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 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow      05000331  
 AUTH. NAME      AUTHOR AFFILIATION  
 MINECK, D.L.      Iowa Electric Light & Power Co.  
 RECIP. NAME      RECIPIENT AFFILIATION  
 MURLEY, T.E.      Office of Nuclear Reactor Regulation, Director (Post 870411)

SUBJECT: Responds to Generic Ltr 88-20 & Suppl 1, "Individual Plant Exam for Severe Accident Vulnerabilities 10CFR50.54(f)."

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*MURLEY*

Iowa Electric Light and Power Company

October 31, 1989

NG-89-3096

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  
Reference: Generic Letter 88-20, "Individual Plant Examination  
for Severe Accident Vulnerabilities - 10 CFR§50.54(f)",  
and Supplement 1.  
File: A-101b, A-225, T-23a

Dear Dr. Murley:

Generic Letter (GL) 88-20 requested that licensees submit proposed programs for completing an Individual Plant Examination (IPE) within 60 days after receipt of the NRC's final guidance documents. Supplement 1 to GL 88-20 (August 29, 1989) announced the availability of NUREG-1335, "Individual Plant Examination: Submittal Guidance," and formally initiated the GL 88-20 schedule.

We intend to conduct an IPE of the Duane Arnold Energy Center (DAEC) by performing a Level I Probabilistic Risk Assessment (PRA) and a containment performance analysis that makes use of the guidance contained in Appendix 1 of GL 88-20. After our IPE team has become familiar and gained experience with the Level I PRA, we may choose to perform a Level II PRA as our containment performance analysis. A description of the planned approach and methodology that we have selected to accomplish the DAEC IPE is contained in Attachment 1.

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Dr. Thomas E. Murley  
October 31, 1989  
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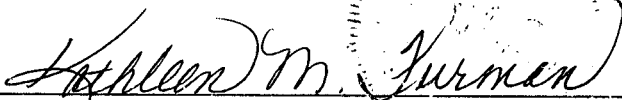
Our initial Level I PRA will be complete by June 30, 1991. We anticipate completion of our containment performance analysis by June 30, 1992 with submission of the IPE results to you by August 31, 1992. Major milestones and schedules for the IPE will be included in our next semi-annual Integrated Plan update which is due November 3, 1989.

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

IOWA ELECTRIC LIGHT AND POWER COMPANY

By   
DANIEL L. MINECK  
Manager, Nuclear Division

Subscribed and sworn to before me on  
this 31st day of October,  
1989.

  
Notary Public in and for the State  
of Iowa

DLM/BHJ/pjv+

Attachment

cc: B. Johnson  
W. Miller  
L. Liu  
L. Root  
R. McGaughy  
B. Lee, Jr. (NUMARC)  
J. R. Hall (NRC-NRR)  
A. Bert Davis (Region III)  
NRC Resident Office  
Commitment Control

## Planned Approach and Methodology

### GENERAL

We plan to pursue the Individual Plant Examination (IPE) of the DAEC by utilizing Iowa Electric employees to the maximum extent practical, augmented by outside consultant support when necessary. We hope to retain a significant portion of knowledge gained by making use of our own employees that would otherwise be lost if the project were to be performed entirely by outside organizations.

We intend to establish an IPE team made up of Iowa Electric engineers with diverse nuclear power plant experience under the direction of a supervising engineer. The IPE team will conduct a Level I PRA and a containment performance analysis for the purpose of identifying plant-specific vulnerabilities that could lead to severe accidents. Additional in-house and external resources will be used to augment the team's effort when appropriate. Our IPE will provide for an independent in-house review to ensure the accuracy of documentation packages and to validate both the IPE process and its results. In addition, an external advisory group made up of PRA consultants will be used to review our PRA methodology and provide guidance as needed.

### LEVEL I PRA

The System Engineering group at the DAEC will support the IPE team by developing plant-specific fault trees using "smart" or "segmented" PRA techniques. Consistent with current industry practice, the degree to which a system will be modelled to the subcomponent level will depend on the safety-significance of the system. We feel that significant system interactions will be identifiable using this approach and we do not anticipate that system failure modes will be discovered at the individual subcomponent level. Event trees developed during earlier PRAs by other utilities and common to General Electric BWRs will be adjusted as necessary and validated for applicability to the DAEC prior to use. Computer resources running industry recognized codes will be utilized to build system fault tree and event tree PRA models of the DAEC's response to events and to quantify the results.

### CONTAINMENT PERFORMANCE ANALYSIS

The methodology and approach to be used in the containment performance analysis will be determined as experience is gained during the Level I PRA. As our IPE team becomes more familiar with the IPE process and the state of research in this area progresses, we may choose to perform a Level II PRA to satisfy this requirement.