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

March 5, 1979

Docket No. 50-313

Mr. William Cavanaugh, III
Executive Director, Generation
and Construction Department
Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

We have reviewed your submittals dated January 18 and 31, 1979, concerning the fire protection modifications of Arkansas Nuclear One - Unit 1. We find that additional information is needed and that changes to your proposed modifications are needed to meet our criteria of acceptance.

Enclosed is our request for additional information and our positions relating to your proposed modifications. Since the modifications are scheduled for implementation during the forthcoming refueling outage, we request a response as soon as possible in order that the continued review of the proposed modifications will not impact upon your refueling schedule.

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosure:
Request for Additional
Information

cc: See next page

cc:
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Mr. Daniel H. Williams
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Mr. John W. Anderson, Jr.
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Request for Additional Information and NRC Positions

Concerning

Fire Protection Modifications as Proposed

in Letters Dated January 18 and 31, 1979

for

Arkansas Nuclear One - Unit 1

1. SER Items 3.3 (Corridor No. 98) and 3.7 (Cable Spreading Room):

   a. Additional details are required on the temperature rating, placement and performance characteristics of the Protectowire detection system. The specifications should indicate the configuration of the Protectowire installation pattern and whether it is to be laid on the top of the cable trays or attached to the underside. The design should be supported by test data or analysis verifying that the response time will be rapid enough to prevent damage to the exposed safe shutdown cables in conduit (Spec Item 9.7.2).

   b. The detectors, when installed, should be tested in place to determine their adequacy with respect to the number and their placement. As a result of the testing and with the required response time analysis establish the effectiveness of the proposed system. For those areas where the speed of the response is critical, provide an analysis of the detector performance criteria establishing the required response time (Spec Item 9.1.3.1).

   c. The reliability of the Protectowire system should be improved by installing the system so that every other cable tray (vertically and horizontally) is in a different zone. Then, if there is any malfunction of one zone, the fire will still be detected promptly by the Protectowire zone in the next adjacent tray (Spec Item 9.7.2.3).

   d. The reliability of the water spray system should be improved by designing the logic of the actuation system so that it includes the following combinations as possible actuation modes:
      (1) Actuation of any one smoke detector and any one Protectowire zone;

      (2) Actuation of any two Protectowire zones; or

      (3) Actuation of any two smoke detectors.

      The system should still alarm on actuation of any one smoke detector or Protectowire zone (Spec Item 9.7.2.4).

e. Compliance should be required with NFPA 72-E-1978, "Standard on Automatic Fire Detectors" (Spec Item 6.2).

f. Identify the location of the manual tripping station(s).

g. Identify the circuitry (power, actuation, and alarm) or portions of circuits that will be electrically supervised for open circuits, shorts to ground, and line-to-line shorts. (This is not called out in the system specification). (Spec Item 9.7.6.3).

h. The water system should be capable of supplying the water spray system plus hose lines with one fire pump out of service. Identify how many fire pumps the specified 3,800 gpm at 109 psig assumes to be in operation (Spec Item 8.2).

i. Provide schematics showing the normal and emergency power supply for the line-type heat detectors. (Spec Item 9.7.6.1). Verify that all portions of the detection and actuation systems are provided with an emergency power source.

j. Verify that all circuit supervision, including that for the existing smoke detectors in the cable spreading room, will actuate audible and visual trouble signals in the control room. (This is not called out in the system specification.)

k. Referring to Section IV, page 4, of the "Description Report," it is not clear if the trouble alarm can be silenced when the test switch at C463 is in position to prevent automatic operation of the water spray system. It should not be possible to silence this alarm. In addition, a light should also be provided on the main control panel to indicate this condition of impairment.

l. The statement on Section IV, page 5, of the "Description Report" that solenoid valve number 2 is mechanically operated while solenoid valve number 1 is electrical requires clarification.

2. SER Items 3.4 (Switchgear Rooms) and 3.8 (Upper North Electrical Penetration Room)

a. The licensee should provide test data or reference submitted test reports to support the design of the Kaowool installation to protect safe shutdown conduits from fire.

b. Zone 99-M (North Switchgear Room): Conduits EC1190 and EC1237 should be protected by insulation rather than by spraying the exposing cable trays with fire retardant mastic.

c. Zone 149-E (north upper electrical penetration area): Conduit EB1096 should be protected by insulation rather than by spraying the exposing redundant cable tray with fire retardant mastic.

3. SER Item 3.11 (Hose Stations):

a. The location of proposed fire hose stations in the Reactor and Auxiliary Buildings is considered acceptable; however, additional pressure and flow data is required to properly evaluate the capability of the proposed systems.