

Iowa Electric Light and Power Company

August 11, 1980
LDR-80-227

LARRY D. ROOT
ASSISTANT VICE PRESIDENT
NUCLEAR GENERATION

Mr. James G. Keppler, Director
Office of Inspection and Enforcement
Region III
Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Mr. Keppler:

In response to your "Request for Additional Information Regarding CRD Systems", received by us on Thurs., August 7, 1980, we submit the following.

Question 1: Who performed design analysis, fabrication, and installation of the CRD system piping?

Response: The CRD system piping of concern is defined in our response to Question 4 below. Except for the SDV vent line, the safety-related portions of the CRD system piping associated with the scram function were design analyzed by EDS under contract to Reactor Controls, Inc. (RCI). The CRD system scram piping was supplied and installed by RCI under contract to Bechtel. Detailed procurement documents to trace the fabrication history of the RCI-supplied piping and valves are maintained by RCI.

Question 2: What portion of the CRD system was reviewed per Bulletins 79-02 and 79-14?

Response: IE Bulletin 79-02 review did not include the CRD system piping by RCI.

IE Bulletin 79-14 review included category 1 portions of the CRD system piping which were computer-analyzed by EDS. Computer-analyzed lines included scram header and volume tank piping, scram header discharge piping, and typical insert and withdrawal piping from the CRD to the hydraulic control units. The EDS computer analysis did not encompass small (1 inch and under) vent piping from the scram header and volume tank, and the vent piping was therefore excluded from the 79-14 review.

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Question 3: What was the basis for evaluation [of design adequacy] in item 2 above -- were original criteria used or was reanalysis performed?

Response: The Bulletin 79-14 walkdown determined the as-built dimensions of the computer-analyzed CRD scram piping and pipe supports. A comparison between the as-built dimensions and the CRD piping drawings used for stress analysis was made to identify discrepancies which could impact the analysis. An evaluation of the acceptability of the discrepancies was then made by a stress analyst, using original criteria and documented. The Bulletin 79-14 final results conclude that all computer-analyzed, safety-related CRD piping associated with the scram function is adequately analyzed from seismic and operational stress conditions. Therefore, no reanalysis of the CRD scram piping was performed.

Question 4: What portions of the CRD system are considered to be safety-related?

Response: The DAEC FSAR, Appendix C, section C.1.2, defines safety-related (i.e., seismic category 1) structures, systems, and equipment as those whose failure could cause or increase the severity of a design basis accident, cause the release of radioactivity in excess of 10CFR100 limits, or those essential for safe shutdown following a loss of coolant accident. As such, the safety-related portions of the CRD system are considered to be those portions related to the reactor scram function. Specifically, the safety-related CRD piping includes:

1. Insert and withdraw lines connecting the 89 hydraulic control units (HCU's) to the associated control rod drive actuators (1"-DCA-17 and 3/4"-DCA-18)
2. Interconnecting piping between the 89 HCU's and the 2 scram discharge headers (3/4" DBA)
3. Scram discharge headers (8" DBA)
4. Scram discharge instrument volumes (10" DBA) and 3/4" scram level switch piping
5. Drain line from instrument volumes (2" DBA) up to CV-1867
6. Vent line from scram discharge piping (1 and 3/4") up to CV-1859.

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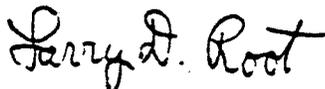
Question 5: Did the original analysis use curves, tables or charts?

Response: The EDS stress analysis of the CRD scram piping was performed in accordance with Subsection NB-3600, ASME Section III, 1971. The analysis included consideration of forces due to gravity, thermal expansion and anchor movement, seismic events, and transient thermal and fatigue loading. The analysis used a lumped mass mathematical model under the EDS PISTOL and TRANS program formats.

Question 6: If a reanalysis was performed, what method was used -- the original or a new analysis?

Response: No reanalysis of the safety-related CRD piping system was performed, as explained in our response to Question 3 above.

Very truly yours,



Larry D. Root
Assistant Vice President
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LDR/BE/mz

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