TUELECTRIC

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April 9, 1998

C. Lance Terry
Senior Vice President
& Principal Nuclear Officer

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) - UNIT 1
DOCKET NO. 50-445
THERMO-LAG ENCLOSED RACEWAY, THERMAL MASS OPEN ITEM, AND MATRIX OF THERMO-LAG UPGRADES
(TAC NO. M85536)

REF: 1) TU Electric letter, logged TXX-97252, from Mr. C. L. Terry to NRC dated December 10, 1997

2) TU Electric letter, logged TXX-98028, from Mr. C. L. Terry to NRC dated February 13, 1998

3) NRC letter from Suzanne C. Black to William J. Cahill dated October 29, 1992, as clarified by NUREG-0797 Supplement 26 of February 1993, NUREG-0797 Supplement 27 of April 1993, and NRC letter from T. J. Polich to C. L. Terry dated May 22, 1996

4) Generic Letter 86-010 Sup. 1- "Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within the Same Fire Area (Supplement 1 To Generic Letter 86-10, 'Implementation of Fire Protection Requirements')" dated March 25, 1994

5) NRC letter from Timothy J. Polich to C. Lance Terry dated April 1, 1998

Gentlemen:

This letter is a follow-up to references 1) and 2). In reference 1), TU Electric stated that it intended to test selected fire barrier configurations to resolve the two remaining Open Items pertaining to the NRC's final acceptance of the fire barriers for CPSES Unit 1. TU Electric committed to perform this test using the criteria agreed upon in reference 3) [the October 29, 1992, Criteria]. The NRC staff pointed out in subsequent phone calls that reference 4) [GL 86-10, Sup.1] provides the most recent NRC guidance concerning the criteria to be used for fire barrier testing. In reference 2), TU Electric compared two sets of criteria (the October 29, 1992, Criteria and GL 86-10, Sup.1). The NRC staff provided comments on reference 4) in reference 5) and requested that

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TU Electric respond to these comments to resolve any issues prior to the start of any fire endurance tests.

On March 17, 1998, TU Electric discussed the protocols to be used in this test with the NRC Staff. Based on these discussions, TU Electric amends the test proposal of reference 1) in the following manner:

a) For the test specimens which are demonstrating the capability of the Thermo-Lag barriers on 12 inch cable trays and 2 inch conduits in lieu of placing thermocouples at six inch intervals on selected cables (per the October 29, 1992, Criteria), TU Electric will place a No. 8 AWG bare copper conductor inside the raceway on top of the cable(s) (and attached to one of the cable(s)), and will instrument the bare copper conductor with thermocouples at six inch intervals (per GL 86-10, Sup.1).

b) If a cable functionality evaluation is required, the evaluation will be based on acceptable cable insulation resistance (IR) values and acceptable instrument loop accuracies.

The cable IR values will be obtained during a hot-air test (e.g., using a programable hot-air oven). The temperature profile for the hot-air test will be based on a composite, worst case profile obtained during the fire endurance test, using the temperature data obtained from the thermocouples mounted on the No. 8 AWG bare copper wire. The hottest valid thermocouple reading during each one minute interval of the fire test will be utilized to establish the composite profile.

A minimum of 2 feet of instrument cable will be exposed to the elevated temperatures in the hot air test. Because the raceways being tested in the fire test have a low percentage fill, no cable compressive loads will be present and the hot-air cable test data will not need to be adjusted for compressive loading.

The insulation resistance of the cable will be measured a minimum of three times (at approximately 20, 40 and 60 minutes - the last set of measurements to be completed as close to 60 minutes as reasonably achievable). The insulation resistance values obtained during the hot air test will then be used to determine if the instrument accuracies are within acceptable limits.

c) As confirmed with the NRC staff during a conference call, burn through is defined as consumption of all the Thermo-Lag material such that the inner layer of stress skin can be seen upon visual inspection.

The test specimens for the fire test (Test Scheme 13-3) will be fabricated using TU Electric stock material similar to the as installed configurations for a specific limited application of 12 inch cable tray and 2 inch conduit at CPSES Unit 1. TU Electric will utilize a test plan, acceptance criteria, and test specimens as described in reference 1) except as modified above. The objective of the test is to qualify the specimen fire barrier configurations including the as built 12 inch cable trays, 2 inch conduits, and silicone foam fire-stops as well as the potential upgrade raceway configurations. (Note that the fire stop testing is not based upon IEEE Std 634.)

The methodology and criteria described above, when considered in its entirety, constitutes a valid qualification test of these raceways for CPSES and responds to the comments in reference 5) as necessary to resolve the issues raised by the NRC. In particular, the comments concerning the measurement of temperature inside the raceway and cable functionality have been resolved with the proposal to use thermocouples at six inch intervals on a bare copper wire inside the raceway and to use a hot air test to demonstrate cable functionality, if required.

In addition, TU Electric has attached to this letter a matrix of the upgrades for the Thermo-Lag installations at CPSES Unit 1. The matrix lists the upgrades and provides the time periods when these upgrades were completed. The upgrades which TU Electric determined to be necessary following the testing for Unit 1 in 1993 were completed in the 1993-95 time frame. The matrix also provides details of the remaining upgrades which will be performed to resolve the questions/concerns provided by the NRC staff in the Safety Evaluation Report of May 22, 1996.

Should you have any questions or need additional information, please contact Obaid Bhatty at (254) 897-5839.

This communication contains the following commitment:

Commitment

A fire test will be performed to confirm the acceptability for CPSES Unit 1 of the as built Thermo-Lag barrier for 2 inch conduit with low thermal mass, the as built Thermo-Lag barrier for 12 inch cable tray with low thermal mass, the silicone foam fire-stops, and potential upgrade raceway configurations. The fire test shall be performed using the methodology and criteria described in TXX-98098.

Sincerely,

C. L. Terry

C. L. Terry

By: Roger D. Walker
Roger D. Walker
Regulatory Affairs Manager

OB:ob
Attachment

cc: E. W. Merschoff, Region IV
J. I. Tapia, Region IV
T. J. Polich, NRR
Resident Inspectors, CPSES

STATUS OF UNIT 1 UPGRADES - CONDUITS AND JUNCTION BOXES

COMMODITY	UNIT 1 UPGRADE STATUS	ACCEPTANCE TEST	ACCEPTED BY NRC VIA	REMARKS
3/4"	COMPLETE (DM 92-077 09/92-12/92)	Scheme 9-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2
1"	COMPLETE (DM 92-077 09/92-12/92)	Scheme 9-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2
1-1/2"	UPGRADES PARTIALLY COMPLETE*(DM 92-077 08/93-05/94)	Scheme 9-1 (Unit 2 test) Scheme 13-2 (Unit 1 test)	NUREG 0797 SUPPLEMENT 26	WILL BE UPGRADED IN THE SAME MANNER AS UNIT 2 WITH 1/4" PREFORMED OVERLAYS VIA DM-97-014#
2"	UPGRADES PARTIALLY COMPLETE*(DM 92-077 08/93-05/94)	Scheme 13-2 (UNIT 1 test with cable functionality evaluation)	NRC SAFETY EVALUATION OF MAY 22. 1996	1) CONDUITS WITH LESS THAN 8.3 % FILLS WILL BE UPGRADED VIA DM-97-014#; 2)PROPOSED TEST SCHEME 13-3 WILL ADDRESS FILLS ≥ 8.3 % BUT ≤ 43.47%; 3) FILLS ≥ 43.47% HAVE BEEN PREVIOUSLY ACCEPTED BY THE NRC IN MAY 22. 1996. LETTER
3" & LARGER	COMPLETE (DM 92-077 08/93-05/94)	Scheme 9-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2
JUNCTION BOXES	COMPLETE (DM 92-077 08/93-05/94)	Scheme 10-2 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2

* All radial bends upgraded with stainless steel mesh based on Unit 1 Test Scheme 13-2

DM-97-014 for conduit upgrades is presently scheduled to be completed 12/31/98.

STATUS OF UNIT 1 UPGRADES - CABLE TRAYS

COMMODITY	UNIT 1 UPGRADE STATUS	ACCEPTANCE TEST	ACCEPTED BY NRC VIA.	REMARKS
12"	UPGRADES PARTIALLY COMPLETE (DM 92-077 08/93-05/94)	Scheme 13-2 (Unit 1 test with cable functionality evaluation)	NRC SAFETY EVALUATION OF MAY 22, 1996	1) CABLES TRAY TEE SECTIONS UPGRADED BASED ON UNIT 2 TEST SCHEME 14-1; 2)TRAYS WITH LESS THAN 5.6% FILL WILL BE UPGRADED VIA DM-97-014#; 3) PROPOSED TEST SCHEME 13-3 WILL ADDRESS FILLS ≥ 5.6% BUT ≤ 14.68% 4) FILLS ≥ 14.68% HAVE BEEN PREVIOUSLY ACCEPTED BY THE NRC IN MAY 22, 1996, LETTER
18"	COMPLETE (DM 92-077 08/93-05/94)	SCHEME 11-5 (Unit 1 test)	NRC SAFETY EVALUATION OF MAY 22, 1996	N/A
24"	COMPLETE (DM 92-077 08/93-05/94)	SCHEME 11-5 (Unit 1 test)	NRC SAFETY EVALUATION OF MAY 22, 1996	N/A
30"	COMPLETE (DM 92-077 08/93-05/94)	SCHEME 14-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2
36"	N/A	SCHEME 15-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 27	NOT APPLICABLE FOR UNIT 1. THE FSSA CABLES WERE RE-ROUTED IN SMALLER TRAYS OR CONDUITS

DM-97-014 for cable tray upgrades is presently scheduled to be completed by 12/31/98.

STATUS OF UNIT 1 UPGRADES - CABLE TRAYS (CONTD.)

COMMODITY	UNIT 1 UPGRADE STATUS	ACCEPTANCE TEST	ACCEPTED BY NRC VIA.	REMARKS
TEE SECTIONS ALL SIZES	COMPLETE (DM 92-077 08/93-05/94)	SCHEME 14-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2
FIRE STOPS. SILICONE ELASTOMER	NONE REQUIRED	SCHEME 14-1 (Unit 2 test) SCHEME 11-2 (Unit 1 test)	NUREG 0797 SUPPLEMENT 26	INSTALLED FIRE STOPS ON UNIT 1 ARE THE SAME AS THE FIRE STOPS ON UNIT 2
FIRE STOPS. SILICONE FOAM	NONE REQUIRED	SCHEME 14-1 (Unit 2 test) SCHEME 11-2 (Unit 1 test) NEI TEST 2-8	NUREG 0797 SUPPLEMENT 26 NRC SAFETY EVALUATION OF MAY 22, 1996	SAME AS UNIT 2 FOR SILICONE ELASTOMER INSTALLED FIRE STOPS CONSTRUCTED WITH SILICONE FOAM WILL BE ADDRESSED VIA PROPOSED TEST SCHEME 13-3
FIRE STOPS. THERMO-LAG 330-1	COMPLETE (DM 92-077 08/93-05/94)	NEI TEST 2-8	NRC SAFETY EVALUATION OF MAY 22, 1996	THERMO-LAG FIRE STOPS INSTALLED AS TESTED VIA NEI TEST
CABLES WRAPPED IN EXPOSED TRAY	COMPLETE (DM 92-077 08/93-05/94)	SCHEME 15-2 (Unit 1 test) SCHEME 11-1 (Unit 2 test)	NRC SAFETY EVALUATION OF MAY 22, 1996	THREE LAYERS OF FLEXI-BLANKET (330-660) INSTALLED

STATUS OF UNIT 1 UPGRADES - AIRDROPS AND FLEX CONDUIT

COMMODITY	UNIT 1 UPGRADE STATUS	ACCEPTANCE TEST	ACCEPTED BY NRC VIA	REMARKS
LESS THAN 1-1/2" DIAMETER	COMPLETE (DM 92-077 08/93-05/94)	SCHEME 11-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	UPGRADED IN THE SAME MANNER AS UNIT 2
1-1/2" & 2" DIAMETER	TO BE UPGRADED SAME AS UNIT 2	SCHEME 11-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	1) ACCEPTABLE VIA NRC LETTER DATED NOVEMBER 6, 1997 2) THREE LAYERS OF FLEXI-BLANKET (330-660) WILL BE INSTALLED VIA DM-97-014#
GREATER THAN 2" DIAMETER	NONE REQUIRED	SCHEME 11-1 (Unit 2 test)	NUREG 0797 SUPPLEMENT 26	INSTALLATION THE SAME AS UNIT 2

DM-97-014 for airdrop upgrades is presently scheduled to be completed by 12/31/98.