



KANSAS GAS AND ELECTRIC COMPANY

GLENN L. KOESTER  
VICE PRESIDENT-OPERATIONS

POOR ORIGINAL

February 28 1979

Mr. Karl V. Seyfrit  
Director, Region IV  
Office of Inspection & Enforcement  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76012

REGULATORY DOCKET FILE COPY

Re: Docket No. STN 50-482  
Subj: Wolf Creek Reactor Building Base Mat

Dear Mr. Seyfrit:

The purpose of this letter is to furnish the NRC with an update of current information relating to the ongoing investigation of the Wolf Creek Reactor Building base mat. Transmittal of information at this time is consistent with Kansas Gas and Electric Company/Kansas City Power & Light Company (KG&E/KCPL) policies of keeping the NRC currently informed of developments concerning the Wolf Creek unit.

As indicated in my letter of January 16, 1979 to Mr. Licitra, KG&E/KCPL has initiated a comprehensive testing program at the Portland Cement Association's (PCA) Construction Technology Laboratories at Skokie, Illinois, using remnants of the 90-day test cylinders initially produced for the Wolf Creek base mat tests. This program was directed primarily to those cylinders that had reported strengths of less than 5000 psi at age 90 days and those cylinders in which a stress reversal was indicated. Results from this program are summarized in PCA Report, "Wolf Creek Generating Station Reactor Basemat Concrete Second Testing Program" dated February 27, 1979, a copy of which is attached for early NRC review and comment.

The PCA investigations of compressive strengths were based upon tests of 2 x 2 inch cubes cut from previously tested concrete cylinders. Results of these tests according to the PCA report "...indicate an average corrected strength of 6690 psi, with a range of 5340 to 7960 psi." Petrographic analysis and air content measurements were also made from these remnants and were judged by PCA to be satisfactory. Of particular interest is the PCA conclusion that the test data "...strongly suggest that the concrete is of high quality, the materials being properly proportioned, batched and mixed." As previously discussed, cylinder remnants can also be made available to the NRC or its representatives for independent testing and analysis.

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Further field investigations into this matter are presently contemplated involving the batching of concrete using the same mix design and materials utilized during the Wolf Creek base mat pour. These investigations, a part of a total re-examination of concrete production at Wolf Creek site, are being formulated by KG&E/KCPL's technical consultant, Mr. W.R. Waugh, and are intended to establish empirical correlations of these tests with results from earlier testing and analyses. Of particular interest are tests to establish correlation factors for full size cylinder compressive tests as compared to the compressive strength tests performed by PCA on 2 x 2 inch cubes. On the basis of current schedular data, these field investigations are targeted for completion within the next several months. In view of our plans for conducting full 90-day compressive strength tests, there appears to be little opportunity for improvement of this preliminary schedule.

As indicated in my letter to Mr. Roger Boyd dated February 21, 1979, we are having PCA perform testing on remnants from 28-day cylinders. This information should be available prior to the results of the field investigation. We will forward this information to you when it is received from PCA. We will keep you informed of the status of these investigations and welcome your representatives to witness any or all tests conducted thereunder.

Although the series of tests of concrete provides a sound technical basis for believing that the compressive strength of the Wolf Creek base mat greatly exceeds the specified 5000 psi, we remain fully committed to resolving questions concerning its acceptability. We will continue to commit all resources at our disposal to achieve this objective.

Yours very truly,

*Allen L. Kester*

GLK:bb

Enc: 1) Portland Cement  
Assoc. Report

cc: Mr. Roger S. Boyd, Director  
Division of Project Management  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Enc: 1) Portland Cement Assoc. Report.

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