# POWER AUTHORITY OF THE STATE OF NEW YORK

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February 13, 1979 IPN-79-4

Director of Nuclear Reactor Regulation U. S. Nuclear Regulatory Commission Washington, D. C. 20555

Attention: Mr. Albert Schwencer, Chief Operating Reactors Branch No. 1 Division of Operating Reactors

Subject: Indian Point 3 Nuclear Power Plant Docket No. 50-286 Fire Protection Program Review Administrative Controls

Dear Sir:

In response to your letter of December 12, 1978 concerning the subject item, enclosed please find ten (10) copies of Attachment 1 which addresses your Enclosure 1 request for additional information.

Very truly yours,

Paul J. Early Assistant Chief Engineer-Projects

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# ATTACHMENT 1

RESPONSES TO NRC REQUEST OF DECEMBER 12, 1978 FOR ADDITIONAL INFORMATION (ENCLOSURE 1) ON FIRE PROTECTION PROGRAM ADMINISTRATIVE CONTROLS

# POWER AUTHORITY OF THE STATE OF NEW YORK INDIAN POINT 3 NUCLEAR POWER PLANT DOCKET NO. 50-286 FEBRUARY, 1979

Identify the upper level offsite management position which has overall management responsibility for the fire protection program including periodic assessment of the effectiveness of the Indian Point 3 fire protection program.

## Response

The offsite management position which has overall management responsibility for the fire protection program including periodic assessment of the effectiveness of the Indian Point 3 program is the Director of Security and Safety at the New York Office.

The comparison of the Indian Point 3 fire protection program to BTP 9.5-1 contained in the "Review of the Indian Point Station Fire Protection Program" did not address the following items. The following should be included in the Indian Point 3 fire protection program:

### Response

Responses to Question No. 2 address safety related areas as defined in B.T.P. 9.5.1.

a. Responsibilities of the fire brigade members in a fire emergency should be assigned to each brigade member or brigade position. These responsibilities should not conflict with the brigade member's responsibilities under normal plant conditions.

#### Response

Positions defined for the fire brigade are fire brigade leader and fire brigade member, only. All members of the fire brigade are trained and retrained in various phases of fire extinguishment by both academic and actual "hands on" training. The Authority believes that it is more effective to have members of the fire brigade (other than the leader) with interchangeable roles in coping with fire extinguishment rather than rigidly defining each fire brigade position. Each fire brigade member shall be assigned responsibilities by the fire brigade leader to be conducted during a fire emergency at the time. These responsibilities shall not conflict with responsibilities under normal plant conditions.

b. The fire brigade member's qualification requirements should include satisfactory completion of a physical examination for performing strenuous activity, and satisfactory completion of the fire brigade training.

### Response

Fire brigade member's qualification requirements shall include satisfactory completion of training and a physical examination. This physical would identify any condition that would prevent members from participating in a strenuous activity as fire fighting. An indication of any such condition would eliminate that personnel from fire brigade activities.

- c. The training provided to fire brigade members should include classroom instruction in the following:
  - 1. Identification of fire hazards and associated types of fires that could occur in the plant, and an identification of the location of such hazards.
  - 2. Identification of the location of fire fighting equipment for each fire area, and familiarization with layout of the plant including access and egress routes for each area.
  - 3. The proper use of available fire fighting equipment, and the correct method of fighting each type of fire. The types of fires covered should include electrical fires, fires in cables and cable trays, hydrogen fires, flammable liquid and waste/debris fires.
  - 4. Indoctrination in the plant fire fighting plan with specific coverage of each individual's responsibilities.
  - 5. The proper use of communication, lighting, ventilation, and emergency breathing equipment, in a fire situation.
  - 6. The direction and coordination of the fire fighting activities (fire brigade leaders only).
  - 7. The toxic characteristics of potential products of combustion.
  - 8. The proper method for fighting fires inside building and tunnels.
  - 9. Detailed review of fire fighting procedures and procedure changes.
  - Review of latest plant modifications and changes in fire fighting plants (since the last instruction period).

#### Response

Training provided to fire brigade members shall include classroom instruction in 2 c, 1 through 10 above. The review of the latest plant modifications will be in reference to fire protection equipment.

d. Regular planned meetings held every 3 months should repeat the classroom instruction program over a two year period.

## Response

The Indian Point 3 fire protection program shall include regular planned meetings held quarterly to review classroom instruction programs over a two year period.

e. Practice sessions should be held for fire brigade members on the proper method of fighting the various types of fires which could occur in a nuclear power plant. These sessions should provide brigade members with experience in actual fire extinguishment and the use of emergency breathing apparatus under strenuous conditions. These practice sessions should be provided at regular intervals but not to exceed 1 year for each fire brigade member.

### Response

Practice sessions shall be held for fire brigade members. These sessions will provide brigade members with actual experience in fire extinguishment, with emergency breathing apparatus under strenuous conditions and shall be provided at regular intervals not to exceed one (1) year for each fire brigade member.

- f. The comparison of BTP 9.5-1 states that drills should simulate fires and various fire conditions that would be anticipated in a fire emergency. In addition, fire drills should include the following:
  - 1. Assessment of fire alarm effectiveness, time required to notify and asssemble the fire brigade, and selection, placement and use of equipment.
  - 2. Assessment of each brigade member's knowledge of his role in the fire fighting strategy for the area assumed to contain the fire; and assessment of the brigade member's conformance with established plant fire fighting procedures and use of fire fighting equipment, including self-contained emergency breathing apparatus, communication equipment and ventilation equipment to the extent practicable.
  - 3. Assessment of the brigade leader's direction of the fire fighting effort, as to the thoroughness, accuracy, and effectiveness.
  - 4. Performance of drills at regular intervals, but not to exceed 3 months for each fire brigade. At least one drill per year should be performed on a "back shift" for each fire brigade. A sufficient number of these drills, not less than one for each fire brigade per year, shall be unannounced, to determine the fire readiness of the plant fire brigade leader, brigade, fire protection systems and equipment.
  - 5. Preplanning of the drills to establish the training objectives of the drill. The drills should also be critiqued to determine how well the training objectives have been met. Unannounced drills should have their critiques performed by members of the management staff responsible for plant safety and security. At three year intervals, drills should be critiqued by qualified individuals independent of the plant staff.

### Response

The Indian Point 3 fire protection program shall simulate fire drills and various fire conditions that would be anticipated in a fire emergency. The fire brigade shall provide assessments as stated in 2 f, 1 through 3.

Drills shall be conducted at approximately quarterly intervals. Annually, one of these drills shall be conducted during a "back shift". Each brigade member shall participate in at least one drill per year and at least one of these drills shall be unannounced.

# Question No. 2 Response cont'd

Preplanning of the drills to establish training objectives, and reviews by the Security and Safety Department to see if training objectives have been met shall be performed. Drills shall be reviewed by qualified individuals, independent of the plant staff, at three year intervals.

# Question No. 2, cont'd.

- g. The comparison indicates that a permit system is used for all welding and burning operations, but does not identify who must authorize the permit. All welding and burning work permits should be authorized by the responsible Foreman or Supervisor. The Foreman or Supervisor should have received training in potential fire hazards and precautions that should be taken. Before issuing the permit, the responsible Foreman or Supervisor should physically survey the area where the work is to be performed and establish that the following precautions have been accomplished:
  - All moveable combustible material below and within a 35 foot radius of the cutting, welding, grinding or open flame work has been removed. (See NFPA 51B)
  - 2. All immovable combustible material below and within a 35 foot radius has been throughly protected by asbestos curtains, metal guards, or flameproof covers, and fire extinguishers, hose, or other firefighting equipment are provided at the work site. (See NFPA 51B)

#### Response

The Maintenance Department will incorporate a welding and burning permit system in order to satisfy the Indian Point Unit 3 Fire Protection Program. It will be the responsibility of the Maintenance Department to insure that adequate fire protection is in force at the job site and to issue the permit for welding/burning at a particular job site prior to the actual start of welding or burning. The permit will state what fire protection will be provided at the job site or is in force at the welding and burning stations. Protection will be provided in the form of either covering or removing flammable material or to post a fire watch prior to the start of welding or burning.

- h. Fire notification procedures should be developed, to include the following:
  - 1. Actions to be taken by the individual discovering the fire, such as, notification of the control room, sounding alarms and actuation of local fire suppression systems.
  - 2. Actions to be taken by the control room operator upon report of a fire or receipt of alarm on control room annunciator panel, such as: announcing location of fire over PA system, sounding fire alarms and notifying the shift supervisor and the fire brigade leader of the type, size and location of fire.
  - 3. Actions to be taken by the fire brigade after notification by the control room operator of a fire, including: location to assemble; directions given by fire brigade leader; and responsibilities of brigade members such as selection of fire fighting equipment and transportation to fire location, selection of protective equipment, use of fire suppression systems operating instructions, and use of preplanned strategies for fighting fires in specific areas.
  - 4. Actions to be taken by Plant Superintendent and his staff and Security Guards after notification of a fire.
  - 5. Actions to be taken that will coordinate fire fighting activities with offsite fire departments, including: identification of individual responsible for assessing situation and calling in outside fire department assistance when needed; identification of individual who will direct fire fighting activities when aided by offsite fire fighting assistance. The procedures should also describe the offsite fire department's resources and estimate response time by the offsite fire department to provide assistance to the station.

### Response

Fire notifications shall be developed and shall include actions to be taken in 2 h, 1 through 5. Action to be taken in 2 h, 1, 2 and 4 are identified and in accordance with the Indian Point 3 Emergency Plan. Action to be taken in 2 h, 3 and 5 are identified in the fire brigade training procedure.

i. Provisions should be established for including offsite fire fighting organizations in fire brigade drills at least once per year and for training offsite fire department personnel in basic radiation principles typical radiation hazards and precautions to be taken in a fire involving radioactive materials in the plant.

#### Response

Provisions shall be established for including offsite fire fighting organizations in fire brigade drills at least once per year, and for orientation training of offsite fire department personnel in basic radiation principles, typical radiation hazards, and precautions to be taken in a fire involving radioactive materials in the plant. As a minimum, this training shall be performed for the offsite department Chiefs and officers.

- j. Fire fighting strategies should be developed for fighting fires in all safety related areas and areas which may present a hazard to safety related areas. These strategies should be provided in a format that affords quick reference in a fire situation and that can also be used in the training program. These strategies should include information to assist fire fighting activities, including:
  - 1. Identification of combustibles in each plant zone covered by the specific fighting strategy.
  - 2. Fire extinguishants best suited for controlling the fires associated with the combustible loadings in that zone and the nearest location of these extinguishants.
  - 3. Most favorable direction from which to attack a fire in each area, in view of the ventilation direction and access hallways, stairs and doors. All access and egress routes that involve locked doors should be specifically identified in the strategy with the appropriate precautions and methods for access specified.
  - 4. Identification of the plant equipment that should be managed (i.e., de-energized or cooled) to reduce the hazard potential during a local fire.
  - 5. Assignment of responsibilities to brigade positions including command control of the brigade, fire hose laying, applying the extinguishant to the fire, advancing support supplies to the fire scene, communication with the control room, coordination with the outside fire departments.
  - 6. Identification of radiological and toxic hazards in fire zone.
  - 7. Control of ventilation system operation for fire containment or smoke clearing operations.
  - 8. Operations (e.g., application of particular extinguishant or de-energizing equipment) requiring control room and shift engineer coordination or authorization.

#### Response

The Authority has no intention of developing detailed preplanned strategies for fighting fires in all safety related areas. Assurance of the adequacy of fire protection is primarily provided for by fire barriers and fixed automatic detection and suppression systems The fire brigade leader shall be familiar with plant operations and safety related areas and his knowledge shall be the basis for strategies taken during a fire.

k. The validity of the preplanning strategies should be tested by appropriate full-dress drills to check the logic of the strategy, the adequacy of the equipment, personnel understanding and to uncover unforseen problems.

# Response

Fire drills will be conducted in different areas throughout the plant. These drills will be critiqued upon their completion to correct problems experienced.

- 1. The comparison of BTP 9.5-1 does not describe the inspections performed on fire protection systems. Inspections should be performed to include the following:
  - 1. Inspections of installation, maintenance and modification of fire protection systems; to assure conformance to design and installation requirements.
  - Inspection of penetration seals and fire retardant coating installations to verify the activity is satisfactorily completed.
  - 3. Inspections of cable routing to verify conformance with design requirements, following routing of new cabling.
  - 4. Measures to assure that inspection personnel are independent from the individual performing the activity being inspected and are knowledgeable in the design and installation requirements for fire protection.
  - 5. Inspection procedures, instruction and check lists which provide for:
    - . Identification of characteristics and activities to be inspected.
    - . Identification of the individuals or groups responsible for performing the inspection operation.
    - . Acceptance and rejection criteria.
    - . Recording evidence of completing and inspecting and installation, maintenance or modification activity.
    - . Recording results of the inspection operation.

### Response

The Authority shall perform inspections of fire protection systems for safety related areas as defined in B.T.P. 9.5.1. These inspections should be performed to include the items listed in 2 1, 1 through 5, as applicable.

m. Following modification, repair or replacement, sufficient testing using appropriate NFPA and other standards is performed to demonstrate that fire protection systems are operational and will perform satisfactorily in service. Written test procedures for installation test incorporate the requirements and acceptance limits contained in applicable design documents.

## Response

The Authority shall perform and document sufficient testing to demonstrate that fire protection systems are operational and will perform satisfactorily in service.

n. The comparison to BTP 9.5-1 describes the reporting of unsafe conditions, but does not address the more in-depth review and resolution required for more significant or repetitive occurrences.

In the case of significant or repetitive conditions adverse to fire protection, such as fire incidents or recurring failures of a fire protection system, the cause of the condition is determined and analyzed, and prompt corrective actions are taken to preclude recurrence of the same or simular conditions. The cause of the condition and the corrective action taken are promptly reported to cognizant levels of management for review and assessment.

### Response

The Indian Point 3 Fire Protection Program shall include a review for significant or repetitive occurrences. The cause of the occurrence shall be determined and analyzed, and corrective actions shall be taken to preclude the recurrence of the same simular occurrence. The cause of the occurrence and the corrective action taken shall be reported to the Director of Security and Safety at the New York Office, for review and assessment.