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SUBJECT: Provides addl info re Motor-Operated Valves MO-1908 & MO-1909, per NRC request concerning compliance w/10CFR50.48, "Fire Protection." Util 840928 commitment to lock motor control ctr power breakers open retracted.

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Iowa Electric Light and Power Company

October 21, 1986
NG-86-3358

Mr. Harold Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
10 CFR 50.48 and 10 CFR 50 Appendix R: Request for Additional Information
Reference: 1) Letter, L. Root to H. Denton, LDR-82-180, June 22, 1982
2) Letter, R. McGaughy to H. Denton, NG-84-4135 September 28, 1984
File: P-72a

Dear Mr. Denton:

This letter provides additional information requested by your staff regarding the Duane Arnold Energy Center's (DAEC) compliance with 10 CFR 50.48, "Fire Protection." The information requested involves two motor operated valves, MO-1908 and MO-1909.

Motor Operated Valves 1908 and 1909 provide high-low pressure interface isolation for the RHR Shutdown Cooling Suction Line. MO-1908 is located inside the drywell and is powered by Division I. MO-1909 is located in the Reactor Building RHR Valve Room (Fire Zone 2D) and is powered by Division II. These valves are used only for shutdown cooling and are normally closed.

It is possible for a fire in the Control Room to cause these motor operators to open spuriously prior to transferring control to the alternate shutdown panel and thereby potentially breaching a high-low pressure interface boundary. Therefore, we originally committed (Reference 1) to locking open the motor control center (MCC) power breakers for both of the motor operators to prevent that failure. Subsequent to making that commitment, our control room operators expressed concern about intentionally disabling plant equipment which might be needed to cope with plant emergencies other than fire.

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Specifically, they are concerned about the loss of valve position indication on the valves as well as the possibility of a plant accident which might prohibit access to both MCC power breakers thus precluding the use of RHR Shutdown Cooling.

As a result of these concerns, we retracted our commitment to lock the MCC power breakers open (Reference 2). To maintain an equivalent level of protection from fire, we performed circuit modifications to provide separation of redundant power and control cables for MO-1908 and MO-1909 in all fire zones except the Control Room (Fire Zone 12-A). For a fire in the Control Room, transfer switches were installed as part of the alternate shutdown panel (outside of the Control Room) to prevent fire-induced failures from spuriously opening these valves once the transfer switches are placed in the "emergency" position. This transfer of control to the alternate shutdown panel is expected to occur 15 to 20 minutes after the decision is made to evacuate the Control Room. We consider the likelihood of a Control Room fire causing both of these valves to open spuriously during this 15 to 20 minute period to be extremely remote. Only specific hot shorts in the opening circuits of both valves can cause them to open. These hot shorts would have to occur concurrently in two different panels which are totally enclosed and separated by a 4-foot wide walkway. All circuits in each panel are protected by fuses or circuit breakers. In the event of a fire, the more likely failure modes would be short circuits and faults to ground which would cause these fuses or circuit breakers to isolate the source of power for opening these valves.

Your staff has reviewed our most recent position regarding MO-1908 and 1909 and has found our current approach to be unacceptable. The staff's position is that no possible combination of circuit faults resulting from a fire in a single fire area should cause the breach of a high-low pressure interface boundary regardless of the probability of such an event. We recognize the staff's concern and are planning to make circuit modifications which will allow us to keep both MCC power breakers closed and at the same time prevent a Control Room fire from spuriously opening both valves. We are currently working on a conceptual design and will provide you a description of our detailed design prior to its implementation. We plan to have the modification complete prior to Cycle 10 startup which is scheduled for Fall 1988.

During the interim period, we will tag open the outboard valve (MO-1909) power breaker during normal plant operations to prevent MO-1909 from spuriously opening. Removing power to MO-1909 will result in the loss of valve position indication in the Control Room. Valve position indication will still be available in the Control Room for the inboard valve MO-1908 which will verify the integrity of the high-low pressure interface. MO-1909 is located in a radiation area (RHR Valve Room) which makes it impractical from an ALARA standpoint to verify its position on a routine basis. Because

MO-1909 is located in a locked radiologically-controlled area, it is not likely that it would be manually opened without Control Room operators being aware of it. We will have procedures in place which will require direct verification weekly that the MO-1909 power breaker is open. Opening this breaker will require us to revise plant operating procedures and train Control Room personnel. We plan to revise procedures and conduct training so that we can operate the plant with the MO-1909 power breaker open prior to Cycle 9 Startup scheduled for Spring 1987.

Please contact us if you have any questions regarding this submittal.

Very truly yours,

R. W. McGaughy

Richard W. McGaughy
Manager, Nuclear Division

RWM/SLS/dmb*

cc: S. Swails
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NRC Resident Office