Docket No: STN 50-482

Mr. Ron Eilers
1512 South Parkwood Lane
Wichita, Kansas 67218

Dear Mr. Eilers:

Your mailgram of July 16, 1979, to Mr. Harold Denton, concerning the concrete in the Wolf Creek base mat, has been referred to me for a reply. In your mailgram, you expressed concerns about evaluations performed on the concrete and request further tests by an "unbiased private specialist".

We appreciate your concerns and would like to provide the following comments on this matter.

The requirements originally established for the base mat are the design criteria specified in the Wolf Creek Preliminary Safety Analysis Report (PSAR). These criteria require that the base mat be designed to withstand specified design loads and loading combinations without impairment of structural integrity or safety function.

To satisfy these criteria, the architect-engineer for the Wolf Creek plant had specified a concrete strength of 5,000 pounds per square inch along with other design parameters (e.g.; concrete thickness and rebar design). After the concrete for the base mat had been placed, strength tests performed at the specified 90-day curing period gave results in some cases which were less than 5,000 pounds per square inch.

As a result of the above situation, the Kansas Gas & Electric Company (the lead applicant for the Wolf Creek plant) had a number of strength tests and petrographic analyses performed on the previously tested concrete samples to evaluate the situation. The applicant concluded that the results of these tests and analyses indicated no signs of sub-standard concrete, inadequate mixing or adverse chemical reaction, or that the concrete was getting weaker with time.

At our request, an independent petrographic analysis was also performed on the concrete samples by the U.S. Army Corps of Engineers. The results of the analysis performed by the Corps of Engineers agreed with the applicant's results.

Additionally, the applicant performed a reanalysis of the base mat, at our request, to determine if the indicated strength of the concrete based on the 90-day test results would satisfy the design criteria specified in the Wolf Creek PSAR. The applicant calculated this strength to be 4,460 pounds per square inch as compared to the 5,000 pounds per square inch value originally specified by the architect-engineer. The applicant then performed a reanalysis of the base mat based on a concrete strength of 4,460 pounds per square inch to demonstrate that the design criteria in the PSAR were met.

Our evaluation of the Wolf Creek base mat, included the tests and analyses discussed above. Based on our evaluation, we concluded that the base mat concrete strength has not retrogressed, that the strength of the base mat meets the original design criteria in the Wolf Creek PSAR, and that the mat will withstand the specified design loads and loading combinations without impairment of its structural integrity or its safety function.

In summary, the applicant has demonstrated that the Wolf Creek base mat does meet the original design criteria specified in the Wolf Creek PSAR.

Sincerely,

Original Signed by
Olan Parr

Steven A. Varga, Acting Assistant Director
for Light Water Reactors
Division of Project Management