

TEXAS UTILITIES GENERATING COMPANY

SKYWAY TOWER • 400 NORTH OLIVE STREET, L.B. 81 • DALLAS, TEXAS 75201

August 1, 1985

WILLIAM G. COUNCIL
EXECUTIVE VICE PRESIDENT

Director of Nuclear Reactor Regulation
Attention: Mr. Vincent S. Noonan, Director
Comanche Peak Project
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
DOCKET NOS. 50-445 AND 50-446
VISUAL INSPECTION OF PAINTED NON-PRESSURE
BOUNDARY WELDS

Dear Mr. Noonan:

A significant portion of the reinspection effort at Comanche Peak will involve the reinspection of non-pressure boundary welds (ASME-NF and AWS). This independent third party visual weld reinspection will address completed non-pressure boundary welds, which have been subjected to inprocess and final acceptance inspection, and may have received final protective coatings. After thorough study and careful consideration, it is our intent to conduct this evaluation without removal of the protective coatings. It is our judgement that such an approach will provide reasonable assurance that no safety significant deficiencies exist with respect to the non-pressure boundary welds. Removal of the coatings would provide no significant increase to that assurance. This decision is not without precedent in the industry and TUGCO management and our Third Party contractor feel that it is the prudent approach for the Comanche Peak reinspection program.

In arriving at this conclusion we first evaluated those weld attributes which are considered critical for weld strength, and the effects which paint would have on a visual inspection for those attributes. The following attributes fall into this category: undercut, lack of fusion (usually associated with overlaps), cracks, weld length and size, existence and location. All of these attributes, with the exception of cracks, are detectable and measurable through a paint coating of the type and thickness found at Comanche Peak (a primer and epoxy topcoat averaging approximately 10 mils).

Cracking has not been a problem at Comanche Peak.

- Several independent NRC inspections of support welds, including the recent TRT, reported no evidence of cracking.

8508060137 850801
PDR ADOCK 05000445
G PDR

A047
110

- Several independent and separate reviews (including the NRC) of the welding procedures, welding materials control, and welding inspection documentation indicate no evidence of weld cracking nor any reason to suspect weld cracking as a generic issue. (This included an independent analysis of a very large statistically valid sample of nonconformance reports.)
- From a metallurgical standpoint, there is no reason to suspect weld cracking problems. The materials used are readily weldable, compatible with the electrodes, and historically produce welds which are not prone to cracking.

Undercut is readily detectable through paint. In fact, evidence has shown that paint tends to emphasize undercut if it exists. Regardless, both undercut and overlaps are only significant where fatigue loading is a factor. Fatigue loading is not a factor for these welds.

The remaining inspection attributes: craters, arc strikes, porosity, weld profile, slag, and spatter are all readily visible through a paint coating of the type and thickness found at Comanche Peak.

Recently, similar inspections were allowed by the NRC at Wolf Creek Generating Station. Based on similar analyses by independent consultants, visual inspections of painted fillet welds were conducted on safety-related structural steel. These welds had also been previously inspected and accepted.

Our evaluation of the welding history at Comanche Peak has concluded that only one inspection attribute has presented deficiencies of a recurring nature. Weld undersize has been noted on nonconformance reports, the TRT report, and other NRC inspection reports. Weld size is easily detectable and evaluated through paint.

In summary, there does not appear to be evidence of a significant or generic problem associated with the non-pressure boundary welds or the welding program at Comanche Peak. Significant strength-related attributes can be reliably evaluated through a paint coating. Accordingly, for previously inspected and accepted ASME-NF and AWS non-pressure boundary welds, visual reinspection through paint will provide adequate confidence that the weld will perform satisfactorily in service.

Further, for the inspection of AWS welds, we intend to use the NRC-approved Visual Weld Acceptance Criteria (VWAC) (NCIG-01 Revision 2). Our engineer, Gibbs & Hill, has reviewed the engineering evaluation which forms the basis for the acceptance criteria and has concluded that the criteria are applicable to the non-ASME structural welds at Comanche Peak. Amendment 55 to the CPSES FSAR dated July 19, 1985 incorporated the VWAC (NCIG-01 Revision 2) for inspections of AWS welds. It should be noted that Paragraph 2.5.1 of NCIG-01 allows the use of VWAC on coated welds for inspections subsequent to the acceptance inspection. Our inspectors have been trained to this new criteria. Naturally, should an inspector feel that he is unable to provide an adequate inspection on any particular weld because of its coating, he will be encouraged to have the paint removed to allay any doubts.

A detailed study supporting our decision was given to members of Region IV staff on July 2, 1985, following a detailed briefing of the rationale behind the decision.

Based on the above evaluation it is our intention to conduct the reinspection of non-pressure boundary welds (ASME-NF and AWS) without removal of the protective coatings.

Should you have any questions in this matter, please contact this office.

Sincerely,

M. G. Council

BSD/grr

c - Richard P. Denise, Director
Division of Reactor Safety & Projects
Region IV