KANSAS GAS AND ELECTRIC COMPANY

GLENN L. KOESTER
VICE PRESIDENT - NUCLEAR

July 17, 1985

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

KMLNRC 85-179
Re: Docket No. STN 50-482
Ref: 1) NRC Letter from BJYoungblood to GLKoester, KG&E, dated May 9, 1985
2) KMLNRC 85-150 dated 6/6/85 to HRDenton, NRC, from GLKoester, KG&E
Subj: Response to Request for Additional Information Regarding Generic Letter 83-28

Dear Mr. Denton:

The attachment to this letter transmits additional information regarding Generic Letter 83-28, Items 4.1, 4.2.1 and 4.2.2 requested by Reference 1.

If you have additional questions concerning this topic, please contact me or Mr. Otto Maynard of my staff.

Yours very truly,

Glenn L Koester

GLK:bb
Attach
xc:PO'Connor (2), w/a
JCummins, w/a

A055
4/1

4.1 REACTOR TRIP SYSTEM RELIABILITY (VENDOR - RELATED MODIFICATIONS)

All vendor - recommended reactor trip breaker modifications have been implemented at Wolf Creek Generating Station (WCGS). Implementation was completed prior to fuel load.

4.2.1 PERIODIC MAINTENANCE PROGRAM FOR REACTOR TRIP BREAKERS

The WCGS preventive maintenance program (PMP) for the reactor trip breakers (RTBs) on a six month basis includes the following items.

1. General inspection, includes checking of cleanliness, all bolts and nuts, pole bases, arc chutes, insulating link, wiring and auxiliary switches;

2. The retaining rings inspection, including those on the undervoltage trip attachment (UTVA) and shunt trip attachment (STA);

3. Arcing and main contacts inspection as specified by the Westinghouse Maintenance Manual;

4. UVTA check as specified by the Westinghouse Maintenance Manual, including replacement of UVTA if dropout voltage is greater than 60% or less than 30% of rated UVTA coil voltage;

5. STA check as specified by the Westinghouse Maintenance Manual;

6. Lubrication as specified by the Westinghouse Maintenance Manual;

7. Functional check of the breaker's operation prior to returning it to service.

The inspection results will be evaluated after several inspection periods and, if experience warrants, the six months frequency will be extended to once per refueling as recommended by Westinghouse.

The WCGS PMP for the reactor trip breakers on a refueling interval includes the following items.

1. Pre-cleaning insulation resistance measurement and recording;

2. RTB dusting and cleaning;

3. Post-cleaning insulation resistance measurement and recording, as specified by the Westinghouse Maintenance Manual;

4. Inspection of main and secondary disconnecting contacts, bolt tightness, secondary wiring, mechanical parts, cell switches, instruments, relays and other panel mounted devices.

5. UVTA trip force and breaker load check as specified by the Westinghouse Maintenance Manual;

6. Functional test of breaker prior to returning to service as specified by the Westinghouse Maintenance Manual.

Measurement and recording the main reactor trip breaker response time for the undervoltage trip is done as a plant surveillance during refueling outages. The measured time is from the loss of the undervoltage coil voltage to loss of rod control stationary gripper coil voltage.

A statement has been added to the Preventive Maintenance Program to caution the maintenance personnel to perform only those activities specified in their work instructions for the reactor protection switchgear.

The vendor - recommended program schedule for the first maintenance activity is six months or when 500 breaker operations have been counted, whichever comes first. Subsequent inspections and tests are recommended to take place at refueling (approximately every eighteen months) or when 500 operations have been counted since the last inspection, whichever comes first. The PMP which controls the periodic maintenance program is based

on the six month/refueling intervals, as applicable rather than the 500 breaker operations. The frequency of unscheduled trips, or breaker operations, would have to be in excess of 3/day during a six month period or 1/day during a refueling period (approximately eighteen months) to obtain the 500 operations to warrant maintenance. Surveillance testing during a refueling interval is not expected to exceed 20 breaker operations, which has minimal impact on the frequency. Therefore, the six month/refueling intervals which are specified in the PMP are the more conservative.

Additional information concerning the WCGS maintenance program for the reactor trip breakers was submitted via Reference 2.

4.2.2 TRENDING OF REACTOR TRIP BREAKERS TO FORECAST DEGRADATION OF OPERABILITY

Generic letter 83-28 identified four parameters as trendable. These are (a) undervoltage trip attachment dropout voltage, (b) trip force, (c) breaker response time for undervoltage trip, and (d) breaker insulation resistance. These items are detailed below.

(a) Undervoltage Trip Attachment Dropout Voltage

The dropout voltage for the undervoltage trip attachment is trended by KG&E. This is accomplished by comparing the average dropout voltage obtained to the average obtained in the three previous maintenance activities. Corrective action will be taken if deviations exist. The Maintenance organization is responsible for this activity.

(b) Trip Force

The Westinghouse Owners Group (WOG) recently completed the life cycle testing on the reactor trip breakers with the final report due to be issued in 1985. The WOG concluded that in 2500 test cycles the UVTA and the STA consistently provided a greater force output than the force required to trip the test breaker. Due to this proof testing, KG&E does not plan on trending the trip force to forecast degradation of operability.

(c) Breaker Response Time for Undervoltage Trip

The breaker response time measurement is taken as a part of Technical Specification plant surveillance procedures. These procedures specify a maximum allowable response time. Corrective actions will be taken if the breaker response time exceeds the value outlined in the procedures. In addition, a systematic review of response time data will be applied to try to provide for early identification of degradation. The Instruemnt and Control Organization is responsible for this activity.

(d) Breaker Insulation Resistance

A minimum breaker insulation resistance is outlined in plant procedures which are consistant with the Institute of Electrical and Electronics Engineers (IEEE) recommendations. Corrective action will be taken if the megger reading is outside the specified range. Trending of megger values obtained to forecast the degradation of operability is not done by KG&E due to the following reasons.

1. KG&E plant procedures comply with IEEE recommendations for interpreting insulation resistance measurements.

2. Temperature, moisture and humidity have marked effects upon resistance values causing test results to vary. Trending this parameter would not accurately forecast degradation of operability.