KANSAS GAS AND ELECTRIC COMPANY
THE ELECTRIC COMPANY

GLENN L. KOESTER
VICE PRESIDENT-OPERATIONS

May 3, 1978

Mr. W.C. Seidle, Chief
Reactor Construction and Engineering
Support Branch
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Re: Response to Inspection Report
NRC Docket No. STN 50-482/Rpt. 78-04
Containment Base Mat Ninety-Day
Cylinder Breaks

Dear Mr. Seidle:

As indicated in the referenced report, an investigation of 90-day cylinder breaks has been initiated and is continuing. To date no problem with the actual base mat concrete has been identified. The laboratory tests conducted by the Portland Cement Association indicate that the base mat concrete is considerably above design strength.

The exact cause of the low breaks has not been definitely established and investigations are continuing to try and identify the exact cause. Physical misalignment of the cylinder compression testing machine has been found. This condition is being analyzed in an effort to quantify the effect on indicated strength.

Our preliminary investigations of this matter indicate that this problem is not reportable under regulation 50.55(e); however, when our investigations are complete, we will forward to you a copy of our final report. It is estimated that it will take about 90 days to complete our investigations and prepare the final report.

Yours very truly,

Glenn L. Koester

GLK:bb
cc: JOArterburn
EWCreel
WEHitt
DTMcPhee

TABLE I - PCA COMPRESSION TEST DATA

Power Block
6x12-in. Cylinders
(14 April 1978)

Cyl. No.	Strength psi	Type of Break
7156	6680	D/C
7202	6690	D/C
7208	6260	D/C
7214	6580	D/C
7220	5830	D/C
7232	5980	D/C
7238	5960	D/C
7244	6330	D/C
7250	6170	D
7256	6610	D/C
7262	6390	D/C
7280	6560	D/C
7286	5910	D
7313	6140	D/T
7325	6530	D/C
7331	6030	L/T
7337	5910	D/C
7343	5970	D/C
7356	5860	D/T
7362	5980	D/C
Ave. =	6220	
Max. =	6690	
Min. =	5830	
Std. Dev. =	302	

D = diagonal
C = conical
L = lengthwise
T = transverse

Basemat
2x2 [illegible]
(17 April 1978)

Cyl. No.	Corrected Strength (80% of total) psi
6408	6680, 6700
6413	6400, 7950
6438	6350
6443	5700, 6440
6449	5640
6450	5280
6456	6500
6473	5060, 5210
6479	6380
6498	6200
6509	5540
6510	5160, 5180
6707	5160, 5920
Ave. =	5970
Max. =	7950
Min. =	5060
Std. Dev. =	752

Data from Companion Cylinders tested by Daniel

Ave. =	5370
Max. =	6110
Min. =	4360
Std. Dev. =	477

These data indicate normal strengths at 90 days. Aggregates were sheared in all cylinder breaks and the most common fracture surface was a combination of diagonal and conical forms, not substantially different from forms observed on Daniel's tested cylinders. The diagonal break might be explained by the fact that most of the cylinder bottoms were slightly rounded, with the relative high-point in the center.

A 2x2" cube was cut from remnant of Cylinder No. 6431 and compression-tested on April 7, 1978. Compressive strength, after 20% correction, was 6810 psi. This compressive strength is not included in the statistical calculations.

Don Campbell

DON CAMPBELL
Petrographic Services

md

CT-0407