

**TEXAS UTILITIES GENERATING COMPANY**  
SKYWAY TOWER \* 400 NORTH OLIVE STREET, L.B. 81 \* DALLAS, TEXAS 75201

**R. J. GARY**  
EXECUTIVE VICE PRESIDENT

February 13, 1984  
TXX-4109

Mr. E. H. Johnson, Chief  
Reactor Project Branch 1  
U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76012

Docket Nos.: 50-445  
50-446

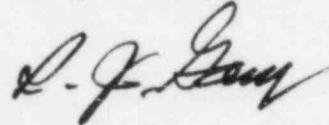
COMANCHE PEAK STEAM ELECTRIC STATION  
FERRORESONANT TRANSFORMERS  
QA FILE: CP-84-04, SDAR-128  
FILE NO.: 10110

Dear Mr. Johnson:

In accordance with 10CFR50.55(e), we are submitting the enclosed report of actions taken to correct a deficiency regarding inverters in the NSSS which have experienced failure.

Supporting documentation is available at the CPSES site for your Inspectors review.

Very truly yours,



RJG:ln

cc: NRC Region IV - (0 + 1 copy)

Director, Inspection & Enforcement (15 copies)  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

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## ATTACHMENT

## Ferroresonant Transformers

Description

Within four (4) months of initial startup testing, three (3) inverters in the NSSS system experienced failure. Initial loading on the inverters was 40 percent to 50 percent of design load. The failures have been attributed to a grounded secondary winding of the inverter ferroresonant output transformers.

A fault analysis performed by the manufacturer (GE) indicates failure is due to shift and vibration of small parts of laminations which compose the center core leg of the transformer. The vibration abrades the coil insulation and, in time, penetrates the insulation connecting the coil and core. Each transformer failure is attributed to insufficient securing of the center leg.

The inverters supply power to the NSSS instrumentation buses. Site engineering has determined the issue is generic to all ferroresonant transformers.

Safety Analysis

In the event the defect had not been detected, the inverters could fail in operation rendering NSSS plant status or monitoring systems inoperable.

Corrective Action

The transformers will be returned to the supplier (Westinghouse) for repair by the manufacturer. Repair will consist of:

- a. Replacing the insulation with material more resistant to abrasion,
- b. Treating the insulation with hard bonding material,
- c. Incorporating improved mechanical wedging for the center leg, and
- d. Hi-pot production tests at 4000V (vs. 2500V) for assurance of dielectric integrity.

Reinstallation of the transformers will be completed no later than thirty (30) days prior to fuel load.