Iowa Electric Light and Power Company

JOHN F. FRANZ, JR.

September 28, 1992 NG-92-4344

Dr. Thomas E. Murley, 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 Generic Letter No. 92-04

1) NRC GL No. 92-04, "Resolution of the Issues Related to Reactor Vessel Water Level Instrumentation

in BWRs Pursuant to 10 CFR

50.54(f)"

BWROG Report, "BWR Reactor Vessel Water Level Instrumentation", BWROG-92074

3) Letter, Emergency Procedures Committee (EPC) to BWROG Plant Operations Superintendents,

e: A-101b, SPF-158

Dear Dr. Murley:

This letter provides Iowa Electric Light and Power Company's (IELP's) response to Generic Letter No. 92-04 (reference 1) in accordance with 10 CFR 50.54(f).

Reference 1 discussed potential inaccuracies in certain vessel level instrumentation due to the presence of non-condensible gases in the instrument reference leg. These gases could build up over time due to improper installation of condensing chambers or due to reference leg leakage. During depressurization below 450 psig, these gases may come out of solution in the reference leg and cause a false high level indication.

The BWR Owner's Group (BWROG) report on this phenomenon (reference 2) concluded that automatic safety systems will be actuated at pressures well above 450 psig, even for worst-case

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gas concentrations. Reference 1 stated that the NRC staff is confident that all emergency cooling systems will initiate as designed and that interim plant operation is acceptable. Reference 1 also requested actions be taken by licensees in order to resolve the matter of potential inaccuracies for longer-term operation. These actions are listed below along with our responses.

Requested Action

- 1. In light of potential errors resulting from the effects of noncondensible gases, each licensee should determine:
 - a. The impact of potential level indication errors on automatic safety system response during all licensing basis transients and accidents;
 - b. The impact of potential level indication errors on operators' short and long term actions during and after all licensing basis accidents and transients.
 - c. The impact of potential level indication errors on operator actions prescribed in emergency operating procedures of other affected procedures not covered in (b).

ITLP Response

1.a. The BWROG provided to the NRC and member utilities a copy of their report, "BWR Reactor Vessel Water Le el 1. strumentation" (reference 2). This report addresses the safety impact of potential water level indication errors on automatic system response during all licensing basis transients and accidents. The analysis basis is contained in Section 6.0, "Safety Analysis", of the report and is summarized in Section 2.2, "Plant Response to Postulated Accident Scenarios". IELP has determined that the information in the BWROG report is applicable to the design of DAEC. This conclusion is based on our review of the report and the evaluation made by General Electric as contained in Attachment 2 to the report.

The DAEC staff has reviewed the licensing basis transients and accidents in our UFSAR Chapter 15 and has determined that potential water level indication errors will not have any adverse effects. Our staff has further determined that all Emergency Core Cooling System (ECCS) actions initiated from low-low and low-low-low reactor water level signals are not affected by non-condensibles since they are generated by

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instruments with Yarway reference legs.

- 1.b. The BWROG report addresses in Section 6.9, "Operator Responses", the operator actions that could be anticipated in response to potential water level indication errors. As discussed in Section 6.0 of the report, the short term automatic safety actions will be performed as necessary. Additional guidance has been provided to the plant operations personnel as a result of the Emergency Procedur a Committee (EFC) recommendation latter of August 19, 1992 (reference 3). Once available, this guidance was provided to the operators as part of their immediate required reading. The existing long term guidance provided in the Emergency Operating Procedures (EOPs) alerts the operators to the possibility of inaccurate water level readings due to non-condensible gases following a rapid depressurization. The EOPs also provide contingency actions for operators if vessel level indication is lost. This involves flooding the vessel and relying on injection flow and vessel pressure to assure adequate core cooling. The DAEC EOPs also provide a procedure for back-filling level instrument reference legs to regain water level indication. Sufficient operator guidance is therefore given to address the concerns outlined in reference 1.
- 1.c. As stated in section 6.9 of the report and the 1.b. response above, the operators have idequate information in the present EOPs as augmented by the recent communication from the EPC (reference 3). The EVC is continuing to review the potenti need for any additional guidance in the Emergency Procedure Guidelines (EPG) to further address the potential water level indication errors. Such review will take into account the information from the BWROG program of analysis and testing regarding this issue.

Requested Action

- Based upon the results of (1), above, each licensee should notify the NRC of short term actions taken, such as:
 - a. Periodic monitoring of level instrumentation system leakage; and
 - b. Implementation of procedures and operator training to assure that potential level errors will not result in improper operator actions.

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IELP Response

A.a. and b. DAEC operators have been informed on the effects of noncondensible gases on cold reference leg instruments. A walkdown was performed to identify any leakage on the reference legs of affected instruments. Three valves were identified having minor leakage. Two of these valves have been repaired; the third is scheduled for repair during the next forced outage. Engineering has also reviewed data from previous DAEC plant shutdowns and has found no evidence of noncondensible gases affecting reference legs.

Requested Action

Each licensee should provide its plans and schedule for corrective actions, including any proposed hardware modifications necessar, to assure the level instrumentation system design is of high functional reliability for long term operation. Since this instrumentation plays an important role in plant safety and is required for both normal and accident conditions, the staff recommends that each utility implement its longer term actions to assure a level instrumentation system of high functional reliability at the first opportunity but prior to starting up after the next refueling outage commencing 3 months after the date of this letter.

IELE Response

The repair of the leaking instrument valve is planned for the next forced outage. Operators will receive formal training on this phenomenon a part of their normal requalification training. IELP endorses the BWROG testing plan submitted to the NRC and will evaluate results of that testing for input on DAEC level instrument configuration.

IELP has satisfied the requirements of reference 1 and determined that there are no adverse effects on safety functions or operator actions at DAEC due to non-condensible gases in level instrument reference legs. Please contact this office if you have any further questions.

NG-92-4344

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

John F. Franz, Jr.

Signed and sworm to before meyon this 28 in of September

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Notary Public in and for the State of Iowa

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