



KANSAS GAS AND ELECTRIC COMPANY

GLENN L. KOESTER
VICE PRESIDENT, NUCLEAR

October 30, 1980

Mr. Karl V. Seyfrit
Director, Region IV
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76011

KMLNRC-035

Re: Docket No. STN 50-482

Subj: Interim 50.55(e) Report regarding
Undersized Socket Welds

Dear Mr. Seyfrit:

On September 30, 1980, we reported to your Region IV office that undersized socket welds had been found in Wolf Creek piping.

Attached are two (2) copies of an Interim Report which is submitted pursuant to 10CFR50.55(e).

Please advise if you need additional information.

Yours very truly,

Glenn L. Koester

GLK:bb
Attach 2

cc: Director, Office of Inspection
and Enforcement
c/o Distribution Service Branch, DDC, ADM
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Attach 15 Copies

TVandel, NRC Site Inspector
Attach 1

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INTERIM REPORT
ON
UNDERSIZED SOCKET WELDS
FOR
WOLF CREEK GENERATING STATION
UNIT #1

KANSAS GAS AND ELECTRIC COMPANY

October 28, 1980

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1. Introduction

This interim report, submitted in accordance with 10CFR50.55(e), describes a problem involving the acceptance of deficient socket welds on small piping installed at the Wolf Creek Site under Section III of the ASME Boiler and Pressure Vessel Code. The deficiency was initially reported to the USNRC - Region IV office as a potential 10CFR50.55(e) on September 30, 1980.

Small bore piping size 2" and under is fabricated and erected by the Wolf Creek Constructor (Daniel). Most of the small piping is prefabricated in the on-site weld fabrication shop (shop welds) and subsequently moved into the power block and welded into place. (Field welds)

2. Chronology and Description of Deficiency

For small piping socket welding fittings, the minimum size of the fillet weld between the pipe and fitting body is prescribed by ASME Code rules. If the fillet weld is concave, the size of the weld is not determined by direct measurement, but by calculation involving a theoretical throat size.

On another project, KG&E's constructor had discovered that welds inspected and accepted were in fact undersize according to the Code. Failure to recognize the effect of concavity on weld acceptability was the underlying cause of the welds being accepted by that project. The Constructor conducted a study of Wolf Creek welds at that time (January 1980) and determined that such a problem did not exist at the Wolf Creek Site. This

determination was made using criteria based on checking welds at several positions around the circumference of the weld.

Since that time, however, a re-examination of socket welds using a full 360° sweep of weld circumference (as opposed to several position checks around the circumference) has revealed that a problem with undersized socket welds on small piping does exist.

The re-inspection was performed on 9/26/80 through 9/29/80 and NRC Region IV was notified of a potential 10CFR50.55(e) nonconformance on 9/30/80. Daniel Corrective Action Report #1-M-007 was issued at that time.

3. Scope

Inspection of shop and field welds completed to date shows that:

- 1) Weld rejection rate is 7 to 10%
- 2) Installation or field weld problems were limited to 2" heavy wall pipe (1½", 1", ¾" and ⅜" pipe was determined to be acceptable)
- 3) Problems with welds made in the fabrication shop were isolated to a time period prior to May, 1980
- 4) Installation or field welds could not be isolated to a particular time period.

4. Analysis of Safety Implications

The design and acceptance criteria for the socket weld size is a code rule, therefore failure to comply with a minimum size is considered reportable under 10CFR50.55(e). Because of the large number of systems and individual welds involved, analysis to determine the adequacy of individual undersized

welds is not considered to be productive, therefore all deficient welds identified will be repaired by procedure.

5. Corrective Actions

Actions to correct the problem and prevent recurrence consist of the following:

- 1) Daniel Corrective Action Report was issued on 9/30/80
- 2) All field installation socket welds have been or will be reinspected and those found deficient will be repaired
- 3) All socket welds made prior to May, 1980 have been or will be reinspected. Those found deficient will be repaired
- 4) Socket welds made after April 30, 1980 will be sample reinspected to confirm that the problem does not extend to welds made during this time period
- 5) Travelers involving small piping have been placed on hold at Traveler Stations
- 6) Deficiency Reports are being generated for all welds identified as deficient
- 7) All future inspection of welds will include 360° criteria including the entire weld circumference
- 8) A retraining program has been completed for all Fabrication Shop and Quality Control personnel
- 9) A retraining program for field personnel is currently being established
- 10) The Quality Control Department has re-emphasized socket weld inspection procedures and the inspection process.

6. Schedule

Due to the nature of this problem, it will take several months to identify all nonconforming welds and complete corrective actions. We expect to have all actions completed by July 1, 1981 and at that time will submit a final report or a status report if all corrections are not completed.