U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/90004(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: March 13-15, and 20-21, 1990

WB Grant

Inspector: W. B. Grant 4/4/90
Date

Accompanying Inspector: A. W. Markley

T. Flodi

Approved By: William Snell, Chief 4/4/90
Radiological Controls and Date
Emergency Preparedness Section

Inspection Summary

Inspection on March 13-15 and 20-21, 1990 (Report No. 50-461/90004(DRSS))
Areas Inspected: Routine, unannounced inspection of the radiological protection program during a planned outage, including: (1) changes, (2) audits and appraisals, (3) external exposure control, (4) control of radioactive materials, (5) contamination and surveys, and (6) maintaining occupational exposures ALARA (IP 83750). Also reviewed were corrective actions on past violations and other identified concerns (IP 92701, 92702).
Results: The licensee's radiation protection program appears to be generally effective in controlling radiological work and in protecting the public health and safety.

DETAILS

1. Persons Contacted

*J. Bradburne, Supervisor, Radiological Engineering
*J. Brownell, Project Specialist, Licensing
R. Campbell, Radiation Protection Shift Supervisor
*J. Cook, Manager, Clinton Power Station
*M. Dodds, Acting Supervisor Radiation Operations
*C. Elsasser, Director, Outage Maintenance Support
*R. Freeman, Manager NSED
J. Hill, Radiation Protection Shift Supervisor
*G. Kephart, Supervisor, Radiological Support
D. Lang, Consultant, Delta Group
M. Lewis, Dosimetry Supervisor
D. McBride, Site Coordinator, Bartlett Nuclear
*D. Miller, Director, Plant Radiation Protection
*M. Niswander, Supervisor, Radiological Environmental
*J. Perry, Vice President
*F. Spangenberg, Manager, Licensing and Safety
R. Weber, Supervisor, QA Surveillances
J. Withrow, Supervisor, QA Audits
*R. Wyatt, Manager, Quality Assurance

*P. Brockman, Senior Resident Inspector, NRC
S. Ray, Resident Inspector, NRC

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

*Denotes those present at the Exit Meeting on March 21, 1990.

2. General

This inspection was conducted to review aspects of the licensee's radiation protection program during a short planned maintenance outage, including: changes since the last inspection, audits and surveillances, exposure control, control of radioactive materials, ALARA, and the licensee's corrective actions regarding past violations and identified concerns. During the performance of plant tours, no significant access control, posting or procedural adherence problems were identified. Housekeeping and material conditions were generally good.

3. Licensee Action on Previous Inspection Findings (IP 92701, 92702)

(Closed) Violation No. 50-461/89037-01: Failure to evaluate the WE filter pit area for radiation prior to constructing scaffolding in the filter pit. Procedures have been revised and training and counseling have been provided to preclude the recurrence of this event. This item is closed.

(Closed) Violation No. 50-461/89037-02: Failure to post a high radiation area in the WE filter pit. The shield plug above the WE filter pit has been posted "High Radiation Area - Contact RP Prior to Entry." Additionally, shield plugs which cover potential high radiation areas are posted in the same manner. Counseling has been provided to preclude recurrence. This item is closed.

(Closed) Open Item No. 50-461/88026-02: Compare and establish a relationship between noble gas grab sample results and in-line effluent monitoring results. Grab sample analysis results routinely indicate noble gas concentrations at levels below the lower limit of detection capabilities of the licensee's counting systems. Therefore, comparisons between grab sample analysis and in-line continuous monitor results are not possible at this time. The comparison methodology is in place in Procedure CPS No. 7410.75, "Operation of Digital AR/PR Monitors." The licensee stated that comparisons of effluent grab sample analysis and in-line monitor results will be performed when noble gas activity exceeds the lower limit of detection. This item is closed.

4. Changes (IP 83750)

The inspectors reviewed changes in organization, personnel, facilities, equipment, program and procedures that could affect the occupational radiation protection program. The following organizational changes were noted. A radiological project engineer who has experience with area and process radiation monitors has been hired for the radiological environmental group. The ALARA group has been augmented with two experienced contract engineers pending permanent staffing of these positions. The dosimetry staff has been enlarged to six full-time clerks with two additional temporary clerks to support the SR-31 computer upgrade and planned outage close out. Finally, a sixth radiation protection supervisor was selected from the technician ranks.

The SR-31 computer system upgrade has entered the application development and debugging phase. Software modules to support computer controlled RCA access, dose entry, respirator issuance, reporting functions and security issues are under development at this time. Scheduled implementation and operational debugging are set for 1 to 1 1/2 months prior to the next refueling outage.

New and contract personnel meet or exceed the qualifications requirements listed in ANSI N18.1 - 1978 for the positions they occupy.

No violations or deviations were identified.

5. Audits and Surveillances (IP 83750)

The inspectors reviewed the results of Quality Assurance audits and surveillances conducted by the licensee since the last inspection. Also reviewed were the depth and thoroughness of the audits and surveillances.

Twelve quality assurance surveillances that had been performed since the last inspection were reviewed. The findings and responses were reviewed with no problems noted. These surveillances covered high radiation area access control, radiological environmental surveillances, area postings, respiratory protection, RWP/ALARA and packaging of radioactive material. The depth and level of evaluation was good. However, some inconsistencies in documenting the objective evidence reviewed were noted.

The licensee acknowledged the inconsistencies and took immediate corrective action to ensure consistent documentation of quality assurance surveillances. An administrative directive was issued to QA personnel regarding documentation requirements for QA surveillances. The licensee indicated that the QA supervisors were directed not to approve QA surveillances unless they contained the requisite documentation. In addition, QA surveillance documentation requirements would be discussed in a forthcoming staff meeting.

No violations or deviations were identified.

6. External Exposure Control (IP 83750)

The inspector reviewed the licensee's external exposure control and personal dosimetry program, including: changes in the program, use of dosimetry to determine whether requirements were met, planning and preparation for maintenance and refueling outage tasks including ALARA considerations and required records, reports and notifications.

The licensee's personnel dosimetry program has added two dosimetry clerks to its staff. The permanent staff is comprised of a Dosimetry Supervisor, Dosimetry Specialist, and six permanent dosimetry clerks. Exposure records of plant and contractor personnel were selectively reviewed for previous and current station employees. No exposures greater than 10 CFR 20.101 limits were noted.

The acquisition of a Panasonic TLD system is nearly complete. NVLAP accreditation will be sought in all eight areas. Scheduled implementation of this system is set for the first quarter of 1991. Until then, continued use of the current dosimetry contractor is expected.

No violations or deviations were identified.

7. Control of Radioactive Material (IP 83750)

The inspector reviewed the licensee's program for control of radioactive materials and contamination, including: adequacy of supply, maintenance and calibration of contamination survey and monitoring equipment; effectiveness of survey methods, practices, equipment and procedures; adequacy of review and dissemination of survey data; and effectiveness of radioactive and contaminated material controls.

The results of a hot particle incident investigation was reviewed as noted in the previous Inspection Report (50-461/89037). On August 29, 1989, a hot particle was found on the forearm of a radiation protection technician (RPT) who had been performing routine work in the radiological control area. The RPT's dose was originally calculated to be 10 rem to the skin of the extremity. On January 5, 1990, the licensee reported an extremity skin dose to the individual of 3.8 rem based on exoelectron dosimetry.

The licensee's reporting criterion for a personnel contamination event is 100 cpm above background on the skin or clothing. As of March 20, 1990, six contamination events had been reported, four clothing and two skin.

No violations or deviations were identified.

8. Maintaining Occupational Exposures ALARA (IP 83750, 83729)

The inspectors reviewed the licensee's program for maintaining occupational exposures ALARA, including: ALARA group staffing and qualification; changes in ALARA policy and procedures, and their implementation; ALARA considerations for planned, maintenance and refueling outages; worker awareness and involvement in the ALARA program; establishment of goals and objectives, and effectiveness in meeting them. Also reviewed were management techniques, program experience and correction of self identified program weaknesses.

The inspectors reviewed ALARA pre-job planning documents and post job reviews for reactor water cleanup system valve work and the demineralizer plenum changeout. Also reviewed the status of shutdown cooling system work which was ongoing. Implementation of ALARA techniques and methods for these jobs was acceptable. Exposure reductions achieved for both the reactor water cleanup valve and demineralizer plenum changeout were very good.

Coordination of ALARA planning and outage management for scheduled work was very good. However, as tasks were added to the outage scope, some breakdowns in communication were noted. The licensee has initiated corrective actions to ensure that the ALARA planning and outage management groups capitalize on lessons learned from this outage and are prepared for the next refueling outage.

The total station dose for 1990 was approximately 94.1 man-rem of which about 75.8 man-rem was attributed to the ongoing planned outage.

The ALARA group has been augmented with two experienced contract engineers pending permanent staffing of these positions. A radiation protection technician has been detailed to the ALARA group to provide additional support.

9. Plant Tours (IP 83750, 83729)

The inspectors performed several tours of the Radiologically Controlled Area. These included walkdowns of the containment, fuel, auxiliary, turbine and radwaste buildings. The inspectors observed the following:

- posting and labeling for radiation, high radiation, contaminated and radioactive material storage areas. Posting and labeling were in accordance with regulatory requirements and approved station procedures;

- radiation workers access and exit from the RCA and drywell. Protective clothing was worn and removed in a proper manner. Personnel use of frisking stations and portal monitors was acceptable. Radiation Work Permits for the reactor water cleanup system valve work and demineralizer plenum changeout were reviewed and found acceptable. Worker use and knowledge of radiation work permits was acceptable;

- contamination monitoring, portable survey and area radiation monitoring instrumentation in use throughout the plant. All instrumentation observed had been recently source checked and had current calibrations, as appropriate;

- radiological conditions in decon room, hot tool shop, respirator issue room and at the radwaste and condensate sample panels. Radiological controls in these areas were acceptable.

10. Exit Interview (IP 30703)

The inspectors met with license representatives (denoted in Section 1) at the conclusion of the inspection on March 21, 1990, to discuss the scope and findings of the inspection. Included in the discussion were the corrective actions resulting from the two violations related to the WE filter pit entry on December 5, 1989; response to the open item regarding the grab sample analysis comparison to the in-line monitor results; ALARA and Dosimetry group staffing; quality assurance surveillance documentation; and plant housekeeping.

During the exit interview, the inspectors discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. Licensee representatives did not identify any such documents or processes as proprietary.