

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-315/86013(DRSS); No. 50-316/86013(DRSS)

Docket Nos. 50-315; 50-316

License No. DPR-58; DPR-74

Licensee: American Electric Power Service
Corporation
Indiana and Michigan Electric Company
1 Riverside Plaza
Columbus, OH 43216

Facility Name: D. C. Cook Nuclear Plant, Units 1 and 2

Inspection At: D. C. Cook Site, Bridgman, Michigan

Inspection Conducted: September 15 through November 5, 1986

Inspector: *W Shafer for*
C. F. Gill

11-18-86
Date

Approved By: *W D Shafer for*
L. R. Gregey, Chief
Facilities Radiation Protection
Section

11-18-86
Date

Inspection Summary

Inspection during the period September 15 through November 5, 1986 (Reports No. 50-315/86013(DRSS); 50-316/86013(DRSS))

Areas Inspected: Unannounced inspection of the radiation protection and radwaste programs including: status of Radiation Protection Improvement Program; organization and management controls; staff stability; training and qualifications; external exposure control and dosimetry; control of radioactive materials and contamination; internal exposure control and assessment; audits and appraisals; solid radwaste; and transportation activities. Also, certain TMI Action Plan Items, open items, certain Licensee Event Reports, and the licensee's response to IE Bulletin No. 78-08 were reviewed.

Results: No violations or deviations were identified.

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DETAILS

1. Persons Contacted

- #D. Allen, Radiation Protection Supervisor
- *A. Blind, Assistant Plant Manager - Administration
- *S. Brewer, Radiological Support Section Manager - AEP
- #P. Burke, Assistant Site Coordinator - HNS
- #*R. Clendenning, Plant Radiation Protection Supervisor
- K. Cunningham, Radwaste Handling Supervisor
- *M. Evarts, Licensing Scientist - AEP
- C. Flis, Senior Performance Engineer
- #J. Fryer, Environmental Coordinator
- *L. Gibson, Assistant Plant Manager - Technical Support
- M. Glissman, Performance Engineer
- P. Holland, Radiation Protection Supervisor
- *L. Holmes, Administrative Compliance Coordinator
- *M. Horvath, AEPSC Site QA Supervisor
- R. Jillson, Radiation Protection Training Instructor
- #*J. Joseph, ALARA Coordinator
- J. Kambach, Radiation Protection Supervisor
- R. Krieger, Training Instructor III
- *T. Kriesel, Technical Superintendent Physical Sciences
- *B. Kroeger, AEPSC Manager of Quality Assurance
- S. Lehrer, Radiation Protection Supervisor
- *J. Leichner, Radiological Support Nuclear Engineer - AEP
- #J. Long, Radiation Protection Training Specialist
- *J. Nadeau, AEPSC Site QA Auditor
- D. Petroff, Performance Engineer
- T. Postlewait, Technical Superintendent Engineering
- *J. Rutkowski, Staff Assistant
- K. Scherer, Associate Training Instructor
- D. Schroeder, Senior Radiation Protection Training Instructor
- *W. Smith, Jr., Plant Manager
- B. Svensson, Licensing Activities Coordinator
- *M. Terry, Administrative Compliance Coordinator
- W. Wattson, Consultant - WBJ
- *J. Wojcik, Plant Chemical Supervisor

- J. Heller, NRC Resident Inspector
- *B. Jorgensen, NRC Senior Resident Inspector

The inspector also contacted other licensee and contractor employees including radiation protection technicians and members of the technical and engineering staffs.

*Denotes those present at the exit meeting on October 24, 1986.

#Denotes subsequent telephone discussions between October 27 and November 5, 1986.

2. General

This inspection, which began at 4:00 p.m. on September 15, 1986, was conducted to review the Radiation Protection Improvement Program and the radiation protection and radwaste programs including organization and management controls, qualifications and training, external and internal exposure controls, control of radioactive materials and contamination, audits and appraisals, solid radwaste, and transportation activities. Also certain TMI Action Plan Items, open items, certain Licensee Event Reports, and the licensee's response to IE Bulletin No. 78-08 were reviewed. The inspector conducted radiation and contamination surveys of selected plant areas using NRC and licensee survey instruments (Xetex 305-B and Eberline RM-14); readings were in general agreement with posted licensee data. Access controls and procedural adherence were adequate. Housekeeping and storage of radioactive materials showed improvement.

3. Licensee Action on Previous Inspection Findings

(Open) Open Item (315/84017-03; 316/84019-03): HVAC filter housing drain system bypass and fire protection system water leakage problems. The corrective actions for this identified weakness (Inspection Reports No. 50-315/85024; 50-316/85024, Section 13) outlined in the licensee's response dated November 8, 1985, were reviewed. The licensee expects the design changes and procedural revisions to be completed in the first calendar quarter of 1987. Pending completion of design changes and procedural modifications, this item remains open.

(Open) Open Item (315/84017-04; 316/84019-04): High range iodine and particulate sampling system design concerns regarding provisions for continuous and representative sampling, adequacy of shielding for sample transport, and prevention of contamination of high range noble gas monitor with iodine. This item remains open pending licensee completion and NRC review of NUREG-0737 Item 11.F.1, Attachment 2, compliance documentation.

(Open) Open Item (315/84017-05; 316/84019-05): Review SPING setpoints and calibrations. This item remains open pending licensee completion and NRC review of NUREG-0737 Item 11.F.1, Attachment 1, compliance documentation.

(Open) Unresolved Item (315/85011-05; 316/85011-04): Obtain NRR concurrence on the locations of the steam relief/PORV monitors. An engineering justification of the acceptability of the present monitor locations was provided to NRR by the licensee in letter AEP:NRC:0678T, dated May 20, 1986. This item remains open, pending resolution by NRR.

(Open) Open Item (315/85011-06; 316/85011-05): Two weaknesses related to an NRC Confirming Order and NUREG-0737 compliance. In letter AEP:NRC:0678N, dated August 8, 1985, the licensee addressed these weaknesses and stated that Open Items No. 315/84017-04; 316/84019-04 and 315/84017-05; 316/84019-05 are being entered into the compliance analysis report program which has been implemented for NUREG-0737 Items II.F.1,

Attachments 1, 2, and 3, and II.B.3. The licensee has completed 96 of the 106 compliance action items. The remaining ten items are being tracked by Phase II of the analysis. The licensee expects to complete compliance reviews, the remaining six design changes, procedural revisions, and personnel training by June 15, 1987. This matter will be reviewed further during a future inspection.

(Open) Open Item (315/85024-02; 316/85024-02): Extremity monitoring practices. The licensee expects to complete an evaluation of the current extremity dosimetry practice by the end of 1986.

(Open) Open Item (315/85024-06; 316/85024-06): Operation of the HNS DAW sorter. The licensee met with HNS representatives to discuss the use of the HNS DAW sorter on September 3, 1986. During that meeting, the licensee requested that HNS prepare recommendations to ensure that the DAW sorter is used in the most effective manner at D. C. Cook. The inspector reviewed the revised DAW sorter operating procedure; one minor correction is apparently necessary. The licensee expects to implement appropriate HNS DAW sorter operating recommendations, relocate the sorter in a lower background area, and revise the operating procedure by the end of 1986.

(Closed) Open Item (315/85024-07; 316/85024-07): Decontamination worker training inadequacies. The licensee has established better oversight of contract decontamination worker activities by assigning decontamination project oversight responsibilities to specific contract and utility radiation protection technicians who, in turn, are receiving increased scrutiny by utility radiation protection supervision. Decontamination workers receive utility NGET training, must pass a one-day HNS decontamination classroom course with examination, demonstrate an understanding of certain plant procedures, receive two weeks of on-the-job training, and remain under close HNS supervision while performing their work activities on-site. This matter is considered closed.

(Open) Open Item (315/86001-01; 316/86001-01): Review results of staff stability evaluations. The licensee expects to complete this evaluation by the end of 1986. See Section 5.

(Closed) Violation (315/86001-02; 316/86001-02): Failure to place contaminated tools and equipment in posted areas. The corrective actions outlined in the licensee's response dated July 24, 1986, were reviewed. No problems were noted.

(Open) Open Item (315/86001-03; 316/86001-03): Establish positive control over radioactive/contaminated tools and equipment in the vicinity of the hot tool crib. See Section 9.

(Open) Open Item (315/86001-04; 316/86001-04): Evaluate the apparent need to upgrade the ALARA program. The licensee has contacted two vendors regarding the feasibility and expense of upgrading the dose-record computer capabilities to more effectively implement the ALARA Program by facilitating

the licensee's ability to research dose-savings techniques. The licensee expects to reach a decision regarding this matter and implement the computer system modification in 1987, if appropriate. This matter will be reviewed further during a future inspection.

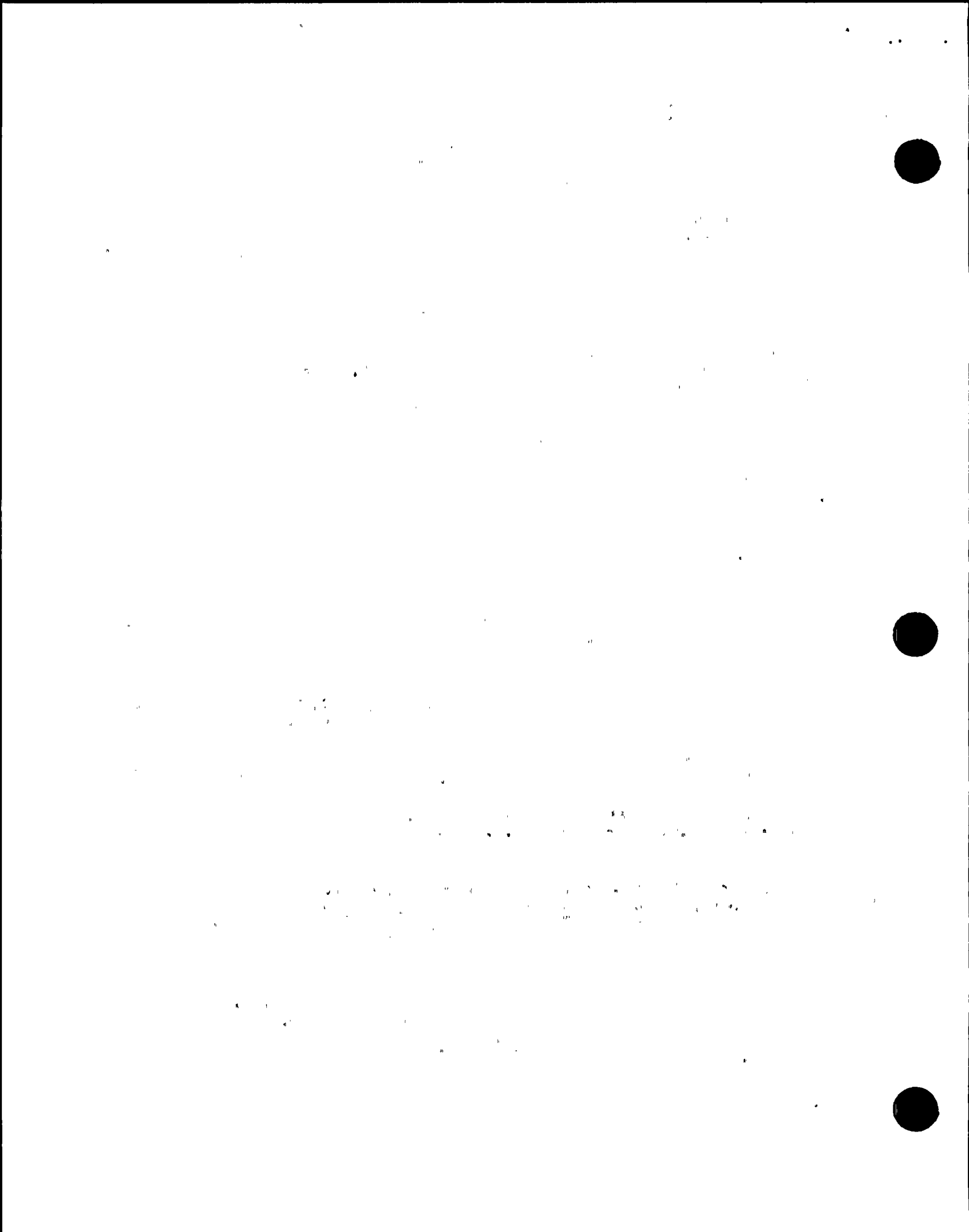
(Closed) Open Item (315/86001-05; 316/86001-05): Revise Procedure No. PMP 6010.RAD.001 concerning release rates to uncontrolled areas. On September 4, 1986, Change Sheet No. 2 to Revision 7 to this procedure was issued. This change sheet, in part, redefines "clean" objects and areas as those having fixed contamination below 100 corrected counts per minute utilizing a pancake GM detector. On September 13, 1986, the RPM issued a memorandum which directed all Radiation Protection Section personnel to use only GM pancake detectors to survey items for fixed contamination prior to release into clean areas. The memorandum also states that the GM pancake detectors have a ten percent efficiency and a minimum detectable countrate of 100 corrected counts per minute.

(Open) Open Item (315/86001-06; 316/86001-06): Evaluation of possible release path for contaminated material to uncontrolled areas. The licensee expects to complete this evaluation by end of 1986.

(Closed) Open Item (315/86001-07; 316/86001-07): Evaluation of dosimetry placement. On September 30, 1986, the RPM sent a policy memorandum to upper-level plant managerial and supervisory staff to establish definitive guidelines concerning the proper location and orientation of personnel dosimetry. The senior NGET training instructor stated that these guidelines have been incorporated into the NGET training program, including a new video segment in proper wearing of personnel dosimetry. This matter is considered closed.

(Closed) Open Item (315/86001-08; 316/86001-08): Inadequate training on use of portable survey instruments. Beginning on September 22, 1986, the licensee has been conducting one-hour classes on the proper use of radiation survey meters for those workers requiring unescorted access into High Radiation Areas (HRAs). The class is taught by radiation protection personnel under the direction of the RPM and the Radiation Protection Training Specialist. The inspector reviewed the lesson plan; no problems were noted. On September 26, 1986, the job-coverage Radiation Protection Supervisor issued a memorandum to all radiation protection technicians inform them of a new policy which requires the Radiation Protection Section to grant unescorted access to HRAs only to those persons who have been so designated on the appropriate list located in the Job Coverage Office. One of the requirements to be placed on this list is the successful completion of the one-hour class on the proper use of radiation survey meters. This matter is considered closed.

(Closed) Open Item (315/86001-09; 316/86001-09): Correction of deficiencies noted in use of bags and carts for transfer of material. Corrective actions include tagging laundry carts, posting signs, modifying NGET training, and ordering yellow bags imprinted with "Radioactive (tri-blade radioactive symbol) Material." This matter is considered closed.



(Closed) Open Item (315/86001-10; 316/86001-10): Improve frisking equipment at the normal laboratory egress area. The portal monitor with poor detection sensitivity which the laboratory and other workers frequently used to exit the RCA has been removed. This forces all personnel to exit the RCA via the normal egress point. This matter is considered closed.

(Closed) Violation (315/86001-11; 316/86001-11): Failure to comply with radioactive waste burial site regulations. The corrective actions outlined by the licensee to the State of South Carolina in a letter dated September 20, 1986, were reviewed. No problems were noted.

(Closed) Violation (315/86001-12; 316/86001-12): Failure to prevent shifting of a radioactive waste shipment load. The corrective actions outlined in the licensee's response dated July 24, 1986, were reviewed. No problems were noted.

4. Organization and Management Controls

The inspector reviewed the licensee's radiation protection organization and management controls for the radiation protection program, including changes in the organizational structure and staffing, effectiveness of procedures and other management techniques used to implement the program, experience concerning self-identification and correction of program implementation weaknesses, and effectiveness of audits of the program.

Effective July 1, 1986, a major reorganization of the D.C. Cook plant staff was approved by the licensee's corporate office. The reorganization included the addition of a third assistant plant manager, realignment of the assistant plant managers' responsibilities, and the addition of a plant coordinator for licensing activities. The Plant Radiation Protection Supervisor (PRPS) is still the designated Radiation Protection Manager (RPM). The PRPS reports administratively to the plant manager through the Technical Physical Science Superintendent and the Assistant Plant Manager - Technical Support. It is generally considered an organizational weakness to require the person designated as the RPM to report administratively to the plant manager through intermediate managerial positions because of the communication barriers it can create between the RPM and the plant manager; however, in this case the RPM stated that he functionally has ready and direct access to the plant manager.

Five radiation protection supervisors, four performance engineers, and the Radiation Protection Training Specialist report directly to RPM. The RPM appears to have adequately delegated authority and responsibility to his subordinates, thereby allowing the RPM to concentrate on the development and management of the radiation protection program. Each radiation protection supervisor has been assigned responsibility for specific functional areas; these areas are dosimetry, instrumentation, radiation work permits, job coverage, and radioactive material control. Also, the 32 radiation protection technician (RPT) positions are each assigned to primarily work in one of these function areas. Staff stability is discussed in the next section.



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The licensee's radiation protection staff is augmented by 45 contract RPTs who are assigned duties under the oversight of utility radiation protection supervisors in the areas of dosimetry, instrumentation, radiation work permits, job coverage, radioactive material control, and the auxiliary building reclamation project. The licensee's staff is also augmented by 77 contractor workers in several areas, including housekeeping, radwaste handling assistance, decontamination of floors and equipment, operation of the DAW sorter and the Freon tool cleaners, laundry operations, respirator cleaning, chemistry support, and other technical support. The inspector selectively reviewed the training, qualifications, and licensee oversight of the contact RPTs and other contract workers; no problems were noted. Because of certain licensee RPIP improvement projects, it appears desirable that the licensee's staff remain augmented until significant progress is made towards the improvement project goals. These special projects appear indicative of the licensee's recent internal commitments to more conscientiously implement RPIP, although more effort appears warranted to certain areas. See Section 15.

No violations or deviations were identified.

5. Radiation Protection Staff Stability

Licensee's performance concerning radiation protection staffing has declined somewhat during the past year. The turnover rate for radiation protection technicians has been high; about 35 percent of the positions are vacant or filled with technicians who do not meet ANSI qualification requirements. Although many of the recent vacancies have been created by in-house transfers (quality assurance, training, and ALARA groups), the loss of experienced technicians has reduced the overall experience level and represents a potentially negative influence on the efficiency of the radiation protection program. The effect of reduced staff stability was exacerbated by the licensee's past policy of heavy reliance on contract technicians for job coverage; improvement in this area was exhibited recently by the establishment of a rotating shift schedule which assures that all house technicians are periodically involved in job coverage. The licensee expects to complete an internal assessment of inspector concerns regarding radiation protection staff experience, stability, and morale by the end of 1986. This matter will be reviewed further during a future inspection. (Open Item No. 315/86001-01; 316/86001-01)

6. Training and Qualifications

The inspector reviewed the training and qualifications aspects of the licensee's radiation protection, radwaste, and transportation programs, including: changes in responsibilities, policies, goals, programs, and methods; qualifications of newly hired or promoted radiation protection personnel; and provision of appropriate radiation protection, radwaste, and transportation training for station personnel. Also reviewed were management techniques used to implement these programs and experience concerning self-identification and correction of program implementation weaknesses.

The licensee's radiation protection technician (RPT) training program is undergoing a change with the intention of seeking INPO accreditation in 1987. The RPTs are being qualified by tasks with formal classroom and on-the-job task/on-the-job qualification (OJT/OJQ) lesson plans. The licensee has identified 217 RPT tasks which have been incorporated into 234 classroom and 64 OJT/OJQ lesson plans. When fully implemented, an RPT will be allowed to perform a given task only if the RPT has been qualified to perform that specific task. The licensee is presently compiling lists of task qualifications needed to perform each radiation protection procedure. By December 31, 1986, the licensee expects to have the new training program fully implemented. The licensee expects it will take two years to qualify all RPTs under the new training program; during this transition period, the experienced RPTs will be allowed to perform tasks without necessarily completing the new formalized training with proper qualification documentation. The licensee also plans to enroll the contract RPTs into the new training program if they have been on-site at least six months. The inspector selectively reviewed portions of the lesson plans and training records; no problems were found.

The new RPT training program is being developed by two training instructors with technical assistance from the Radiation Protection Section. A Radiation Protection Training Specialist position has been created to be responsible to the Plant Radiation Protection Supervisor, in part, for administration of the OJT/OJQ standards and program, training scheduling, and as a plant training department liaison. The inspector reviewed the qualifications of the RPT training instructors and the Radiation Protection Training Specialist; no problems were noted.

The inspector discussed the nuclear general employee training (NGET) program with the appropriate training instructors and the RPM; no significant problems were identified. The inspector also reviewed the qualifications of the NGET training instructors; no problems were found. Discussions of contractor decontamination worker training and the special Radiation Protection Section class on the proper use of portable survey instruments are discussed in Section 3.

No violations or deviations were identified.

7. External Exposure Control and Personal Dosimetry

The inspector reviewed the licensee's external exposure control and personal dosimetry programs, including: changes in facilities, equipment, personnel, and procedures; adequacy of the dosimetry program to meet routine and emergency needs; planning and preparation for maintenance and refueling tasks including ALARA considerations; required records, reports, and notifications; effectiveness of management techniques used to implement these programs and experience concerning self-identification and correction of program implementation weaknesses.

Exposure records of plant and contractor personnel for 1986 to date were selectively reviewed. No exposures greater than 10 CFR 20.101 limits were noted. The estimated total dose for 1986 is projected to be 700 person-rem; about 75 percent of this exposure was accumulated during the 132-day Unit 2 refueling outage due mostly to guide tube replacement and extensive steam generator work.

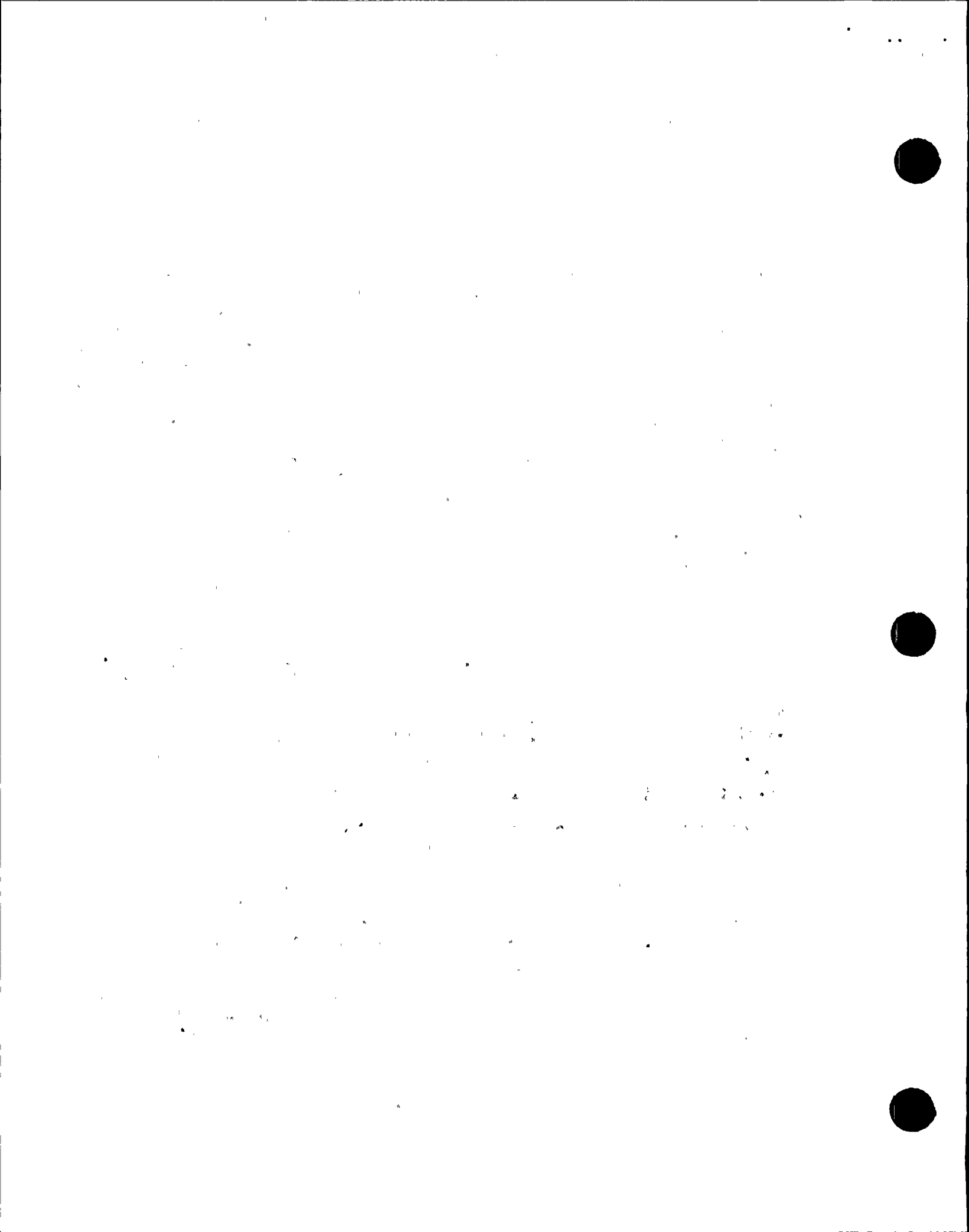
Procedure 12 THP 6010.RAD.741, "Termination Exposure Reporting," requires that the Termination Letter Log be maintained to assure compliance with 10 CFR 20.408. The inspector reviewed the Termination Letter Log entries for the last three months. The log appears to be poorly maintained with numerous errors and indications of apparent failures to follow Procedure 12 THP 6010.RAD.741. Examples include the apparent failures to adhere to procedural requirements to properly maintain the Termination Letter Log, to promptly send TLDs for early reading if notified of termination before the twenty-fifth of the month, and to promptly process TLDs and assign exposures. These errors and apparent procedural violations were discussed with the RPM and the appropriate radiation protection supervisor and performance engineer. Three apparent violations were identified by the inspector. However, contented that the procedural and regulatory requirements were met in the three cases and that erroneous log entries were responsible for the appearance of the three violations. The matter was further discussed at the exit meeting and is considered an unresolved item pending the licensee's verification/or correction of the data contained in the Termination Letter Log. (315/86013-01; 316/86013-01)

8. Internal Exposure Control and Assessment

The inspector reviewed the licensee's internal exposure control and assessment programs, including: changes in facilities, equipment, personnel, respiratory protection training, and procedures affecting internal exposure control and personal assessment of individual intakes meet regulatory requirements; planning and preparation for maintenance and refueling tasks including ALARA considerations; required records, reports, and notifications; effectiveness of management techniques used to implement these programs, and experience concerning self-identification and correction of program implementation weaknesses.

Through September, 4150 whole body counts (WBCs) were conducted in 1986. The inspector selectively reviewed WBC records and evaluations of MPC-hours; no result exceeding the 40 MPC-hour control measure was noted. Two persons have received greater than one percent maximum permissible body burden (MPBB) in 1986; last year 54 incidents of this type were noted. In addition to initial, termination, and routine periodic WBCs, the licensee requires a WBC for an individual with personnel contamination above the shoulders if detectable by hand-held friskers.

The inspector toured the respiratory protective device cleaning and storage facilities; no problems were noted. The inspector interviewed an HNS assistant site coordinator concerning the qualifications of the HNS



personnel assigned to these facilities; no problems were noted. Discussions with plant personnel indicate that engineering controls are, in general, being used instead of respirators where practical, in accordance with 10 CFR 20.103.

No violations and deviations were identified.

9. Control of Radioactive Materials and Contamination

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 methods of control of radioactive and contaminated materials.

In July 1986, the licensee began the auxiliary building reclamation project which has the goal of reducing the auxiliary building contaminated floor area from approximately 53,000 square feet to about 20,000 square feet (10 percent of total floor area) within one year. As areas are decontaminated, appropriate surfaces are painted, and process leakage is repaired or contained. By the end of September 1986, the contaminated area was reduced to approximately 34,500 square feet and 220 leakage containment devices had been installed. The reclamation projects staff includes approximately 20 HNS decontamination workers and 20 contractor RPTs. The staff is working two shifts per day under contractor supervision and radiation protection supervisor oversight.

Through September, there were 420 personnel contamination incidents in 1986. The licensee defines a personnel contamination incident as one where an individual has skin or clothing contamination equal to or greater than 100 cpm above background using a frisking device, or any detectable counts on nasal or mouth swaps. There were approximately three times as many clothing as skin contaminations. The licensee appears to adequately track and trend the root causes of contamination incidents. The policy of supplying licensee management with copies of a monthly list of persons with multiple contaminations for disposition appears effective in reducing the number of recurrences. The inspector selectively reviewed personnel contamination incident reports; no problems were found.

The licensee issued guidelines for radioactive material control in the auxiliary building on January 28, 1986. These guidelines were issued for the purposes of preventing the unauthorized addition/alterations of radioactive materials into/in storage areas and the reduction of temporary areas utilized for equipment storage. The inspector observed that each storage area is now clearly defined and controlled by radioactive equipment release and radioactive material laydown area request forms and procedures. During a previous inspection (Inspection Reports No. 50-315/86001; 50-316/86001), the inspector discussed with the licensee the desirability of transferring a significant portion of the contaminated material, tools,

and equipment now temporarily stored in the auxiliary building general access areas to other storage facilities. The licensee is preparing a portion of the welding and fabrication shop building to store part of this equipment. The new contaminated equipment storage facility will have sealed roof, walls, and floor with six inch high curbs and an internal survey station with high density concrete block walls. The facility will be controlled as a locked and posted RCA surrounded by a fence with padlocked gates. The contaminated equipment will be placed in containers labeled as internally contaminated, and will be transferred to the new facility after the containers have been surveyed to assure acceptable radiation levels and no detectable external contamination.

The inspector made independent surveys to confirm postings and to verify that the licensee has an effective program for the control of radioactive and contaminated materials. Posting of contaminated, radiation, high radiation, and very high radiation areas appear appropriate. Surveys for contaminated material outside designated contaminated areas were conducted inside the auxiliary and turbine buildings; no significant problems were noted.

During a previous inspection (Inspection Reports No. 50-315/86001; 50-316/86001), the inspector discussed with the licensee the desirability of consolidating under radiation protection control the collection, decontamination, storage, and reissuance of tools from the hot tool crib. Although the licensee plans to refurbish this area of the 633-foot elevation of the auxiliary building to enhance radiological control of contaminated equipment, ordered construction material has not arrived on-site. To ensure proper control of the contaminated items during the interim, the licensee segregated adjacent storage areas, conducts daily surveys, and collects and counts approximately 100 smears twice a week. This matter remains open pending completion of the new facility. (Open Item No. 315/86001-03; 316/86001-03)

No violations or deviations were identified.

10. Audits and Appraisals

The inspector reviewed reports of audits and appraisals conducted for or by the licensee including audits required by technical specifications. Also reviewed were management techniques used to implement the audit program, and experience concerning identification and correction of programmatic weaknesses.

The inspector selectively reviewed portions of AEPSC QA audit and surveillance reports to date in 1986 and the findings of the 1985 and 1986 INPO audits and discussed the corrective action responses with the RPM and the Environmental Coordinator. In general, the responses to audit findings appear thorough, timely, and technically sound.

The inspector also reviewed the AEPSC QA auditors' qualifications regarding their radiation protection technical expertise, and the audit and surveillance schedule for the remainder of 1986. Although the technical background of the appropriate auditors appears adequate to assess technical performance, compliance, and personnel qualification and training in the area of radiation protection, the scope of the annual radiation protection QA audit does not appear to have been broad enough to comprehensively assess overall program adequacy. The AEPSC site QA section divides the audit of the radiation protection program into five segments; one audit segment is conducted each year. The inspector questioned whether the past performance of the radiation protection section warrants an audit schedule that takes five years to complete. The inspector also discussed with the AEPSC Site QA Supervisor the apparent desirability of maintaining a QA surveillance program which could, in a timely manner, accommodate special QA surveillances of the radiation protection program in problem areas identified by organizations other than QA, including those identified in condition reports, radiological deviation reports, personnel contamination incident reports, and Radiation Protection Section monthly reports or by the NRC and INPO. The licensee's present QA surveillance program does not appear to have this degree of flexibility. This matter was discussed at the exit and will be reviewed further during a future inspection. (315/86013-02; 316/86013-02)

No violations or deviations were identified.

11. Solid Radioactive Waste

The inspector reviewed the licensee's solid radioactive waste management program, including: determination whether changes to equipment and procedures were in accordance with 10 CFR 50.59; adequacy of implementing procedures to properly classify and characterize waste, prepare manifests, and mark packages; overall performance of the process control and quality assurance programs; adequacy of required records, reports, and notifications; and experience concerning identification and correction of programmatic weaknesses.

Through the end of August, the licensee generated 13,400 cubic feet of solid radwaste in 1986, compared to 18,600 cubic feet generated by the end of August 1985. This reduction is due, in part, to the licensee's conscientious efforts to minimize solid radwaste volume by judicious use of radwaste process equipment, waste segregation, and dry active waste (DAW) compaction. Recent innovations include a request from the licensee to HNS for recommendations for more effective use of the HNS DAW sorter, the trial use of a demineralizer instead of the waste evaporator for some waste streams, a budget request for a solid waste shredder, use of more efficient process equipment for cleaning contaminated mop heads, and the use of a super compactor which reportedly has the capability to compact two 52-gallon drums into one 55-gallon drum.

A review of the monthly radioactive waste status reports indicates that the licensee has done an effective job in minimizing the amount of solid radwaste temporarily stored on-site. The inspector toured the radwaste process and solid radwaste storage facilities; no significant problems were noted. The apparent poor location of the HNS DAW sorter is discussed in Section 3.

The annual QA Radwaste Audit was conducted by the licensee from May 14 to June 25, 1986, to assess the adequacy of implementation of the programs associated with the control, handling, receipt, packaging, and shipping of radioactive material. Problems identified by the audit included nine examples of failures to follow procedures governing control and handling of radioactive material. The audit concluded that the program for control and handling of radioactive material, with the exception of radwaste, is not being adequately implemented. The inspector reviewed the audit report and interviewed the QA auditor, the RPM, and the Environmental Coordinator concerning the audit findings and the corrective actions; no significant problems were noted.

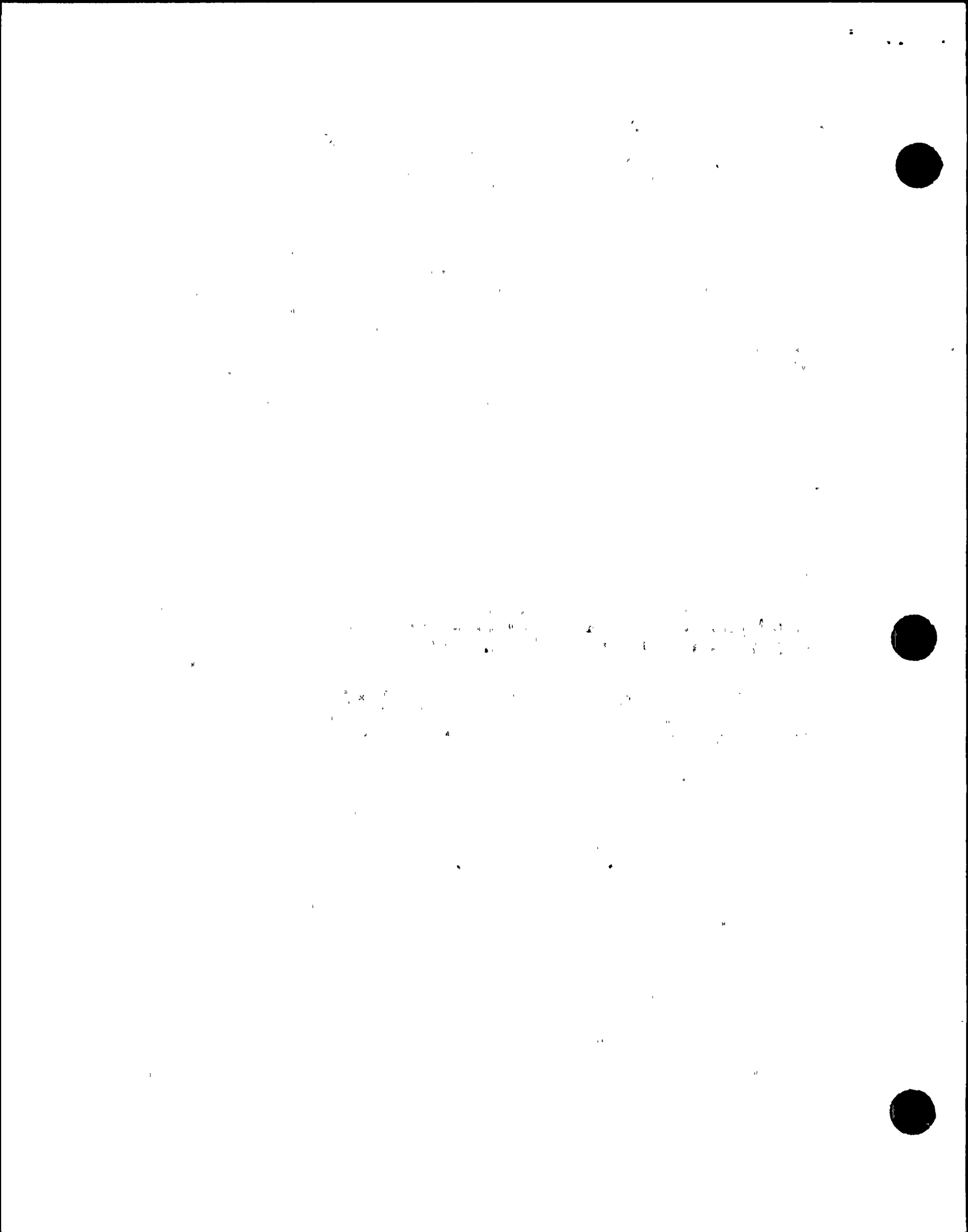
No violations or deviations were identified.

12. Transportation of Radioactive Materials

The inspector reviewed the licensee's transportation of radioactive materials program, including: determination whether written implementing procedures are adequate, maintained current, properly approved, and acceptably implemented; determination whether shipments are in compliance with NRC and DOT regulations and the licensee's quality assurance program; determination if there were any transportation incidents involving licensee shipments; adequacy of required records, reports, shipment documentation, and notifications; and experience concerning identification and correction of programmatic weaknesses.

The inspector selectively reviewed portions of the solid radwaste shipment records for 1985 and to date in 1986. The information on the shipping papers appears to satisfy NRC, DOT, and burial site requirements. The licensee had 62 shipments in 1985 and 29 shipments through September 26 in 1986 consisting of 29,300 and 16,000 cubic feet, respectively. The shipments in 1983 and 1984 consisted of 23,200 and 17,400 cubic feet, respectively. The increased volume generated and shipped in 1985 was primarily due to activities associated with the Unit 1 ten-year ISI refueling outage, the Unit 2 steam generator repair outage, and five maintenance outages. The inspector also observed the loading, blocking, and bracing of a flat bed truck shipment consisting of two liners and a DAW box and the surveys of the flat bed truck shipment and a truck trailer shipment; no problems were noted.

The South Carolina Department of Health and Environmental Control notified the licensee by a letter dated July 22, 1986, of an apparent violation of Department Regulation 61-83, Section 4.1 which requires written notification to be given to the Department a minimum of 72 hours prior to departure of radioactive waste from the licensee's facility. Licensee



Radioactive Waste Shipment No. 0786-208-A arrived at the Chem-Nuclear burial facility in Barnwell, South Carolina on July 17, 1986, apparently without prior notification. The licensee replied to the State of South Carolina in a letter dated August 7, 1986, which stated that the licensee's check of the facsimile machine transmission records indicate that prior notification was successfully transmitted to the South Carolina Department of Health and Environmental Control on July 9, 1986. The letter also stated that on July 28, 1986, a conference call between the licensee and a South Carolina state official lead to the conclusion that the July 9, 1986 transmission was an anomaly as no determination could be made of where the problem existed; the licensee stated that they will monitor their transmissions to the South Carolina Department of Health and Environmental Control to ensure full compliance will all applicable requirements and regulations. In a letter to the licensee dated August 18, 1986, the State of South Carolina stated that they were satisfied with the licensee's measures to ensure that future prior notifications transmittals will be verified.

On October 23, 1986, the licensee was contacted by a Chem-Nuclear representative at the burial facility in Barnwell, South Carolina regarding the apparent mislabeling of the licensee's shipment which arrived at Barnwell that day. State of South Carolina inspectors apparently believe the shipment labeled Yellow-II should have been labeled Yellow-III. Until the licensee receives formal notification from the State of South Carolina concerning this apparent violation of 49 CFR 172.403, the matter is considered an Unresolved Item, was discussed at the exit, and will be reviewed further during a future inspection. (315/86013-03; 316/86013-03)

No violations or deviations were identified by the inspector.

13. IE Bulletin No. 78-08

The inspector reviewed licensee actions taken in response to IE Bulletin No. 78-08, Radiation Levels from Fuel Element Transfer Tubes. The licensee responded to this bulletin on August 11, 1978; the bulletin was subsequently closed in Inspection Reports No. 50-315/79023; 50-316/79020. The licensee stated in their response letter that a special file of the radiation survey results would be assembled and maintained on future surveys. During this inspection, this file and other documentation of the licensee's adherence to their commitments were not readily available for the inspector's review. Until these documents are assembled and reviewed during a future inspection, this matter is considered an Unresolved Item. (315/86013-04; 316/86013-04)

14. Licensee Event Report Followup

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished.

(Closed) LER 315/84-034-00: Erroneous Setpoints Incorporated into Containment Pressure Relief Procedure. On December 12, 1984, a corporate procedure review team notified the plant that the procedure used to reduce containment pressure (OHP 4021.028.004) contained a step which, if performed, could have resulted in releases to the atmosphere in excess of the limits specified in Technical Specification 3.11.2.1. The licensee stated in the LER that a search of records revealed the technical specification limits had not been exceeded in the past. The licensee's corrective actions, including procedural revisions, appear adequate to prevent recurrence.

(Closed) LER 315/85-038-00 and 01: Inoperable Charcoal Absorbers Due to Carbon Settling. On August 6, 1985, while performing surveillance testing, it was discovered that one of the two Unit 1 auxiliary building ESF ventilation system charcoal banks was inoperable. This inoperability was based on the inability of the charcoal absorber bank to remove 99 percent of the halogenated hydrocarbon refrigerant test gas as required by Technical Specification Surveillance Requirement 4.7.6.1.b.2. As found, the charcoal absorber bank test results represented an efficiency of 98.8 percent. This failure was apparently due to significant settling of the carbon within the charcoal absorber trays. Improperly filled absorber trays were found, at later dates, in the other three auxiliary building ESF ventilation system charcoal banks and the two control room emergency ventilation system charcoal banks. The poorest efficiency measured was 98.5 percent. After carbon replacement/replenishment, all six charcoal banks passed the technical specification surveillance criteria. Licensee evaluations indicate that the reduced efficiencies of these systems did not represent a significant safety hazard to the health and safety to the general public. The licensee's corrective actions, including procedural revision and special training, appear adequate to prevent recurrence.

(Closed) LER 316/83-018-03: Radiation Monitors ERS-2301 and ERS-2305 failed. On January 17, 1983, the lower containment gaseous and particulate radiation monitors, ERS-2301 and ERS-2305, failed due to loaded filter paper which caused the pump to trip on low flow. The licensee's corrective actions, including procedural revisions, appear adequate to prevent recurrence.

(Closed) LER 316/85-85-026-00: Charcoal Absorber Damage Due to Exposure to Fire Protection Water. During visual inspections conducted September 3-9, 1985, the licensee discovered that the charcoal absorber banks within three technical specification filtration units had been inadvertently exposed to fire protection water. Following completion of charcoal changeout, technical specification in-place filter tests were conducted and passed. The licensee's corrective actions, including design changes, appear adequate to prevent recurrence.

No violations or deviations were identified by the inspector.

15. Radiation Protection Improvement Program

At the conclusion of an inspection (Inspection Report No. 50-315/85024; 50-316/85024) on September 6, 1985, a meeting was held at the D.C. Cook plant between licensee representatives and members of the NRC/Region III staff to discuss specific weaknesses in the D.C. Cook radiation protection program which required corrective action. At a subsequent meeting in the Region III office in Glen Ellyn, Illinois, on October 3, 1985, the licensee proposed a Radiation Protection Improvement Program (RPIP) to correct the identified weaknesses. Region III confirmed the acceptability of the proposed RPIP to the licensee in a letter dated November 1, 1985. A status update and additional information concerning RPIP was transmitted by the licensee to Region III in a letter dated March 4, 1986, in response to the SALP 5 report.

During this inspection, the inspector reviewed the status and apparent effectiveness of RPIP. Although, in general, the licensee was able to demonstrate that the program has been implemented in a timely manner and that some radiation protection improvements have resulted, it appears to the inspector that more licensee effort is warranted in key areas such as staffing (Section 5), procedural adherence (Section 7), contaminated material control (Section 9), radioactive waste transportation activities (Section 12), and the ALARA program (Section 3). The status and effectiveness of RPIP will continue to be reviewed during future inspections.

16. Exit Meeting

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on October 24, 1986, and by telephone through November 5, 1986. The inspector summarized the scope and findings of the inspection. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents or processes as proprietary. In response to certain matters discussed by the inspector, the licensee:

- a. Acknowledged the inspector's concerns regarding adherence to the termination exposure reporting procedural and regulatory requirements and stated these concerns would be addressed during the resolution of the appropriate Condition Report. (Section 7)
- b. Acknowledged the inspector's concerns regarding the scope of annual QA audit of the radiation protection program and stated the QA department would evaluate the adequacy of the current audit policy. (Section 10)
- c. Acknowledged the apparent mislabeling of a radwaste shipment. (Section 12)
- d. Acknowledged the inspector's concerns regarding compliance with commitments made in the licensee's response to IE Bulletin No. 78-08. (Section 13)

