



KANSAS GAS AND ELECTRIC COMPANY

GLENN L. KOESTER
VICE PRESIDENT - NUCLEAR

February 7, 1985

R.P. Denise, Director
Wolf Creek Task Force
Reactor Projects Branch 2
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

KMLNRC 85-050
Re: Docket No. STN 50-482
Subj: Final 10CFR50.55(e) Report - RdF
RTD Calibration Uncertainties (53564-K161)

Dear Mr. Denise:

The Attachment to this letter provides the final report submitted pursuant to 10CFR50.55(e) concerning the subject resistance temperature detectors.

If you have any questions concerning this matter, please contact me or Mr. Gene Rathbun of my staff.

Very Truly Yours,

Glenn L. Koester
Vice President - Nuclear

Attach
Enclosure

cc: RCDeYoung
PO'Connor (2)
HBundy
WGuldemand

8502200519 850207
PDR ADOCK 05000482
S PDR

IE-27

Attachment to
KMLNRC 85-050

10CFR50.55(e) Report
on
RdF RTD Calibration Uncertainties
(53564-K161)

Kansas Gas and Electric Company
Wolf Creek Generating Station
Burlington, Kansas

February 7, 1985

10CFR50.55(e) Report on
RdF RTD Calibration Uncertainties

1.0 INTRODUCTION

This report provides a summary of the deficiency discovered concerning calibration uncertainties of RdF resistance temperature detectors (RTDs) used to measure primary system temperature at Wolf Creek. This deficiency was reported to the NRC in accordance with the requirements of 10CFR50.55(e). The initial report was made by Messrs Maynard and Chernoff of KG&E to Mr. Lawrence Martin of NRC Region IV on January 30, 1985. This concern was a new deficiency associated with the same RTD uncertainties as an earlier 10CFR50.55(e) report (References 1 and 2).

2.0 DESCRIPTION OF THE PROBLEM

As noted in Reference 1, a Startup Field Report (SFR#1-BB-150) was generated to document an inconsistency between calculated resistance versus temperature data and measured resistance versus temperature data which were both supplied by RdF. Wolf Creek's RTDs were returned to the vendor for refurbishment or replacement because of construction damage. Due to the extent of the damage, replacement RTDs were provided to Wolf Creek. The replacement RTDs were calibrated by RdF utilizing a revised calibration procedure and shipped to Wolf Creek.

There are sixteen narrow range and eight wide range RTDs utilized in a 4-loop Westinghouse plant. Two narrow range RTDs are installed in each hot leg and cold leg bypass loop. One of these is in service and the other is an installed spare. This report documents the narrow range and wide range RTD effects.

Westinghouse has reviewed the calibration data for the Wolf Creek replacement RTDs and has determined that a revised calibration uncertainty is now appropriate. This calibration uncertainty is used by Westinghouse in their setpoint methodology to determine Reactor Trip System instrumentation trip setpoints. However, the RTDs were shipped to Wolf Creek and the SFR dispositioned allowing their use prior to the completion of Westinghouse's evaluation.

3.0 SAFETY IMPACT

3.1 Narrow Range RTDs

In their evaluations Westinghouse reviewed the Wolf Creek safety analyses and reactor trip setpoint calculations. It was determined that the following Technical Specifications were impacted by the change in RTD calibration uncertainty:

1. Table 2.2-1
 - a. Item 7, Overtemperature Delta-T setpoint
 - b. Item 8, Overpower Delta-T setpoint
 - c. Item 12, Reactor Coolant Flow - low setpoint
2. Specification 3.2.3 and Figure 3.2-3, Flow measurement uncertainty.

Material provided by Reference 3 documented the Technical Specification changes associated with the hardware changeout and is also provided herewith in Enclosure 1 for completeness.

Westinghouse in reevaluating affected safety analyses determined that a revised low reactor coolant flow trip point could be accommodated without significantly changing any resultant accident analyses described in the FSAR. A revised FSAR page is provided herewith in Enclosure 2 which shows the trip point change. This change will be included in the first annual FSAR update.

Had the effects of the greater temperature uncertainty gone unrecognized, Technical Specification required setpoints would have been improperly set.

3.2 Wide Range RTDs

In their evaluation, Westinghouse reviewed the functions which use the wide range RTDs and which could impact plant safety. The post-accident monitoring, cold-overpressure mitigation, and inadequate core cooling monitoring functions were evaluated. It was determined that the increased sensor calibration uncertainties for the RdF RTDs installed at Wolf Creek have no significant impact on the safe operation of the plant.

4.0 CAUSE OF THE DEFICIENCY

This deficiency resulted because the RTD manufacturer supplied hardware to Wolf Creek which did not meet the Westinghouse specification.

5.0 CORRECTIVE ACTION

The safety analysis impacts were evaluated by Westinghouse. With the Technical Specification changes given in Enclosure 1 and the FSAR change given in Enclosure 2 proper reactor protective actions are ensured and FSAR accident analyses envelope design bases conditions. Thus, the evaluation described herein has demonstrated that the revised RFD uncertainty is acceptable.

KG&E procedures will be revised to reflect the new setpoint values. The associated instrumentation will be recalibrated to the new setpoints prior to Wolf Creek's initial criticality.

6.0 REFERENCES

1. KMLNRC 84-158 dated 8/31/84 from GLKoester, KG&E to EHJohnson, NRC
2. KMLNRC 84-216 dated 12/7/84 from GLKoester, KG&E to RPDenise, NRC
3. SLNRC 85-5 dated 2/1/85 from NAPetrick, SNUPPS to HRDenton, NRC