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GL 92-01

C. Lance Terry
Group Vice President

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U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, DC 20555-0001

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446 UNITS 1 AND 2
RESPONSE TO GENERIC LETTER 92-01, REVISION 1, SUPPLEMENT 1,
"REACTOR VESSEL STRUCTURAL INTEGRITY"

REF: 1) NRC Generic Letter 92-01, Revision 1, Supplement 1,
"Reactor Vessel Structural Integrity," dated May 19, 1995

Gentlemen:

On May 19, 1995, the NRC issued Generic Letter 92-01, Revision 1,
Supplement 1, "Reactor Vessel Structural Integrity" (Reference 1).

Pursuant to Section 182a of the Atomic Energy Act of 1954, as amended, and
10 CFR 50.54(f), TU Electric is submitting a response under affirmation
(Attachment 1) to the requested information and requested actions as stated
in Reference 1. The response is provided in Attachment 2.

If you have any questions, please contact Carl B. Corbin at (214) 812-8859.

Sincerely,

C. L. Terry

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

CBC/cbc
Attachments

c - Mr. L. J. Callan, Region IV
Resident Inspectors, CPSES (2)
Mr. T. J. Polich, NRR

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UNIT 1 AND 2 RESPONSE TO NRC GL 92-02, REVISION 1, SUPPLEMENT 1
"REACTOR VESSEL STRUCTURAL INTEGRITY"

BACKGROUND

The Comanche Peak Units 1 and 2 reactor pressure vessels (RPV) were designed and manufactured by Combustion Engineering Inc. (CE). The RPVs were fabricated after the effects of copper (Cu) on irradiation embrittlement were known. The weld wires used to fabricate the beltline welds were low in Cu content and were not Cu coated. The weld wires were also low in Nickel (Ni) content and the welds did not utilize supplemental cold Ni wire additions during fabrication. With low Cu and low Ni welds without cold wire Ni additions, the chemical variability is very low and comparable to that of plate material.

LIMITING RPV MATERIALS FOR EOL RT_{PTS} , P/T LIMIT CURVES, AND LTOP.

As a result of the low Cu and low Ni welds, the Comanche Peak RPVs are plate limited for 10 CFR 50.61 RT_{PTS} at the end of life (EOL) and are plate controlling for the current pressure-temperature (P/T) limit curves and low temperature overpressure protection (LTOP) analysis. For the Comanche Peak Unit 1 RPV: the highest predicted RT_{PTS} at the end of license (EOL) is 100 degrees F (170 degrees F below the screening criteria) for plate material; the highest predicted RT_{PTS} for beltline weld materials at EOL is 41 degrees F (References 1 and 2). For the Comanche Peak Unit 2 RPV: the highest predicted RT_{PTS} at the end of license (EOL) is 94 degrees F (more than 170 degrees F below the screening criteria) for plate material; the highest RT_{PTS} for beltline weld materials at EOL is 41 degrees F (Reference 1 and the Unit 2 Pressurized Thermal Shock (PTS) report which is scheduled to be issued by September 29, 1995). With low EOL RT_{PTS} values and plate limiting critical material, no additional information on our non-Cu coated non-limiting beltline welds will be "relevant" for determining the structural integrity of the reactor vessels since it is controlled by the plate properties.

ACTIVITIES TO IDENTIFY RELEVANT DATA AND SOURCES

WESTINGHOUSE OWNERS GROUP RPV DATA DATABASE:

The Westinghouse Owners Group (WOG) Materials Subcommittee has compiled a database, RPV DATA, of all information relevant to reactor vessel integrity that is available from Westinghouse Electric Corporation, docketed NRC Generic Letter (GL) 92-01 responses, and previous EPRI databases on reactor vessel integrity. The information included in the database is from original fabrication records, reactor vessel surveillance program testing, and other supplemental testing performed by Westinghouse. TU Electric has reviewed this database to identify "sister" plants that contain identical reactor vessel material heats and that would be relevant to the determination of reactor vessel integrity for the Comanche Peak Units. One plant (Palo Verde 2) was identified as having an identical weld heat to the weld material used to fabricate the Comanche Peak Unit 2 RPV but no plants were identified as having identical plate heats for either Comanche Peak unit.

NRC REACTOR VESSEL INTEGRITY DATABASE (RVID):

TU Electric received the initial public issue of the NRC Reactor Vessel Integrity Database (RVID). TU Electric has reviewed this database to identify additional "sister" plants that contain identical reactor vessel material heats and that would be relevant to the determination of reactor vessel integrity for the Comanche Peak Units. No plants were identified other than the one previously identified by the WOG RPVDATA database.

CEOG-REACTOR VESSEL WORKING GROUP:

The Combustion Engineering Owners Group (CEOG) has formed the Reactor Vessel Working Group (RVWG) to address reactor vessel integrity issues for CE fabricated reactor vessels. This group has authorized a task that will compile data from original fabrication records and log books, surveillance test results, and supplemental test results by CE and other NSSS suppliers and utilities. The relevant data will be used to determine a best estimate chemistry for each weld heat fabricated by CE. TU Electric is participating in this effort which is expected to take a minimum of 18 months to complete (Reference 3) plus an additional 6 months to assess the significance of the new data. The length of this schedule does not impact safety for the Comanche Peak Units because the weld materials are not limiting and are not directly "pertinent" to the evaluation of reactor vessel integrity. In fact, the Comanche Peak reactor vessel beltline weld materials will remain more than 200 degrees F below the PTS screening limit of 270 degrees F as documented in the RVID.

RESPONSES TO NRC GL 92-01 SUPPLEMENT 1 QUESTIONS:

NRC Request 1:

A description of those actions taken or planned to locate all data relevant to the determination of RPV Integrity, or an explanation of why the existing data base is considered complete as previously submitted.

TU Electric Response 1:

The Comanche Peak reactor vessels were fabricated with low Cu and low Ni weld material heats. The limiting material for determining RPV Integrity is the beltline plate material. A review of the NRC RVID and WOG RPVDATA databases show no identical match of heats for the limiting plate materials, therefore, no new data is expected. The original data submitted for this limiting plate material was based on actual CMTR data and complete material property tests. Therefore, the data is considered complete as previously submitted. The most limiting weld material for either unit has a predicted EOL RT_{PTS} of 41 degrees F which is more than 200 degrees F below the 10 CFR 50.61 screening criteria and greater than 50 degrees F below the limiting plate. The weld material is, therefore, not pertinent in the determination of reactor vessel integrity. Additionally, the one sister plant identified as having an identical weld heat as Comanche Peak Unit 2, is not limited by this weld heat, but is similarly plate limited and has a predicted EOL RT_{PTS} value over 190 degrees F below the 10 CFR 50.61 screening criteria (Reference 1).

NRC Request 2:

An assessment of any change in best-estimate chemistry based on consideration of all relevant data.

TU Electric Response 2:

The limiting material for determining RPV integrity is the beltline plate material. A review of the NRC RVID and WOG RPV DATA databases show no identical match of heats for the limiting plate materials, therefore, no new data is expected. Since there is no change to the best estimate chemistry for the Comanche Peak limiting reactor vessel plate materials, there will be no impact to reactor vessel structural integrity.

NRC Request 3:

A determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation

TU Electric Response 3:

The determination of vessel integrity for the Comanche Peak reactor vessel materials has been made using the best estimate chemistry without the use of surveillance data. Only one surveillance capsule has been tested from each unit (Unit 2 report is scheduled to be submitted by September 29, 1995) and therefore, position 2 and specifically position 2.1 is not applicable for the Comanche Peak units.

NRC Request 4:

A written report providing any newly acquired data as specified above and (1) the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P/T limits in the technical specifications or (2) a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.

TU Electric Response 4:

The previously submitted LTOP analysis and P/T limit curves in the Technical Specifications were based on the Comanche Peak Unit 1 limiting lower shell plate R1108-1 and the Unit 2 limiting intermediate shell plate R3807-2. Since no new information is available for the limiting plate materials, the previously submitted analysis remains valid. The upper shelf energy values for the weld materials reported for the Comanche Peak reactor vessels are all in accordance with the 10 CFR 50 Appendix G limit of 50 ft-lbs at EOL as previously submitted in the response to the GL 92-01.

Conclusion:

The complete response to NRC Generic Letter 92-01, Revision 1, Supplement 1, questions 1 through 4 are provided above. The response to this Generic Letter is considered complete for Comanche Peak Units 1 and 2. Since TU Electric is participating in the CEOG RVWG task to determine best estimate chemistry values for weld materials, any changes in best estimate chemistry values for the non-limiting reactor vessel beltline welds will be reported by September 1, 1997. The schedule for determining changes to the best estimate weld chemistry will have no effect on determination of reactor vessel integrity. These welds are not limiting materials, are low in both Cu and Ni, and are more than 200 degrees F below the 10 CFR 50.61 screening criteria at EOL.

References:

1. "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.
2. Letter TXX-92516, from W. J. Cahill, Jr., to the NRC, dated November 5, 1992, Transmitting WCAP 13437, "Evaluation of Pressurized Thermal Shock for Comanche Peak Unit 1"
3. CE Owners Group Letter CEOG-95-390, "CEOG Reactor Vessel Working Group Activities to address Reactor Vessel Integrity", David Sager to U.S. Nuclear Regulatory Commission, July 27, 1995.