U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-461
License No:	NPF-62
Report No:	50-461/99005(DRS)
Licensee:	Illinois Power Company
Facility:	Clinton Nuclear Power Station
Location:	Route 54 West Clinton, IL 61727
Dates:	February 8 - 12, 1999
Inspector:	S. Orth, Senior Radiation Specialist
Approved by:	G. L. Shear, Chief, Plant Support Branch Division of Reactor Safety

EXECUTIVE SUMMARY

Clinton Nuclear Power Station, Unit 1
NRC Inspection Report 50-461/99005

This announced inspection included an evaluation of the effectiveness of aspects of the radiation protection (RP) program. Specifically, the inspector reviewed the licensee's as-low-as-is-reasonably-achievable (ALARA) program and the adequacy of radiological surveys. As part of this inspection effort, the inspector reviewed the organization of the ALARA program, the development and monitoring of station dose goals, selected ALARA evaluations, and the source term reduction program. During this inspection, the inspector also reviewed actions taken to address previous NRC identified issues. This report covers a 5-day inspection period concluding on February 12, 1999, and was performed by a senior radiation specialist.

Plant Support

- The inspector noted improvements in the ALARA program. Increasing the resources for the ALARA program contributed to more timely and critical work planning reviews and to effective monitoring of department and station dose performance. The 1999 annual dose goals more accurately reflected the licensee's planned scope of work and were effectively monitored by the plant departments. (Section R1.1)

- The licensee identified an inadvertent entry of two individuals into a posted high radiation area (HRA). The individuals were not on a radiation work permit which authorized the entry into the HRA, contrary to procedural requirements. This failure to follow procedure was considered a Non-Cited Violation. The inspector concluded that the licensee had performed an appropriate review of the incident and had implemented corrective actions, which were commensurate with the error. (Section R4.1)

- The inspector concluded that the licensee had not adequately corrected a repetitive problem concerning the adequacy and thoroughness of radiological surveys. As a result of this ongoing problem, the licensee identified a failure of the RP staff to perform an adequate radiological survey incident to the changes in operation of the residual heat removal system. This inadequate survey was determined to be a violation of 10 CFR Part 20. Specifically, the RP staff failed to identify and post an HRA, which resulted from known operational changes within the facility. (Section R4.2)

- During routine contamination surveys and work coverage, RP technicians demonstrated acceptable techniques and clearly communicated radiological conditions to plant personnel. In addition, the licensee properly calibrated area radiation monitors at the frequency specified in plant procedures. (Section R4.3)

- The licensee included an acceptable level of ALARA instructions in general employee and RP technician training, which included the use of mock-ups. The ALARA staff also participated in bench-marking to increase its awareness of successful industry practices. (Section R5.1)

Report Details

IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 Maintaining Occupational Exposure As-Low-As-Is-Reasonably-Achievable (ALARA)

a. Inspection Scope (IP 83750)

The inspector reviewed the licensee's ALARA program, including program organization, dose goal development and monitoring, work planning, and source term reduction initiatives. The inspector interviewed members of the licensee's staff and reviewed the implementing procedures, selected ALARA reviews, and ALARA committee meeting minutes.

b. Observations and Findings

The inspector noted improvements in the ALARA program. Since the completion of the licensee's Independent Safety Analysis (ISA) and the NRC's Special Evaluation Team (SET) inspection, which were performed in the fall of 1997, station management support for the ALARA program increased. The added support resulted in the following:

- At the time of the ISA/SET reviews, the ALARA program consisted of one individual, who devoted about one-half of his time to the program. At the time of this inspection, the ALARA staff consisted of a full-time ALARA coordinator, an ALARA technician, an ALARA specialist, and a radiation protection (RP) planner. In addition, the licensee supplemented the staff with two contract individuals to support the planner and specialist. In general, the inspector observed that these resources provided more timely ALARA reviews (pre-job, in-progress, and post-job reviews). Based on a selective review of these documents, the inspector found the reviews to be appropriate in scope and, in the case of in-progress and post-job reviews, to provide a critical evaluation of work progress and lessons learned for future work activities.

- The licensee developed realistic annual dose goals for 1999. Previously, the station organizations determined annual department dose goals that were not based on scheduled activities or performance. However, the ALARA staff and station management ensured that the 1999 annual department goals were developed from scheduled activities and work scope. Based on these estimates, the licensee established a 1999 station dose goal of 100 person-Rem.

- The ALARA department distributed dose trends and radiation work permit (RWP) reports that were used by the station departments to manage their dose. The inspector interviewed department representatives from the contract service

and the plant maintenance departments, which accounted for about 60 percent of the 1999 station dose goal. During these interviews, the department representatives indicated that the reports enabled them to monitor their departments' dose and to predict future problems. Specifically, the staff, with the aid of the ALARA group, was responsible for identifying work activities that were not within the planned dose allowance and determining how the department's dose budget would accommodate these activities. On occasion, the departments shared dose, to account for changing work scope and responsibilities.

However, the inspector observed some continuing challenges. The RP planners enabled the RP organization to develop RP controls (i.e., RWPs and ALARA plans) for upcoming work activities. One planner focused on long range work activities (1 month ahead and 4 to 10 days ahead), and the other planner focused on near term work activities (1 to 3 days ahead). However, the development of the RP plans were not integrated into the planning process. The inspector concluded that these controls were developed separately and, consequently, the ALARA staff expended added resources to obtain information from the staff and to ensure that the controls were consistent with any changes to the work scope.

In addition, the licensee also recognized the limited scope of the topics discussed by the ALARA committee. Since the issuance of the ISA and SET reports, the licensee revised the charter of the committee. For example, the site vice president was assigned to chair the ALARA committee, which was to add more focus to the committee. The inspector reviewed committee meeting minutes for August and September of 1998 and noted a good level of station involvement. However, the inspector observed that the agenda of the meetings were limited to the approval of the planning and controls for specific evolutions. The ALARA coordinator and acting radiation protection manager (RPM) stated that the licensee's goal was to expand the committee's agenda to review broader initiatives and dose reduction techniques, such as source term reduction initiatives. Specifically, the licensee acknowledged that efforts in source term reduction were needed and planned to review this area in the future.

c. Conclusions

The inspector noted improvements in the ALARA program. Increasing the resources for the ALARA program contributed to more timely and critical work planning reviews and to effective monitoring of department and station dose performance. The 1999 annual dose goals more accurately reflected the licensee's planned scope of work and were effectively monitored by the plant departments.

R2 Status of Radiation Protection and Chemistry Facilities and Equipment

R2.1 Area and Process Radiation (AR/PR) Monitoring System Console Modification (IP 83750)

As described in NRC Inspection Report No. 50-461/98007(DRS), the licensee began a modification to replace the existing system which provided AR/PR monitor indications in the control room. During this inspection, the responsible system engineer demonstrated the capabilities of the system, which was under final testing and verification. The licensee planned to install the modification prior to the unit startup, while allowing at least 2 weeks for the operators to develop a familiarity with the system. The inspector noted a good level of teamwork between operations, system engineering, and radiation protection staffs in developing the monitoring system and in determining where the consoles were to be installed. As designed, the licensee planned to provide system indication in the RP access area and to provide indication and control in the control room and Technical Support Center. Based on the current schedule, the licensee expected the modification to be installed prior to unit startup but developed contingencies if the schedule could not be met.

R4 Staff Knowledge and Performance in Radiation Protection and Chemistry

R4.1 Unauthorized Entry Into a High Radiation Area

a. Inspection Scope (IP 83750)

The inspector reviewed the circumstances associated with a January 7, 1999, incident involving two individuals who inadvertently entered a posted high radiation area (HRA). The inspector reviewed the licensee's investigation results and applicable procedures and discussed the event with members of the licensee's staff.

b. Observations and Findings

On January 7, 1999, two individuals entered the "A" residual heat removal (RHR) heat exchanger room to perform fire protection related inspections. The room was posted as an HRA, with radiation levels as high as 100 millirem per hour (mrem/hr) at 30 centimeters from one of the heat exchangers (re radiological survey dated November 20, 1998). The individuals stated that they were aware of the radiation area (RA) posting on the outer doors to the area, but they did not notice the HRA posting on the inner doors, which had recently been upgraded from an RA posting. The individuals did not have electronic dosimetry and were not signed onto a radiation work permit which allowed access to areas posted as HRAs. Following the entry, the individuals recognized that they had entered the HRA and reported the incident to the RP staff.

The RP staff documented the event and restricted the individuals from entering the radiologically controlled area (RCA), pending the completion of corrective actions. Based on the individuals' time in the area (less than 5 minutes) and the survey data, the RP staff estimated that the individuals did not receive any measurable dose, which

was confirmed by the evaluation of their thermoluminescence dosimeters (TLDs). As corrective actions, the individuals were counseled on the importance of reading all radiological postings prior to entering radiological areas. Subsequently, the RP staff reinstated the individuals' access to the RCA. Although the licensee continued to identify some minor radiation worker practice problems, the RP staff confirmed that no other inadvertent entries into HRAs had occurred in the recent past.

Technical Specification (TS) 5.4.1 requires, in part, that procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Appendix A, recommends that RP procedures be implemented which cover access control to radiological areas, including a radiation work permit system. Procedure CPS No. 1024.02 (Revision 6), "Radiological Work Control," establishes requirements for access to radiological areas and states, in part, that access to a posted HRA requires authorization on an approved RWP for HRA entry. The access of the two individuals into a posted HRA while not on an RWP for HRA entry, is a violation of TS 5.4.1. This non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-461/99005-01).

c. Conclusions

The licensee identified an inadvertent entry of two individuals into a posted high radiation area (HRA). The individuals were not on a radiation work permit which authorized the entry into the HRA, contrary to procedural requirements. This failure to follow procedure was considered a Non-Cited Violation. The inspector concluded that the licensee had performed an appropriate review of the incident and had implemented corrective actions, which were commensurate with the error.

R4.2 Inadequate Surveys of the "B" RHR Heat Exchanger Bay

a. Inspection Scope (IP 83750)

The inspector reviewed the circumstances surrounding an incident in which an unposted HRA was identified in the 702' elevation of the Auxiliary Building ("B" RHR heat exchanger bay). The inspector discussed the event with members of the RP staff, reviewed the licensee's investigation results and radiological surveys, and discussed the corrective actions with the acting RPM.

b. Observations and Findings

On November 2, 1998, a member of the RP staff identified an area within the "B" RHR heat exchanger bay (a posted RA) having radiation levels requiring an HRA posting. Two days earlier on October 31, 1998, a worker was performing an evolution in the area and received an electronic dosimeter (ED) dose rate alarm (alarm was set at 100 mrem/hr). The worker left the area and discussed the alarm with an RP technician at the appropriate control point. Since the area had been historically posted as an HRA, the RP technician did not review the current surveys of the area and did not

recognize that the area was improperly posted. The RP technician increased the worker's dose rate alarm to 120 mrem/hr and allowed the worker to continue the evolution. On November 2, 1998, the worker returned to the area and told another RP technician that he had previously received an ED alarm. The second RP technician noted that the original incident had not been fully evaluated and initiated a survey of the area. The licensee conducted radiological surveys within the area and determined that radiation levels of about 120 mrem/hr existed at 30 centimeters from the heat exchanger and that the heat exchanger was accessible from a scaffold within the area. Consequently, the RP technician posted the access to the scaffolding as an HRA.

The licensee entered the issue into its corrective action system and performed an investigation to determine the cause of the incident. The licensee identified two problems which contributed to this incident:

(1) On or about October 15, 1998, the RP staff had reduced the postings in the area from HRA to RA postings, as allowed by the current radiation levels in the area. Between October 15 and November 2, the operations staff had made changes to the RHR system alignments. Although the RP staff recognized the potential radiological impact of these changes, the staff did not perform adequate surveys of the area.

(2) The RP technician, who originally evaluated the ED alarm incident did not perform an adequate evaluation of the conditions which resulted in the alarm.

Based on a review of the circumstances associated with the incident and discussions with members of the RP staff, the inspector determined that the licensee's conclusions were appropriate. The inspector reviewed the worker's RWP and dosimetry records and concluded that the individual was authorized to enter an HRA and that no unplanned exposure resulted from this incident. The inspector also reviewed RP log entries and surveys for October 18, 1998, October 24, 1998, and October 31, 1998, to evaluate the change in radiological conditions due to the RHR system lineup changes. Based on the survey records, the inspector noted that the surveys were not thorough in that the dose rates in all of the accessible areas were not evaluated. For example, the inspector noted that only for the survey performed on October 18, did the licensee note that a scaffolding unit was in the area and document the applicable dose rates. The following two surveys did not indicate the presence of the scaffolding unit. In addition, the survey performed on October 31, 1998, was not properly documented, in that only a log entry was made which indicated that the dose rates were verified.

As corrective actions for this incident, RP management:

- Counseled the RP technician who did not adequately evaluate the ED alarm incident;

- Briefed the remaining RP technicians on the incident, emphasizing management expectations for evaluating ED alarms; and

- Changed the expectation for conducting surveys following system changes, which was communicated to the staff

Part 20.1501 of Title 10 of the Code of Federal Regulations (CFR) requires that each licensee make, or cause to be made, surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present. Pursuant to 10 CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive materials or other sources of radiation. As described above, the failure to perform adequate surveys to evaluate the radiological hazards incident to the changes to the operation of the RHR system to ensure that HRAs were posted in accordance with the requirements of 10 CFR Part 20 is a violation of 10 CFR 20.1501 (VIO 50-461/99005-02).

Although the licensee identified this violation, the inspector concluded that the violation should have reasonably been prevented by corrective actions for previous violations concerning the adequacy and thoroughness of radiological surveys. In NRC Inspection Reports Nos. 50-461/97017(DRS) and 50-461/98010(DRS), the NRC documented violations of NRC requirements which concerned an inadequate radiological survey and the poor evaluation of survey results, respectively. Following each of these incidents, RP management conducted briefings and training sessions with the RP staff emphasizing the need to perform thorough surveys and to conduct thorough evaluations of the radiation measurements. Based on the similarities between these previous violations and the violation described above, the inspector concluded that the licensee had not fully corrected the underlying problem concerning the adequacy and thoroughness of radiological surveys. Consequently, enforcement discretion has not been applied to this recent violation, and the violation is cited. The acting RPM acknowledged the similarities between the recent incident and the previous violations and indicated that he planned to evaluate the adequacy of supervisory oversight of these activities to ensure that management expectations were understood and implemented in the field.

c. Conclusions

The inspector concluded that the licensee had not adequately corrected a repetitive problem concerning the adequacy and thoroughness of radiological surveys. As a result of this ongoing problem, the licensee identified a failure of the RP staff to perform an adequate radiological survey incident to the changes in operation of the RHR system. This inadequate survey was determined to be a violation of 10 CFR Part 20. Specifically, the RP staff failed to identify and post an HRA, which resulted from known operational changes within the facility.

R4.3 Routine Radiological Surveys and Work Coverage

a. Inspection Scope (IP 83750)

The inspector observed RP technicians performing routine radiological surveys (i.e., contamination and dose rate measurements). In addition, the inspector reviewed the frequency of area radiation monitor (ARM) calibrations, as specified in procedures CPS No. 8640.01 (Revision 34), "Connected Fixed and Portable Digital Area Radiation Monitor Calibration and Channel Functional Test," and CPS No. 8640.11 (Revision 1), "Stand Alone Fixed Digital Area Radiation Monitor Calibration and Channel Functional Test."

b. Observations and Findings

The inspector accompanied an RP technician and observed routine contamination surveys which were performed to verify the status of non-contaminated areas within the RCA, of RCA boundaries, and of certain areas outside of the RCA. During these surveys, the technician demonstrated acceptable techniques and an appropriate understanding of the purpose of the surveys. No problems were identified.

The inspector also observed a technician preparing for the removal of used protective clothing containers and contaminated equipment from the "B" reactor water cleanup room, which was posted as an HRA and contaminated area. The technician performed appropriate surveys of the area and of the equipment and clearly communicated the radiological information to the workers. During the removal of the protective clothing containers, the technician temporarily reduced the level of posting in the immediate area of the containers to an RA and allowed the involved workers, who were performing the container removal evolution on a minor radiological risk record that did not allow HRA entries, to enter the area. In doing so, the technician established a temporary RA in the area immediately outside of the room and designated the door to the room as the HRA boundary. Although the transition was cumbersome, the technician provided adequate control of the HRA boundary and, following the evolution, returned the area to its original status.

As described in the Updated Safety Analysis Report (USAR), ARMs provide indication of radiation levels in select plant areas. On a 14-month frequency, the responsible system engineer scheduled routine calibrations of the ARMs via the plant preventive maintenance system, which was consistent with the calibration frequency for the process radiation monitors. In accordance with the governing procedures, the licensee performed a functional test of the monitor and a detector calibration, using a 100 microcurie cesium-137 source. The inspector verified that the calibrations were performed at a 14-month frequency. On occasion, the licensee allowed a 25 percent extension. However, the inspector noted that this extension was not routinely used and that, when used, the system engineer ensured that the postponement was attributable to a valid operational concern.

c. Conclusions

During routine contamination surveys and work coverage, RP technicians demonstrated acceptable techniques and clearly communicated radiological conditions to plant personnel. In addition, the licensee properly calibrated ARMs at the frequency specified in plant procedures.

R5 Staff Training and Qualification in Radiation Protection and Chemistry

R5.1 ALARA Related Training

a. Inspection Scope (IP 83750)

The inspector reviewed the licensee training programs concerning the level of instruction provided to maintain exposures ALARA. As part of this review, the inspector evaluated general employee training, RP staff training, and the use of mock-ups.

b. Observations and Findings

The inspector determined that there was an acceptable level of ALARA guidance contained in general employee and RP staff instructions. In the case of general employee training, lesson plans contained a basic description of ALARA principles, administrative dose control levels, and dose reduction methods. In addition, the RP technician and shift supervisor training program contained a reasonably thorough discussion of the licensee's ALARA program and dose reduction methods, which was repeated during selected continuing training. Although the licensee did not have a formal training program for the technical staff (e.g., ALARA staff), members of the ALARA staff maintained their RP technician and shift supervisor qualifications (i.e., initial and continuing training) and participated in bench-marking trips to other NRC licensees. The staff stated that these trips were valuable in providing an awareness of industry ALARA initiatives.

The inspector also observed that the licensee used work site mock-ups to improve the performance of its staff. During this inspection, the staff was preparing for control rod drive mechanism maintenance. As part of this preparation, the maintenance and RP staffs used a mock-up (located outside of the protected area) to ensure that necessary precautions were identified and to increase the workers' proficiency with the task. The inspector noted good communications and teamwork during this evolution.

c. Conclusions

The licensee included an acceptable level of ALARA instructions in general employee and RP technician training, which included the use of mock-ups. The ALARA staff also participated in bench-marking to increase its awareness of successful industry practices.

R8 Miscellaneous Radiation Protection and Chemistry Issues (IP 92904)

R8.1 (Open) Inspection Follow-up Item (IFI) No. 50-461/97999-08: During the NRC's SET inspection, the inspection team noted that the post-accident sampling system (PASS) panel and the sample vial shield were in need of repair. In addition, the training of chemistry technicians for the use of the PASS was not comprehensive.

The inspector discussed the current status of the PASS with members of the chemistry staff and noted good progress in resolving operability issues. At the time of this inspection, the PASS panel was operable with two exceptions. The inline pH meter had recently failed (December 9, 1998) and was scheduled to be repaired. In addition, the licensee was resolving some problems concerning a segment of heat tracing on the containment atmosphere sampling lines. The inspector noted that the remaining capabilities had been recently tested and that identified problems had been resolved. Based on the licensee's evaluation, the PASS panel was determined to be about 95 percent operable (i.e., the pH probe accounted for a 5 percent reduction in operability).

The inspector also reviewed chemistry technician training records, which demonstrated that the technicians had performed "PASS Panel Operation and Team Lead" training in January of 1999. The licensee stated that one technician was scheduled to receive the training on February 18, 1999. After this session, all of the chemistry technicians would be current in their training, and the training would have effectively encompassed the entire process (i.e., lecture and panel manipulations).

Following a repair/modification to the (diluted) containment atmosphere sampling line and the replacement of a leaking dilution valve, the chemistry staff performed a test to validate the expected dilution factor (1/1000). The staff performed the test by injecting pure helium through the sample lines, diluting the helium via the normal dilution protocol, and determining the dilution factor through a gas chromatograph analysis. Although the licensee did not perform a blank analysis to determine if there were any residual helium impurities in the carrier gas, the inspector did not identify any problems with the testing. During the inspection, the licensee verified that there was no measurable helium in the carrier gas. Based on the results of the test, the chemistry staff calculated a dilution factor of about 1/100, but the staff could not explain the reason for the discrepancy between the measured dilution factor and the design dilution factor. The licensee planned to perform an additional analysis and to contact the valve vendor and panel vendor to resolve the anomaly. The chemistry staff had performed a preliminary calculation, which concluded that the dose to the PASS operator would not be significantly increased by the change in the dilution factor. However, the licensee also planned to conduct a more thorough review of the dose evaluation. The results of these evaluations will be reviewed in future RP&C inspections.

R8.2 (Closed) IFI No. 50-461/97999-12: During the NRC's SET inspection, the inspection team identified that the licensee did not have a file containing 10 CFR 50.75(g) information concerning radioactive spills, etc. In NRC Inspection Report No. 50-461/98024(DRS), the inspector concluded that the licensee had implemented a procedure which provided adequate controls and recording requirements. At the time

of this inspection, the licensee had completed its review of historical documentation to determine if any events should have been recorded in this file. The licensee's research was thorough and included a comprehensive review of industry practices in this area. Based on the results of the research efforts, the RP staff added one incident to the subject file involving a 1992 overflow of the reactor core isolation cooling (RCIC) tank which was located in a bermed area within the protected area. Although the overflow was contained within the bermed area, the slightly contaminated water had been quickly removed, and follow-up surveys did not detect any residual contamination; the RP staff conservatively chose to include the details of the event and the radiological evaluation in the designated file. Since the licensee had determined that no significant contamination had remained, no violation of 50.75(g)(1) was identified. Nonetheless, the inspector reviewed the documentation and considered it to be complete. This item is closed.

R8.3 (Closed) Violation (VIO) No. 50-461/98007-02: The inspector identified that the licensee had not performed an adequate safety evaluation for a discrepancy between the as-built facility and the description of the facility in the USAR concerning radiation monitors. During this inspection, the inspector reviewed the licensee's revised safety analysis and concluded that the evaluation was adequate. The licensee had properly evaluated both the personnel radiation protection aspects and the leak detection capabilities for the change in location of the subject radiation monitor (i.e., monitors which were not located in the residual heat removal pump rooms) from that originally described in the USAR. The licensee concluded that the change did not result in an unreviewed safety question. To prevent future violations, the licensee revised procedure CPS No. 1005.06, "Conduct of Safety Reviews," to require a review of safety evaluation screenings by engineering supervision and provided additional training to the engineering staff. The inspector reviewed procedure CPS No. 1005.06 and verified that the procedure contained the requirement for a supervisor's approval. An additional review of the licensee's engineering training program was performed by the NRC and is documented in NRC Inspection Report No. 50-461/99003. This violation is closed.

R8.4 (Closed) VIO No. 50-461/98015-01: The failure of an individual to adhere to RP requirements. Specifically, the individual exited the RCA at an unauthorized point and failed to perform required radiological surveys. The inspector verified that the licensee had implemented the following corrective actions:

- The individual was counseled by the assistant plant manager of operations and the assistant director of operations. Expectations concerning procedural adherence were addressed with the individual.

- The licensee provided training to its managers, supervisors, directors, and group leaders to establish coaching and counseling practices.

- The licensee increased the consequences for the violation of radiation worker requirements.

The acting RPM informed the inspectors that since these corrective actions were implemented the number of radiation worker violations had decreased. Although

problems continued to be identified, the acting RPM attributed these problems to knowledge and experience issues and indicated that personnel demonstrated a higher level of ownership in identifying and correcting their own problems (Section R4.1). Since the corrective actions were effectively implemented, this violation is closed. The NRC will continue to monitor radiation worker performance as a routine aspect of future RP&C inspections.

V. Management Meetings

XI Exit Meeting Summary

The inspector presented the preliminary inspection findings to members of licensee management on February 12, 1999. The licensee acknowledged the findings presented and did not identify any of the documents reviewed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

H. Anagnostopoulos, Acting Radiation Protection Manager
L. Baker, Nuclear Station Engineering Department
H. Brophy, RP&C
R. Campbell, RP&C
R. Davis, RP&C
J. Forman, Licensing
G. Hunger, Jr., Manager - Clinton Power Station
G. Kephart, Supervisor - Radiological Programs
S. Klein, RP&C
M. Lewis, RP&C
R. Mauer, Supervisor - Chemistry
J. Ramanuja, RP&C
D. Reoch, RP&C
J. Sipek, Director - Licensing

INSPECTION PROCEDURES USED

IP 83750	Occupational Radiation Exposure
IP 92904	Followup - Plant Support

ITEMS OPENED, CLOSED OR DISCUSSED

Opened

50-461/99005-01	NCV	Inadvertent entry of two unauthorized individuals into a posted HRA (Section R4.1).
50-461/99005-02	VIO	Inadequate radiological survey, which resulted in an unposted HRA (Section 4.2).

Closed

50-461/97999-12	IFI	Maintaining the file containing 10 CFR 50.75(g) information concerning radioactive spills, etc. (Section R8.2).
50-461/98007-01	VIO	Inadequate Safety Evaluation for USAR discrepancy (Section R8.3).
50-461/98015-01	VIO	Failure of an individual to adhere to RP procedures concerning egress from the RCA (Section R8.4).
50-461/99005-01	NCV	Inadvertent entry of two unauthorized individuals into a posted HRA (Section R4.1).

Discussed

50-461/97999-08	IFI	Operability of the PASS panel and the sample vial shield and adequacy of PASS training (Section R8.2).

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
ARM	Area Radiation Monitor
AR/PR	Area and Process Radiation
ED	Electronic Dosimeter
HRA	High Radiation Area
IFI	Inspection Follow-up Item
IP	Inspection Procedure
ISA	Independent Safety Analysis
NCV	Non-Cited Violation
PASS	Post Accident Sampling System
PCM	Portal Contamination Monitor
RA	Radiation Area
RCA	Radiologically Controlled Area
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RP	Radiation Protection
RP&C	Radiation Protection and Chemistry
RPM	Radiation Protection Manager
RWP	Radiation Work Permit
SET	Special Evaluation Team
TLD	Thermoluminescence Dosimeter
TS	Technical Specifications
USAR	Updated Safety Analysis Report
VIO	Violation

LIST OF DOCUMENTS REVIEWED

ALARA Committee Meeting Minutes Nos. 98-07 and 98-08.

CPS No. 1005.06F001, "Safety Evaluation Screening," for Changes to the Updated Safety Analysis Report (Package 7-160), dated June 19, 1998.

CPS Chemistry Addendum Data Sheet, "Helium % Concentration for PASS Atmosphere Dilution Valve," dated November 16, 1998.

CPS Chemistry Addendum Data Sheet, "PASS Atmosphere (Containment) Test, Procedure No. 6005.05," dated January 13, 1999.

CPS Condition Report Nos.: 1-98-01-242 (Revision 1), 1-98-11-022 (Revision 0), 1-99-01-041 (Revision 0).

CPS Radiological Survey Sheet, "Aux. Building - 762' EL., RHR Heat Exchanger (B)," dated October 18, 1998, and October 24, 1998.

Memorandum from Harvey Brophy to Ralph Mauer, "Post Accident Sample Panel Capability Coordination," dated February 5, 1999.

Memorandum from Harvey Brophy to Ralph Mauer, "Post Accident Sample Panel Capability Test Results," dated February 5, 1999.

Procedures:

CPS No. 1005.06 (Revision 12), "Conduct of Safety Reviews;"
CPS No. 1024.02 (Revision 6), "Radiological Work Control;"
CPS No. 1900.22 (Revision 2), "Radiological Postings and Barricades;"
CPS No. 1900.26 (Revision 0), "Use of Radiological Work Documents;"
CPS No. 7100.01 (Revision 1), "Radiological Surveys and Postings;"
CPS No. 7500.01 (Revision 7), "ALARA Job Reviews;" and
CPS No. 7500-09 (Revision 3), "ALARA Committee Charter."

Radiation Protection Work Instruction 313, "Special Processing TLDs," Attachment 1, dated January 8, 1999.

Radiation Worker Information Sheet 5.3, "Minor Radiological Risk Work Rules for Security and Firewatch Personnel," dated March 14, 1998.

Radiation Work Permit No. 19981051, "Inclined Fuel Transfer System Maintenance," and associated ALARA reviews (Nos. 98-008).

Radiation Work Permit No. 19981126, "Diving Support work for ECCS Suction Strainer Mod," and associated ALARA reviews (Nos. 98-034).

Radiation Work Permit No. 19981219, "Repack of A Reactor Recirc Valve," and associated ALARA reviews (Nos. 98-063).

Training Guide No. LP10253 (Revision 1), "ALARA and Personal Dosimetry," dated December 14, 1998

Training Guide No. LP32022 (Revision 4), "Radiation Exposure Control," dated April 20, 1998.