

UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

RO Inquiry Report No. 50-3/72-16Q

Licensee: Consolidated Edison Company
4 Irving Place
New York, New York 10003

License No.: DPR-5

Facility: Indian Point I
Buchanan, New York

Descriptive Title: Exceed Technical Specification Requirements-
Nuclear Input Information to The Flux Flow
Computer

Prepared by:

R. L. Spessard
R. L. Spessard, Reactor Inspector

12/26/72
Date

A. Date and Manner AEC was Informed:

December 20, 1972, by telephone call from a Con Ed Indian Point Station representative. Additional information was obtained on December 21, 1972 during a telephone conversation with a cognizant station Instrument and Controls Engineer.

B. Description of Particular Event or Circumstance:

At 10:40 a.m., on December 19, 1972, while operating at about 86% rated power, a reactor scram occurred as the result of a flux-flow computer trip. The Technical Specifications require a minimum of two of the power range channels designated numbers 22, 24 and 26 to provide nuclear information to the flux-flow computer in the safety system.

Following a unit outage, plant startup occurred at 8:04 a.m., on December 19, 1972. Plant operating procedures require that two of the designated power range channels feed the averaging circuit which provides an average power signal to the flux-flow computer and, that at an appropriate power level during the startup, the third channel be connected into the averaging circuit. This action is normally accomplished by the General Watch Foreman, and it is performed by visually examining the position of the average input

relay for each channel and by manually resetting (by pushbutton) the relay which is in the tripped position. The reactor scram occurred when the General Watch Foreman manually reset the average input relay for Channel No. 22, which he believed to be the only relay in the tripped position.

Subsequent investigation and testing by station personnel revealed that only one power range channel (No. 24) was connected to the averaging circuit prior to the scram and that when the second channel (No. 22) was reset (by the General Watch Foreman), a high flux spike occurred which tripped the flux-flow computer.

According to station personnel, the alarm circuit that monitors the input signals to the averaging circuit initiates a flux drop-out alarm when one of the average input relays trips; however, subsequent tripping of an additional input relay would not be detected by this alarm circuit.

The unit was subsequently returned to service at 4:10 a.m. on December 20, 1972.

C. Action by Licensee:

1. Plant operating procedures have been revised to incorporate more details in regard to determining the position of the average input relays. Also, a diagram showing the proper position of these relays has been affixed to their instrument cubicle.
2. The following design changes to the flux-flow computer circuitry are being considered:
 - a. Installation of indicating lights for each average input relay to provide local and remote position indication.
 - b. Installation of an alarm circuit to provide annunciation when two average input relays are in the tripped position.
3. A written report will be submitted to the Directorate of Licensing within 10 days.



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DEC 27 1972

J. G. Keppler, Chief, Reactor Testing & Operations Branch
Directorate of Regulatory Operations, Headquarters

RO INQUIRY REPORT NO. 50-3/72-16Q
CONSOLIDATED EDISON COMPANY
INDIAN POINT I
EXCEED TECHNICAL SPECIFICATION REQUIREMENTS - NUCLEAR INPUT INFORMATION
TO THE FLUX FLOW COMPUTER

The subject inquiry report is forwarded for action. We believe that this occurrence has disclosed a design inadequacy in the flux-flow computer scram circuitry.

Tele. you forward on 11/2/73 J. H. Hagedorn

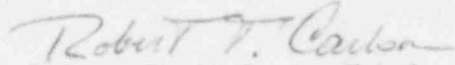
We believe that the licensee's procedural changes and proposed design changes would prevent a repetition of this event; however, we believe that the design of a safety system must include automatic actuation, restoration and reduction in scram logic on loss of input instead of relays which require manual resetting. Accordingly, we believe the circuitry of the averaging unit should be changed such that an automatic reactor scram occurs whenever two of the average input relays are in the tripped position. Additionally, we believe this change should be imposed on the licensee under the backfit provisions of 10 CFR 50.109.

We recommend that licensing be informed of our position so that it can be considered in their review of the safety systems at Indian Point I which we understand will be included as part of their full term license review.

We will review this matter during a subsequent inspection. Distribution will be made by this office to the PDR, LPDR, NSIC, DTIE and State representatives after review by the licensee for proprietary information.

Con Ed reported in their letter dated April 1, 1970 to DRL that, in order to eliminate reactor trips which have occurred as a result of malfunctions in the one-input-dropped section of the average flux computer, the computer circuitry was modified to eliminate automatic

restoration of a dropped channel to the averaging circuit. As a result of this change these relays (one/channel) must be manually reset. The event reported in the Inquiry Report occurred because two of these relays were not reset.


Robert T. Carlson, Chief
Facility Operations Branch

Enclosure:

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cc: RO Chief, Reactor Testing & Operations Branch, HQ (21)
RO:HQ (5)
PDR
Local PDR
NSIC
DTIE
State of New York