

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-461/98024(DRS)

Licensee: Illinois Power Company

Facility: Clinton Nuclear Power Station

Location: Route 54 West
Clinton, IL 61727

Dates: September 21, 1998 - October 1, 1998

Inspector: S. Orth, Senior Radiation Specialist

Approved by: G. L. Shear, Chief, Plant Support Branch 2
Division of Reactor Safety

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EXECUTIVE SUMMARY

Clinton Nuclear Power Station, Unit 1
NRC Inspection Report 50-461/98024

This announced inspection included an evaluation of the effectiveness of aspects of the radiation protection (RP) program. Specifically, the inspector reviewed the licensee's radiological planning for the emergency core cooling system (ECCS) suction strainer modification. As part of this review, the inspector observed RP oversight of the evolution and worker performance. During this inspection, the inspector also reviewed actions on previous NRC identified issues. This report covers a five day inspection concluding on October 1, 1998, performed by a senior radiation specialist. No violations of NRC requirements were identified.

Plant Support

- The RP staff implemented effective planning for the vacuuming of the suppression pool and the removal and replacement of the ECCS strainers. For example, the planning documents contained recommendations contained in NRC generic communications and the lessons learned from industry performance. In addition, the RP staff provided good dose tracking and trending of the evolution. (Section R1.1)
- The licensee's procedure for control of diving evolutions was generally consistent with NRC generic communications and industry lessons learned. However, the inspector observed weaknesses in the procedure concerning provisions for the use of remote monitoring and visual contact with the divers. (Section R3.1)
- During the ECCS suction strainer modification, the inspector observed good teamwork and communications between the work groups. The RP staff effectively communicated radiological conditions to the divers and to the work groups and provided good control of the evolution. (Section R4.1)
- The inspector observed chemistry technicians properly implementing sampling and analysis procedures. Chemistry technicians performed the activities with the procedures in-hand and demonstrated proper contamination control practices. The inspector also noted improvements in the content of chemistry procedures, which addressed previous inspection findings. (Sections R8.5 and R8.7)
- In response to self-identified and NRC-identified deficiencies, the licensee had improved oversight of the post accident sampling system. Recent management focus on the system resulted in the completion of several maintenance activities. However, the system remained inoperable pending the completion of maintenance on the atmospheric sampling system. (Section R8.9)

Report Details

IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 Radiological Planning and Controls for Work in the Suppression Pool

a. Inspection Scope (IP 83750)

The inspector reviewed the licensee's radiological planning and controls for the vacuuming of the suppression pool and the removal and replacement of the emergency core cooling system (ECCS) suction strainers. Specifically, the inspector reviewed the applicable radiation work permits (RWPs), diving procedure (CPS No. 7200.31 (Revision 2), "Control of Diving Operations"), and associated ALARA [as-low-as-is-reasonably-achievable] Job Reviews. The inspector also reviewed the trending of accumulated dose for the evolution.

b. Observations and Findings

The inspector reviewed the RP staff's planning for the evolution and observed that planning documents (ALARA Job Reviews and RWPs) contained appropriate radiological controls and documented the anticipated radiological conditions. Early in the planning process, the RP staff sent representatives to other NRC licensees' sites to observe similar evolutions and to gain insights from those observations. Based on these observations and on radiological surveys of the suppression pool, the RP staff anticipated radiological conditions and estimated accumulated doses for the evolutions. The RP staff also reviewed pertinent NRC and industry notifications of diving incidents and incorporated lessons learned from the events into the planning documents. Specifically, the diving procedure (Section R3.1) and ALARA Job Reviews included the following provisions:

- o the use of remotely monitored electronic dosimetry (i.e., telemetry) and dose rate instrumentation;
- o multiple placement of dosimetry (i.e., thermoluminescence dosimeter, electronic dosimeter, and self-reading dosimeter at the diver's thigh, chest, and head) and the use of extremity dosimetry;
- o continuous communication with the divers; and
- o control of the divers' work patterns and travel routes.

The licensee also performed vacuuming of the suppression pool, which achieved an effective decontamination of the area and reduction in area radiation levels. Because the radiological surveys did not identify any significantly irradiated materials within the suppression pool, the licensee did not identify the need to barricade any areas; however, the diving procedure provided adequate direction for the use of barricades if

the radiation levels had been more significant. In accordance with the diving procedure, the licensee assigned two RP shift supervisors to this evolution to provide consistent RP supervisory oversight.

The inspector noted that the ALARA Job Reviews described additional recommendations and controls that were not always contained in either the RWPs or the diving procedure. For example, the ALARA Job Review for the suppression pool vacuuming evolution (AJR No. 98-033) established a "hold point" for retrieval of objects from the suppression pool. The ALARA Job Review recommended that workers not retrieve objects having contact dose rates greater than 100 millirem per hour (mrem/hr), without evaluating the use of remote retrieving devices; however, neither the RWP nor the diving procedure incorporated this recommendation. The acting Radiation Protection Manager (RPM) acknowledged the potential for omitting radiological controls that were only contained in the text of the ALARA Job Reviews. Although the ALARA Job Review was considered an integral part of the RWP, the RPM indicated that additional emphasis was being placed on ensuring the consistency of the documents and on ensuring that all radiological hold points were properly reflected in the RWPs.

Based on historical surveys, work scope, and industry experience, the licensee established aggressive dose goals for the evolution. For the vacuuming of the suppression pool, the licensee estimated a total dose of about 16.5 person-rem and established a goal of 13.1 person-rem. With about 80 percent of the work completed, the licensee had accumulated 10.7 person-rem, which was consistent with the established goal. For the removal and replacement of the ECCS suction strainers, the licensee estimated a total dose of about 5.9 person-rem and established a goal of 4.734 person-rem. The inspector noted that this goal was consistent with industry performance for similar evolutions. At the time of the inspection, the licensee had completed about 10 percent of the ECCS suction strainer work and had accumulated about 0.400 person-rem. The ALARA staff provided daily trends of job performance, which compared the accumulated dose to the dose goal.

c. Conclusions

The RP staff implemented effective planning for the vacuuming of the suppression pool and the removal and replacement of the ECCS strainers. For example, the planning documents contained recommendations contained in NRC generic communications and the lessons learned from industry performance. In addition, the RP staff provided good dose tracking and trending of the evolution.

R3 **RP&C Procedures and Documentation**

R3.1 Procedural Controls for Radiological Diving Evolutions

a. Inspection Scope (IP 83750)

The inspector reviewed the adequacy of radiological controls contained in procedure CPS No. 7200.31 (Revision 2), "Control of Diving Operations," which applied to all diving operations in radiologically controlled areas.

b. Observations and Findings

Prior to the work activities in the suppression pool, the RP staff completed a significant revision to the diving procedure (CPS No. 7200.31). The inspector observed that this procedure generally incorporated the recommendations contained in Appendix A of NRC Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants." For example, the procedure required continuous communications with the divers, remote-readout radiation detectors for the divers, and pre-work surveys. The inspector also noted that the procedure contained check lists to ensure that the controls were properly evaluated and implemented.

However, the inspector identified two areas where the procedure lacked guidance. The procedure assigned the RP dive supervisor the responsibility for determining the level of visual contact with the divers. However, the procedure did not provide any guidance as to the conditions that may warrant continuous visual contact. In addition, the procedure allowed for the knowledge of area radiological dose rates in place of remote radiological monitoring. However, the procedure did not provide any additional instructions to ensure that the location of divers was well known. As communicated in NRC Information Notice No. 97-68, "Loss of Control of Diver in a Spent Fuel Pool," the loss of positive control of the diver (e.g., visual contact or remote dosimetry) has the potential to result in unplanned radiation doses and overexposures. The RP staff acknowledged the inspector's observations and planned to further evaluate and to revise the procedure, as necessary.

c. Conclusions

The licensee's procedure for control of diving evolutions was generally consistent with NRC generic communications and industry lessons learned. However, the inspector observed some weaknesses in the procedure concerning the provisions for the use of remote monitoring and visual contact with divers.

R4 Staff Knowledge and Performance in RP&C

R4.1 Conduct of Work in the Suppression Pool

a. Inspection Scope (IP 83750)

The inspector reviewed the conduct of the removal and replacement of the ECCS suction strainers. Specifically, the inspector reviewed the implementation of the diving procedure, RWPs, and associated ALARA Job Reviews. The inspector also attended a daily pre-job briefing and a team building meeting and observed the conduct of work.

b. Observations and Findings

The inspector attended a daily pre-work briefing and a team building meeting and noted good discussions of the radiological safety concerns. The daily pre-job briefing was attended by all participants, including the RP dive supervisors. During the briefing, an RP technician reviewed the activities from the previous shift, the radiological survey data, RWP controls, and safety concerns. The RP technician also discussed the importance of three-part-communications, the decontamination of the divers exiting the suppression pool, and an industry event. During the briefing, the inspector noted good interactions between the participants. Following some performance issues (i.e., problems concerning equipment tag-outs, availability of condensate water systems, and use of the RWP access computers), the licensee suspended the evolution and conducted a team building meeting to discuss the problems and to develop improvements for the evolution. The inspector noted excellent communications between the working groups. During the meeting, a participant noted that some of the problems were related to communication and coordination with the operations staff and that operations personnel, who were invited to the meeting, were not in attendance and did not routinely attend the daily pre-job briefings. For example, the operations staff secured sources of condensate water, which were available to the work crew, without notifying the RP staff. The loss of condensate water resulted in the inability of the work crew to use the system to decontaminate the divers exiting the suppression pool. The inspector discussed this observation with licensee management, who indicated that additional operations staff involvement would occur in the future.

During the conduct of the evolution, the inspector noted good teamwork and communications between the participants. The RP staff prepared color coded radiological survey maps, which clearly communicated radiological conditions to the workers. In addition, the RP technicians ensured that the divers' accumulated doses were communicated to the divers in the suppression pool and tracked the divers' general locations. The inspector noted that the licensee had designated the suppression pool as a high radiation area and posted the area accordingly. The inspector also observed effective radiological control of the divers exiting the suppression pool and appropriate radiological surveys.

However, the inspector did identify an inconsistency in the understanding of management expectations for the operation of remote dosimetry. At one point in the evolution, the inspector observed that only one of the diver's dosimeters was

consistently responding. The diver's electronic dosimeter at the chest provided acceptable response, but the other two units (i.e., at the chest and head) were not transmitting properly to the receiver. The RP technician also noted the problem. Although the radiological controls (e.g., procedure, RWP, and ALARA Job Reviews) indicated that remote monitoring was required, the controlling documents did not provide instructions on the specific problem encountered. Since the dose rates in the area were well established, the RP technician indicated that having one consistently transmitting dosimeter was acceptable but that the other units would be tested when the diver exited the water. Although the RP shift supervisor also provided a similar expectation, the supervisor of radiological operations indicated that his expectation was that all equipment properly functioned or the diver was to be removed from the suppression pool and the equipment was to be repaired/adjusted. During the team building meeting (described above), the supervisor of radiological operations explained this expectation to the RP technicians.

c. Conclusions

During the ECCS suction strainer modification, the inspector observed good teamwork and communications between the work groups. The RP staff effectively communicated radiological conditions to the divers and to the work groups and provided good control of the evolution.

R8 Miscellaneous RP&C Issues (IP 92904)

R8.1 (Closed) Unresolved Item (URI) No. 50-461/96012-07: On January 27, 1997, an RP technician identified a small filter paper (smear) in back of the sweatband in his hard hat having contamination levels of about 5,000 disintegrations per minute (dpm). The RP technician reported the incident to his management as an apparent deliberate contamination. As a result of this occurrence, the licensee and the NRC's Office of Investigations performed independent reviews of the incident.

A contractor completed an independent review of the incident for the licensee. Based on the physical evidence and interviews of numerous individuals, the contractor could not determine the origin of the contamination. All of the individual's who may have had access to the hard hat denied having any involvement in the incident. The contractor also could not connect any physical evidence with any members of the licensee's staff. Finally, the RP technician indicated that the contamination could have been accidentally spread to his hard hat from an activity that he had completed the previous week. The NRC's Office of Investigations reviewed the licensee's investigation, interviewed members of the licensee's staff, and also could not determine the origin of the contamination. Since the origin of the contamination could not be determined, no violations of NRC requirements were identified. Consequently, this item is closed.

R8.2 (Closed) Violation (VIO) No. 50-461/96412-13: Licensee failed to restrict access to the drywell in accordance with the radiological safety work plan (RSWP). In addition to the corrective actions discussed in NRC Inspection Report No. 50-461/98010(DRS), the inspector verified that the licensee had completed its revision of procedure CPS No. 7200.11, "Radiological Safety Work Plans," which included lessons learned from the

subject violation. The inspector planned to review the implementation of this procedure and the control of the drywell during future refueling operations as a part of the NRC's routine RP&C inspections at the facility. This violation is closed.

R8.3 (Closed) VIO No. 50-461/96412-17: The failure to implement an adequate procedure resulted in the spread of contamination during radioactive waste sluicing operations. The licensee had completed all corrective actions for this violation; however, the inspector had planned to review the preparation, controls, and conduct of a sluicing activity planned for the fall of 1998. At the time of this inspection, the licensee indicated that no sluicing evolutions had occurred and that none were on the current schedule. Consequently, the inspector planned to review any future evolutions as a part of the NRC's routine RP&C inspections at the facility. This violation is closed.

R8.4 (Closed) VIO No. 50-461/96412-19: The licensee failed to perform an adequate radiological evaluation prior to the removal of insulation. The inspector was to review the effectiveness of the corrective actions documented in NRC Inspection Report No. 50-461/98010(DRS). As documented in Section R1.1 of this report, the inspector reviewed the RP staff's radiological evaluations for the removal and replacement of the ECCS suction strainers and found the evaluations to be acceptable. The evaluations contained reviews of engineering controls and contingencies, and requirements were generally contained in the RWPs. However, the acting RPM acknowledged that additional improvements were necessary to ensure that all applicable recommendations and controls contained in the ALARA Job Reviews were fully evaluated and reflected in the RWPs. This violation is closed.

R8.5 (Closed) VIO No. 50-461/97013-01(b-f): Failure to follow chemistry and RP procedures.

In the case of examples b through e, the chemistry staff failed to properly implement sampling and quality control procedures. The licensee's immediate corrective actions were documented in NRC Inspection Report No. 50-461/97013(DRS). At the time of this inspection, the inspector verified that the licensee had completed the following corrective actions:

- o On May 23, 1997, and on July 8, 1997, the chemistry supervisor issued two letters to chemistry personnel stating his expectations concerning procedure adherence. In the May 23, 1997, letter, the supervisor indicated the importance of procedure adherence and included a list of procedures which were to be performed as "continuous use," which requires that each step of the procedure is to be read prior to performance. However, the chemistry staff continued to identify problems in this area. On July 8, 1997, the chemistry supervisor issued an additional letter, reiterated the requirement to properly implement procedures, and stated the disciplinary measures that would be implemented for any additional examples.
- o The chemistry staff completed numerous procedure revisions to improve the quality of chemistry procedures. For example, the online monitor quality control procedure (CPS No. 6003.01, "On-line Monitor Accuracy Verification") was

revised to more clearly state the actions to be performed if monitor verification results were unacceptable.

During this inspection, the inspector observed chemistry technicians performing a routine reactor coolant conductivity measurement and obtaining samples from the standby liquid control system. The technicians performed the activities with the respective procedure in-hand and fully complied with procedure requirements. The inspector also observed that the technicians demonstrated effective contamination control practices. In the case of the reactor coolant measurement, the technician ensured that gloves were properly worn when handling contaminated (or potentially contaminated) equipment and that the gloves were removed before touching non-contaminated equipment. In addition, radioactive waste (i.e., used, contaminated gloves) was properly handled. During the standby liquid control system sampling, the inspector noted some minor inconsistencies during the independent verifications, which the licensee planned to review. The inspector also reviewed records of on-line monitor quality control verifications, and no problems were identified. Examples b through e of this violation are closed.

In the case of example f, the licensee corrected the posting of the contaminated area identified during the above inspection. The licensee also verified the adequacy of other radiological postings near the affected area, and no problems were identified. During this inspection, the inspector also reviewed radiological conditions within the radiologically posted area. The inspector found that contaminated, radiation, and high radiation areas were posted as required. No additional problems were identified. Example f of this violation is closed.

R8.6 (Closed) VIO No. 50-461/97017-01: The licensee performed an inadequate radiological survey, which resulted in the release of a contaminated individual from the facility. In addition to the immediate corrective actions documented in NRC Inspection Report No. 50-461/97017(DRS), the inspector verified that the licensee had completed the following actions:

- o On July 14, 1997, the licensee implemented a revision to procedure CPS 7200.03, "Personnel Contamination." The inspector noted that the revision contained the limitations of portal contamination monitor (PCM) alarm locations and the requirement that the RP staff survey the area in the vicinity of the suspected contamination. In order to release a known contaminated individual (who could not be successfully decontaminated), the procedure required the RPM to generate a release plan, which addressed specific controls and cautions for the individual and which was approved by the plant manager.
- o RP technicians and RP shift supervisors attended a training seminar (August 1997), which described the incident, discussed procedures applicable to PCM (function and alarms) and to personnel decontamination, and contained a practical demonstration.

- The licensee revised Training Guide No. JT32059, "Monitor and Decontaminate Personnel," to discuss PCM detector limitations (i.e., alarm geometry fluctuations) and to review the changes to the above procedure.

Although the licensee had not released any contaminated individual's using the above procedure, the inspector reviewed the licensee's personnel contamination log and verified that personnel were decontaminated prior to release from the facility. The contamination forms indicated the levels of radioactive contamination that were initially detected and the results of surveys performed after decontamination attempts. Although the inspector noted that personnel were successfully decontaminated before release from the facility, the inspector identified some minor issues concerning the use of the contamination forms. For example, the forms did not indicate if personnel successfully passed through a PCM (without an alarm) after decontamination. The licensee indicated that the contamination form was under revision and planned to include the issues identified by the inspector. The inspector also discussed the event and corrective actions with members of the RP staff, who were knowledgeable of the corrective actions. This violation is closed.

R8.7 (Closed) VIO No. 50-461/97017-03c: The chemistry staff had failed to perform required annual comparisons of online process radiation monitors to grab samples. The inspector verified that the licensee had completed the following corrective actions:

- On July 18, 1997, the chemistry staff performed a comparison of gaseous effluent monitors with grab samples. Due to the licensee's extended shutdown, the level of radioactivity in the samples was insufficient to perform statistically valid comparisons. Consequently, the licensee did not have any reason to alter any of the monitor calibrations.
- On May 7, 1998, the licensee implemented a revision to procedure CPS 9911.81, "HVAC/SGTS Monitor Calibration Review." The inspector noted that the procedure contained specific instructions and criteria for completing the above comparison.
- A table notation was added to Table 3.9.2-2 of the Offsite Dose Calculation Manual to document the requirement to perform the annual comparisons and to modify the channel calibrations as necessary.

During this inspection, the inspector reviewed the most recent performance of CPS 9911.91 (completed on July 17, 1998). The inspector noted that the procedure was performed as required. Consistent with the test performed above, the level of radioactivity in the samples was insufficient to perform statistically valid comparisons. This violation is closed.

R8.8 (Closed) Inspection Follow-up Item (IFI) No. 50-461/97999-07: During the NRC's Special Evaluation Team (SET) inspection, the inspection team noted that the licensee calibrated most of the area and process radiation monitors at 125 percent of the Technical Specifications (TS) intervals. As noted in a previous NRC inspection documented in NRC Inspection Report No. 50-461/97017(DRS), inspectors noted an

increasing trend relative to the use of the 25% "grace period" in various instrument calibrations. Corrective actions for the increasing trend in use of the "grace period" were reviewed in NRC Inspection Report No. 50-461/98007(DRS), and noted that actions had been taken to reduce this trend. This item is closed.

- R8.9 (Open) 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 PASS had not encompassed the entire process.

The inspector discussed the current status of the PASS with members of the chemistry staff, who indicated that programmatic improvements were ongoing to improve the maintenance of the system and to ensure the continued operability of the PASS panel. For example, the PASS was designated as an "a(1)" category system in accordance with the maintenance rule (10 CFR 50.65) to provide additional oversight of system maintenance and availability. The chemistry supervisor also assigned ownership of the system to a staff chemist to provide an additional level of oversight. The chemistry staff indicated that these measures, along with an increased station management focus, would improve the PASS program.

In September of 1998, the licensee had completed a number of maintenance activities associated with the PASS:

- o completed a repair of an air leak to the undiluted liquid sample needle assembly, which corrected an issue concerning the ability of the sample vial shield to properly engage in the needle assembly;
- o performed preventive maintenance on the valve position indicators, reach rods, and compression fittings; and
- o repaired a flow indicator (FE-2), which had been out of service for the previous 2-years.

In the case of the flow indicator, the licensee acknowledged the untimely repair of the instrument and partially attributed the problem to a delay in a request to change the design of the equipment. As designed, the flow instrument (FE-2) provided an indication light to indicate adequate flow but did not provide indication of the actual flow rate. At the time when the equipment initially failed, the chemistry staff initiated a request to remove the instrument and install an instrument which would indicate the actual flow rate through the line instead of repairing the existing instrumentation. The chemistry staff indicated that the design change was not at a sufficient priority to ensure timely replacement. Therefore, the chemistry staff planned to maintain the current indication and to pursue the change in the future.

However, at the time of this inspection, the PASS remained inoperable, pending the completion of a modification/repair of the atmosphere sampling line configuration and the confirmation of the resultant dilution factor for atmospheric sampling, which was scheduled to be completed in October of 1998. Based on discussions with the

chemistry staff, the licensee also indicated that the liquid dilution factor had not been verified since July of 1986, which the chemistry staff also planned to review. In addition, the licensee planned to resolve a problem with the heat tracing indication for the atmospheric sampling line and to complete other minor maintenance issues. Following these repairs, the chemistry staff planned to perform testing of the various sampling capabilities and planned to perform training of the chemistry technicians, as the PASS panel became operable. At the time of this inspection, the chemistry staff was finalizing the scope and schedule for this testing but indicated that it would be completed prior to plant startup. The inspector planned to review the resolution of the remaining PASS operability issues and the licensee's testing of the PASS in future inspections.

- R8.10 (Closed) IFI No. 50-461/97999-11: During the NRC's SET inspection, the inspection team noted that the radiological environmental monitoring program (REMP) and the radiological effluents program were somewhat isolated from each other. For example, the responsibility for the areas rested on different groups within the organization; limited peer review existed; and programs (e.g., the implementation of the Offsite Dose Calculation Manual and the area and process radiation monitoring system) were divided amongst a number of departments/groups without sufficient communications to ensure effectiveness.

The inspector discussed this issue with a member of the RP staff and reviewed the staff's evaluation of the structure/organization of the REMP and effluents program. The licensee acknowledged the lack of oversight and ownership concerning the area and process radiation monitoring systems and had completed corrective actions to ensure that the system was properly maintained and reviewed (NRC Inspection Report No. 50-461/98010(DRS)). However, the RP staff reviewed the current organizational structure and performance of the REMP and radiological effluents program and evaluated other utilities' organizations (within and outside of the NRC's Region III). Based on the results of this review, the RP staff concluded that the organization and structure of its REMP and effluents program did not result in any performance problems or communications weaknesses, that a significant number of other NRC 10 CFR Part 50 licensees had similar organizational structures, and that no changes needed to be made to their organization to ensure effective implementation. The inspector found the licensee's review of the issue to be thorough and did not identify any program performance issues or violations of regulatory requirements; therefore, this item is closed.

- R8.11 (Open) 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. At the time of this inspection, the inspector noted that the licensee had implemented a procedure (CPS No. 7200.06, Revision 0, "Decommissioning Record Retention, 10 CFR 50.75(g)), which provided controls and recording requirements that exceeded the requirements of 10 CFR 50.75(g). Currently, the RP staff was reviewing documentation and personnel memory of previous operational events which may have resulted in residual contamination (both within the owner controlled area and within the radiologically controlled area) to ensure that the information was adequately recorded. In addition, the RP staff indicated that

some information was stored in a decommissioning file, which was also being reviewed. The inspector planned to review the results of the licensee's actions in a future inspection.

V. Management Meetings

XI Exit Meeting Summary

The inspector presented the preliminary inspection findings to members of licensee management on October 1, 1998. The licensee acknowledged the findings presented and did not identify any of the documents reviewed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

H. Anagnostopoulos, Supervisor - Radiological Operations
G. Baker, Manager - Quality Assurance
W. Bousquet, Director - Plant Support Services
R. Campbell, RP&C
V. Cwietniewicz, Manager - Maintenance
R. Davis, RP&C
J. Forman, Licensing
G. Hess, RP&C
G. Hunger, Jr., Manager - Clinton Power Station
G. Kephart, Supervisor - Radiological Programs
S. Klein, RP&C
M. Lewis, RP&C
W. MacFarland, Chief Nuclear Officer
W. Maguire, Director - Operations
R. Mauer, Supervisor - Chemistry
M. Niswander, RP&C
J. Owens, Director - Experience Assessment
R. Phares, Manager - Nuclear Safety and Performance Improvement
J. Place, Director - Plant Radiation and Chemistry
W. Romberg, Manager - Engineering
J. Sipek, Director - Licensing
D. Smith, Director - Security and Emergency Response
J. Stovall, RP&C
M. Tancelosky, Supervisor - Operations Services
D. Wells, RP&C
H. Brophy, RP&C

INSPECTION PROCEDURES USED

IP 83750 Occupational Radiation Exposure
IP 92904 Followup - Plant Support

ITEMS OPENED, CLOSED OR DISCUSSED

Opened

No items were opened this inspection.

Closed

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|----------------------|-----|---|
| 50-461/96012-07 | URI | Potential deliberate contamination incident (Section R8.1). |
| 50-461/96412-13 | VIO | Failure to restrict access to drywell in accordance with RSWP (Section R8.2). |
| 50-461/96412-17 | VIO | Inadequate procedure for radioactive waste sluicing operations (Section R8.3). |
| 50-461/96412-19 | VIO | Inadequate radiological evaluation for insulation removal (Section R8.4). |
| 50-461/97013-01(b-f) | VIO | Failure to follow chemistry and RP procedures (Section R8.5). |
| 50-461/97017-01 | VIO | Inadequate radiological survey resulted in the release of a contaminated individual from the facility (Section R8.6). |
| 50-461/97017-03(c) | VIO | Failure to perform required annual comparisons of online process radiation monitors to grab samples (Section R8.7). |
| 50-461/97999-07 | IFI | Area and process radiation monitors calibrations performed at 125 percent of the TS intervals (Section R8.8). |
| 50-461/97999-11 | IFI | Organizational responsibility for the REMP and the radiological effluents program (Section R8.10). |

Discussed

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|-----------------|-----|--|
| 50-461/97999-08 | IFI | Operability of the PASS panel and the sample vial shield and adequacy of PASS training (Section R8.9). |
| 50-461/97999-12 | IFI | Maintaining the file containing 10 CFR 50.75(g) information concerning radioactive spills, etc. (Section R8.11). |

LIST OF ACRONYMS USED

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|-------|---|
| AJR | ALARA Job Review |
| ALARA | As-Low-As-Is-Reasonably-Achievable |
| dpm | Disintegrations per minute |
| ECCS | Emergency Core Cooling System |
| IFI | Inspection Follow-up Item |
| IP | Inspection Procedure |
| PASS | Post Accident Sampling System |
| PCM | Portal Contamination Monitor |
| REMP | Radiological Environmental Monitoring Program |
| RP | Radiation Protection |
| RP&C | Radiation Protection and Chemistry |
| RPM | Radiation Protection Manager |
| RSWP | Radiological Safety Work Plan |
| RWP | Radiation Work Permit |
| SET | Special Evaluation Team |
| TS | Technical Specifications |
| URI | Unresolved Item |
| VIO | Violation |

LIST OF DOCUMENTS REVIEWED

Condition Reports Nos. 1-92-04-039, 1-98-09-404, and 1-98-09-427.

CPS No. 6003.01, "1G33-Z020 (RR) Monitor Check Sheet," performed on July 20, 1998, through September 28, 1998.

CPS No. 6003.01, "1FL88JB Monitor Check Sheet," performed on July 6, 1998, through September 21, 1998.

CPS No. 6003.01, "Panel 1PL22J and 1PL19J Monitor Check Sheet," performed on June 5, 1998.

CPS No. 7200.03F002, "Clinton Power Station Personnel Contamination Report," Report Nos. 98-007, 98-009, 98-018, 98-034, 98-038, 98-049, 98-051, 98-063 and 98-069.

Independent Safety Engineering Group Review No. 98-17, "Review/Observation of Chemistry Activities, dated September 1, 1998.

Memorandum from Ralph C. Mauer, Supervisor - Chemistry, to Chemistry personnel, dated May 23, 1997.

Memorandum from Ralph C. Mauer, Supervisor - Chemistry, to Chemistry personnel, "Plant Chemistry Procedure Use and Adherence," dated July 8, 1997.

Procedures:

CPS No. 3222.01 (Revision 7), "Aux. Bldg. Sample Panel (1PL33J);"
CPS No. 6003.01 (Revision 5), "On-Line Monitor Accuracy Verification;"
CPS No. 6419.01 (Revision 14), "Conductivity Determination;"
CPS No. 7100.01 (Revision 1), "Radiological Surveys and Postings;"
CPS No. 7200.03 (Revision 1), "Personnel Contamination;"
CPS No. 7200.06 (Revision 0), "Decommissioning Record Retention, 10 CFR 50.75(g);"
CPS No. 7200.11 (Revision 1), "Radiological Safety Work Plans;"
CPS No. 7200.31 (Revision 2), "Control of Diving Operations;" and
CPS No. 9915.01 (Revision 35), "Standby Liquid Control Chemical Sampling."

Program Readiness Review Plan, "Post Accident Sampling System Program," dated July 8, 1998.

Radiation Work Permits:

98001124, "Vacuuming Suppression Pool;"
98001125, "Support for Suppression Pool Vacuuming;"
98001126, "Diving Support Work for ECCS Suction Strainer Mod.;"
98001127, "Diving Work in Suppression Pool for ECCS Suction Strainer;" and
98001209, "Clean Out RF Oil Separator in Support of Suppression Pool Vac."

"Root Cause Analysis for Condition Report No. 1-97-07-238 Concerning Failure to Follow Procedures," Revision 1, dated August 26, 1997.

Surveillance Test Package for CPS No. 9911.81 (Revision 1), "HVAC/SGTS Monitor Calibration Review," completed on September 4, 1998.

Update No. 1 to Training Guide No. JT32059 (Revision 3), "Monitor and Decontaminate Personnel, dated November 10, 1997.