

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-285/92-01

Operating License No. DPR-40

Licensee: Omaha Public Power District (OPPD)
444 South 16th Street Mall
Mail Stop RE/EP4
Omaha, Nebraska 68102-2247

Facility Name: Fort Calhoun Station (FC)

Inspection At: Fort Calhoun Site, Blair, Washington County, Nebraska

Inspection Conducted: January 27-31, 1992

Team Leader: Dr. D. Blair Spitzberg, NRC Region IV

Inspector: John E. Whittemore, Reactor Inspector

Approved: Blaine Murray
Blaine Murray, Chief, Facilities Inspection
Programs Section

2/10/92
Date

Inspection Summary:

Inspection Conducted January 27-31, 1992 (Report No. 50-285/92-01):

Areas Inspected: Routine, announced inspection of the operational status of the emergency preparedness program, including changes to the emergency plan and implementing procedures; emergency facilities, equipment and supplies; organization and management control; training; and independent internal reviews and audits.

Results: One noncited violation involving the failure to make timely submittals of emergency plan implementing procedures was identified (paragraph 3). No deviations were identified. The functional area of emergency preparedness had been maintained in an excellent state of operational readiness. The results of the inspection in the areas evaluated are summarized below:

- ° The licensee had properly reviewed and submitted to NRC changes in its emergency plan. The licensee had identified and promptly corrected two instances in which emergency implementing procedure revisions were not submitted to NRC within 30 days (paragraph 3). Proper classifications and

notifications were performed involving the declaration of three Notification of Unusual Events.

- Emergency facilities, equipment and supplies had been maintained in a state of operational readiness.
- Good staffing levels of trained emergency response organization personnel were maintained. The emergency preparedness planning organization was well staffed and had received excellent management support.
- An excellent training program had been developed and was being successfully implemented for personnel assigned to the emergency response organization. Operating crews evaluated demonstrated proficiency in implementing the emergency plan and implementing procedures in response to a rapidly escalating scenario.
- Comprehensive and effective audits of the emergency preparedness program had been performed.

DETAILS

1. PERSONS CONTACTED

OPPD

*W. C. Jones, Senior Vice President
*R. L. Andrews, Division Manager, Nuclear Services
*W. G. Gates, Division Manager, Nuclear Operations
*T. L. Patterson, Manager, Fort Calhoun Station
*J. K. Gasper, Manager, Training
*R. W. Short, Manager, Nuclear Licensing
*R. L. Jaworski, Manager, Station Engineering
*L. T. Kusek, Manager, Nuclear Safety Review
*W. W. Orr, Manager, Quality Assurance/Quality Control
*D. J. Clayton, Supervisor, Emergency Planning
*G. M. Cook, Supervisor, Station Licensing
M. A. Tesar, Supervisor, Training
J. M. Uhland, Sr., Supervisor, Emergency Preparedness Training
T. J. Herman, Quality Assurance Lead Auditor
J. R. Michaels, Supervisor, Operator Training

NRC

*R. Mullikin, Senior Resident Inspector
*R. Azua, Resident Inspector

The inspectors also held discussions with other station personnel during the course of the inspection.

*Denotes those present at the exit interview.

2. FOLLOWUP ON PREVIOUS INSPECTION FINDINGS (92701)

(Closed) Exercise Weakness (285/9108-02): This exercise observation concerned the use maps containing obsolete information to describe a field team's location. The inspector verified that a new offsite map of the emergency planning zone had been made and was available in the field monitoring vehicles and the emergency response facilities.

3. EMERGENCY PLAN AND IMPLEMENTING PROCEDURES (82701-02.01)

The inspectors reviewed changes in the licensee's emergency plan and implementing procedures to verify that these changes had not decreased the effectiveness of emergency planning, and that the changes had been properly reviewed and submitted to NRC. Since the previous inspection, there had been three emergency plan revisions submitted to the NRC. The plan revisions were submitted in accordance with 10 CFR 50.54(q) and were determined not to decrease the effectiveness of the emergency plan. The inspectors reviewed the procedures governing the revision process for emergency plan changes and found that they called for appropriate internal review and distribution.

The licensee supplied the inspectors with documentation of emergency plan implementing procedure changes which had been made since the previous inspection. There were 32 such revisions implemented along with the development of one new implementing procedure. The procedure changes were initiated, reviewed, and approved in accordance with the standing order procedure SO-G-30. Two of the changes had not been submitted to NRC within 30 days, in violation of 10 CFR 50, Appendix E.V. This determination had been made by the licensee's quality assurance group during the performance of quality assurance surveillance Z-92-1 performed the week of January 13, 1992.

The findings of surveillance Z-92-1 cited corrective action report 92-027 which identified that implementing procedure EPIP-OSC-2, revision 24a had not been submitted to NRC within 30 days of its implementation date of March 28, 1991, and that no record was found to show that EPIP-OSC-12, Revision 8, implemented on April 5, 1991, had been submitted to NRC at all. In response to the quality assurance findings, the emergency planning department initiated prompt action to identify the causes of the violations and begin corrective action. This action was documented in a January 17, 1992, Memorandum EP-92-021. The inspectors reviewed the corrective action and found it to be comprehensive.

10 CFR Part 50, Appendix E, Section V, requires that licensees shall submit any changes to the emergency plan or procedures within 30 days of such changes. The failure to submit Implementing Procedures EPIP-OSC-2 and EPIP-OSC-12 is a violation of 10 CFR Part 50, Appendix E, Section V. However, the inspectors determined that the licensee's action satisfied Section V.G.1 of NRC's Enforcement Policy; therefore, no violation will be issued.

The inspectors reviewed the document control process for emergency plan and implementing procedure changes and determined that controlled copies were maintained for use in all emergency response facilities. The inspectors verified that letters of agreement with offsite emergency support organizations were on file and that annual letters had been sent to all support organizations requesting their review and acknowledgement that the terms of the agreements remained current.

On three occasions since the previous inspection, the licensee had implemented the emergency classification and notification procedures during actual events. Each event was classified as a Notice of Unusual Event. One occurred on April 11, 1991, following the loss of all electrical power supplies to the technical support center uninterruptible power supply system during a test of the diesel generator power system. The event was classified pursuant to emergency action level 5.2, "significant loss of assessment capability". The second event occurred on September 12, 1991 after problems were experienced with station battery sets causing a classification according to emergency action level 11.4, "shutdown per technical specifications". The third event occurred on January 27, 1992, during this inspection, and followed a momentary loss of containment integrity while a surveillance test of the personnel access door seals was being performed. This event was also declared pursuant to emergency action level 11.4. Because this event was abated prior to offsite reporting (by sealing the outer access door), by procedure, notification was reported as a matter of interest and not as a Notice of Unusual Event. The inspectors

reviewed followup documentation of the events and determined that timely and conservative classifications were made and that the appropriate portions of the emergency plan and implementing procedures were properly implemented.

Conclusion

A noncited violation was identified involving two instances in which emergency implementing procedure revisions were not submitted to NRC within 30 days. The licensee had properly reviewed and submitted to NRC changes in its emergency plan.

4. EMERGENCY FACILITIES, EQUIPMENT, INSTRUMENTATION AND SUPPLIES (82701-02.02)

The inspectors reviewed the licensee's emergency equipment and supplies inventories, and provisions for maintaining emergency facilities, equipment, and supplies in a state of operational readiness.

Responsibility for inventory and maintenance of emergency equipment was vested with several organizations and had been performed in accordance with emergency preparedness tests procedures. The inspectors reviewed the documentation of these tests and found that they had been performed at the prescribed frequencies and that emergency facilities and equipment had been maintained in accordance with 10 CFR 50.46(b)(8).

The inspectors toured onsite emergency response facilities and the offsite emergency operations facility and found that they were secure and orderly. The emergency equipment lockers contained dedicated supplies that were found to be functional and ready for use. Emergency facility layout and inventories were found to be as described in the emergency plan. The inspectors reviewed procedures used to perform surveillance tests on the ventilation system for the technical support center. Surveillances included measurement of air flow, pressure drop, in-place filter tests, and charcoal adsorber efficiency. The tests had been performed every 18 months, or during refueling.

Conclusion

Emergency facilities, equipment and supplies had been maintained in a state of operational readiness.

5. ORGANIZATION AND MANAGEMENT CONTROLS (82701-02.03)

The inspectors reviewed the emergency response organization to determine conformance with the emergency plan. The licensee's emergency response organization consisted of approximately 75 positions, each position having been assigned multiple individuals from among which the organization would be staffed during an emergency. Individuals assigned to the positions had been selected based on their training, experience, and the alignment of their normal duties to the expertise needed to fulfill the emergency positions' responsibilities. Minimum staffing positions for emergency facilities were defined. The inspectors reviewed the process for assigning individuals to the

on-call emergency response organization and the means for ensuring that sufficient numbers of trained and qualified personnel were on-call at all times. Emergency response organization assignment rosters and status of personnel qualifications to fill positions had received senior management approval. Except for an isolated and short lived staffing depth problem for certain positions, the emergency response organization was well staffed.

The inspectors reviewed the emergency planning and preparedness organization and found that staffing levels had remained at the same level as the previous inspection. Position descriptions for the emergency planning organization were reviewed and it was determined that two planning representative positions had been upgraded, including new job descriptions and titles. The organization consisted of the Emergency Planning Supervisor, five emergency planners, and a fulltime secretary. The inspectors found that the planning group was well staffed with qualified and experienced professionals. The emergency planning organization reported directly to division management and had received excellent senior management support.

The inspectors reviewed documentation of licensee interfaces with offsite emergency response agencies and organizations to assess the level of cooperation and licensee assistance with these organizations. Based on the number of topical counterpart and planning meetings held, it appeared that the licensee had maintained a cooperative and supportive working relationship with offsite response organizations.

Conclusion

The licensee had maintained good staffing levels of trained emergency response organization personnel. The emergency preparedness planning organization was well staffed and had received excellent management support.

6. TRAINING (82701-02.04)

The inspectors met with training staff personnel and reviewed the licensee's program for emergency response training to determine compliance with the requirements of 10 CFR 50.47(b)(15); 10 CFR Part 50, Appendix E.IV.F; and the emergency plan. In order to evaluate the effectiveness of the training program and the retention of emergency response skills among emergency response personnel, the inspectors also conducted walkthroughs with operating crews assigned to the control room.

6.1 Training Program

The inspectors met with personnel responsible for training members of the emergency response organization and reviewed the status of the training program. The current training program for members of the emergency response organization had been initiated during November 1990. The program was described in the Emergency Preparedness Training Program master Plan (TPMP-70). The inspectors determined that the plan had been developed in accordance with governing Fort Calhoun Station Training Administrative Procedures. The program had been kept current by the licensee's training program configuration

management system. Since the master plan inception, there had been four plan revisions.

Program implementation required all personnel previously qualified under the old program to complete qualification under the new program prior to November 30, 1992. At the time of the inspection, about 90 percent of the assigned individuals had completed the required retraining. All of the remaining 10% had made significant progress toward training completion. For those personnel newly assigned to the emergency response organization, a 90-day period was allowed to complete the training before being placed on the duty roster. The inspectors determined that training deadlines were being met by newly assigned personnel.

The training program appeared to contain all the attributes that would normally be found in an accredited performance based program. A task list had been developed which included the tasks required of all emergency response organization positions. From the task list, objectives had been developed and included in lesson plans. Objectives were also being developed for the existing practical session guides which served as the evaluation criteria for performance evaluation checklists. The inspectors inquired into what provisions had been developed for maintaining, or periodically updating the task list for the emergency response organization training program. Licensee representatives demonstrated how the Training Program Configuration Management System would function to eliminate or add objectives based on task changes. The inspectors concluded that the program would remain current without updating the old task list.

Test questions had been developed in support of all classroom lesson plan objectives. An Emergency Preparedness Training Program test question bank had been developed in accordance with training department procedures and resided in the FCS training department integrated question bank. The system could generate a random examination by entering the codes for the learning objectives to be tested. The inspectors selected a small sample of learning objectives and queried the bank for test items to support the objectives. All of the sampled learning objectives were supported by at least three test items. This finding represented an improvement from the state of the program during the previous inspection at which time the majority of the objectives were supported by just one test item.

The inspectors expressed concerns to the licensee about training waiver provisions which had been specified. Under certain strict conditions, training could be waived if such a waiver was granted beforehand. However, all waivers were to be permanent or final and there were no requirements to recover the training at a later time. Licensee personnel stated that the waiver process had never been used, but agreed that a situation could arise where it would be prudent to grant a temporary waiver with provisions to perform the training at a later time.

The inspectors reviewed documentation of emergency exercises and drills conducted routinely as specified in Section N of the emergency plan. The

exercises and drills appeared to be challenging and involved formal critiques as required by 10 CFR Part 50, Appendix E.IV.F.5.

6.2 Knowledge and Performance of Duties - Operating Crew Walkthroughs

The inspectors conducted a series of walkthroughs on the plant-specific control room simulator to evaluate the current knowledge and ability of personnel assigned emergency response duties in the control room. The scenario used in the evaluation was developed by the inspectors to determine if control room teams were able to classify events accurately, to perform the required notifications in a timely manner, to perform offsite dose assessment, and to make adequate protective action recommendations. The inspectors also assessed the capabilities of the control room teams to skip an event classification as simulated conditions deteriorated rapidly, and the emergency directors' abilities to assess the need to authorize emergency radiation exposures for onsite personnel.

The inspectors observed three control room teams, each representative of a normal group of early responders to an emergency. The scenario required entry into the emergency plan at the Notification of Unusual Event classification level and did not allow for any personnel augmentation during the approximate 90 minute duration of the dynamic scenario. Subsequently, simulated plant conditions were established to require escalation to Site Area Emergency and then to General Emergency classifications. The scenario never prescribed conditions that corresponded to an Alert classification. In order to evaluate the abilities of emergency directors to assess onsite emergency personnel exposures, the scenario stipulated that a person located in the tendon stressing gallery had suffered a severe spinal cord injury and was located in a 30 rem/hour radiation field.

The inspectors determined that the three teams performed well during the walkthrough evaluations. All teams were able to classify events properly and to make accurate notifications in a timely manner, use the computerized offsite dose assessment program, and to make appropriate protective action recommendations. Some difficulties were experienced by the teams and are noted below for consideration of licensee improvement in these areas:

- ° One shift supervisor did not correctly follow the protective action recommendation decisionmaking flow chart contained in EPIP-EOF-7, attachment 6.2. The consequence of this action was that more conservative offsite protective actions were recommended than the flowchart specified.
- ° Two of three crews did not await the arrival of competent medical personnel before removing a person with a severe spinal cord injury from a 30 rem/hour radiation field. One crew did send a licensed control room operator, who was also a qualified emergency medical technician to supervise removal of the injured person. Those who decided on early removal of this individual rationalized their action by assuming that conditions might have deteriorated, thus increasing the exposure rate.

- ° Shift supervisors were quick to authorize "emergency exposure" to rescue an injured man without verifying who was being authorized to receive the exposure. There was no obvious effort to use any selection criteria except to determine that personnel were volunteers.
- ° One crew experienced problems with face-to-face communications. The inspectors determined that this crew had been formed three weeks prior to the inspection and had never performed on the simulator as a team.
- ° During the last walkthrough that was administered, the simulator provided momentary erroneous indication which was detected by the crew and resulted in the shift supervisor declaring a General Emergency from a previous Notification of Unusual Event. The scenario had been designed to result in conditions that would have required classification of Site Area Emergency during this time. The inspectors did not see the indication when it occurred, but simulator personnel were able to backtrack the event and observe what the operating crew had observed. The inspectors agreed that the General Emergency classification was therefore valid based on indication provided by the simulator.
- ° The three crews used different monitors to provide input to the computerized dose assessment program (EAGLE). The simulator did not correctly mimic the in-plant Radiation Monitoring System (RMS) and this may have impacted the scenarios. One crew which used the RM-63 stack monitor noticed that the monitor pump was not running, so they alertly started the pump. This resulted in calculated offsite doses that were not considered to be realistic for the scenario developed. The inspectors could not determine whether the monitor pump was operating as required upon simulator initialization. The inspectors did determine that dose assessment procedures did not provide guidance to assist the assessor in the selection of the appropriate monitor or require a determination that the selected monitor was operating correctly. The inspectors informed the licensee that the integrated result of the individual problems noted could cause negative training to occur.

Conclusion

An excellent training program had been developed and was being successfully implemented for personnel assigned to the emergency response organization. Operating crews evaluated demonstrated proficiency in implementing the emergency plan and implementing procedures in response to a rapidly escalating scenario.

7. INDEPENDENT AND INTERNAL REVIEWS AND AUDITS (82701-02.05)

The inspectors examined independent and internal audits of the emergency preparedness program performed since the last inspection to determine compliance with the requirements of 10 CFR 50.54(t). The inspectors also met with quality assurance personnel to determine whether the licensee's audit program had been conducted in accordance with governing procedures and included

a corrective action system that would ensure timely followup on weak or deficient areas.

The inspectors reviewed documentation of the last annual audit of the emergency preparedness program which was conducted from May 2 through May 30, 1991 (Audit 4). The licensee's terminology for characterizing negative findings was described in QAM-20, "Control of Internal Deficiencies and Corrective Action" and had three levels of increasing significance starting with discrepancy, followed by deficiency, and significant deficiency. The 1991 audit identified eleven discrepancies and one deficiency. Corrective action reports were issued and the inspectors found that corrective actions which had been completed appeared to be responsive.

Quality Assurance audits had been performed in accordance with the Quality Assurance Manual and the governing procedure for conducting audits, QAM-10. The inspectors reviewed these documents and the audit checklists and found that the annual audit had been conducted in accordance with the guidance documents, and met the requirements of 10 CFR 50.54(t) in both scope and content. The audit team consisted of four performing members including the team leader, who had several years of prior emergency planning experience, and an emergency planner from another nuclear utility. The inspectors reviewed training and certification documentation for the audit team and found that they were qualified to American National Standards Institute standard N45.2.23.

Six quality assurance surveillances of emergency response functional areas had been performed annually in addition to the audit. The inspectors reviewed the findings of these surveillances and found that they had been well targeted. As evidenced by the noncited violation referenced in paragraph 3 of this report, quality assurance surveillances had made noteworthy efforts to identify problem areas requiring corrective action.

Conclusion

Annual internal audits of the emergency preparedness program had been performed in accordance with 10 CFR 50.54(t), and had been effective at identifying problem areas in need of corrective action.

8. EXIT INTERVIEW

The inspectors met with the licensee representatives denoted in paragraph 1 on January 31, 1992, and summarized the scope and findings of the inspection as presented in this report. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspectors during the inspection.