

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-331/85-02(DRSS)

Docket No. 50-331

License No. DPR-49

Licensee: Iowa Electric Light and Power
Company
IE Towers
P.O. Box 351
Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Inspection At: Duane Arnold Site, Palo, IA

Inspection Conducted: January 21-25, 1985

Inspectors: *J. P. Patterson*
J. P. Patterson
Team Leader

Feb. 13, 1985
Date

N. Williamsen
N. Williamsen

Feb 13, 1985
Date

Approved By: *M. P. Phillips*
M. P. Phillips, Chief
Emergency Preparedness Section

2/13/85
Date

Inspection Summary

Inspection on January 21-25, 1985 (Report No. 50-331/85-02(DRSS))

Areas Inspected: Routine, unannounced inspection of the following areas of the emergency preparedness program: licensee actions on previously-identified items related to emergency preparedness; implementation of the emergency plan; knowledge and performance of duties (training); emergency detection and classification; protective action decisionmaking; notifications and communications; changes to the emergency preparedness program; and shift staffing and augmentation. The inspection involved 140 inspector-hours onsite by two NRC inspectors and two consultants.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

*D. Mineck, Plant Superintendent
*R. Hannen, Assistant Plant Superintendent - Operations
*K. Young, Assistant Plant Superintendent - Radiation Protection/Security
*E. Root, Chairman, DAEC Safety Committee, Corporate
*D. Wilson, Manager, Nuclear Licensing, Corporate
*D. Hingtgen, Emergency Planning Coordinator, Corporate
*C. Cox, Emergency Planning Assistant, Corporate
*T. Quinn, Site Emergency Planning Assistant
*W. Miller, Technical Support Supervisor
G. Van Middlesworth, Training Coordinator, Corporate
R. Tucker, Training Assistant
S. Huebsch, Quality Assurance Engineer, Corporate
R. Essig, Supervising Quality Assurance Engineer, Corporate
M. Harris, Technical Engineer
J. Smith, Technical Engineer
R. Fry, Secretary, Operations Supervisor
J. West, Site Quality Assurance Engineer
R. Potts, Operations Shift Supervisor
D. Robertson, Operations Shift Supervisor
R. Fowler, Operations Shift Supervisor
F. VanEtten, Operations Shift Supervisor
G. Thullen, Operations Shift Supervisor
H. Giorgio, Site Radiation Protection Coordinator
S. Veitenheimer, Alternate Site Radiation Protection Coordinator
J. Loehrlein, Site Design Engineering Supervisor
P. Pyle, Document Control Clerk

*Denotes those attending the exit meeting on January 25, 1985.

2. Licensee Actions on Previously-Identified Items Related to Emergency Preparedness

- a. (Open) Open Item No. 331/84-05-02: Complete the Symptomatic EOPs to include a statement for OSSs to classify emergencies. The inspector's examination determined that this statement has been included in EOP 1 and EOP 2 which reference EPIP 1.1 for EAL assessment. Two other EOPs, EOP 3 and EOP 4 are in preparation with a completion target date of April 1, 1985. EOP 6 is scheduled for completion prior to the upcoming outage. No date is set for the remaining EOP 5. Provisions for training on the revised EOP 1, EOP 2 and EOP 6 have been completed and will be scheduled at the simulator when the remaining EOPs are available. This item is still considered open until all six EOPs are completed and training on them has been provided.

- b. (Closed) Severity Level IV Noncompliance Item No. 331/84-05-03: Failure to provide annual refresher training for two newly appointed Operations Shift Supervisors (OSSs) in the Duane Arnold Energy Center (DAEC) Emergency Plan Implementing Procedures (EIPs) since May 1982. The inspectors reviewed the training records of all assigned OSSs and determined that all 18 had received this annually required refresher training in the DAEC EIPs, including the two in question, in June and July, 1984. This item is considered closed.
- c. (Closed) Open Item No. 331/84-10-02: Provide additional training for the offsite monitoring teams to better aid them in determining if and when they are within a radiological plume. The inspector determined that this training had been provided and a revised off-site monitoring procedure had been implemented; EIP 3.2, Revision 5 dated October 31, 1984. Section 4.2 of this procedure addressed and clarified the open window/closed window measurement technique and explained the instrument reading results in terms of plume location. This item is considered closed.
- d. (Closed) Open Item No. 331/83-14-03: Portions of the Post Accident Sampling and Analysis Procedure (PASAP) which relate to Containment High Range Monitor readings (Section 3.11) should be included in EIP 3.3a. The inspector's review determined that EIP 3.3a, Manual Dose Projections, did include that portion of PASAP 7.4 relating to Containment High Range Monitor readings used to determine potential release rates. These readings are only used to determine an actual release rate when stack and reactor building vent monitors are inoperable. This item is considered closed.
- e. (Closed) Open Item No. 331/83-18-03: Provide the correct location for the Offsite Laboratory and the Decontamination Facility in Cedar Rapids and delete the incorrect references in the next plan revision. Revision 5 of the DAEC Emergency Plan correctly identified the location of the Laboratory and decontamination facility. EIP 2.6 and EIP 2.7 also correctly identified its Cedar Rapids street address for this laboratory/decontamination facility. This item is considered closed.
- f. (Closed) Open Item No. 331/84-05-01: EIP 1.1 should be revised so that drywell radiation levels for the various EAL conditions in Attachment 2 are consistent with one another as well as with Attachment 1. The inspector reviewed Revision 5, October 1, 1984 to EIP 1.1, Determination of the Emergency Action Level, and determined that the various EAL conditions were consistent with one another as well as the other EAL conditions listed previously in Attachments 1 and 2. This item is considered closed.

3. Activation of the DAEC Emergency Plan

(Closed) 331/84-XX-03, -04, -05, -06, -07, -09, -10, -11, and -12: Activation of the DAEC Emergency Plan. During the period of April through December, 1984, there were twelve licensee activations at the Duane Arnold Energy Center; all were Notifications of Unusual Event

(NUEs). The inspectors reviewed the emergency action levels that were used to classify each of the events. This review included analysis of Licensee Event Reports, Deviation Reports, Evaluation of Deviation Reports, the operator's log, and interviews with DAEC personnel. Based on this review, the classifications were promptly and appropriately made on each occasion.

The following table presents the chronological analysis.

EMERGENCY PLAN ACTIVATIONS, DAEC, APRIL THROUGH DECEMBER, 1984

(Each was an NUE)

<u>Date</u>	<u>Time of Emergency Declaration</u>	<u>EAL No.</u>	<u>Linn County Notified</u>	<u>Benton County Notified</u>	<u>Iowa ODS Notified</u>	<u>Elapsed Time (*3) (minutes)</u>
04/13/84	1451	A-1	(*2)	1456	1500	-, 5, 9
05/16/84	1925	A-11		1938	1937	-, 13, 12
06/24/84	1700	A-11		1701	1702	-, 1, 2
07/03/84	1717	A-11		1727	1733	-, 10, 16
07/12/84	0015	A-11		0017	0018	-, 2, 3
07/18/84	1530	A-11		1544	(*2)	-, 14, -
09/05/84	0959	A-29		1012	1012	-, 13, 13
09/29/84	1640	A-25		1652	1650	-, 12, 10
10/24/84	1015	A-10		1024	1024	-, 9, 9
11/04/84	0147	A-26	0151	0150	0210	4, 3, 23
11/11/84	2039	A-26	2046	2044	2050	7, 5, 11
11/23/84	0640(*1)	A-7	0658	0652	0700	18, 12, 20

*1: Time of event (reactor scram), declaration time unknown.

*2: Blanks in these columns indicate data unavailable from the governmental authorities.

*3: Elapsed time from declaration to notification of Linn County, Benton County, and Iowa ODS, respectively.

A portion of the above table was obtained from the form, Attachment 1, EPIP 1.2, Revision 6. The analysis of these forms showed that most of the forms were poorly completed. However, the new form (Attach. 1, EPIP 1.2, Revision 7) is clearer.

The activations were performed in a suitable manner; the inspectors consider these items closed.

4. Emergency Detection and Classification (82201)

Determination of the Emergency Action Level, EPIP 1.1, Revision 5 dated October 1, 1984 was utilized by the inspectors in their walkthroughs. This procedure is consistent with the EALs described in Table D-2 of the Plan. This latest revision incorporated radiation monitoring points available on the KAMAN monitoring system, where applicable, as EALs. Containment and torus high range monitors were listed under certain criteria for EALs. Other improvements included more definitive levels

for exceeding normal readings and pressures based on plant operating conditions. Attachment 1 had been enlarged to a three page summary of EALs for the four emergency levels. Attachment 2 was more definitive and correlated better with the EAL designations. Revision 5 is an improved version of EALs applicable to Duane Arnold, and if used properly should be more helpful and objective for the Operations Shift Supervisors and the Emergency Coordinators.

The inspectors conducted walkthroughs of accident sequences leading to EALs and accident classification with five Operations Shift Supervisors (OSSs). All but one of the OSSs interviewed demonstrated good familiarity with and understanding of EPIP 1.1 and Attachments 1 and 2. Classifications were made promptly and accurately. Emergency Operating Procedures, EOP-1 and EOP-2 each contained a note reminding the operator to refer to EPIP 1.1 for EAL assessment.

The OSS whose performance was below par exhibited only marginal and somewhat tentative understanding of the Emergency Plan and the EPIPs. He has had all required EP training, however in his function as a Day Supervisor he appeared to be "rusty" through lack of exposure to the Emergency Plan Program and actual practice in its implementation. The inspectors recommend that he be assigned additional EP training for current reinforcement of his normally scheduled training.

The inspector determined that the licensee has reviewed their EALs on an annual basis with Linn County, Benton County, and the State of Iowa emergency response organizations as required by 10 CFR Part 50, Appendix E, Section IV.B. This occurred at various times in August, 1984. However, the inspector emphasized to the Emergency Preparedness Coordinator (EPC) that the significance of these EAL reviews should relate to what response actions are taken and expected of these offsite agencies from licensee EALs which result in an emergency classification. These support agencies need not comprehend the technical concept of the plant's EAL. The inspector informed the EPC that these reviews and discussions of related EALs should be part of joint meetings or training session rather than accomplished through correspondence as is presently done.

Based on the above findings, this portion of the licensee's program is acceptable.

5. Protective Action Decisionmaking (82202)

Initial protective action recommendations (PARs) are the responsibility of the OSS as initial Emergency Coordinator. This authority cannot be delegated to anyone else. Interviews with the three onshift OSSs demonstrated that they were familiar with and capable of making PARs utilizing Attachment 1 of EPIP 3.3a. They demonstrated successfully the mechanics of initiating the notification processes as stipulated in EPIP 1.2. Some of the OSSs indicated that they would use security personnel to make the initial notifications. This follows Notification EPIP 1.2 requirements.

The inspector's review of these EIPs and interviews determined that there is some misconception of an EAL and an emergency classification. An EAL is the initiating condition of some measurable parameter whose level leads to a classification. Section 3.1.2 and Section 3.14 of EIP 1.2 misidentify the designation of an emergency classification with an EAL. Other examples of misidentification are found in other EIPs. EALs lead to emergency classification.

Some OSSs interviewed were not certain of which emergency duties they were responsible for including in those nondelegatable duties as the Emergency Coordinator. A Site Radiation Protection Coordinator and an Alternate Site Radiation Coordinator who could serve as an ALARA Coordinator were also interviewed. They were both familiar with their emergency responsibilities, could make PARs to the Emergency Coordinator (TSC), and demonstrated knowledge and applicability for radiological assessment both onsite and offsite - until the EOF was fully activated. All interviewed had received the required emergency training on a timely basis.

A similar protective action decisionmaking flow chart for Corporate EIPs has been developed and approved on January 8, 1985. Training on this chart has not been completed for corporate personnel.

Based on the above findings, this portion of the licensee's program is acceptable.

6. Notification and Communications (82203)

The inspectors' review of Revision 7 to EIP 1.2, Notification, identified several changes which have been made and should improve the notification process, namely:

- a. Minimum PARs are now specified in Attachment 1 for both the Site Area Emergency and the General Emergency.
- b. Attachment 1 includes space for cancellation notifications for the Emergency Coordinator, Emergency Response and Recovery Director and County and State agencies.
- c. Group Pages (a thirty second message, by radio) are now being put into effect for all emergency event notifications.
- d. An Activation Notification Call List has been added as Attachment 3 for security personnel to use.
- e. Copies of notification forms, Attachment 1, are now being sent to the Emergency Planning Coordinator.

For future reference and procedure changes which refer to EALs in Sections 3.1.2, 3.14, 4.13(a), 4.1.4, and 4.2.1 of EIP 1.2 the author should change to "emergency" or "emergency event" from EAL designation.

The inspector observed and reviewed the functions of various emergency equipment in the TSC and OSC. The Emergency Telephone Book is reviewed and updated quarterly as required. The inspector reviewed records of communications equipment for operation checks for both onsite and offsite use. The inspector determined that the Prompt Notification System including all the sirens within a 10 mile EPZ are being repaired and maintained on a quarterly basis, with some facets done on a monthly basis. Monthly alarm tests are being continued by Linn County and Benton County, Iowa. If a failure on the monthly alarm tests occurs, repairs are made within 7 days. The encoders at the State and County EOCs are also maintained and repaired on a routine schedule.

Radio communications serve as backup to most telephone systems. A microwave line for telephone service also may be used. Two way radio as well as the fixed radios are tested on a daily basis, since the fixed radios are used as well as the two-way radios continually by Security, unless emergency use is needed.

The inspector concluded that this portion of the emergency preparedness program is acceptable.

7. Changes to the Emergency Preparedness Program (82204)

The DAEC Emergency Plan in effect during this inspection was Revision 4. Revision 5 was being distributed during the inspection. Changes in the EIPs and the EP do incorporate changes in emergency facilities, equipment and instrumentation as reviewed by the inspector. Revision 5 to the EP now includes the correct address for the offsite laboratory and decontamination facility, an omission from the earlier plan. The Emergency Planning Coordinator (EPC) is responsible for initiating new or revised EIPs and Corporate EIPs. Proposed revisions are routed by the EPC for internal review using a "Record Review Form," which includes provisions for documenting those who have reviewed and approved the revisions. EIP 6.1, Maintenance of Emergency Preparedness, lists by title those persons responsible for initiating new or revised EIPs, Corporate EIPs, and the DAEC EP Plan. Distribution of approved plans and procedures is also described in EIP 6.1.

There have been no significant changes in the licensee's organization since the previous inspection. Records of revisions to the DAEC and Corporate Plans and Corporate EIPs are maintained at the corporate office. Site EIP revision records are maintained onsite by Document Control. The inspector verified that changes to the DAEC Emergency Plan and EIPs are distributed to proper personnel and organizations. After procedure changes are approved these new issues are not put into effect until related training on them is completed. Thus, it is not always possible to verify that these changes are submitted within 30 days after the change is implemented. The new Revision 5 of the EP has a November 1984 date on the plan, however it was just being distributed onsite during the inspection, therefore it could not have been submitted to the NRC any sooner. The introductory page to the EP does include an approval by the Manager, Nuclear Generation Division dated December 19, 1984.

The inspector concluded that EIPs and plan revisions are being submitted on a timely basis within 30 days after they are effective. The licensee is considering changes to both the plan and EIPs to more accurately reflect the effective dates.

Based on the above findings, this portion of the licensee's program is acceptable.

8. Shift Staffing and Augmentation (82205)

To meet the minimum shift staffing objectives delineated in Table B-1 of NUREG-0654, the licensee is maintaining nine key staff positions with 13 additional emergency support personnel available for duty within 30 minutes and an additional 14 within 60 minutes. The licensee had conducted two shift augmentation drills in May, 1984 and January, 1985. For each drill personnel were notified by telephone or personal pager and proceeded to their appropriate response facility. Each ERF was staffed and activated within one hour. Data was still being compiled during the inspection time on the drill conducted January 22, 1985. Review of preliminary data indicated that the January shift augmentation was successful.

Based on the above findings, this portion of the licensee's program is acceptable.

9. Knowledge and Performance of Duties (Training 82206)

Through interviews and discussions with the training staff the inspectors determined that the Training Center has a matrix system in place to track required training for Emergency Response Organization (ERO) positions. One matrix indicated the various training lessons/modules against the various ERO positions. Using this matrix and the list of persons (with the ERO positions for each person, primary and alternates, as appropriate) another matrix is generated listing the required lessons/modules for each person, by name. Persons requiring similar training were grouped together and listed, one group per sheet, with the required training requirements.

A course catalog lists course/class convening dates. Individuals requiring training (or their supervisors) request and are assigned class seats. At this point, that person's name is color high-lighted to indicate a class seat is assigned. When he attends and completes the training his name is lined out.

The EP training had previously been done in "blocks," with the entire training requiring about 40 hours of classroom instruction, for any individual who would have to take every single lesson/module that was offered. In practice, of course, the members of the ERO would have to report in and out to the Training Center in order to take only the lessons/modules required for their specific position(s).

Presently the instruction is done according to "group," as mentioned above, with the training for any one group offered several times, but in only a single calendar quarter. The procedure of the Training Center is to notify the Station Superintendent or Manager of Nuclear Generation, as appropriate, for any person in that group who has not yet been trained and who has not yet requested a seat for the final class.

The inspectors have reviewed the procedure for training personnel (especially OSSs and STAs) on revised EIPs. The system in effect required any procedure revision to be evaluated as to whether or not training was required and whether that training was to be via a reading file, formally conducted by the Emergency Response Group, or formally conducted by the Training Center. A form was used which also included an indication that required training had been conducted. Document Control was prevented, by procedure, from issuing the revision until indicated required training had been completed.

The inspectors reviewed training records associated with manual dose projections. A revision to the Instructor's Guide for Lesson Plan 3.2 occurred in June, 1984 and updated the lesson plan to include Attachment 1 to EIP 3.3A. Subsequently training was provided to Shift Supervisors and Shift Technical Advisors. Revision 2 to the corresponding CPIP was approved on January 8, 1985. Training on this CPIP revision has not yet been accomplished and the CPIP is therefore not yet approved for use.

The inspectors verified that the Security Director has now received formal EP training, as required for his position in the ERO.

Walkthroughs and interviews were conducted by the inspectors with DAEC personnel. These included five OSS's, a TSC supervisor, a Technical and Engineering supervisor, a Site Radiation Protection Coordinator, and an ALARA Coordinator as well as the Emergency Planning Coordinator and his staff. In the control room interviews, the OSS's indicated good understanding of the meaning of "site boundary" which had been a weakness in the previous inspection. All personnel demonstrated competence in their emergency functions and familiarity with EP and EIPs with one exception (see section 2).

Based on the above findings, this portion of the licensee's program is acceptable.

10. Public Information Program (82209)

The inspector reviewed the final draft of a two page insert which will become an insert into the local telephone directory. This should be available in the telephone directory within three months. A similar insert which will be used as a mailing flyer will be distributed to residents within the 10 mile EPZ. Limited mailing of the current emergency brochure will be made to those people in the fringe areas of the EPZ. The transient population should have easier access to this information with the telephone directory insert than with the previous method of annual distribution of the emergency brochure.

Based on the above findings, this portion of the licensee's program is acceptable.

11. Maintenance of Emergency Preparedness

The inspector reviewed records of communications drills, Health Physics drills, radiological monitoring drill, medical drills, shift augmentation drills and emergency equipment inventory and operational checks. All were in order and conducted in the required time frames. This included a quarterly inventory of the Offsite Radiological and Analytical Laboratory (ORAL). As part of maintaining EP, offsite training with the Palo Fire Department has been conducted within the last year. Radiological monitoring instruments at Mercy Hospital were also checked for operability on a quarterly basis. Emergency and decontamination kits at Mercy Hospital and at the Palo School (serving as a decontamination facility) were inventoried quarterly.

Based on the above findings this portion of the licensee's program is acceptable.

12. Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on January 25, 1984. The inspectors summarized the scope and findings of the inspection.