

MAY 18 1970

P. A. Morris, Director
Division of Reactor Licensing

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. - INDIAN POINT NUCLEAR
GENERATING STATION NO. 2 - DOCKET NO. 50-247

Consolidated Edison has expressed the desire for resolution of the problem concerning the engineered safety feature manual actuation panels including consideration by the ACRS at an early date. At the May 11th subcommittee meeting, the subcommittee was asked to recommend consideration of this problem by the full ACRS at the June meeting. While the subcommittee made no commitment, they indicated that a written report would be required if the ACRS agrees to consider the problem. The enclosed report was written for this purpose.

Original signed by
E. G. Case

Edson G. Case, Director
Division of Reactor Standards

ESB-29
ESB:DRS:VAM

cc w/encl:
R. C. DeYoung, DRL
D. Muller, DRL
K. Kniel, DRL

Distribution:

→ Suppl.
DR Reading
DRS Reading
ESB Reading

bcc: E. G. Case
V. Moore
O. Parr

8111140454 700518
ADOCK 05000247

OFFICE ▶	PWR BR3:DRL	DRS:ESB	DRS:DIR			
SURNAME ▶	Oparr:ese	VMoore	EGCase			
DATE ▶	5/15/70	5/18/70	5/18/70			

MAY 18 1970

INDIAN POINT #2

ENGINEERED SAFETY FEATURE MANUAL ACTUATION PANELS

INTRODUCTION

This report to the ACRS is to inform the Committee of a problem area so that Committee comments or guidance can be obtained. The applicant has requested early consideration of the problem so that resolution will not delay plant startup.

DISCUSSION

Panels SB-1 and SB-2 are located in the control room to provide the necessary controls (switches, lights) for manual actuation of the engineered safety features. Our visit to the site disclosed that the cables entering this panel, the wiring inside the panel and the location of the controls on the front of the panel do not comply with our interpretation of IEEE 279 in that the requirements for separation and independence are not met. Redundant cables were noted to enter the panel through common openings in the control room floor, redundant cables terminated on adjacent terminal boards, redundant connections from terminal boards to controls are bundled together, and the location of the controls on the panel provides minimum spacing.

We have discussed these panels at a number of meetings with Westinghouse and Consolidated Edison. They discussed a number of

MAY 18 1970

possible modifications but have made no firm proposal. Among the possible modifications discussed were:

- a. The addition of isolation devices to preclude faults in the panels from disabling automatic actuation of engineered safety features. No physical separation would be provided to prevent faults from disabling the transfer from the injection to the recirculation mode of emergency core cooling.
- b. The addition of physical protection features to prevent equipment used in the area such as floor polishers and hand tools from causing faults.
- c. The installation of separate connection boxes for each of the redundant safety feature chains near the cable trays. Wires and cables for the redundant chains would be brought from the connection boxes through separate floor openings to the controls on the panel maintaining physical separation. The applicant felt that the lack of physical separation at several multi-function switches defeated the purpose of the added physical separation.

We have concluded that the panel should be modified to prevent faults resulting from localized mechanical damage, overheating in bundles, or localized fires from disabling automatic ECCS actuation or preventing the necessary manual functions within the time to

mitigate the consequences of a design basis accident. Our concerns could be met by the utilization of the junction box arrangement described by the applicant coupled with further improvement in the area of the multifunction switches. Ganged switches are available which provide better separation between stages or wafers. Another possibility is the addition of slave relays to minimize the congestion in the area of the switches.

During the discussions, Westinghouse made clear that no attempt had been made to include physical separation in the design of these panels. This raises the question of whether commitments made during the construction permit review were properly implemented. In the evaluation of the reliability of core cooling, the applicant stated in Supplement 5 to the PSAR (received July 28, 1966), "System effectiveness will exist in the event of loss of normal station auxiliary power coincident with the loss of coolant, and will be tolerant of failures of a single component or instrument channel to respond actively in each system." This statement was interpreted to be a commitment to meet the single failure criterion. We interpreted this to constitute a commitment to give some consideration to physical separation. However, whether one considers the modification to be required to meet the construction permit commitment or as an item of backfit, we believe that the modification should be made, but not necessarily before initial plant startup. In our opinion, it would be acceptable to make the modification at the first refueling outage if necessary to prevent delay.