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BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
Upton, New York 11973

Department of Nuclear Energy (516) 345- 2144

December 28, 1979

Mr. Robert L. Ferguson
Plant Systems Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Dresden 2 and 3 - Fire Protection Review items 3.1.5 and 3.1.6

Dear Bob:

Information on design review items in 3.1.5 Water Suppression Systems and 3.1.6 Gas Suppression Systems, were submitted in September of 1978. Upon review of this information, additional details were requested on a number of sub-items. This additional information was submitted on November 30, 1978, January 4, 1979, March 7, 1979, June 11, 1979, July 13, 1979 and July 24, 1979.

The sub-items under 3.1.5 Water Suppression

a. Water deluge system, high pressure core injection room,
b. Sprinkler system extension-elevation 495 feet, Turbine Building,
c. Sprinkler system unit 3 Cable tunnel,
d. Water suppression - turbine trackway,
e. Sprinkler system - crib house

have been reviewed and found acceptable.

Sub-item: Sprinkler system Cable Concentration on mezzanine turbine building elevation 534 feet has also been reviewed but additional information is required from the utility. These details consist of the detection system for the actuation of the preaction sprinkler system.

Item 3.1.6 Gas Suppression system is still open. The conceptual drawings for the gas suppression system for the auxiliary electrical room and computer room are acceptable except additional information will be submitted by the licensee on concentrations, soak time, discharge rate underfloor coverage and a coverage of small area in the tunnel. This information will be reviewed upon receipt and an additional letter written.

Respectfully yours,

R. E. Hall per mac

Robert E. Hall, Group Leader
Reactor Engineering Analysis

REH:EAM:sd
cc.: R. Cerbone
W. Kato
E. MacDougall
V. Panciera
E. Sylvester

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ENCLOSURE 3

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
Upton, New York 11973

Department of Nuclear Energy (516) 345-2144

February 28, 1980

Mr. Robert L. Ferguson
Plant Systems Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Dresden 2 and 3, Fire Protection Review, Items 3.1.5 and 3.1.6.

Dear Bob:

Attached are items 3.1.5, Water Suppression Systems, and Item 3.1.6, Gas Suppression Systems for the Dresden 2 and 3 Nuclear Power Plant.

Respectfully yours,

Robert E. Hall

Robert E. Hall, Group Leader
Reactor Engineering Analysis

REH:EAM:sd
attachment
cc.: R. Cerbone wo/att.
L. Derderian
W. Kato wo/att.
E. MacDougall
V. Panciera wo/att.
E. Sylvester

DRESDEN 2 and 3

Fire Protection Review

Item 3.1.5 - Water Supression Systems

Information on item 3.1.5, Water Suppression Systems, was submitted in September 28, 1978. Upon review of this information, additional details were requested on a number of sub-items. This additional information was submitted on November 30, 1978, January 4, 1979, March 7, 1979, June 11, 1979, July 13, 1979, July 27, 1979, and December 4, 1979.

All the items under 3.1.5 for review were acceptable except for the preaction system on the mezzanine. This system protects the cable concentration containing redundant divisions of cables.

The actuation of the deluge valve is by ionization detectors located at the ceiling, 24 feet above the floor. Due to the cold smoke produced by many cable fires, a fire could develop and obtain a foothold before the detectors actuated. We recommend that the detectors for deluge valve actuation be line detection type or spot detectors located between the horizontal trays.

Low pressure air supervision has been provided for the sprinkler piping protecting the trays. We recommend that the pressure sensing switch be located on the system side of any regulators or check valves.

Based on the above review and implementation of the above recommendations, 3.1.5 Water Suppression Systems is satisfactory and we recommend that it be accepted by the staff.

Item 3.1.6 - Gas Suppression System

Information on item 3.1.6 Gas Suppression System (auxiliary electrical equipment room) was submitted on September 28, 1978. Upon review of this information additional details were requested from the licensee on concentration, soak time, underfloor coverage, coverage of small area in tunnel and discharge rate.

During a telephone conversation with the licensee the following information was provided.

1. Halon concentration of 5% within 10 seconds for a soak time of 10 minutes.

2. Carbon dioxide concentration of 50% within 10 seconds for a soak time of 10 minutes.

3. The underfloor area in the computer room and the small tunnel area would not have discharge nozzles.

4. Alternative shutdown is provided outside the auxiliary electrical equipment room.

5. Detection for system actuation has been provided under the computer room floor and in the small tunnel area.

Normally, we would recommend a Halon concentration of 7%. However, based on the alternative shutdown capability from this area, the lower Halon concentration of 5% is acceptable. During concentration testing of the systems, the time to reach design concentrations in the computer room underfloor area and the small area of the tunnel should be monitored. This time to reach design concentration should not exceed 5 minutes for Halon nor 7 minutes for carbon dioxide. If these times are exceeded, we recommend that discharge nozzles be provided in the two areas.

Based upon the above review and comments, we find 3.1.6, Gas Suppression Systems, satisfactory and recommend that they be accepted by the staff.