UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645- 3940

NOV 1 1 1971

R. H. Engelken, Assistant Director for Inspection and Enforcement, Division of Compliance, HQ

PRELIMINARY REPORT - INDIAN POINT 2 FIRE

The attached enclosures, prepared on a priority basis, supplement the information contained in "Notification of an Incident or Occurrence" (blue sheet) No. 43, of November 5, 1971, regarding the IP-2 fire. The inspection report will be submitted at a later date as CO Report No. 50-247/71-15.

Our evaluation of available information indicates that the following significant actions should be taken:

1. DRL should review promptly the interim Technical Specifications with the intent of incorporating necessary modifications to cover plant activities during the next several months.

2. Con Ed 2 does not conform to their documented safety-related representations that were a basis for DRL issuing the interim license. The extent of this nonconformance is illustrated in Enclosure 2.

3. DRL should review promptly the previously approved cable separation criteria for this plant, and other plants of this design, (i.e. assuring proper physical separation of redundant cables.)

Unless prompt action is taken on Item 1 above, it is our recommendation that you inform DRL that we are of the view that the core should be promptly unloaded.

James P. O'Reilly
Director

Enclosures:
1. Preliminary Report
2. Systems Affected, Completely or Partially by the IP-2 Fire
3. Electrical/Instrumentation Cable Review
4. Inspection Manpower Allocations and Assignments

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Enclosure (1)

PRELIMINARY REPORT

CONSOLIDATED EDISON COMPANY (Indian Point No. 2)

A. General- PAB Fire - November 4, 1971

Our Region I (Newark) office has reviewed available facts relating to the Primary Auxiliary Building fire at the Indian Point No. 2 (IP-2) facility on November 4, 1971. This review included: the possible causes of the fire; the adequacy of emergency actions; the seriousness of the electrical, mechanical, and structural damage (Enclosure 2); and the effects of the fire on the Indian Point No. 1 (IP-1) plant (Inquiry Report No. 50-3/71-1).

The fire was detected by a roving operator at 7:00 p.m. on November 4, 1971. Less than 15 minutes prior to this time, a Con Ed watch foreman was in the PAB building and did not notice smoke or unusual odors. Off-site Fire Departments arrived at the site in 15 minutes. Records indicate that the fire was under control in 45 minutes and was totally extinguished in two hours. The cause of the fire could not be determined, hence, the Verplanck Fire Department Chief requested an investigation by the Westchester County Sheriff's Office. An investigation is in progress and includes the assistance of an arson expert. No investigation has been made by New York State Police. The FBI was notified by the sheriff but withdrew since no government property was involved.

In the process of fire fighting, the electrical supply to the three motor control centers directly above the fire was intentionally disconnected. Subsequently, the 138 KV supply to the IP-2 plant was removed and the emergency diesels were placed in the "off" position. During this period, the DC batteries were the only source of electrical power to IP-2.

B. Conformance to Requirements

As a result of the fire, certain items were noted to be in noncompliance with Technical Specification requirements. These items, and subsequent licensee actions, include the following:

1. A flow path for the addition of boric acid to the reactor coolant system was not available.

   An RHR pump was returned to service at 2:32 p.m. on November 5, 1971 with the capability of delivering borated water from the refueling water storage tank.

2. The electrical supply for the boric acid heaters, transfer pumps and pipe tracing was lost with the loss of power and by fire damage. Con Ed decided to dump and flush the contents of these tanks. During

this operation, valves were opened which are required by Technical Specifications to be closed and locked.

Con Ed indicated that other valves were closed between the boric acid tank and the reactor coolant system prior to this activity.

3. Certain instrumentation such as: the pressurizer level and pressure; steam generator level; boric acid tank level; refueling water storage tank level; and accumulator tank level; was lost by power loss and by fire damage.

Subsequent action by Con Ed provided at least one channel of information for each of the above, except for the boric acid tank level. This tank is currently empty.

C. Information on Con Ed's Motion Before ASLB

The applicant's motion of June 18, 1971, to the ASLB, for permitting fuel loading and subcritical testing states that:

"All engineering safety systems, including the diesels, with the exception of minor 'punch-list items' none of which affects system safety, be completed prior to the commencement of said activities."

The plant does not presently fulfill this requirement. For example, none of the safety injection motor-operated valves can be positioned electrically. (See Enclosure 2)

D. Con Ed 1 Status

During the fire, Indian Point No. 1 was operating at a power of 215 Mwe. No Technical Specification violations, or other safety items, were noted by our inspector. (See Inquiry Report No. 50-3/71-12)

E. Incomplete Action Directly Related to the Fire

Mr. Arnold Weintraub, Fire Protection Specialist, NYOO, and Mr. A. Ryan, Region I Investigator will be on-site on November 11 and 12, 1971, to perform a study relating to fire prevention activities at both Units 1 and 2. This effort is directed at obtaining assurance that proper actions are being taken to prevent or minimize the effects of the "next" fire.

F. Major Licensee Actions

1. Nuclear Facility Safety Committee

Subcommittees of the Con Ed Nuclear Facility Safety Committee met on Friday and Saturday, November 5 and 6, 1971, to conduct an initial evaluation of:

a. Plant safety directly after the fire.

b. Apparent violations of the Technical Specification during the fire.

c. Sequence of plant repairs.

d. Consequences of a similar fire during power operation.

2. Joint Test Group

Con Ed has already established a Joint Test Group for the purpose of evaluating the effects of the fire on previously completed pre-operational tests.

Enclosure (2)

SYSTEMS AFFECTED, COMPLETELY OR PARTIALLY, BY THE IP-2 FIRE

ITEM	TITLE	SYSTEM COMPONENTS INOPERATIVE
1.	Safety Injection System	1. Motor-operated valves in this system are electrically inoperative. 2. Boron injection tank heaters. 3. Boron injection temperature controller level transmitter.
2.	Containment Spray System	1. All four discharge stop valves.
3.	Containment Air Recirculation Cooling and Filtration System	1. All 10 valves in the charcoal filter housing units.
4.	Isolation Valve Seal Water System	1. Seal water return line isolation valve.
5.	Auxiliary Coolant System	1. RC pump bearing CCW return isolation valve. 2. RC pump thermal barrier return isolation valve. 3. RHR heat exchanger shut-off valves. 4. Booster pumps 21, 22.
6.	Hydrogen Recombiner	1. Units 21 and 22.
7.	Diesel Generator Building	1. All normal and emergency vent fans. 2. Lighting. 3. Crankcase exhaust. 4. Compressors. 5. Fuel oil pump. 6. Jacket water and lube oil heaters. 7. Heat tracing.
8.	Public Address System	1. Power supply.
9.	Containment Building	1. Pressure relief fan. 2. Purge fans. 3. Purge supply fan. 4. Dilution fan.
10.	Primary System	1. Both pressurizer power relief line block valves. 2. Make-up pump.

ITEM	TITLE	SYSTEM COMPONENTS INOPERATIVE
11.	Feedwater Control System	1. Boiler feed pumps 21 and 22.
12.	Boric Acid System	1. Both normal and emergency heat tracing systems. 2. Tanks 21 and 22 heaters. 3. Room heaters. 4. Evaporater. 5. Transfer pump.
13.	Chemical & Volume Control System	1. Volume control tank discharge valve.
14.	Radiation Monitoring System	1. Partial loss of system. 2. Containment air particulate monitor blower.
15.	Electrical Tunnel Ventilation System	1. Exhaust fan.
16.	Instrument Bus No. 24	1. One power source for redundant instrumentation - reactor protection analog channel 4, containment instruments, and SIS analog.
17.	Air Conditioning System	1. Six motors.
18.	Primary Auxiliary Building	1. Exhaust fan. 2. Sump pumps. 3. Sump tank pumps. 4. Supply fan.
19.	Fuel Storage Building	1. New fuel elevator. 2. Overhead crane. 3. Exhaust fan. 4. Sump pump. 5. Many miscellaneous items including a motor-operated door.

Enclosure (3)

ELECTRICAL/INSTRUMENTATION CABLE REVIEW

Our review, to date, reveals that the design and installation of the electrical/instrumentation cables and motor control centers do not meet our interpretation of the intent of IEEE, Criterion 279, in that a single failure precludes "proper protection system action". This was demonstrated by the fire.

Cable separation in trays was accomplished by the use of tray dividers. In one instance four redundant valves were lost through the loss of a single tray.

The actual separation of motor control centers 26A and 26B is 8 inches. The close proximity of the two panels appear to imply a common mode of failure; however, it is to be noted that the actual failure was due to a lack of a proper fire barrier between cable trays and the entrance to the motor control centers. The outside damage to the motor control centers was minimum; however, total disintegration occurred inside.

It can be concluded from our preliminary review that IEEE 279 single failure criterion (paragraph 4.2) was not met; however, the licensee did conform to FSAR commitments.

The damage that occurred, under operating circumstances, could have had serious safety implications.

The acceptance criteria for the installation of electrical/instrumentation cables is of immediate concern in that many plants have similar installations.

Enclosure (4)

INSPECTION MANPOWER ALLOCATIONS AND ALLEGATIONS

A. Madsen - Reactor Inspector, designated as the senior Compliance site contact. Arrived at site at 11:00 p.m. Thursday, November 4, 1971, remained at site through Friday and Saturday, November 5 and 6, 1971.

B. Howard - Senior Reactor Inspector - At the site Friday, November 5, 1971. Coordinated CO construction-oriented investigation of fire damage.

C. Burzi - Reactor Inspector - At the site Friday and Saturday, November 5 and 6, 1971, evaluating electrical damage.

D. Tillou - Reactor Inspector - At the site Friday and Saturday, November 5 and 6, 1971, to assess mechanical and structural damage. Assisted in the electrical damage evaluation.

E. Ryan - Investigator - At the site Friday, Saturday and Sunday, November 5, 6 and 7, 1971. Interviewed personnel, reviewed records relating to personnel observations relating to the fire. Scheduled to assist in fire prevention appraisal on November 12 and 13, 1971.