



BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.

Upton, New York 11973

(516) 345- 2144

Department of Nuclear Energy

April 17, 1980

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

RE: Indian Point 3, Fire Protection Review, Items 3.1.8(2), 3.2.4, and 3.2.1.

Dear Bob:

Attached is Brookhaven National Laboratory's input on Item 3.1.8(2), Sprinkler Systems, Item 3.2.4, Cable Spreading Room, and Item 3.2.1, Separation of Instrumentation in Containment, for Indian Point 3 nuclear power plant.

Respectfully yours,

Robert E. Hall, Group Leader
Reactor Engineering Analysis

REH:EAM:sd
attachment

cc.: V. Benaroya	wo/att.	M. Levine	wo/att.
L. Derderian		E. MacDougall	
D. Eisenhut		V. Noonan	wo/att.
H. George		V. Panciera	
W. Kato		E. Sylvester	

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INDIAN POINT 3

Fire Protection Review

Items 3.1.8(2) and 3.2.4 - Sprinkler System, Tunnel and Penetration Areas, and Cable Spreading Room

On February 28, 1980, the licensee forwarded to the Nuclear Regulatory Commission (NRC) written documentation of verbal discussions with Mr. Hank George of the NRC staff. This letter was to resolve the items listed above. The following is the licensee's reply:

1. The system will meet the design density requirements of NFPA 15-1977.
2. The newly designed sprinkler will extend 15 feet into the tunnels.
3. Cable tray protection will also be provided on the cable spreading room side of the proposed wall.
4. The detectors will be provided over each cable tray.

The suppression systems protecting the cables on each side of the open area between the wall and the tunnel will be on separate feeds such that failure or isolation of any section of fire suppression piping will not incapacitate both systems.

Based upon the above review, 3.1.8(2) Sprinkler Systems and 3.2.4 Cable Spreading Room, fire protection are satisfactory and we recommend that the staff accept these items.

Item 3.2.1 - Separation of Instrumentation in Containment

Section 3.2.1 of the SER questions the adequacy of separation of redundant instrumentation at the penetration area in containment. A visit to the plant was made on May 3 and 4, 1979 to examine this area.

Based on this visit a position was taken by the NRC and forwarded to the licensee. The position is as follows:

Barriers are provided at certain locations inside containment to separate redundant safe shutdown instrumentation cabling. However, no barriers are provided between redundant instrumentation cabling at the penetration area and tested barriers have not been used to protect instrumentation elsewhere in the containment. To provide adequate separation between redundant cabling in the containment area, in general, we recommend that both the following be met.

- a. Provide test data to demonstrate the adequacy of the existing barriers to prevent a fire below the barrier from damaging cables in trays above the barrier, or install tested thermal barriers, such as Kao-Wool, to insulate the lower cable tray containing instrumentation

cables of one channel where the redundant instrumentation cables are stacked in a tray above. The fire barrier installation should conform to a design which has been tested to demonstrate a 1-hour fire rating, and

- b. Thermal barriers, as above, should also be installed to enclose one channel of safe shutdown instrumentation both where the cabling crosses from the stack of trays over to the penetration area, and at the penetration area. An acceptable alternative to this would be to provide tested barriers to separate cable trays presenting an exposure hazard to the safe shutdown instrumentation. The channel to be protected should also be the channel that is located in the lowest tray where the redundant instrumentation cable trays are stacked above each other (channel 4).

The licensee's response on February 28, 1980 to this position is as follows:

- a. The authority will install tested fire barriers, such as "M" board (BISCO) or high temperature fabric blankets (TECH-SIL), to enclose the lower cable trays of one channel where the redundant instrumentation cable trays are stacked above each other. The fire barrier installation will conform to a design which has been tested to demonstrate a minimum 1-hour fire rating.
- b. The authority will install similar fire barriers as specified above, to enclose the same channel of safe shutdown instrumentation both where the cabling crosses from the stack of trays to the penetration area and at the penetration area.

The licensee's response indicated above satisfies the concern of the close proximity of redundant instrumentation cabling at or near the penetration area and we recommend that the staff accept this item.