ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-313/96-11
50-368/96-11

Licenses: DPR-51
NPF-6

Licensee: Entergy Operations, Inc.
1448 S.R. 333
Russellville, Arkansas

Facility Name: Arkansas Nuclear One, Units 1 and 2

Inspection At: Russellville, Arkansas

Inspection Conducted: January 8-12, 1996

Inspectors: L. T. Ricketson, P.E., Senior Radiation Specialist
Plant Support Branch

M. C. Hay, Radiation Specialist
Plant Support Branch

Approved: Blaine Murray 2/22/96
Blaine Murray, Chief, Plant Support Branch Date
Division of Reactor Safety

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection of radioactive effluent management and radiation protection programs including: audits and appraisals, program changes, process and effluent monitor calibration, dose commitment, testing of engineered safety feature air cleaning systems, training and qualifications, effectiveness of licensee controls, preparation for implementation of dry cask spent fuel storage, and follow-up of a licensee event report.

Results (Units 1 and 2):

Plant Support

- Good oversight of the radioactive effluent management program was implemented. Thorough audits were performed by the quality assurance organization, and an excellent independent assessment was conducted to review the performance of the chemistry group (Section 1.1)

- A good program was in place to response test and calibrate liquid and gaseous radioactive effluent monitors (Section 1.3).

- A good effluent management program was implemented. Sampling and analyses of effluent streams were performed as required and offsite doses were well below technical specification limits (Section 1.4).

- A good program had been established concerning inplace and laboratory testing of engineered safety feature air cleaning systems and system adsorbers (Section 1.5).

- Chemistry personnel participating in the effluent management program were well trained and qualified for the tasks performed (Section 1.6).

- An effective corrective action program was in place to document and correct problems associated with the areas inspected (Section 1.7).

- Progress was made toward the implementation of dry cask spent fuel storage; however, there was no contingency plan in case an accident occurred during the movement of spent fuel (Section 2).

Summary of Inspection Findings:

- Licensee Event Report 368/95-006 was closed (Section 3).

Attachment:

- Attachment - Persons Contacted and Exit Meeting

DETAILS

1 RADIOACTIVE WASTE TREATMENT AND EFFLUENT MONITORING (84750)

1.1 Audits and Appraisals

The inspectors reviewed various assessment activities to verify agreement with the commitments in Chapter 12.4 of the Unit 1 safety analysis report and 13.4 of the Unit 2 safety analysis report.

The inspectors reviewed the 1994 and 1995 quality assurance audits of the environmental monitoring program. The audits included a review of the radioactive effluent control program. Several deficiencies were identified during the 1994 audit. The deficiencies were addressed by the appropriate department and were not identified during the 1995 audit. The 1995 audit identified no significant deficiencies and concluded that the program was satisfactorily implemented and complied with regulatory requirements.

The inspectors determined that the audits were thorough and noted that the audits included both performance and compliance based reviews. Audit team members had previous experience in the areas reviewed and were qualified to evaluate the performance of program personnel.

The inspectors noted that there had been no surveillances performed by quality assurance personnel, aside from observations made during the audits. In response to the inspectors' comments, licensee personnel stated that relatively few problems had been identified in this area; therefore, quality assurance management decided that less oversight was necessary. The inspectors concurred with this decision at the exit meeting and concluded that there was appropriate management oversight of this area.

An assessment of the chemistry program performance was conducted November 13-17, 1995. The assessment team was composed of nine members; most members were from other nuclear sites or the licensee's corporate office. The assessment team identified numerous strengths; but, it also identified four areas in which improvements could be made. The inspectors concluded that observations were insightful and that the assessment was an excellent management oversight tool.

1.2 Changes in the Radwaste System Design and Operation

The inspectors reviewed changes to the radioactive waste management program to verify agreement with Chapter 11 of the final safety analysis report.

The radioactive effluent management program was implemented primarily by the chemistry organization. There had been no major structural changes to the chemistry organization since the previous inspection. Also, there were no major changes in the program or the way in which it functioned. Requirements

for effluent monitoring had not been relocated from the technical specifications to the offsite dose calculation manual as allowed by Generic Letter 89-01.

1.3 Process and Effluent Monitors

The inspectors reviewed the use, response testing, and calibration of effluent monitors and interviewed personnel from the chemistry department and the radiation instrumentation group to determine compliance with the requirements in Unit 1 Technical Specifications 4.29.1.3 and 4.29.2.3 and Unit 2 Technical Specifications 4.3.3.9 and 4.3.3.10.

The inspectors reviewed radiation monitor setpoint equations provided in the offsite dose calculation manual, and verified monitor setpoints calculated by the licensee's computer code. The examples of radiation monitor setpoints were chosen at random from effluent release permits.

The inspectors reviewed calibration records of liquid and gaseous effluent radiation monitors and confirmed that the calibrations had been performed at the required intervals. Radioactive sources of appropriate geometry and energies were used for the calibrations.

The inspectors confirmed that sampling and analysis of effluent streams were performed as required.

1.4 Dose Commitment

The inspectors reviewed the licensee's effluent control program and effluent releases to determine compliance with the requirements in Unit 1 Technical Specification 3.25 and 4.29; and in Unit 2 Technical Specifications 3.11 and 4.11, and 10 CFR 20 Appendices B and 10 CFR 50 Appendix I. The program elements were also reviewed to determine agreement with the commitments in Chapter 11 of the updated final safety analysis reports for both units.

Through a review of the semiannual effluent reports and individual permit packages the inspectors verified that doses which could result to the public were well within the technical specification limits. The reports followed the guidance in Regulatory Guide 1.21 and were determined by the inspectors to furnish the appropriate information.

The inspectors observed chemistry personnel perform sample collection, radioactive effluent release permit preparation, and dose calculations. No problems were identified. However, on January 10, 1996, during the preparation for a liquid effluent release from a boric acid condensate tank (2T69A), operations personnel submitted to chemistry personnel the incorrect background reading for the associated radiation monitor. The reading initially provided was an order of magnitude greater than the actual background reading. Because the background reading was used in the setpoint calculation, it resulted in the calculation of a nonconservative radiation alarm setpoint. The error was discovered as licensee personnel attempted to

install the calculated radiation monitor setpoint. The value was on the extreme, upper end of the radiation monitor range and was almost too large to be installed. Operations personnel reviewed the matter, identified the problem, and submitted the correct background reading to chemistry personnel before conducting the liquid effluent release. Because the amount of conservatism in the licensee's setpoint calculation equation, the inspectors determined that the release would not have exceeded technical specification release limits and that the event was of minor safety significance. Condition Report 2-96-0015 was initiated to document and correct the situation.

1.5 Engineered-Safety-Feature Filtration and Control Room Habitability System

The inspectors reviewed records of surveillance testing, performed walkdowns of air cleaning systems, and interviewed systems engineering personnel to determine compliance with the requirements of Unit 1 Technical Specifications 4.10, 4.11, 4.17, and 4.25 and Unit 2 Technical Specifications 4.7.6, 4.9.4 and 4.9.11.

With licensee representatives, the inspectors performed walkdowns of air cleaning systems in Units 1 and 2. The units observed included those for the fuel handling areas, control rooms, reactor building purge, penetration rooms, and the auxiliary building. No problems involving the physical conditions of the air cleaning systems were identified.

The inspectors reviewed records of in-place testing of high efficiency particulate air filters and charcoal adsorbers as well as laboratory tests of charcoal and found that those systems required by technical specifications had been tested at the proper interval. The inspectors reviewed air cleaning system surveillance procedures and determined that the procedures incorporated guidance from ANSI 510-1975, "Standard for Testing of Nuclear Air Cleaning Systems," to ensure that in-place and laboratory tests of filters and adsorbers were performed properly.

The inspectors also confirmed that the licensee maintained a copy of the results of Nuclear Procurement Issues Committee audit of the vendor who performed the in-place testing of filters and charcoal and laboratory testing of charcoal. The audit identified deficiencies in the vendors operations, but the inspectors determined the deficiencies did not adversely impact the licensee's ability to comply with technical specification requirements.

1.6 Training and Qualifications

The inspectors reviewed the qualifications of selected personnel involved with the areas covered by this inspection to determine compliance with the requirements of Technical Specifications 6.3 and 6.4 of Units 1 and 2 and agreement with the commitments in Chapters 12 and 13 of the safety analysis reports for Units 1 and 2, respectively.

The inspectors reviewed training records and interviewed the chemistry superintendent and selected chemistry technicians and determined that no

additional personnel had joined the chemistry organization since the previous inspection. The inspectors observed chemistry personnel performing assigned tasks and noted that the chemistry technicians observed and interviewed were knowledgeable and performed well. The inspectors concluded that these individuals were qualified to perform the tasks reviewed.

1.7 Effectiveness of Licensee Controls

The inspectors reviewed examples of significant condition reports related to radioactive effluent activities. Root cause analyses had been performed properly, and the corrective actions addressed the identified causes. Responses to conditions from the responsible groups were made in a timely manner.

2 RADIATION PROTECTION SUPPORT OF SPENT FUEL MOVEMENT (83750)

The inspectors interviewed a representative of the radiation protection program in order to determine program status regarding the transfer of spent fuel from the storage pool to the dry cask storage pad and to gain insights into the efforts of the radiation protection organization to support the operation. Actual fuel transfer is scheduled to begin in mid-March, 1996.

The inspectors found that there was a multi-disciplined team planning the effort and coordinating tasks to be performed. The individual interviewed was one of the health physics representatives on the team. In addition to the health physics organization, the team included members from the operations, engineering, mechanical maintenance, modification, licensing, planning and scheduling, chemistry, and quality control organizations. The inspectors noted that no one from the emergency preparedness organization was included.

In preparation for the operation, members of the radiation protection group, including an ALARA representative, had observed a similar operation at another site and had conducted discussions with their counterparts at the site. Mockup training was conducted for the welders that will participate. An ALARA plan will be developed to address radiological work conditions. A radiation work permit had not been prepared for the work of moving the fuel from the storage pool. The inspectors were told that it would be prepared before the first practice run.

The licensee planned to perform multiple practice runs prior to moving spent fuel. The implementing procedure for the evolution was still in development at the time of the inspection. The licensee representative stated that the licensee planned to conduct a practice run before completing the procedure in order to determine if additional steps or precautions were necessary. Also, Work Plan 1601.303, "Radiation Monitoring Requirements for Loading and Storage of the VSC," Revision 0, was being developed to provide instructions for the radiological monitoring requirements.

The licensee representative acknowledged that there was no contingency plan, at least from a radiation protection standpoint, in the event there was a major accident or emergency. Licensee representatives stated that they would evaluate the lack of a contingency plan and the lack of an emergency preparedness representative on the coordination team and take actions they determined necessary.

3 ONSITE REVIEW OF A LICENSEE EVENT REPORT (92700)

(Closed) Licensee Event Report 368/95-006: Radwaste Area Effluent Flowpath Not Continuously Monitored As Required

On October 18, 1995, auxiliary sampling equipment was being used to monitor radioactive gaseous effluent from the rad waste area ventilation of the auxiliary building while maintenance was in progress on the normal instrumentation. Following maintenance, the licensee discovered tubing of the auxiliary sampling equipment had become disconnected. The licensee determined that the ventilation pathway could have be unmonitored for as much as two hours and eight minutes. A number of immediate corrective actions were taken by the licensee.

A formal root cause analysis was conducted and the licensee determined that the alternate sampling equipment connections were inadequate to ensure continuous sampling. Two long term corrective actions were proposed. They were:

1. The event should be discussed during the next training cycle.

2. An alternate sampling equipment container should be constructed to provide a protected environment for the pump, cartridge, and tubing.

The inspectors compared the circumstances of this event with an earlier, similar event and determined that the corrective actions for previous event could not reasonably have been expected to have prevented this occurrence. The inspectors verified that corrective actions to prevent future occurrences had been initiated.

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

*R. Bement, Manager, Radiation Protection and Chemistry
*D. Fowler, Supervisor, Quality Assurance
*W. McKelvy, Chemistry Superintendent
D. Mims, Licensing Director
*R. Miniker, Air Cleaning Systems Engineer
T. Nickels, Health Physics Specialist
*S. Pyle, Licensing Specialist
J. Smith, Health Physics Superintendent
*M. Smith, Licensing Supervisor
D. Snellings, Superintendent, Radiation Protection Technical Support
G. Stephenson, Chemist
*B. Taylor, Engineer, Engineering Programs
D. Wagner, Supervisor, Quality Assurance
*L. Waldinger, General Manager, Plant Operations

1.2 NRC Personnel

*S. Campbell, Resident Inspector
*K. Kennedy, Senior Resident Inspector

*Denotes personnel that attended the exit meeting. In addition to the personnel listed, the inspectors contacted other personnel during this inspection period.

2 EXIT MEETING

An exit meeting was conducted on January 12, 1996. During this meeting, the inspectors reviewed the scope and findings of the report. The licensee did not express a position on the inspection findings documented in this report. The licensee did not identify as proprietary, any information provided to, or reviewed by the inspector.