

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

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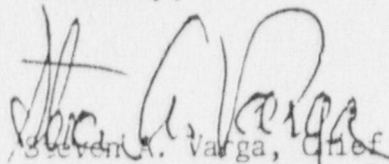
Mr. T. N. Ewing

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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,

A handwritten signature in dark ink, appearing to read "Steven A. Varga". The signature is fluid and cursive, with a large initial "S" and "V".

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:

Mr. Vaughn L. Conrad
Public Service Company of Oklahoma
P. O. Box 201
Tulsa, Oklahoma 74102

Sheldon J. Wolfe, Esq.
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Paul M. Murphy, Esq.
Isham, Lincoln & Beale
One 1st National Plaza
Suite 4200
Chicago, Illinois 60606

Mr. Frederick J. Shon, Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Joseph Gallo, Esq.
Isham, Lincoln & Beale
1050 17th Street, N. W.
Washington, D. C. 20036

Dr. Paul W. Purdom
Director, Environmental Studies Group
Drexel University
32nd and Chestnut Street
Philadelphia, Pennsylvania 19104

Dr. M. J. Robinson
Black & Veatch
P. O. Box 8405
Kansas City, Missouri 64114

Mr. Maynard Human
General Manager
Western Farmers Electric Cooperative
P. O. Box 429
Anadarko, Oklahoma 73005

Mr. Gerald F. Diddle
General Manager
Associated Electric Cooperative, Inc.
P.O. Box 754
Springfield, Missouri 65801

Ms. Carrie Dickerson
Citizens Action for Safe Energy, Inc.
P.O. Box 924
Claremore, Oklahoma 74107

Ms. Ilene H. Younghein
3900 Cashion Place
Oklahoma City, Oklahoma 73112

Andrew T. Dalton, Jr., Esq.
1437 South Main Street
Tulsa, Oklahoma 74119