U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/92021(DRSS)

Docket No. 50-461 License No. NPF-62

Licensee: Illinois Power Company
500 South 27th Street
Decatur, IL 62525

Facility Name: Clinton Power Station

Inspection At: Clinton Site, Clinton, Illinois

Inspection Conducted: November 30-December 4, 1992

Inspector: David W. Nelson 12/22/92
D. W. Nelson Date
Radiation Specialist

Approved By: William Snell 12/22/92
William Snell, Chief Date
Radiological Controls Section 2

Inspection Summary

Inspection on November 30-December 4, 1992 (Report No. 50-461/92021(DRSS))
Areas Inspected: Routine unannounced inspection of the radioactive waste processing and transportation programs with special emphasis on 10 CFR 61 requirements (IP 84850) for disposal of radioactive waste, including organization, management controls, audits and surveillances, facility tours, and implementation of waste form and waste classification requirements. In addition, the inspector examined concerns about the use of external dosimetry.
Results: Overall the radioactive waste processing and transportation programs were very good to excellent in implementing the requirements of 10 CFR Parts 20 and 61 and 49 CFR Parts 171-173.

Program strengths included the experience and qualifications of the personnel in the transportation program, the quality of the transportation and radioactive waste procedures, the continuing training program for transportation personnel and the licensee's incident free transportation record (with approximately 120 radioactive materials and radioactive waste shipments) for 1992.

DETAILS

1. Persons Contacted

*R. Colaliboux, Supervisor, Radwaste Programs
*J. Cook, Manager, Clinton Power Station
*A. Darelius, Senior QA Specialist
*M. Dodds, Supervisor, Radiological Operations
*L. Everman, Director, Radiation Protection
*E. Juteau, Radiological Project Specialist
*G. Kephart, Supervisor, Radiological Support
*J. Miller, Manager, NSED
*R. Morgenstern, Director, Nuclear Training
*D. Morris, Director, QA
*J. Palchak, Manager, Nuclear Planning and Support
*S. Perry, Vice President
*R. Phares, Director, Licensing
*M. Reandeau, Licensing Specialist
*J. Rumanuja, Supervisor, Radiological Engineering
*J. Sipek, Supervisor, Regional Regulatory Interface
*F. Spangenberg, Manager, Licensing and Safety
*R. Weedon, Assistant Director, Radiation Protection
*C. Williams, Radiological Engineer

*P. Brochman, Senior Resident Inspector

The inspector also interviewed other licensee and contractor personnel during the course of the inspection.

*Denotes those present at the exit meeting on December 4, 1992.

2. General

This inspection was conducted to review aspects of the licensee's radioactive waste processing and transportation programs. The inspection included a tour of the radioactive waste building, observations of licensee activities, review of representative records and discussions with licensee personnel.

3. Licensee Action on Previous Inspection Findings (IP 86750)

(Closed) Inspection Followup Item No. 461/92018-01: Failure to have a current copy of the consignee's specific license on file prior to the transfer of radioactive material. The license on file had exceeded its expiration date. Subsequent to the shipment, the licensee learned that the consignee had submitted a timely renewal application to the NRC but had failed to send a copy of the application to the licensee. The licensee immediately requested and got a copy of the consignee's timely renewal application request. In addition the licensee has added an item on the shipment checkoff sheets to include the license expiration date. This item is closed.

4. Organization and Management Controls (IP 84850, 86750)

The inspector reviewed the licensee's organization and management controls for the radioactive waste processing and transportation programs including: organizational structure, staffing, delineation of authority and management techniques used to implement the program and experience concerning self-identification and correction of program implementation weaknesses.

The qualifications of the individuals responsible for radioactive materials transportation and radioactive waste processing programs were excellent. The two individuals responsible for the radioactive waste and materials transportation program were both eminently qualified to hold their positions. One, the radiological engineer, holds a BS degree in Nuclear Engineering and has been in the program since 1990 and the other, the Radiological Project specialist, has been involved in the shipment of radioactive materials for 11 years (nine years at Three Mile Island and two years at the plant). The supervisor of the radioactive waste processing program has 11 years experience working with radioactive waste (seven years as the supervisor) and the two technicians have similar backgrounds; one has approximately five years radioactive waste experience (two as radioactive waste supervisor) and the other has 7 years experience in radiation protection one year of which was in radioactive waste.

In addition to assigning experienced personnel to the programs, the plant appeared committed to providing quality continuing education for all individuals directly or indirectly involved in the transportation of radioactive materials. In the six months prior to the inspection, selected personnel in the program attended the following:

* "DOT/NRC Radioactive Materials Transportation and Disposal Training." Vendor on site.

* "Packaging, Transportation, and Disposal of Radioactive Waste." Richland, Washington.

* "Regulatory Awareness Workshop." Vendor on site.

* "Advanced Training Seminar, Radioactive Waste Packaging, Transportation, and Disposal." Orlando, Florida.

Management support for both programs appeared to be strong.

NRC IE Bulletin 79-19 states in part that licensees should designate in writing those individuals who are responsible for the safe transfer, packaging, and transport of radioactive material. During an interview with transportation personnel the inspector noted that the licensee had not implemented this guidance. Following the interview, the licensee immediately drafted a letter for management's signature and the letter was signed prior to the exit meeting. Since this was not a regulatory requirement no further action by the licensee was required.

No violations or deviations were identified.

5. Audits, Surveillances and Self Assessments (IP 84850, 86750)

The inspector reviewed the results of one Quality Assurance (QA) audit and two surveillances conducted by the licensee during 1992. Also reviewed was the scope and thoroughness of the audit and the surveillances.

As part of the annual QA audit of the Radwaste program Q38-92-03, the vendor's performance with regard to solidification was reviewed for compliance to Clinton Power Station (CPS) procedure 1913.03, "Radioactive Waste Solidification Vendor Interface." Eight packages of solidified waste were reviewed and found to comply with the requirements of the procedure. The audit did not, however, specifically verify that the Radwaste program was in compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 61.56. Although the verification is not a requirement under 10 CFR 50 Appendix B, this subject is one that should be considered for future audits.

The two surveillances reviewed, Q-16049 and Q-15134, were performed to verify the radioactive materials shipments met the requirements of CPS 7013.12, "Shipment of Radioactive Material." In both cases the audited shipments were found to be in full compliance with the procedural requirements. Surveillance Q-16049 did report, however, that one shipment was made without a current copy of the consignee's license on file (see Section 3). 10 CFR 30.41 requires that transporters of radioactive materials have current copies of their consignsee's licenses on file and failure to do so may, in some circumstances, be a violation of the regulation. In this case, the license was in timely renewal and the licensee had called the consignee prior to the shipment to confirm that the conditions of the license (possession limit) were still valid. The auditor wrote a Monitor Report (MR) to document the deficiency. Monitor reports, however, are informal documents primarily designed to track suggestions for improvement. Condition Reports (CR), on the other hand, are formal documents that report and document conditions adverse to quality. Even though "conditions adverse to quality" is not clearly defined in the CR procedure it is understood that procedural violations meet the definition. CRs require a review by all involved parties including management and all corrective actions taken as a result of the review must be documented. In this case, the auditor should have reported the potential violation in a CR and the failure to do so indicated that this may be an area that needs improvement. This issue was discussed in a meeting with QA and raised at the exit meeting.

During a tour of the Radwaste Building the inspector asked the licensee to simulate the processing (solidification) of one of its waste streams. During the simulation, the inspector reviewed the activities of QC as well as the vendor (Scientific Ecology Group). QC involvement in the process was extensive and well documented; QC checkoffs were evident throughout the process and all of the required tests were performed as described in the procedure. A review of several other processing

procedures indicated that, in general, each was comprehensive, user friendly and appeared to have met all of the waste form requirements of 10 CFR 61.

No violations or deviations were identified.

6. Radioactive Waste and Materials Shipments (IP 84850, 86750)

The inspector reviewed the documentation for a number of the more than 120 radioactive waste and materials shipments made during 1992. In addition, the inspector monitored a shipment made during the inspection. The inspector found that all of the required forms (state and burial site manifests) and documents were completed in full compliance with the licensee's procedures and QC's involvement in the shipments was extensive and well documented. For example, during an inspection of the trailer, QC found a small crack in a weld in one of the cask brace supports. QC documented the finding and contacted the vendor for guidance. The vendor indicated that the crack was insignificant and would not effect the safety of the shipment.

The licensee's 1992 shipping record was excellent. None of the approximately 120 shipments were found to have violated any federal, state or local requirements.

The inspector reviewed the licensee's transportation procedures (CPS 7013.13, "Shipment of Radioactive Waste" and CPS 7013.12, "Shipment of Radioactive Material") and found them to be well written, comprehensive and user friendly.

No violations or deviations were identified.

7. Quality Assurance Vendor Audits (IP 84850, 86750)

A number of the audits performed on the radioactive waste processing and transportation vendors are conducted by the Nuclear Procurement Issues Committee (NUPIC) in compliance with the licensee's procedures and Technical Specification requirements. The inspector reviewed the NUPIC audits performed on Chem-Nuclear Systems, Inc. (10 CFR 71 Subpart H for transportation); Scientific Ecology Group (on-site processing; packaging and transportation of radioactive waste); and Westinghouse's Advanced Energy Systems (10 CFR 61 analytical laboratory services). In each case the audits were thorough and well documented. A number of deficiencies were reported in each audit and the corrective actions taken were prompt and well documented. In addition, the inspector reviewed the QA Audit Q36-91-04 performed on the activities of the on-site processing vendor, Scientific Ecology Group. The audit reviewed the vendor's procedural implementation and 10 CFR 61 compliance for both solidification and dewatering of resin. There were no deficiencies noted.

No violations or deviations were identified.

8. Waste Generation and Characterization (IP 84850, 86750)

There are six primary waste streams at the plant: spent resins (mostly bead), waste sludges, phase separator residue, evaporator concentrates, fuel pool resins and Dry Active Waste (DAW). Each is treated in a slightly different manner:

* Spent resins are dewatered in carbon steel liners for direct shipment to a burial site.

* Waste sludges are solidified in carbon steel liners for direct shipment to a burial site.

* Phase separator residue is dewatered in a High Integrity Containers (HIC) for direct shipment to a burial site.

* Evaporator concentrates are solidified in carbon steel liners for direct shipment to a burial site.

* Fuel pool resins are dewatered in a HIC for direct shipment.

* DAW is shipped to SEG for processing (incineration or compaction) for eventual shipment to a burial site.

The licensee uses RADMAN, a computer based radioactive waste monitoring and shipping database, to characterize their waste, assign the transportation class and generate the required forms for each radioactive waste shipment. Scaling factors are based on the analysis of actual samples taken from each waste stream. Samples from each stream are collected and analyzed at least once a year. If the vendor's results match those of the licensee (split samples are collected) the vendor's results are fed into the database. For all but one of the streams (DAW), isotopic activities for each shipment are based on the weight (mass) of the waste and the sample analyses. DAW activity is based on container dose to curie conversions. A review of a number of representative shipment documents indicated that the program was meeting the waste classification requirements of 10 CFR 61.

During a review of the 10 CFR 61 Compliance Program procedure (CPS No. 7013.40), the inspector noted that a copy of the 10 CFR 61 sample preparation section of the procedure was included in each of the sample shipments to the vendor laboratory. This prevents misunderstandings from arising about how each sample should handled and analyzed. This is an excellent idea.

No violations or deviations were identified.

9. External Exposure Control (IP 83750)

During the inspection the inspector met with several groups within the facility to discuss concerns raised about dosimetry. Specifically, some workers were concerned about the licensee's policy of administratively

assigning a dose of 0 mR for TLD results of less than 10 mR. In addition, some workers were concerned that multipak dosimetry results were not being added to their dosimetry records. These concerns were raised in a meeting with the Radiation Protection Manager and will be addressed in a future inspection. Inspection Followup Item 50-461/92021-01.

One Inspection Followup Item was identified.

10. Plant Tours (IP 83750, 84750)

During a tour of the auxiliary and radwaste buildings the inspectors noted the following: postings, labeling and radiological controls in both buildings were in accordance with regulatory and licensee procedural requirements and housekeeping practices in both buildings was very good.

No violations or deviations were identified.

11. Exit Interview (IP 83750, 84750)

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on December 4, 1992 to discuss the scope and range of the inspection.

During the exit interview, the inspector discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. Licensee representatives did not identify any such documents or processes as proprietary. The following were specifically addressed at the exit meeting.

a. The 1992 radioactive shipment record (Section 6).

b. The Inspection Followup Item that was closed concerning the failure to have a current copy of the consignee's license on file (Sections 3 and 5).

c. Concerns about the reporting of deficiencies in Audits and Surveillances (Section 5).

d. The quality of the licensee's radioactive waste and transportation procedures (Sections 5 and 6).