Docket Nos. 50-440
50-441

MAY 11 1981

Mr. Dalwyn R. Davidson
Vice President, Engineering
The Cleveland Electric Illuminating
Company
P.O. Box 5000
Cleveland, Ohio 44101

Dear Mr. Davidson:

Subject: Request for Additional Information - Instrumentation and Control Systems

In the performance of licensing reviews, the staff has identified four concerns in regard to instrumentation and control systems. Some of these concerns have already been transmitted to you in IE Bulletins. However, explicit instructions were not given for making a submittal as part of the licensing review. The purpose of this letter is to state our instructions for a submittal in regard to these concerns. The information that we require is identified in the enclosure.

We request that you provide the information not later than November, 1981. If you require any clarification of this request, please contact M. D. Houston, Project Manager, (301) 492-8593.

Sincerely,

Robert L. Tedesco
Assistant Director for Licensing
Division of Licensing

Enclosure:
Request for Additional Information

cc w/enclosure:
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420.06 Control System Failures

The analyses reported in Chapter 15 of the FSAR are intended to demonstrate the adequacy of safety systems in mitigating anticipated operational occurrences and accidents.

Based on the conservative assumptions made in defining these design-basis events and the detailed review of the analyses by the staff, it is likely that they adequately bound the consequences of single control system failures.

To provide assurance that the design basis event analyses adequately bound other more fundamental credible failures you are requested to provide the following information:

(1) Identify those control systems whose failure or malfunction could seriously impact plant safety.

(2) Indicate which, if any, of the control systems identified in (1) receive power from common power sources. The power sources considered should include all power sources whose failure or malfunction could lead to failure or malfunction of more than one control system and should extend to the effects of cascading power losses due to the failure of higher level distribution panels and load centers.

(3) Indicate which, if any, of the control systems identified in (1) receive input signals from common sensors. The sensors considered should include, but should not necessarily be limited to, common hydraulic headers or impulse lines feeding pressure, temperature, level or other signals to two or more control systems.

(4) Provide justification that any simultaneous malfunctions of the control systems identified in (2) and (3) resulting from failures or malfunctions of the applicable common power source or sensor are bounded by the analyses in Chapter 15 and would not require action or response beyond the capability of operators or safety systems.

420.04 Engineered Safety Features (ESF) Reset Controls (IE Bulletin 80-06)

If safety equipment does not remain in its emergency mode upon reset of an engineered safeguards actuation signal, system modification, design change or other corrective action should be planned to assure that protective action of the affected equipment is not compromised once the associated actuation signal is reset. This issue was addressed in IE Bulletin 80-06. IE Bulletin 80-06 required that reviews be conducted to determine which, if any, safety functions might be unavailable after reset, and what changes could be implemented to correct the problem. With minor modifications the wording of the original Bulletin 80-06 is an appropriate basis for the current OL applicants to review their systems.

Provide your response to IE Bulletin 80-06 with two exceptions. First, the 90-day limit for response in Item 4 is not applicable. Second, your response should be in the form of an amendment to the FSAR.

420.05 Qualification of Control Systems (IE Information Notice 79-22)

If control systems are exposed to the environment resulting from the rupture of reactor coolant lines, steamlines or feedwater lines, the control systems may malfunction in a manner which would cause consequences to be more severe than calculated in safety analyses. This concern was addressed in IE Information Notice 79-22.

Provide the results of an analysis of interactions between non-safety grade or control equipment to demonstrate they will not cause consequences more severe than those found in safety analyses when subjected to the harsh environment of a high energy line break.

ENCLOSURE

420.0 Instrumentation & Control Systems Branch

420.03 Loss of Non-Class 1E Instrumentation and Control Power System Bus During Power Operation (IE Bulletin 79-27)

If reactor controls and vital instruments derive power from common electrical distribution systems, the failure of such electrical distribution systems may result in an event requiring operator action concurrent with failure of important instrumentation upon which these operator actions should be based. This concern was addressed in IE Bulletin 79-27. On November 30, 1979, IE Bulletin 79-27 was sent to operating license (OL) holders, the near term OL applicants (North Anna 2, Diablo Canyon, McGuire, Salem 2, Sequoyah, and Zimmer), and other holders of construction permits (CP). Of these recipients, the CP holders were not given explicit direction for making a submittal as part of the licensing review. However, they were informed that the issue would be addressed later.

Provide your response to IE Bulletin 79-27 with two exceptions. First, the 90 day limit in Item 4 is not applicable. Second, your response should be in the form of an amendment to the FSAR.