

2/4/77

Docket No. 50-331

Iowa Electric Light & Power Company
ATTN: Mr. Duane Arnold
President
Security Building
P. O. Box 351
Cedar Rapids, Iowa 52406

Gentlemen:

RE: DUANE ARNOLD ENERGY CENTER

We have completed our preliminary review of the information you submitted on November 3, 1976, regarding the instrumentation systems available at your facility to monitor drywell to torus differential pressure (ΔP) and torus water level. This information was provided in response to our letter dated September 30, 1976, regarding Technical Specification requirements associated with the Mark I Containment Short Term Program Plant Unique Analyses.

Based on our review of the information provided in your response and your existing Technical Specification requirements for instrumentation systems which could be used to monitor drywell to torus ΔP and torus water level, we have determined that your Technical Specifications should be revised to incorporate instrumentation system requirements which meet the NRC staff technical position detailed in the enclosure. Consequently, you are requested to provide the following information and commitments within 20 days of receipt of this letter:

- a. Your commitment to install instrumentation systems to monitor drywell to torus ΔP and torus water level which meet the minimum requirements of the enclosed NRC staff technical position;
- b. Your schedule for completion of the installation of such systems; and
- c. Your commitment to request appropriate Technical Specification changes relating to this instrumentation following installation.

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Installation of the above-mentioned instrumentation systems and your request for appropriate Technical Specification changes should be accomplished in an expeditious manner but no later than April 15, 1977.

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Operating Reactors

Enclosure:
NRC Staff Technical Position

cc: Mr. Robert Lowenstein, Esquire
Harold F. Reis, Esquire
Lowenstein, Newman, Reis and Axelrad
1025 Connecticut Avenue, N. W.
Washington, D. C. 20036

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ENCLOSURE 1

NRC Staff Technical Position On Instrumentation Systems to Monitor Torus to Drywell Differential Pressure and Torus Water Level

In consideration of the significance of drywell to torus differential pressure (ΔP) control and torus water level control to the results of the Mark I Containment Short Term Program Plant Unique Analyses, we have concluded that a minimum of two narrow range instrument channels should be provided to monitor each of these plant parameters.

Operational experience indicates that pressure transducers tend to drift and water level indicators tend to stick; these observations, together with standard instrument calibration frequency requirements, form the basis for our requirements for a minimum of two instrument channels per parameter.

The significance of variations in drywell to torus ΔP and torus water level and the magnitude of the LOCA-related hydrodynamic loads on torus support systems forms the basis for our requirement for narrow range instrumentation to accurately measure these parameters. The error-band of the instrumentation used to monitor the drywell-wetwell differential pressure and the torus water level should be small in comparison to the absolute value of the parameter being measured. Based on the load sensitivity curves presented in Addendum 2 to the Mark I Containment Short Term Program Final Report and typical instrument accuracies, we conclude that the error in the ΔP measurement should be no greater than ± 0.1 psid and that the error in the torus water level measurement should be no greater than 10% of the difference between the maximum and minimum torus water level (i.e., if the difference between maximum level and minimum level = 4", then the instrument error should be $\leq .4$ ").

The Technical Specifications for each Mark I BWR facility (except Brunswick Units Nos. 1 and 2) should include requirements consistent with this position. Action to be taken in the event that one or both of the instrument channels is out of service should be consistent with other requirements for surveillance instrumentation.