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

NOV 6 1978

A

Docket Nos. 50-369
and 50-370

Mr. William O. Parker, Jr.
Vice President, Steam Production
Duke Power Company
P. O. Box 2178
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Parker:

SUBJECT: FUEL BUILDING VENTILATION SYSTEM
(McGuire Nuclear Station, Units 1 and 2)

As a result of our continuing review of the McGuire Nuclear Station design, we find that we are in need of some additional information regarding the fuel building ventilation system. This information is described in the Enclosure. Your prompt response to this request will be appreciated.

Please contact us if you have any questions regarding this matter.

Sincerely,

Robert L. Baer

Robert L. Baer, Chief
Light Water Reactors
Branch No. 2
Division of Project Management

Enclosure:
As Stated

ccs w/enclosure:
See page 2

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cc: Mr. W. L. Porter
Duke Power Company
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Mr. R. S. Howard
Power Systems Division
Westinghouse Electric Corporation
P. O. Box 355
Pittsburgh, Pennsylvania 15230

Mr. E. J. Keith
EDS Nuclear Incorporated
220 Montgomery Street
San Francisco, California 94104

Mr. J. E. Houghtaling
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2536 Countryside Boulevard
Clearwater, Florida 33515

Mr. Jesse L. Riley, President
The Carolina Environmental Study Group
854 Henley Place
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418 Law Building
730 East Trade Street
Charlotte, North Carolina 28202

Mr. William O. Parker, Jr.

cc: Robert M. Lazo, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Emmeth A. Luebke
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Director
Bodega Marine Lab of California
P. O. Box 247
Bodega Bay, California 94923

ENCLOSURE

Request For Additional Information
Accident Analysis Branch
McGuire Nuclear Station, Units 1 & 2

NOV 6 1978

I. Provide an evaluation of the exfiltration that can occur from the fuel storage building under fuel handling accident conditions. Your evaluation should include a calculation of the expected flow of air through the paneled areas of each side of the building, and the resulting negative pressure, as a function of wind speed. Determine the wind speed at which air will begin to flow out of the building, and the flow rate as a function of wind speed. The degree of mixing assumed in the building should be justified. If complete mixing in the fuel building is assumed, this exfiltration flow will contain activity at the same concentration as the air which reaches the filters in the exhaust system. This fact can then be used to apportion the fractions of filtered and unfiltered release which is occurring at each wind speed. The atmospheric dispersion factor may be considered inversely proportional to the wind speed, starting from the value used in the base case analysis, which is usually 1 m/sec.

II. In order that we may evaluate your analysis, and perform independent analyses as necessary, provide the following information:

- Information and considerations for evaluating fuel handling accidents outside containment.
- Area of panel siding on each of four faces of building exposed to winds.
- Area of panel siding not exposed to winds (connected to other buildings).
- The pressures that can be expected in connected buildings.
- Size and locations of doors and major penetrations.

- Flow rate of exhaust air passing through the area occupied by the fuel pool.
- Differences between total supply air and total exhaust air flow for fuel building.
- Readable drawing showing the location and layout of the building ventilation system and important building features.
- Leakage test data as follows:
    - . Wind speed and direction with respect to building during tests.
    - . Negative pressure measured in building for two different supply air flows.
    - . Locations of pressure reference points, instrument type and accuracy.

For a spectrum of wind speeds (1 to 10 m/sec) having velocity pressure P_v:

- Positive fraction of velocity pressure assumed for windward paneled areas.
- Negative fraction of velocity pressure assumed for leeward paneled areas.
- Negative fraction of velocity pressure assumed for paneled areas parallel to winds.
- Area assumed to have higher negative pressures to allow for unusual wind pressure patterns, and the pressure assumed.

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