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 MINECK,D.L. Iowa Electric Light & Power Co.
 RECIP.NAME RECIPIENT AFFILIATION
 DAVIS,A.B. Region 3 (Post 820201)

SUBJECT: RO:on 900918,reactor tripped during testing of main steam line radiation monitors.

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Iowa Electric Light and Power Company

September 19, 1990
NG-90-2323

Mr. A. Bert Davis
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Duane Arnold Energy Center
Docket No: 50-331
Op. License DPR-49

Subject: September 18, 1990 Duane Arnold
Energy Center Reactor Trip

File: A-100, A-224, A-283i

Dear Mr. Davis:

At 0130 hours on September 18, 1990, with the reactor at approximately 50% power, we experienced a reactor trip at the Duane Arnold Energy Center. The event occurred during testing of the Main Steam Line Radiation Monitors, which provide an input to the Primary Containment Isolation System. During this testing, three of the four inboard Main Steam Isolation Valves (MSIVs) closed unexpectedly. In response to the closure of these valves, the Reactor Protection System actuated as designed and inserted all control rods. A review of the event indicates that all equipment performed as expected subsequent to the MSIV closure, and that the Control Room staff took timely and appropriate actions.

The procedural controls on the troubleshooting activities undertaken to determine the cause of the event required that they be planned and implemented in a step-by-step fashion. The NRC Resident Inspector was kept informed of this work, and as requested by the NRC staff, was consulted prior to the taking of any physical actions which might have disturbed the as-found condition of the MSIV closure logic and associated components.

It was determined that the cause of the September 18 event was a loose connection in a Control Room front panel. This loose connection was in the inboard MSIV control circuitry, and resulted in partially-completed closure logic for three inboard MSIVs. These valves subsequently closed when the on-going surveillance test completed the remainder of their closure logic.

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Mr. A. Bert Davis
NG-90-2323
Page 2

As a corrective action for this event, all Control Room front panel terminations will be checked for tightness prior to reactor startup. All Control Room back panels which underwent modification work during the recent refueling outage have had their terminations inspected. Additional details regarding this event will be documented in LER 90-016.

We recognize that the unique nature of this event warrants aggressive action to ensure a complete understanding prior to reactor startup. Review and concurrence of our root cause determination by NRC personnel will help to achieve this requirement, and therefore such concurrence is a prerequisite to reactor startup.

This event was Duane Arnold Energy Center's third reactor trip since our startup from the recent refueling outage. In order to enhance our future plant operations, we will be reviewing all three events together to determine if any generic or common implications exist. Corrective actions will be implemented for any items of concern identified.

Very truly yours,



Daniel L. Mineck
Manager, Nuclear Division

DLM/JRP/p1

cc: Director of Nuclear Reactor Regulation
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