IES
UTILITIES INC.

John F. Franz, Jr.
Vice President, Nuclear

June 30, 1994
NG-94-2113

Mr. William T. Russell, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License No. DPR-49
Response to NRC SER and Request for Additonal Information on Generic Letter 89-19

References: 1) Letter, Mineck (IELP) to Murley (NRC), dated May 4, 1990, NG-90-1089
2) Letter, Mineck (IELP) to Murley (NRC), dated July 31, 1990, NG-90-1739
3) Letter, Pulsifer (NRC) to Liu (IES), dated May 24, 1994

File: A-101b, C-31

Dear Mr. Russell:

In September 1989, NRC Generic Letter 89-19 requested information and possible action related to reactor vessel overfill protection. References 1 and 2 provided our response to that Generic Letter. At that time, we had concluded that no further actions were required. The feedwater and turbine trip instrumentation is arranged in a 2 out of 3 logic and the instruments have demonstrated historical reliability through calibration every six months and trip unit testing every 18 months.

Your staff responded to those submittals with a request for additional information (Reference 3) concerning our plans for operator training on overfill events and schedule for making changes in Technical Specifications (TS) governing availabilities of overfill protection system instrumentation.

We had considered both those items in formulating our original submittals. We concluded that additional training and TS changes are not required. Operator training and requalification includes scenarios which require operator intervention to control reactor vessel water level and

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prevent overfilling the vessel using existing procedures. We further concluded that a TS change is not warranted for these instruments because they do not serve to protect any safety limits.

The reactor water high level (Level 8) trip terminates feedwater flow and isolates the main turbine when the water level in the reactor vessel is higher than the normally anticipated operational band and lower than the steam line nozzles. The isolation prevents turbine damage due to excessive moisture carryover, and the feedwater trip prevents water intrusion into the steam lines. The Level 8 trip may be encountered during the level transient following a reactor scram or upon failure of the feedwater controller, whereby the two feedwater regulation valves move to their fully open positions. The feedwater controller failure event is described in the Duane Arnold Energy Center (DAEC) Final Safety Analysis Report because the ensuing turbine trip causes a decrease in minimum critical power ratio (MCPR). However, the turbine trip and feedwater pump trip are incorporated for protection of the main turbine, not for protection of the MCPR safety limit. It can therefore be seen that the Level 8 trip is a plant design feature incorporated to protect equipment, but has no nuclear safety-related function.

The reactor water level instrumentation which feeds the Level 8 trip units is currently in the DAEC TS (Table 3.2-F) and is calibrated every six months. While the trip units are not currently included in TS, they are functionally tested every refuel outage and there would be no increase in equipment reliability as a result of adding them to the TS. Any action statements for inoperable trip units could result in placing the plant in a condition of reduced margin of safety due to the potential for causing unnecessary turbine trips. We agree with the NRC staff conclusion that this issue is of low safety significance. Based upon our evaluation of the Level 8 trip function and our ongoing instrument calibration and maintenance program, we do not plan to incorporate the Level 8 trip units in TS.

Should you have any additional questions regarding this matter, please contact this office.

No new commitments are made in this letter.

Sincerely,

John F. Franz
Vice President, Nuclear

JFF/SRC/pjv~
Attachments:
cc: S. Catron
L. Liu
L. Root
R. Pulsifer (NRC-NRR)
J. Martin (Region III)
NRC Resident Office
DCRC