

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-331/94007(DRSS)

Docket No. 50-331

License No. DPR-49

Licensee: Iowa Electric Company

Facility Name: Duane Arnold

Inspection At: Duane Arnold site, Palo IA

Inspection Conducted: March 14-18, 1994

Inspector:

J. E. Foster  
J. E. Foster

Date

3/24/94

Approved By:

William G. Snell  
William G. Snell, Chief  
Radiological Programs Section 2

Date

3/25/94

Inspection Summary

Inspection on March 14-18, 1994 (Report No. 50-331/94007(DRSS))

Areas Inspected: Routine, announced inspection of the Duane Arnold Plant's emergency preparedness (EP) program, and follow-up on licensee actions on previously identified items (IP 82701).

Results: No violations or deviations were identified.

The overall condition of the emergency preparedness program was excellent. Response facilities were in operational readiness. The comprehensive and highly detailed 1993 audit and surveillances of the program satisfied the requirements of 10 CFR 50.54(t). Emergency planning department organization and staffing was a strength. Portions of an emergency drill were observed. One concern was developed relative to training of key response personnel regarding the federal response to an emergency.

## DETAILS

### 1. Persons Contacted

- \*J. Franz, Vice President - Nuclear
- \*D. Wilson, Plant Superintendent
- \*L. Henderson, Manager, Emergency Planning
- \*K. Young, Manager, Nuclear Licensing
- \*K. Peveler, Manager, Corporate Quality Assurance
- \*K. Eyuer, Senior Emergency Planner
- \*P. Tillman, Senior Emergency Planner
- \*P. Sullivan, Senior Emergency Planner
- \*L. Heckert, Regulatory Communications
- \*S. Hopper, Senior Emergency Planner
- \*K. Brickell, Emergency Planning Specialist
- G. VanMiddlesworth, Assistant Plant Superintendent-O&M
- R. Becker, Emergency Planning Scenario Developer
- P. Bessette, Regulatory Communication. Supervisor
- T. Wilkerson, Radiation Protection Manager

The above licensee staff attended either the entrance interview on March 14, 1994 or the exit interview on March 18, 1994. The inspector also contacted other licensee personnel during the inspection.

\* Indicates persons present at the exit interview.

### 2. Licensee Action on Previously Identified Items (IP 82301)

(Open) Inspection Followup Item No. 50-331/93004-01: During the 1993 exercise, there were difficulties in coordination among controllers and using mockups to simulate actual plant equipment. This item will remain open pending demonstration of controller actions in an evaluated exercise.

### 3. Operational Status of the Emergency Preparedness (EP) Program (IP 82701)

#### a. Activations of the Emergency Response Plan

Based on review of NRC records and discussions with cognizant licensee staff, there were no actual emergency plan activations since the May 1993 routine inspection.

#### b. Emergency Plan and Implementing Procedures

A considerable number of changes to various procedures have been made to accommodate changes to 10 CFR 20 and EPA-400. In addition, plant emergency response personnel are now organized into three teams: red, white, and blue. A review of a sample of revised procedures did not indicate any problems.

RCP-EDS-SUM-000, "Software Users Manual, Emergency Data System (EDS)" dated July 6, 1992 was reviewed. This document provides for the EDS console operator being responsible for initiating and terminating transmissions to the NRC Emergency Response Data System (ERDS) during emergency events of Alert or higher classifications. There can be only one EDS console operator logged on at any one time, and only trained personnel may fill this position. The system provides for four modes of operation:

1. EDS to ERDS - sends real plant data.
2. EDS to ERDS Test Mode - data sent can be from the Plant Process computer, plant simulator, or a test file.
3. EDS No-modem Test Mode - logs data to a log file (used for exercises). Data may be from all available sources.
4. EDS Operator Configured Test - internal testing.

The manual also describes how to locally access five data displays, three of which are designed to approximate the content of the displays utilized by the NRC. These displays are meant to aid the viewer in communicating with the NRC about transmitted parameters. Two summary displays, "PLANT SUM" and "RAD SUM" provide ERDS data in a more condensed format for in-plant emergency usage.

Discussion with licensee personnel indicated that conversion of the emergency classification system to that developed by the Nuclear Utilities Management And Resource Council (NUMARC, report NESP-007, Rev. 2, "Methodology for Development of Emergency Action Levels") was being pursued. Due to the time required to convert the generic NUMARC scheme into site specific Emergency Action Levels, and the schedule for the annual emergency preparedness exercise, conversion to the NUMARC system is not anticipated until early 1995. Conversion to the NUMARC EALS will require NRC review and approval, and agreement by the affected State and counties prior to implementation.

Records indicated that the annual review of the station Emergency Action Levels (EALs) took place in conjunction with the offsite training on EALs which took place on December 1, 1993. Included in the discussions were changes to the current EALs to accommodate the changes in protective action guidance contained in EPA-400 and recent revisions to 10 CFR 20. Also included was an introduction to the NUMARC EAL scheme.

Discussion with licensee personnel indicated that medical consultants would be provided with training on dealing with the media, so that they could more effectively assist with media briefings conducted from the Joint Public Information Center.

A computerized system for generating and formatting an Emergency Broadcast System message (EBS) has been developed in conjunction with Benton and Linn counties. The program accepts user input as

to emergency classification, areas of interest and other information, and rapidly generates a very highly detailed, pre-scripted EBS message ready for broadcast on the EBS system. As appropriate, this message can include a complete listing of affected parks and recreational facilities. In addition to EBS messages, the system can generate lists of information (schools, special care facilities, traffic control points, etc.) which can be useful for decisionmaking and emergency response activities.

Records indicated that annual reviews of the Corporate Emergency Plan and Corporate Plan Implementing Procedures (CPIPs), Emergency Plan and Emergency Plan Implementing Procedures (EPIPs) took place during early December 1993.

Outstanding items to be completed by the Emergency Planning organization are tracked on the Emergency Planning Work Tracking system.

No violations or deviations were identified.

c. Emergency Facilities, Equipment, Instrumentation and Supplies

The TSC, OSC, and EOF were as described in the Emergency Plan and implementing procedures. The EOF is offsite on the fourteenth floor of the IE Tower Building, located in downtown Cedar Rapids. All facilities were found to be in an acceptable state of operational readiness.

A small sample of inventory and communications check records, such as the "Offsite Emergency Response Facilities Quarterly Verification/Inventory" (per CPIP-4.1) did not indicate any uncorrected problems.

Testing of the Emergency Notification System (ENS) line in the EOF indicated some minor "echoing" and the Headquarters Operations Officer was requested to have AT&T investigate the problem.

A new siren system telemetry system has been installed, acceptance tested on November 3, 1993 and is operational. This system provides continuous monitoring of the operability/status of the siren system, and individual alarms can be activated if a siren becomes inoperative for some reason. Printed status reports are also generated by the system.

The layout of the Technical Support Center has been revised, with facility modifications being completed just prior to the March 17, 1994 drill.

The dose projection system has been upgraded to the Meteorological Information and Dispersion Assessment System (MIDAS) "B" module, providing for a segmented plume calculation, and generation of new dose units prescribed by 10 CFR 20 and EPA-400. A conservative 8-

hour release duration is utilized. Two laptop personal computers are available as backup units. Licensee personnel indicated that the same software has been provided to the State of Iowa, so dose projections between the licensee and the state should not significantly differ. While the dose projection program is still run from a VAX computer, the displays and printers are now personal computer driven.

No violations or deviations were identified.

d. Organization and Management Control

The Manager, Emergency Planning, accepted a position with another utility in late 1993, and was replaced by the former Supervisor, Emergency Planning. A replacement Supervisor, Emergency Planning has been selected. The Emergency Planning organization size remains excellent, and the overall organization was unchanged.

The Emergency planning organization consisted of the Manager, Emergency Planning; Supervisor, Emergency Planning; four Senior Emergency Planners, an Emergency Planning Specialist, and a Senior Clerk Technical Typist. Additionally, personnel in the Training Department have assigned Emergency Planning responsibilities including instruction and scenario development. The Manager, Emergency Planning reports to the Vice President-Nuclear, who reports to the President, IES Utilities, now one of the IES companies.

No violations or deviations were identified.

e. Training

Emergency Preparedness Training is covered in the Duane Arnold Energy Center Emergency Plan in Section 0, with Section 2.2 addressing Emergency Response Organization Training, 2.4 covering specialized training, and section 2.5 detailing training frequency.

Corporate Plan Implementing Procedure 4.2, "Training Drills and Exercises", provides general training requirements in section 4.1. a separate document, "Program Description for EP Training at DAEC" provides additional guidance. Training Department Administrative Procedures (TDAP) describe initial training under 60001 series Instructor Guides, (IGs) and requalification training utilizing the 60009 series IGs. Requalification training is required at twelve month intervals, with a three month "grace period".

Attendance sheet information is entered into the computerized Training Records Tracking System (TRTS), which can provide reports in varying formats. A current TRTS system printout was reviewed, with no problems indicated. The TRTS system also produces the Emergency Telephone Book, utilizing currently qualified personnel.



A new initiative has been expanded and enhanced Controller training for drill and exercise controllers. Controller training handouts were reviewed, and they appeared to be very complete, with no problems identified.

Instructor Guide 60001, # A02, Topic: Emergency Response & Recovery Director (ER&RD), Revision 0, dated September 25, 1992 was reviewed in detail. The guide was very complete, consisting of an Instructor Guide and a Student Guide, both formatted to provide for an Introduction, Presentation, and Summary, with copies of applicable handouts or transparencies. Two excellent points were noted; it was made clear that the EOF does not have to assume all emergency responsibilities at one time, and the general subjects which should be covered in the briefing of the NRC site team were enumerated.

The IG provided for discussing Technical Specification and/or license issues with the NRC. It should be made clear that Technical Specifications or the License are pertinent to a functional nuclear reactor, not one involved in a significant accident. 10 CFR 50.54(x) provides that appropriate actions may be taken to protect the health and safety of the public, and 10 CFR 50.54(y) provides that a senior licensed individual can authorize such actions.

The training module and pertinent EPIP require that a written summary report of an accident should be generated by the utility within 8 hours. This reflects the licensee action guidance contained in NUREG-0645, Appendix 1, pages 1-4, 1-8, 1-12 and 1-16. However, experience has shown that such reports are not crucial, and may distract from other efforts, especially if management efforts are expended to meet the eight hour goal.

It was also noted that training did not provide information on the NRC or other federal agencies' nuclear power reactor incident response programs, including NRC response modes and site team(s) composition. The NRC incident response program involves shifting responsibilities during various modes, and site team planning now provides for an "Initial Site Team" and a later "Full Federal Activation Site Team" with additional positions. Approximately twenty-four hours after a major reactor accident, the Department of Energy would establish a Federal Radiological Monitoring and Assessment Center (FRMAC). This and other federal response plan information is important for key emergency response organization members. Following a major accident, the NRC would also request that: 1) failed equipment not needed for safe plant shutdown not be repaired until NRC personnel arrive to participate in failure analysis, 2) no response records in any format be destroyed or discarded, 3) key response personnel be made available for interview, and 4) space onsite for the NRC team(s) be provided. This is an Inspection Followup Item (IFI) No. 50-331/94007-01.

Interview of two individuals with responsibilities in the TSC did not indicate any problems. Both individuals were very conversant with the responsibilities or their positions, and were aware of applicable procedures/checklists.

In place of the "annual media day", which has had minimal attendance in recent years, the Manager of Corporate Communications visited thirteen local radio, television and print media organizations during December 22, 1993 - January 4, 1994 and provided them with media information packets. Packets included the latest revision of the Media Guide, a copy of the 1993 Emergency Action Plan Brochure/calendar, and the Environmental Protection Agency "Risks and Realities" publication.

During 1993 and early 1994, the EP planning organization issued a quarterly newsletter, the "EP Update", containing news and educational articles regarding the Emergency Planning Department.

Emergency Planning organization personnel participated as observers and/or controllers in the "FRMAC-93" federal exercise conducted as a part of the Ft. Calhoun evaluated exercise. This exercise tested the Department of Energy's ability to establish a Federal Radiological Monitoring and Assessment Center (FRMAC), collect ambient radiation data, perform environmental sampling, and provide technical summations of local radiological conditions to state, county, and federal organizations.

Records indicated that required off-hours unannounced notification drills took place on November 16, 1993 and February 22, 1994. No problems were noted.

No violations or deviations were identified.

f. Independent and Internal Reviews and Audits

Aspects of the EP audit and surveillance program were discussed with QA personnel. Records of EP audits and surveillances conducted since the May 1993 inspection were also reviewed and discussed.

The inspector reviewed Audit Report I-93-12, "Emergency Plan and Implementing Procedures", dated August, 6, 1993. This audit was conducted by four individuals (including one representative from Wisconsin Public Service Corporation utility) during June 21-July 30, 1993. A highly detailed, sixty page audit checklist was utilized. Twelve specific areas were audited:

1. Emergency Planning Organization and Administration
2. Emergency Planning Plan and Procedures
3. Emergency Response Training/Drills/ERO
4. Emergency Facilities, Equipment, and Resources
5. Emergency Assessment and Notification

7. Public Information
8. Coordination with Offsite Agencies
9. Safety Parameter Display System
10. Regulatory History
11. Industry Experience
12. DAEC Experience

The audit resulted in no findings (each of the twelve areas was considered as satisfactory or better) and twelve recommendations for improvement of the program. There were no open findings from previous audits of the area. The audit report was outstanding in terms of detail and the adequacy with which items were addressed. Recommendations made by the auditors were well based upon audit results. Sections of the audit which addressed the requirements of 10 CFR 50.54(t) regarding the assessment of the adequacy with offsite agencies were unusually well performed, via structured interviews. The Audit report contained key responses from those interviewed.

The audit also specifically addressed the concern expressed in NRC Report No. 50-331/93004(DRSS) that exercise and drill scenarios were similar. The audit team found that there were "similarities between the 1992 and 1993 scenario story lines but there were enough changes implemented to support the statement that they are different scenarios..."

Letters were sent on August 23, 1993 to local offsite officials, explaining that the audit had been conducted, conveyed overall positive results, and was available in its entirety upon request. For each organization interviewed, the portion of the audit summarizing the team's discussion was enclosed with the letter. A separate letter was sent to the State of Iowa on August 26, 1993, indicating that the audit had been conducted and was enclosed in its entirety. These letters met the requirements of 10 CFR 50.54(t) which requires that the portion of the annual review addressing the adequacy of the offsite interface be made available to offsite officials.

While the above QA Audit did not have trackable findings, the Emergency Planning group had reviewed and responded to each of the recommendations contained in the audit. A status report dated February 2, 1994 was generated to inform personnel in the EP group of the status of these actions.

Quality Assurance Surveillance Report S-93-024 "Emergency Planning Dress Rehearsal", dated May 6, 1993 was also reviewed. This surveillance was conducted by four individuals during April 27-29, 1993. The surveillance team attended controller and player briefings, witnessed performance during a drill, and attended post drill, facility and consolidated critiques. The surveillance report was highly detailed and comprehensive. No deficiencies, operability or reportability issues were identified in the



surveillance.

Quality Assurance Surveillance Report S-92-125 "ROLM Callout Survey", dated August 8, 1992 was reviewed. This report dealt with the results of a May 27, 1992 unannounced emergency response organization callout drill, and June 9, 1992 second callout. No significant problems were identified.

No violations or deviations were identified.

4. Observation of March 17, 1993 Drill

On March 17, 1994, the licensee held the "Full Scale Drill I" drill. This six-hour drill exercised all DAEC emergency response facilities (TSC, OSC, EOF) including the Joint Public Information Center. In addition, the Offsite Relocation and Assembly Area, Offsite Radiological and Analytical Laboratory, and Offsite Decontamination Facility were activated. The Counties of Linn and Benton participated on a limited basis, as did the State of Iowa Dose Assessment group. Prior to the drill, the Institute of Nuclear Power Operations (INPO) provided assistance on controller training. Players responding to the JPIC and EOF did so in "real time", without prestaging, and site assembly and accountability was performed.

The drill manual was reviewed. It was highly detailed and complete, with Part I providing a general description and overview of the drill, and Part II providing the scenario and timeline.

Portions of the drill were observed by the Inspector, the Duane Arnold Senior Resident Inspector, and the Quad Cities Resident Inspector. Overall drill performance was excellent.

It was observed that the initial drill public address notification to plant personnel did not provide the reason for the simulated emergency classification. This could be beneficial in reducing the number of calls to the Control Room which could follow such a notification.

The revised Technical Support Center (TSC) appeared to function well. The TSC Supervisor properly asked that arriving communicators be allowed to go to the front of the line of individuals signing in for TSC positions and utilized the appropriate checklist to assure all TSC activation steps had been completed. Later, he visited the OSC and asked for speculation from OSC personnel as to the scenario leak location. This was a good use of the gathered expertise in the OSC. Periodic TSC briefings were well conducted utilizing a wireless microphone; these briefings were also audible in the OSC.

The Safety Parameter Display System (SPDS) computer would not "boot" properly at the start of the exercise. TSC personnel responded very well, contacting the computer services department and utilizing other EDS displays until the problem was diagnosed and corrected.

As in previous exercises, the OSC "tagboard" concept worked very well, allocating critical positions and tasks to those who arrived first and were qualified to perform the tagged functions. An "OSC Additional Resources" board was available, but was not organized by discipline of the listed individual. This made it somewhat difficult to determine the number of additional personnel available and their specialty areas. The OSC status board plotter was not clear on some nuances of how the OSC status board was to be formatted. Following the drill, recommendations were made for revision of the OSC status boards to a three board system comprised of boards for priorities, available manpower, and team status.

The current dose projection "B" model, a MIDAS program, was observed to require more computation time in order to generate the segmented plume model. The older, "A" model MIDAS was faster, but did not have a segmented plume model or the capability to address currently utilized Total Effective Dose Equivalent or Committed Effective Dose Equivalent values.

No violations or deviations were identified.

#### 5. Exit Interview

The inspector held an exit interview on March 18, 1994 with those licensee representatives identified in Section 1 to present and discuss the preliminary inspection findings. Specific items discussed during the exit meeting are summarized below. The licensee indicated that none of the matters discussed were proprietary in nature.

- . The overall condition of the emergency preparedness program was excellent.
- . The 1993 audit of the EP program was outstanding. The comprehensive and highly detailed 1993 audit and surveillances of the program satisfied the requirements of 10 CFR 50.54(t).
- . Response facilities were in operational readiness.
- . Emergency planning department organization and staffing was a strength.
- . Portions of an emergency drill were observed. Overall performance was excellent. Recommendations had been made as to OSC status boards.
- . The overall training program was excellent. One concern was developed relative to training of key response personnel regarding the NRC and other federal agencies' response to an emergency.