NRC PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 16 1978

Docket Nos: STN 50-556
STN 50-557

Mr. T. N. Ewing, Manager
Black Fox Station Nuclear Project
Public Service Company of Oklahoma
P. O. Box 201
Tulsa, Oklahoma 74102

Dear Mr. Ewing:

SUBJECT: ABILITY OF ULTIMATE HEAT SINK TO WITHSTAND TORNADO MISSILES (BLACK FOX STATION UNITS 1 AND 2)

In Section 9.3.4, "Ultimate Heat Sink," of our Safety Evaluation Report related to the construction of the proposed Black Fox Station, NUREG-0190, we concluded that the ultimate heat sink, which will consist of two mechanical draft cooling towers located on a common basin, will be adequately protected against tornado missiles. Our conclusion was based on the description provided in the Preliminary Safety Analysis Report of the design of the structures housing the cooling towers.

The cooling tower fans and discharge nozzles will be adequately protected against tornado missiles up to an elevation of approximately 50 feet above plant grade by seismic Category I structural barriers. However, upon closer examination, it does not appear that the cooling tower discharge nozzles and fans will be protected against tornado missiles above that level.

It is our position that design basis missiles such as the wood plank, steel rod, and steel pipes are capable of striking in all directions and at all elevations relative to plant structures. In addition, in the case of mechanical draft cooling towers, we believe that even smaller debris normally associated with a tornado wind field may have the potential for damaging the fans. In view of this, we can not support our earlier conclusion regarding the adequacy of the tornado missile protection of the cooling towers and, therefore, consider this matter unresolved.

Accordingly, we request that within three weeks of your receipt of this letter, you either (1) demonstrate that the ultimate heat sink cooling towers need not be relied upon to provide the required long-term cooling capability, or (2) modify the design of the cooling towers to provide tornado missile protection for the

fans and discharge nozzles. Should you desire clarification of the information requested or wish to meet with us concerning this matter, please contact Cecil Thomas, Project Manager for the proposed Black Fox Station.

Sincerely,

Steven A. Varga, Chief
Light Water Reactors Branch No. 4
Division of Project Management

cc: See next page

Public Service Company of Oklahoma

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ccs w/encl:

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