Iowa Electric Light and Power Company

July 9, 1993
NG-93-2771

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
Regulatory Guide (RG) 1.97
Reference: 1) Letter from J. Franz (IELP) to T. Murley (NRC) dated June 26, 1992 (NG-92-2629)
File: A-106, C-61

Dear Dr. Murley:

In the referenced letter, we advised the Staff of the status of our Accident Monitoring Instrumentation Program developed to implement Regulatory Guide (RG) 1.97. On June 28, 1993, a conference call was held with members of your staff and Duane Arnold Energy Center (DAEC) personnel to discuss certain issues described in that letter, including the acceptability of interruptible power supplies to certain containment isolation valve position indications. These indications are used to verify primary containment isolation. The purpose of this letter is to document our response to questions raised by your staff regarding the availability of alternate position indication for normally-open containment isolation valves upon a loss of their normal position indication.

As described in Item 5 to Attachment 1 of the referenced letter, certain primary containment isolation valve position indications (Type B, Category 1 variables) are supplied by our Reactor Protection System. The Reactor Protection System (RPS) is powered from Class 1E, safety-related 480 VAC electrical busses via two RPS motor-generator sets. These essential busses are normally powered from offsite power and have emergency diesel generators as backup power supplies. The RPS motor-generator sets, however, are non-safety related and are designed to

190(A003 1/0

positively deenergize equipment in the event of a momentary power interruption. Therefore, in the unlikely event of a complete loss of offsite power (LOOP) or a failure of the RPS distribution panel, the RPS power supply would be deenergized. The containment isolation valves would then fail closed due to loss of control power (fail-safe position) but position indication would be lost.

Upon a loss of RPS power, Abnormal Operating Procedures direct Control Room operators to restore power to the RPS busses through normal or alternate supplies. Containment integrity is assured during the interim due to the redundancy of the fail-closed inboard and outboard isolation valves. If restoration of power to the RPS busses is unsuccessful, alternate indication for those normally-open containment isolation valves is available. The valves of concern and alternate indications of valve position are described below:

Recirculation Pump Mini-Purge Isolation Valves

Upon a loss of RPS, operators can verify the fail-closed position of these two valves by observing that local mini-purge flow indication is zero. Additionally, local visual verification of valve position is available. Both of these alternate indications of valve position are readily accessible and located on the first floor of the Reactor Building.

Drywell Equipment and Drain Sump Isolation Valves

Upon a loss of RPS, operators can verify the fail-closed position of these four valves by local visual verification from the torus room. In the event that this area is not accessible, the level of the tanks to which these sumps discharge can be monitored from the Radwaste Control Room for indication of containment breach. Additionally, electrical continuity readings for the valve position switches can be taken at the control room panels to determine the position of these valves.

RG 1.97 permits the use of interruptible power supplies if momentary loss of power is tolerable. We believe that the containment isolation valve position indications powered from RPS are examples of indications where such an interruption is tolerable. If control room operators are unable to recover the RPS busses, there are several alternate means of verifying containment isolation.

Therefore, based on the above alternate indications; the redundancy of the inboard and outboard fail-safe containment isolation valves; and the low probability of an event which results in the permanent loss of the RPS busses, we have concluded that this valve position instrumentation provides adequate information to control room operators regarding the safety status of the plant and meets the criteria of RG 1.97.

If you have any further questions, please contact this office.

Very truly yours,

Keith D. Young

Keith D. Young
Manager, Nuclear Licensing

KDY/PMB/pjv

cc: P. Bessette
L. Liu
L. Root
R. Pulsifer (NRC-NRR)
J. Martin (Region III)
NRC Resident Office
DCRC