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ACCESSION NBR:9104170192 DOC.DATE: 91/04/12 NOTARIZED: NO DOCKET #
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 MURLEY,T.E. Office of Nuclear Reactor Regulation, Director (Post 870411

SUBJECT: Submits status of Reg Guide 1.97 activities at facility re
 accident monitoring instrumentation. Labeling accident
 monitoring instrumentation in control room will be completed
 by 910801 & position paper will be prepared by 910901.

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Iowa Electric Light and Power Company

April 12, 1991

NG-91-0640

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

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Status of R. G. 1.97 Activities at the DAEC

- References: (1) letter R. McGaughy (IELP) to H. Denton (NRC),
dated July 3, 1985 (NG-85-2423)
(2) letter R. McGaughy (IELP) to H. Denton (NRC),
dated October 16, 1985 (NG-85-4481)
(3) letter D. Mineck (IELP) to T. Murley (NRC),
dated May 3, 1989 (NG-89-0057)

File: A-107b, A-370

Dear Dr. Murley:

This letter provides our response to questions raised by your Staff regarding accident monitoring instrumentation at the Duane Arnold Energy Center (DAEC). After reviewing the development and implementation of our Regulatory Guide (RG) 1.97 program we have concluded that, although additional effort is necessary to implement all aspects of RG 1.97 fully, the accident monitoring instrumentation installed at the DAEC is fully functional and will permit Control Room personnel to monitor variables and systems during and following an accident.

The DAEC accident monitoring instrumentation (AMI) program was one part of the more comprehensive Iowa Electric Emergency Response Facility (ERF) Program developed to implement the requirements of Supplement 1 to NUREG-0737 which, in addition to RG 1.97, included the Safety Parameter Display System, Detailed Control Room Design Review, and Emergency Operating Procedure upgrade projects. The project team assigned responsibility for RG 1.97 spent over two years performing the necessary evaluations of AMI guidelines defined in RG 1.97 and the comparisons of emergency response capabilities already in place at DAEC to these guidelines.

Our original response to RG 1.97 (Reference 1) detailed the design and qualification criteria of the AMI and stated that existing safety-related (or Class 1E) plant instrumentation and new instrumentation, added earlier to meet the requirements of NUREG-0737, were used, whenever possible, to meet the guidance of RG 1.97. Originally, instrumentation had been designed and installed in accordance with the seismic and physical and electrical separation criteria applicable during initial construction and licensing of the DAEC, which are less stringent than RG 1.100 and RG 1.75 respectively. Instrumentation installed for NUREG-0737 or RG 1.97 met the separation and seismic specifications of RG 1.97 to the extent permitted by the original design and structures of the DAEC. Reference 1 also identified certain modifications to the DAEC which would be required to meet RG 1.97 including the installation of upgraded reactor water level instrumentation, upgrading of certain Control Room instrumentation to Category 1 specifications and installation of a new Class 1E power supply system for certain Category 1 instruments. The schedule for these modifications was documented in the November 1985 semi-annual update to the "Plan for the Integrated Scheduling of Plant Modifications for the Duane Arnold Energy Center" (Integrated Plan) and in a separate letter describing the plans and schedules for the upgrading of existing plant instrumentation to meet RG 1.97 (Reference 2). The labelling of RG 1.97 instrumentation in the control room was intended to be performed as part of the Detailed Control Room Design Review project and was not included in these schedules.

All modifications described in Reference 2, with the exception of the rerouting of cables for divisional separation, were completed on schedule, by the end of the 1988 Refueling Outage, as documented in our May 1989 semi-annual update of the Integrated Plan schedule. A separate letter was submitted revising some of the commitments made in Reference 2. The changes eliminated any need to reroute cables for divisional separation (Reference 3).

We also informed you in Reference 3 that we would conduct a detailed review to verify that the DAEC accident monitoring instrumentation program in fact satisfies our commitments to RG 1.97. The decision to perform this review was based, in part, on our review of NRC inspection reports of RG 1.97 implementation programs at other utilities and our recognition that some of the issues identified in these reports could be applicable to the DAEC, particularly the identification of AMI in the Control Room and clarification of compliance to RG 1.100 and RG 1.75 specifications. A consultant began this evaluation in March 1989 and was originally scheduled to be completed by July 1989. This review was not completed until October 1990 due to our decision to expand the scope of this review from Category 1 variables only to all variables in the AMI program and expand the list of instruments in the RG 1.97 program to include all subcomponents in the instrument loops.

We recognized during the performance of this review that, while all the modifications listed in reports under the Integrated Plan were carefully

tracked and implemented, other items were not on this schedule and consequently were not tracked and not completed. In particular, this included the identification of AMI in the Control Room and in a controlled Equipment Data Base. Because we had confidence in the qualification and availability of AMI installed in the Control Room and that Control Room Operators had good awareness of which indications were AMI, a decision was made to wait until the evaluation of the program was complete to resolve these concerns. In hindsight, we realize that this decision may have been inappropriate. Since the instrumentation was not specifically identified in the equipment data base as being in our RG 1.97 program, the potential exists for it to be modified such that our previous commitments to RG 1.97 would be invalid.

Therefore, we have reviewed the maintenance and modification history of our Category 1 and 2 AMI to assure ourselves and the Staff that this instrumentation remains capable of performing its intended function under accident conditions. We have concluded from this review that, although this instrumentation was not in a "controlled program" of its own, the instrumentation has been adequately controlled and maintained by other existing programs. Specifically, we have determined that:

1. Category 1 and 2 AMI located in harsh environments is included in and controlled by the DAEC Environmental Qualification Program.
2. AMI installed in accordance with the requirements of NUREG-0737 is included in and controlled by the DAEC Technical Specifications for instrument ranges and operability.
3. Category 1 and 2 AMI has been calibrated and maintained through either the Preventative Maintenance Action Request or Surveillance Test programs.
4. No modifications performed since implementation of the RG 1.97 program in 1985 have been identified which would have invalidated previous commitments made in response to RG 1.97.

As discussed previously with members of your staff, our resolution of the issues identified in the consultants report is not yet complete. We have identified, thus far, six activities which we believe must be completed prior to an NRC inspection of our RG 1.97 program. These activities are described and schedules for their completion are shown on the Attachment to this letter. Upon finalization of the list described in Task 1 of the Attachment, controls will be put in place to preclude inadvertently modifying this equipment and deviating from our commitments. These controls will remain until the Equipment Data Base has been updated as described in Task 4 of the Attachment. We have also identified other issues including the availability of AMI on the Plant Process Computer and Safety Parameter Display System which are being reviewed for action. Those issues could potentially involve modifications to the plant or changes in our commitments regarding RG 1.97. However, we are confident

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that none of these issues will put in doubt the adequacy of the AMI. Furthermore, we do not anticipate requesting any new exceptions from RG 1.97 specifications from those already granted. Any changes to commitments or equipment modifications which may be necessary will be promptly communicated to you via updates to the Integrated Plan.

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

Very truly yours,



Daniel L. Mineck
Manager, Nuclear Division

DLM/PMB/PJV+

cc: P. Bessette
R. McGaughy
L. Root
L. Liu
S. Sands (NRC-NRR)
NRC Resident Office

TASK DESCRIPTION AND SCHEDULES FOR COMPLETION

Task 1: Finalize a formal list of components subject to RG 1.97 requirements.

Completion Date: May 15, 1991

Task 2: Complete labeling of Accident Monitoring Instrumentation in the Control Room as specified by RG 1.97.

Completion Date: August 1, 1991

Task 3: Complete specific training of Control Room Operators regarding RG 1.97 and Accident Monitoring Instrumentation at the DAEC.

Completion Date: August 1, 1991

Task 4: Revise the Equipment Data Base for the components identified in Task 1 above to indicate that each component is subject to RG 1.97 requirements thus assuring that appropriate controls are maintained.

Completion Date: August 1, 1991

Task 5: Prepare a "Position Paper" describing DAEC's compliance to and deviations from RG 1.75.

Completion Date: September 1, 1991

Task 6: Prepare a "Position Paper" describing DAEC's compliance to and deviations from RG 1.100.

Completion Date: September 1, 1991