, which increased the 100 square inch limitation to 500 square inches. The technical basis accompanying the Code Case revision provides an expanded basis for the change in area limitation, citing no direct correlation to the amount of surface area when comparing residual stresses for overlay repairs done using temperbead welding. As surface areas of up to 500 square inches have been shown through testing and analysis to continue to result in compressive residual stresses in the weld region, the proposed surge nozzle overlay will have no adverse impact on the pressure boundary function of the nozzle.

In addition, it is noted that since the weld overlays are fabricated from nickel based Alloy 52/52M materials with high resistance to PWSCC and inherent toughness, no cracking in the overlays is expected to occur due to the shrinkage associated with the weld overlay. With respect to the low alloy steel material in the nozzle, many temper bead weld overlays have been applied in the nuclear industry to these nozzle-to-safe end locations. In no instance has there been any reported cracking due to the weld overlay application. The stiffness and high toughness inherent in the low alloy steel nozzle is expected to protect against any cracking and limit any distortion that might occur in the nozzle. Comanche Peak will be measuring and evaluating axial shrinkage. Also, any cracking that might occur should be detected by the final NDE of the weld overlay. Laboratory testing and field experience have been documented qualifying the temper bead weld overlay repair for nozzle-to-safe-end welds and these efforts and experience have demonstrated that the remedy provides a quality, sound repair that maintains structural integrity, thus demonstrating an acceptable level of quality and safety.

3. NRC Question

On page 19 of your submittal, you state that Reg. Guide 1.147 Rev. 14 condition on use of N-638-1 is not applicable and will not be applied. Identify the UT acceptance criteria that will be used for the complete full structural weld overlay and heat-affected zone beneath the weld overlay. Since the acceptance criteria to be used is not consistent with the respective positions stated in Regulatory Guide 1.147 for the applicable code cases, provide the technical bases for its use.

TXU Response

Table 2, "Conditionally Acceptable Section XI Code Cases" in Regulatory Guide 1.147, Rev. 14, for Code Case N-638-1 states "The acceptance criteria of NB-5330 of Section III edition and addenda approved in 10 CFR 50.55a apply to all flaws identified within the repaired volume."

Code Case N-638-1 applies to any type of welding where a temper bead technique is to be used and is not specifically written for a weld overlay repair. Code Case N-504-2 and Nonmandatory Appendix Q are applicable for weld overlay repairs. Thus the final full structural weld overlay and heat-affected zone beneath the weld overlay will be examined in accordance with the requirements of Code Case N-504-2 and Nonmandatory Appendix Q. The acceptance criteria in Nonmandatory Appendix Q section Q-3000 will be used.

4. NRC Question

Provide a commitment to provide within 14 days from completion of UT examination of the weld overlays, a report that summarizes the results of the examinations, consistent with the September 14, 2006 letter from Exelon to NRC regarding Byron Station, Unit 1 Relief Request I3R-03.

TXU Response

TXU will provide the requested data within 14 days of completion of UT examinations.

5. NRC Question

On page 20 of your submittal, you propose the use of contact pyrometers versus attached thermocouples. Please provide a more detailed discussion of your basis on the modification to use contact pyrometers and why your modification provides an acceptable level of quality and safety.

TXU Response

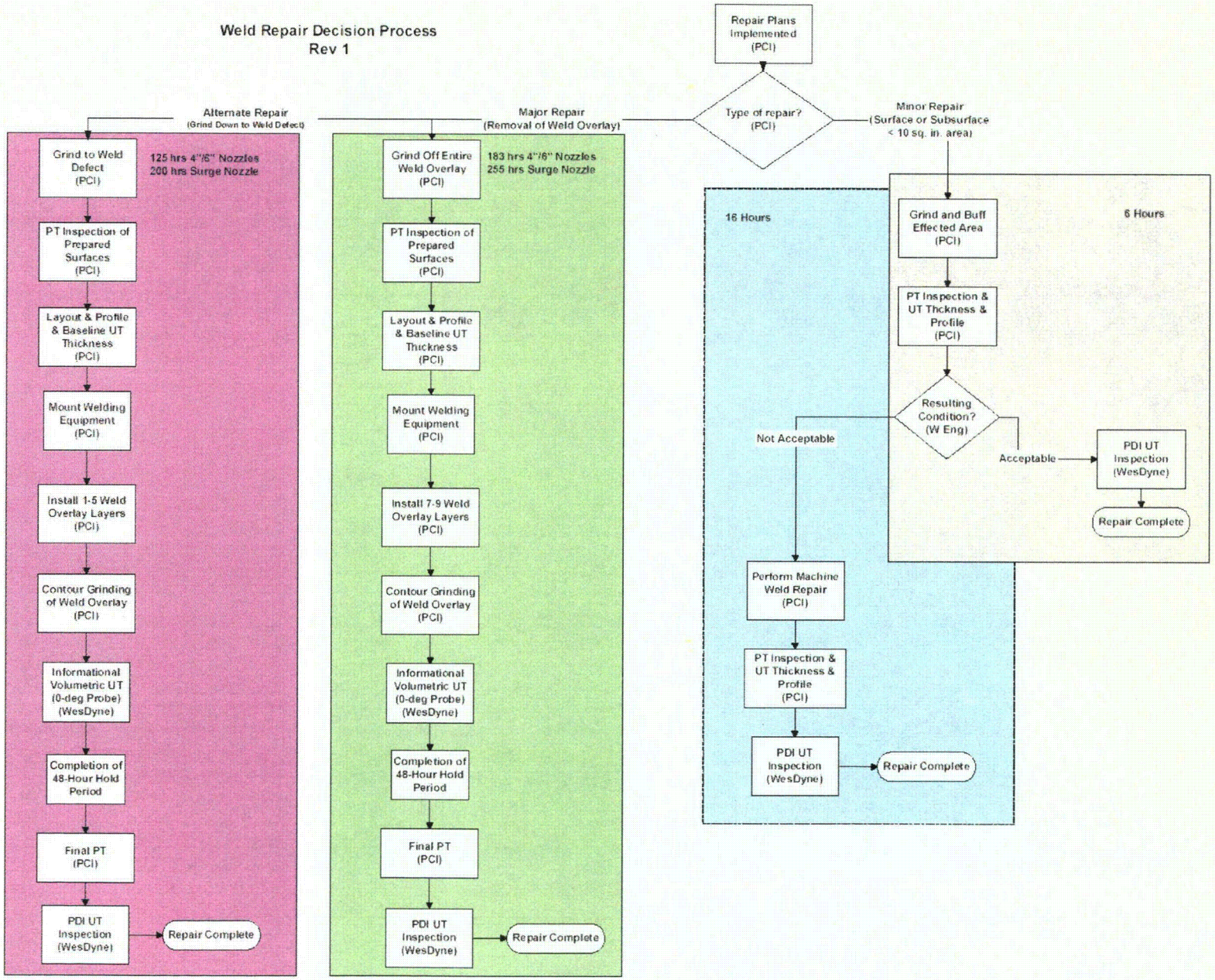
Process temperature monitoring is performed to ensure compliance with the applicable Welding Procedure Specification preheat/interpass temperature requirements during overlay welding. Interpass temperature, temperature of a previously deposited weld pass prior to depositing a subsequent weld pass, must be measured at the start location of the successive weld pass prior to commencement of welding. Attached thermocouples are not practical for this application because they must be fixed at specific location(s). However, a contact pyrometer permits interpass temperature measurement at any location determined to be the starting point for the respective successive weld pass. The accuracy of temperature measurements from a contact pyrometer and attached thermocouple are comparable. As stated in the Relief Request; Instruments used (i.e., contact pyrometer) will be calibrated in accordance with approved calibration and control program requirements, which will provide the objective evidence of respective instrument accuracy.

6. NRC Question

Please discuss your repair strategy if the post overlay preservice inspection results identify indications that exceed the acceptance criteria under Table IWB-3514-2.

TXU Response

Repair strategy is detailed in a Westinghouse Weld Repair Decision Process (Decision Tree Flowchart shown on the following page) which defines the decision logic for minor, major and alternate repair scenarios.


Weld Repair Decision Process
Rev 1
Repair Plans Implemented (PCI)
Type of repair? (PCI)
Alternate Repair (Grind Down to Weld Defect)
Major Repair (Removal of Weld Overlay)
Minor Repair (Surface or Subsurface < 10 sq. in. area)
Grind to Weld Defect (PCI)
125 hrs 4"/6" Nozzles
200 hrs Surge Nozzle
PT Inspection of Prepared Surfaces (PCI)
Layout & Profile & Baseline UT Thickness (PCI)
Mount Welding Equipment (PCI)
Install 1-5 Weld Overlay Layers (PCI)
Contour Grinding of Weld Overlay (PCI)
Informational Volumetric UT (0-deg Probe) (WesDyne)
Completion of 48-Hour Hold Period
Final PT (PCI)
PDI UT Inspection (WesDyne)
Repair Complete
Grind Off Entire Weld Overlay (PCI)
183 hrs 4"/6" Nozzles
255 hrs Surge Nozzle
PT Inspection of Prepared Surfaces (PCI)
Layout & Profile & Baseline UT Thickness (PCI)
Mount Welding Equipment (PCI)
Install 7-9 Weld Overlay Layers (PCI)
Contour Grinding of Weld Overlay (PCI)
Informational Volumetric UT (0-deg Probe) (WesDyne)
Completion of 48-Hour Hold Period
Final PT (PCI)
PDI UT Inspection (WesDyne)
Repair Complete
16 Hours
6 Hours
Grind and Buff Effected Area (PCI)
PT Inspection & UT Thickness & Profile (PCI)
Resulting Condition? (W Eng)
Not Acceptable
Acceptable
PDI UT Inspection (WesDyne)
Repair Complete
Perform Machine Weld Repair (PCI)
PT Inspection & UT Thickness & Profile (PCI)
PDI UT Inspection (WesDyne)
Repair Complete

Licensing Basis Commitment for Unit 1

Commitment Number	Commitment Description
27425	The results of the final evaluation of the confirmatory analyses based on actual weld shrinkage measurements after the weld overlay will be provided within 14 days from completion of UT examination of the weld overlays and prior to plant startup.

LAST UPDATE DATE: 02/02/2007

COMMITMENT TYPE : REG NUMBER: 27425 STATUS: OPN
COMMITMENT REGISTER NUMBER:

I. COMMITMENT DETAIL INFORMATION

AUTHORITY : NRC PRIORITY : G
PRIMARY ORG : ZRA UNITS : 1 N N
LIC CONTACT : JCH DELETE CODE:

SUB: (AM) AMERICAN SOCIETY OF MECHANICAL (IR) INSERVICE TESTING (ASME)
(II) INSERVICE INSPECTIONS (ASME) (WF) REPAIR BY WELDING
(1B) ONE TIME ACTION-TO STATUS CLS ( )

STATUS	: OPN	(1X)	: NA	(2X)
MILESTONE	:	(1X)	:	(2X)
SCH'D COMPLETION DATE:		(1X)	:	(2X)
REQ'D COMPLETION DATE:	04/30/2007	(1X)	:	(2X)

TITLE: PROVIDE REPORT OF CONFIRMATORY ANALYSES OF PZR WELD OVERLAYS

DESCRIPTION:
The results of the final evaluation of the confirmatory analyses based on actual weld shrinkage measurements after the weld overlay will be provided within 14 days from completion of UT examination of the weld overlays and prior to plant startup.

COMMENTS:

II. COMMITMENT REFERENCE INFORMATION

SOURCE REFERENCE:

TYPE: LTR NUM: TXX-07-000027 SRC LVL: 1
SEC: REV:
PG : ISSUE DATE: 02/02/2007

OPEN/INCORPORATING/CLOSING REFERENCE:

TYPE: _____ NUM: _____ STATUS: ___ UNIT: _
SEC: _____ REV: _____

TYPE: _____ NUM: _____ STATUS: ___ UNIT: _
SEC: _____ REV: _____

TYPE: _____ NUM: _____ STATUS: ___ UNIT: _
SEC: _____ REV: _____

TYPE: _____ NUM: _____ STATUS: ___ UNIT: _
SEC: _____ REV: _____

.. MORE ..

LAST UPDATE DATE: 02/02/2007

COMMITMENT TYPE : REG NUMBER: 27425 STATUS: OPN
COMMITMENT REGISTER NUMBER:

II. COMMITMENT REFERENCE INFORMATION

OTHER REFERENCE:

TYPE: _____ NUM: _____ REV : _____

TYPE: _____ NUM: _____ REV : _____

.. MORE ..

LAST UPDATE DATE: 02/02/2007

COMMITMENT TYPE : REG NUMBER: 27425 STATUS: OPN
COMMITMENT REGISTER NUMBER:

ALL COMMITMENT INFORMATION HAS BEEN REVIEWED TO BE COMPLETE AND ACCURATE AT THIS TIME EXCEPT AS MARKED.

NAME (PLEASE PRINT)	EXT.	DEPARTMENT	SIGNATURE	DATE
				__/__/__
				__/__/__

FOR LICENSING COMPLIANCE GROUP ONLY

TNL REVIEW: _____ __/__/__
SIGNATURE DATE

CT DATA ENTRY: _____ __/__/__
INITIALS DATE

** END OF REPORT **