

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 IPPOLITO, T.A. Operating Reactors Branch 3

SUBJECT: Responds to G Lear 771209 request re effect of inoperative safety-relief valve upon containment. Forwards GE evaluation rept. Forwards GE evaluation rept.

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Iowa Electric Light and Power Company

October 25, 1979
LDR-79-251

LARRY D. ROOT
ASSISTANT VICE PRESIDENT
NUCLEAR GENERATION

Mr. Thomas A. Ippolito
Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20034

Dear Mr. Ippolito:

Mr. G. Lear's letter of December 9, 1977 requested that Iowa Electric evaluate the effect of a stuck open safety relief valve (SRV) upon the Duane Arnold Energy Center (DAEC) containment. The requested evaluation has been conducted by General Electric Company (GE) and is included herewith.

Iowa Electric has modified the DAEC operating procedures to (1) require a cooldown at normal rates if the suppression pool temperature reaches 110°F, (2) require opening 4 safety relief valves when the pool temperature reaches 110°F if a stuck open safety relief valve is experienced, and (3) require closing of opened safety relief valves after primary pressure reaches 144.5 psig.

The above modifications conform to the DAEC Technical Specifications except that: (a) depressurization to avoid condensation instability is not limited to the normal cooldown rate (100°F/hr) specified in Technical Specification 3.7.A.1.c.(4), (b) during reactor isolation conditions, reactor depressurization is begun when the pool temperature reaches 110°F, rather than the temperature of 120°F given in Technical Specifications 3.7.A.1.c.(4), and (c) since the SRV capacities are assumed to be 122.5% of ASME rated, the reactor pressure corresponding to the ramshead critical SRV discharge mass flux of 40 lbm/sec-ft² is 144.5 psig, rather than the value of 200 psig given in Technical Specification 3.7.A.1.c.(4).

Items (b) and (c) above are conservative with respect to the Technical Specifications. Item (a) is non-conservative with respect to reactor pressure vessel fatigue, but is shown to be necessary by the analyses to prevent condensation instability. If one of the postulated events were to occur during the present cycle, the cumulative fatigue cycle will be acceptably small (approximately equal to one startup and shutdown cycle).

During the spring 1980 refueling outage the SRV ramshead discharge devices are scheduled to be replaced by quenchers and the mass flux and temperature limits for ramshead will no longer be appropriate limits. As discussed with your Tom Kevern, it does not appear desirable to request the Staff

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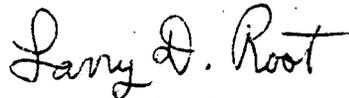
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time necessary to process a technical specification amendment in view of the fact that the analyses indicate that the changes to operating procedures are in the interest of public safety and will be in effect only until quenchers are installed.

If you have any questions, please feel free to call upon me or my staff.

Very truly yours,



Larry D. Root
Assistant Vice President
Nuclear Generation

LDR/KAM/mz

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