KANSAS GAS AND ELECTRIC COMPANY

GLENN L. KOESTER
VICE PRESIDENT - NUCLEAR

July 9, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

KMLNRC 84-1[illegible]
Re: Dock No. STN 50-482
Ref: NRC Letter dated 6/27/84 from BJYoungblood, NRC, to GLKoester, KG&E
Subj: Boron Dilution Mitigation System Technical Specifications

Dear Mr. Denton:

The Referenced letter requested additional information regarding the KG&E request to delete the Boron Dilution Mitigation System Technical Specifications.

Transmitted herewith is the response to the question in the Referenced letter. This information is hereby incorporated into the Wolf Creek Generating Station, Unit No. 1, Operating License Application.

Yours very truly,

Glenn L Koester

GLK:bb
Attach
xc: PO'Connor (2)
HBundy

A001

OATH OF AFFIRMATION

STATE OF KANSAS)
) SS:
COUNTY OF SEDGWICK)

I, Glenn L. Koester, of lawful age, being duly sworn upon oath, do depose, state and affirm that I am Vice President - Nuclear of Kansas Gas and Electric Company, Wichita, Kansas, that I have signed the foregoing letter of transmittal, know the contents thereof, and that all statements contained therein are true.

KANSAS GAS AND ELECTRIC COMPANY

ATTEST:

By Glenn L Koester
Glenn L. Koester
Vice President - Nuclear

E.D. Prothro
E.D. Prothro, Assistant Secretary

STATE OF KANSAS)
) SS:
COUNTY OF SEDGWICK)

BE IT REMEMBERED that on this 9th day of July, 1984, before me, Evelyn L. Fry, a Notary, personally appeared Glenn L. Koester, Vice President - Nuclear of Kansas Gas and Electric Company, Wichita, Kansas, who is personally known to me and who executed the foregoing instrument, and he duly acknowledged the execution of the same for and on behalf of and as the act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the date and year above written.

EVELYN L. FRY
NOTARY
PUBLIC

Evelyn L Fry
Evelyn L. Fry, Notary

My Commission expires on August 15, 1984.

Questions/Responses - Boron Dilution Mitigation System

Q. By letter dated March 16, 1984, Kansas Gas and Electric Company (KG&E) requested deletion of the Boron Dilution Mitigation System Technical Specification. Based upon our review of your submittal, we have determined that we require additional information to complete our review.

You conclude that automatic termination of the boron dilution event is not necessary, and that manual action can be relied upon based upon a calculated low probability of resulting core damage. The staff has historically allowed reliance of manual action to mitigate boron dilution events. The acceptability of allowing reliance on manual action is based on: (a) assuring that the operator has sufficent time to be alerted to a boron dilution event so that appropriate manual actions can be taken before the subcritical margin is lost, and (b) assuring that appropriate alarms are available to alert the operator to a boron dilution event. The Standard Review Plan (SRP) section identifies acceptable times, from the time the operator is alerted to a boron dilution event, for the operator to take the necessary corrective action for each mode of operation. In general, the alarm system should meet the single failure criterion.

Please demonstrate that manual action can be relied upon to mitigate boron dilution events by showing how your design conforms to the SRP criteria. If you choose not to conform to the SRP criteria (e.g., allow shorter times for operator actions, do not install positive alarms which meet the single failure criterion), please provide justification for the acceptibility of your design. We will specifically need the data base (operational history, similator data, etc.) which supports any significant reduction in the operator action times specified in the SRP.

R. In justifying the deletion of the Boron Dilution Mitigation System (BDMS) Technical Specifications, KG&E did not conform to the Standard Review Plan (SRP) criteria in Section 15.4.6 of NUREG-0800 (Chemical and Volume Control System Malfunction that results in a decrease in Boron Concentration in the Reactor Coolant (PWR). KG&E instead chose to propose an alternative method, as provided for the SRP, for justifying the deletion of the BDMS Technical Specifications. This method employed a probabilistic argument. Similar studies were generated by the NRC for St. Lucie Unit 1 and NUREG-0933 (A Prioritization of Generic Safety Issues).

The study that KG&E generated utilizes conventional PRA techniques in a conservative fashion. We utilized data from Swain and Guttman (NUREG-1278) for human reliability in conjunction with our specific procedures and training to demonstrate the reliability of manual actions. We showed that no significant increase in reliability is achieved by using the automated system. This appears to confirm on a Wolf Creek specific basis the generic conclusions reached by NUREG-0933 in that boron dilution events do not constitute a significant risk to the public. We, in addition, conclude that the automated system does not improve reliability beyond what can be achieved using manual action.