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John F. Franz, Jr.  
Vice President, Nuclear

April 17, 1996  
NG-96-0728

Mr. William T. Russell, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-37  
Washington, DC 20555-0001

Subject: Duane Arnold Energy Center

Docket No: 50-331

Op. License No: DPR-49

Response to NRC Generic Letter 96-01

- References:
- 1) NRC Generic Letter (GL) 96-01, "Testing of Safety-Related Logic Circuits," January 10, 1996.
  - 2) R. McGaughy (IELP) to A. Davis (NRC), "Augmented Logic Circuit Testing," NG-87-2287, June 11, 1987.
  - 3) J. Franz (IES) to W. Russell (NRC), "Response to Request for Additional Information Regarding Removal of Certain Motor-Operated Valves from the DAEC Generic Letter 89-10 Program," NG-95-0815, March 10, 1995.

File: A-101b, C-61

Dear Mr. Russell:

In Reference 1, the Staff requested that we provide our plans and schedule for performing a review of our testing practices of safety-related logic circuits to ensure that these practices adequately demonstrate that these circuits will perform their intended safety function, in accordance with our Technical Specifications (TS). This letter provides that requested information.

The Duane Arnold Energy Center (DAEC) has previously performed a comprehensive evaluation and enhancement of our logic testing practices to ensure safety-related circuitry components and contacts are demonstrated operable per design intent. Reference 2 describes these efforts.

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We have confidence that these previous efforts remain valid based on our administrative controls, such as biennial reviews of TS-required surveillance testing procedures, corrective action and audit programs, industry operating experience review program, as well as our recent completion of the design basis reconstitution effort of instrument setpoint calculations for TS instrumentation and implementation of an Instrument Setpoint Control program. Therefore, a complete re-review of our logic testing practices is not warranted. However, based upon recent industry experiences with deficiencies in testing practices after circuit modifications have been made, as described in GL 96-01 and Information Notices referenced therein, we believe that a selective review of modifications made to logic circuits since our previous review is prudent. We plan to perform such a review as permitted by the Note on page 5 of the GL. This review will consist of:

- 1) identification of those design changes made since the review described in Reference 2 that had the potential to affect the safety function of TS-required logic
- 2) an engineering evaluation of the post-modification tests performed on those logic circuits to ensure that those design changes actually performed per the design intent
- 3) an evaluation to ensure that the current routine testing procedures adequately test the safety-related function of those modified logic circuits, to the extent practicable and prudent to safe plant operation.

It is important to note that because of the DAEC's design vintage, it is not always possible or practicable to test every part of a safety-related logic circuit without compromising plant safety and reliability. There are situations where the risk of an inadvertent equipment actuation and subsequent plant transient from testing some part of a logic circuit is not prudent or safe (for example, to intentionally challenge portions of logic that seal-in a signal or provide equipment interlocks or inhibits with the equipment operating.) It is the DAEC's philosophy and practice to test logic circuits only where the benefit of the test outweighs the risk of performing it. We therefore test only under the proper plant conditions or only test those parts of the logic that are practically and safely testable, while still ensuring that the TS requirements are satisfied.

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\* Note: It is our understanding, based upon the Staff's clarifications at the Nuclear Energy Institute's workshop, that those parts of logic circuits, such as annunciators/alarms, computer points, interlocks and bypasses that do not perform a safety function or are incapable of inhibiting a safety function, per the plant's design basis, need not be covered by the GL-required review.

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Lastly, as stated in Reference 3, while it is part of the DAEC plant design for certain components in safety-related systems to automatically re-align to their accident mitigation positions upon receipt of an actual demand signal, this feature is not relied upon in our accident analysis. Consequently, it is not necessary for us to confirm that this design feature is tested as part of the surveillance testing program per this Generic Letter.

The DAEC is in the process of converting to the Improved Standard Technical Specifications (NUREG-1433) which will both modify some existing TS-required logic tests and add new ones. Therefore, we propose to perform the GL 96-01 review as part of the implementation program for our new TS. Because some new tests may be safely conducted only during a plant outage, our schedule for completing this review will be startup from Refueling Outage (RFO) 15, currently scheduled for Spring 1998. This schedule is consistent with that proposed in the GL.

This letter contains the following new NRC commitments:

1. Perform the review of testing practices of safety-related Technical Specification logic circuits as described in this letter. This review will be completed prior to startup from RFO 15.
2. Inform NRC of the completion of the GL 96-01 review within 30 days of completion.

Please contact this office if you have any questions regarding this matter.

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This letter is true and accurate to the best of my knowledge and belief.

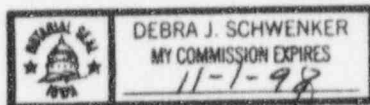
IES UTILITIES INC.

By John F. Franz  
John F. Franz  
Vice President, Nuclear

State of Iowa  
(County) of Linn

Signed and sworn to before me on this 17 day of April, 1996, by

John Franz



Debra J. Schwenker  
Notary Public in and for the State of Iowa

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Commission Expires

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cc: T. Browning  
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