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DEisenhut
BJYoungblood
GEdison
MRushbrook
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RWescott

bcc:
TERA
NRC/PDR
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NSIC
TIC
ACRS (16)

Docket No.: STN 50-482

Mr. Glenn L. Koester
Vice President - Nuclear
Kansas Gas and Electric Company
201 North Market Street
Wichita, Kansas 67201

Dear Mr. Koester:

Subject: Request for Additional Information for the Review of the Wolf Creek Plant Unit 1 Regarding Hydrologic Engineering - Environmental

As a result of our continuing review of the Wolf Creek Plant, Environmental Report, we find that we need additional information to complete our evaluation. The specific information required is in the area of hydrologic engineering and is presented in the Enclosure.

To maintain our licensing review schedule for the Wolf Creek Plant ER, we will need responses to the enclosed request by October 2, 1981. If you cannot meet this date, please inform us within seven days after receipt of this letter of the date you plan to submit your responses so that we may review our schedule for any necessary changes.

Please contact Dr. G. E. Edison, Wolf Creek Licensing Project Manager, if you desire any discussion or clarification of the enclosed request.

Sincerely,

Original signed by:
B. J. Youngblood

B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

Enclosure:
As stated

cc: See next page

OFFICE	DL:LB#1	DL:LB#1					
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	9/21/81	9/22/81					

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HYDROLOGIC ENGINEERING ENVIRONMENTAL QUESTIONS
WOLF CREEK GENERATING STATION, UNIT 1
DOCKET NUMBER 50-482

240.0 Hydrologic and Geotechnical Engineering Branch

240.16 (ER) (2.4.1.2) a) Section 2.4.1.2.2, p. 2.4-8 states that there are 34 water right permits granted for irrigation use along the Neosho River from the mouth of Wolf Creek to Oklahoma. However, Table 2.1-19 lists only 30 of these permits. Please update Table 2.1-19 to include the additional 4 irrigation permits.

b) The maximum rate of appropriated surface water from the John Redmond spillway location to the Oklahoma state line is stated in Section 2.4.1.2.2, p. 2.4-8 to be 239,404 gpm. Table 2.1-19 indicates that the authorized maximum diversion rate from the Neoshos River downstream of the confluence of Wolf Creek is 115,469 gpm. Please explain the discrepancy in these values. If the discrepancy is the result of diversions between the John Redmond Reservoir and Wolf Creek please furnish the appropriate information as given in Table 2.1-19.

c) The maximum annual quantity of water authorized to be diverted from the Neosho River as stated in Section 2.4.1.2.2, p. 2.4-8 (117,065 acre-feet) is four times larger than the total quantity indicated in Table 2.1-19 (29,989 acre feet). Please explain the discrepancy as in b) above.

240.17 (ER) (2.4.1) Table 240.14/240.15-1 gives the 100-year peak flood flow for Wolf Creek below the cooling lake dam under natural conditions as 8,363 cfs. How does this value compare with the peak flood flow used to arrive at the flood prone area due to the 100-year flood found in Flood Hazard Boundary Maps for Coffey County?

240.18 (ER) (2.4.2.1) In Section 2.4.2.1.1 influent conditions on the Neosho River are purported to result in horizontal migration into the alluvium of 100 to 200 feet. Please provide the data to support this estimate, and what method(s) and parameter values were used.

240.19 (ER) (2.4.2.1) In the first sentence of the last paragraph on page 2.4-12 is written, "where it is saturated, the weathered bedrock (except limestone) has a greater permeability than the overlying soil zone." Please provide data to support this statement because comparable values for soil and bedrock are not presented in Table 2.4-7 nor anywhere else in relevant position of the text. Also, it is inferred (in the same sentence) that weathered limestone members probably do not exhibit permeability greater than or equal to the soil or bedrock shale members. Yet the latter are often confining units of the limestone aquifers. Furthermore, data presented in Table 2.4-7 show that the Plattsmouth Limestone has permeabilities approximately one to two orders of magnitude greater than some weathered shale members. Please explain these contradictions.

240.20 (ER) (2.4.2.1) A water level recorder chart is shown in Figure 2.4-13 for a monitor well. Please provide a map showing the wells exact location. What depth and stratigraphic interval does the data represent?

240.21 (ER) (2.4.2.1) Please provide data to support the effective porosity values used to determine average linear velocities in the Plattsmouth Limestone and Shale members. Based on attached references the reported values are unreasonably high.

240.22 (ER) (2.4.2.1) Is the Heumader Shale Member considered to be an aquifer or aquitard or both within and proximal to the cooling lake area? Please support your position with data from tables and/or references.

240.23 (ER) (2.4.2.1) You state that in-situ permeability tests were performed using falling head methods. These methods however, are subject to numerous problems ranging from construction of the infiltration sump to chemical incompatability of the water used in the test. To assess the validity of the tests run, please provide a detailed description of the methods, techniques, and an analysis of these tests, including construction, completion and development of test wells.

240.24 (ER) (2.4.2.1) In Section 2.4.2.4.2 you state that seepage rates from the cooling lake will not increase due to quarrying of Plattsmouth and Toronto Limestones prior to filling. As most of the restriction to flow is reportedly caused by the overburden materials which will be removed during quarrying, your conclusion about the seepage rates appears to be unsupported. Please provide the rationale for this statement.