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August 8, 1986

Mr. James M. Taylor, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Unit 3
Response to the Safety System Outage
Modification Inspection - Design
Phase
NRC Docket No. 50-249

Reference: Letter from J. M. Taylor to Cordell Reed
dated May 29, 1986 (Inspection Report No.
50-249/86009).

Dear Mr. Taylor:

The referenced letter documented the results of the design portion of the subject outage modification inspection conducted by your office. The Inspection Report included the inspection team's identification of what it considered programmatic weaknesses in Edison's design process as well as the detailed inspection findings. The programmatic concerns identified are addressed in this letter and Attachment 1. Our response to the individual findings is provided in Attachment 2. This response is provided consistent with an extension of the due date granted during a telecon with Mr. Jim Konklin of your staff on August 1, 1986.

The concerns raised during this inspection led Commonwealth Edison to form a Design Task Group to review our modification design control process and coordinate our evaluation of the inspection findings. This effort was initiated promptly after the inspection, well in advance of receipt of the Inspection Report. The Task Group review included the programmatic concerns identified in your letter which are addressed in Attachment 1.

Commonwealth Edison's review concurred with a number of the specific findings identified in the Inspection Report. For these items, we have taken the corrective actions described in Attachment 2. However, many of the findings were not substantiated by our review. In particular, we disagree with the staff's conclusion that the Analog Trip System (ATS) modification does not meet single failure criterion (Deficiency D4.1-1). Our own review and an independent review by Sargent and Lundy indicates that no single failure as defined in IEEE 279-1968 could disable the reactor protection or primary containment isolation functions. Additional details regarding this item, and other findings with which we disagree, are provided

We agree with the Inspection Team's three potential programmatic weaknesses, however, we believe these weaknesses are symptomatic of a single underlying weakness in the area of adequate documentation of the design control process. Attachment 1 addresses each of the items the Inspection Team identified as well as the underlying documentation weakness. To a large extent, these weaknesses reflect an expectation on the part of the Inspection Team for a greater level of documentation detail than has previously been provided or required at Dresden.

In spite of this documentation weakness, the current process was found to result in adequate designs, that is, designs which conform to the FSAR. While additional evaluations had to be performed and engineering judgment better documented to reach this conclusion, no hardware changes were mandated by the initial reviews we conducted during the inspection nor by our detailed review of the findings in your report. (However, to improve the ATS design, relays were moved as discussed in the response to Deficiency 4.1-1.) This supports our determination that our weaknesses lie in the area of documentation of the design process, not in the design itself.

As for the many findings which relate to the definition of the design basis for a system, Edison disagrees with the characterization of these findings as deficiencies. The design basis for all plant systems is as specified in the Dresden FSAR, as modified by subsequent NRC Safety Evaluations. This definition is based on the fact that these documents contain, explicitly or by reference, the specific design basis features and requirements which were reviewed and approved by the NRC and formed the basis for issuance of the facility license. Supplementary documents, such as original design specifications and procedures, <u>implement</u> the design basis requirements in the FSAR and were not intended to exclude alternate means of implementing design basis requirements for future modifications.

It is Commonwealth Edison's intent to maintain an effective modification design process that is well documented and complies with our regulatory commitments. To prevent recurrence of the root cause weaknesses identified, the following corrective actions are being undertaken:

(1) To ensure compliance with design basis requirements, formal documentation is now required for each modification of safety-related equipment of all applicable design inputs addressed by ANSI N45.2.11. (Attachment 1, Section III)

(2) A detailed checklist and instruction has been implemented for all design changes to assure consistent and standardized documentation of 50.59 reviews. (Attachment 1, Section II)

(3) Specific guidance on the use of and documentation of engineering judgment has been provided to appropriate CECo and consultant personnel. (Attachment 1, Section VI)

(4) Additional requirements will be established regarding the transfer of data between interfacing organizations. (Attachment 1, Section IV)

(5) Formal procedures will be implemented as required to control the development of engineering data. This will include the thermal overload settings identified in your report. (Attachment 1, Section V)

Items 1, 2 and 3 have been completed. Item 4 is are still being developed and should be completed in November 1986. The thermal overload procedure identified in Item 5 is expected to be completed in January, 1987.

In conclusion, our review has determined that modification designs which comply with our design basis requirements are being produced. However, sufficient documentation, in light of today's requirements, was not always available to convince the inspection team that all aspects of the design are being thoroughly evaluated and properly controlled. We believe the corrective actions described above, as well as the specific actions identified in the attachments, are sufficiently broad to correct these weaknesses. We believe the modifications we've designed comply with the Dresden design basis as previously discussed.

In addition, we acknowledge the need for greater documentation in today's environment and have taken steps to achieve it. However, we feel it is inappropriate to characterize such findings as deficiencies or potential violations of regulatory requirements in the absence of objective criteria or measurement standards.

If you have any questions regarding this response or desire additional information, please contact our Nuclear Licensing Department.

Very truly yours,

L. O. DelGeorge
Assistant Vice-President

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Attachment

cc: J. G. Keppler - Region III
H. R. Denton - NRR
R. A. Gilbert - NRR
NRC Resident Inspector - Dresden

1924K

D5.1-1 (Deficiency) 250 Volt Battery Sizing Calculation

This Deficiency states that the battery and cell sizing calculations for the 250 volt battery replacement modification did not adequately address the following three concerns:

1. DC motor data was taken from the National Electric Code instead of plant specific motor data without adequate justification.

2. Motor starting currents, a momentary load, was not considered.

3. The 70°F temperature correction factor used in this calculation was inconsistent with the temperatures used in the procurement specification (65°F) and the plant surveillance procedure (60°F).

Response

1. Although calculation 7056-00-19-4 was prepared using motor data from the National Electric Code (NEC), we do not agree that this is a Deficiency. NEC Table 430-147: "Full-load current in amperes, direct-current motors" was utilized since the values were considered to be conservative (i.e., the NEC table identifies the FLC values as "average" quantities) and the plant specific motor data was not readily available. For motor horsepowers not specifically identified in the NEC, motor full load currents were obtained by interpolating between values provided in the NEC table. Utilization of the NEC values was considered a reasonable assumption by both the reviewer and approver of the calculation.

   In order to address the NRC concern, S&L subsequently prepared Calculation 7056-00-19-10 utilizing plant specific motor data obtained from Commonwealth Edison. The battery load cycle developed from the plant specific motor data is illustrated in Figure 1, while Figure 2 illustrates the battery load cycle developed using the NEC values. A comparison of the load cycles indicates that utilization of the NEC motor data was a conservative assumption:

FIGURE 1
4 Hour Load Cycle Based on Plant Sepcific Motor Data

0-1 Minute	- 404A
1-15 Minutes	- 515A
15-60 Minutes	- 365A
60-240 Minutes	- 15A

FIGURE 2
4 Hour Load Cycle Based on NEC Values

0-1 Minute	- 887A
1-15 Minutes	- 840A
15-30 Minutes	- 431A
30-60 Minutes	- 246A
60-150 Minutes	- 86A
150-240 Minutes	- 30A