

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-220/88-12
50-410/88-12

Docket No. 50-220
50-410

License No. DPR-63
NPF-54 Priority - Category C

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Facility Name: Nine Mile Point Units 1 and 2

Inspection At: Oswego, New York

Inspection Conducted: April 18-22, 1988

Inspectors: Robert M. Loesch
R. Loesch, Radiation Specialist

5/16/88
date

R.L.Nimitz
R. Nimitz, Senior Radiation Specialist

5/16/88
date

Approved by: M.M. Shanbaky
M.M. Shanbaky, Chief, Facilities Radiation Protection Section

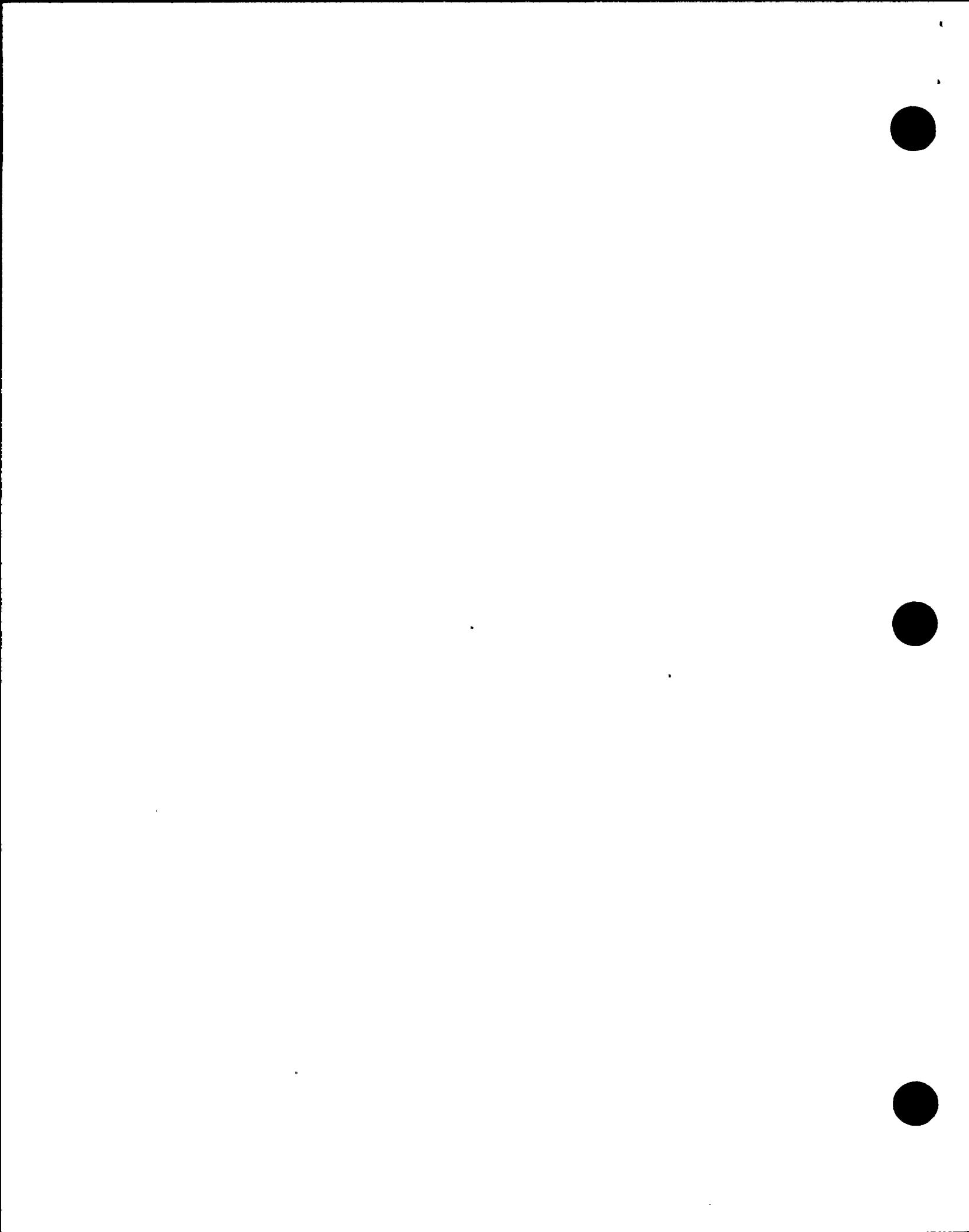
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Inspection Summary: Inspection conducted April 18-22, 1988 (Combined Inspection Report No. 50-220/88-12; 50-410/88-12)

Areas Inspected: Routine, announced Radiological Controls Inspection at Units 1 and 2. Areas reviewed were licensee action on previous findings, ALARA, and external exposure controls.

Results: No violations were identified.

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DETAILS

1.0 Individuals Contacted

1.1 Niagara Mohawk

- * J.L. Willis, General Superintendent
- * T. Roman, Station Superintendent, Unit 1
- * R. B. Abbott, Station Superintendent, Unit 2
- * K.A. Dahlberg, Site Superintendent, Maintenance
- * J. Duell, Site Chemistry Supervisor
- * P. Volza, Radiation Protection Manager
- * D. Barcomb, Radiation Protection Supervisor, Unit 2
- * R. Gerbig, Radiation Protection Supervisor, Unit 1
- * N. Spagnoletti, Manager, Corporate Health Physics
- * M. Goldych, Assistant Superintendent, Training

1.2 NRC

- * W.A. Cook, Senior Resident, Nine Mile Point

1.3 Others

- * P. MacEwan, Site Representative, New York State Electric and Gas
- * P. Eddy, Site Representative, New York State Public Service Commission

* denotes those individuals attending the exit meeting on April 22, 1988.

The inspector also contacted other individuals.

2.0 Purpose of Inspection

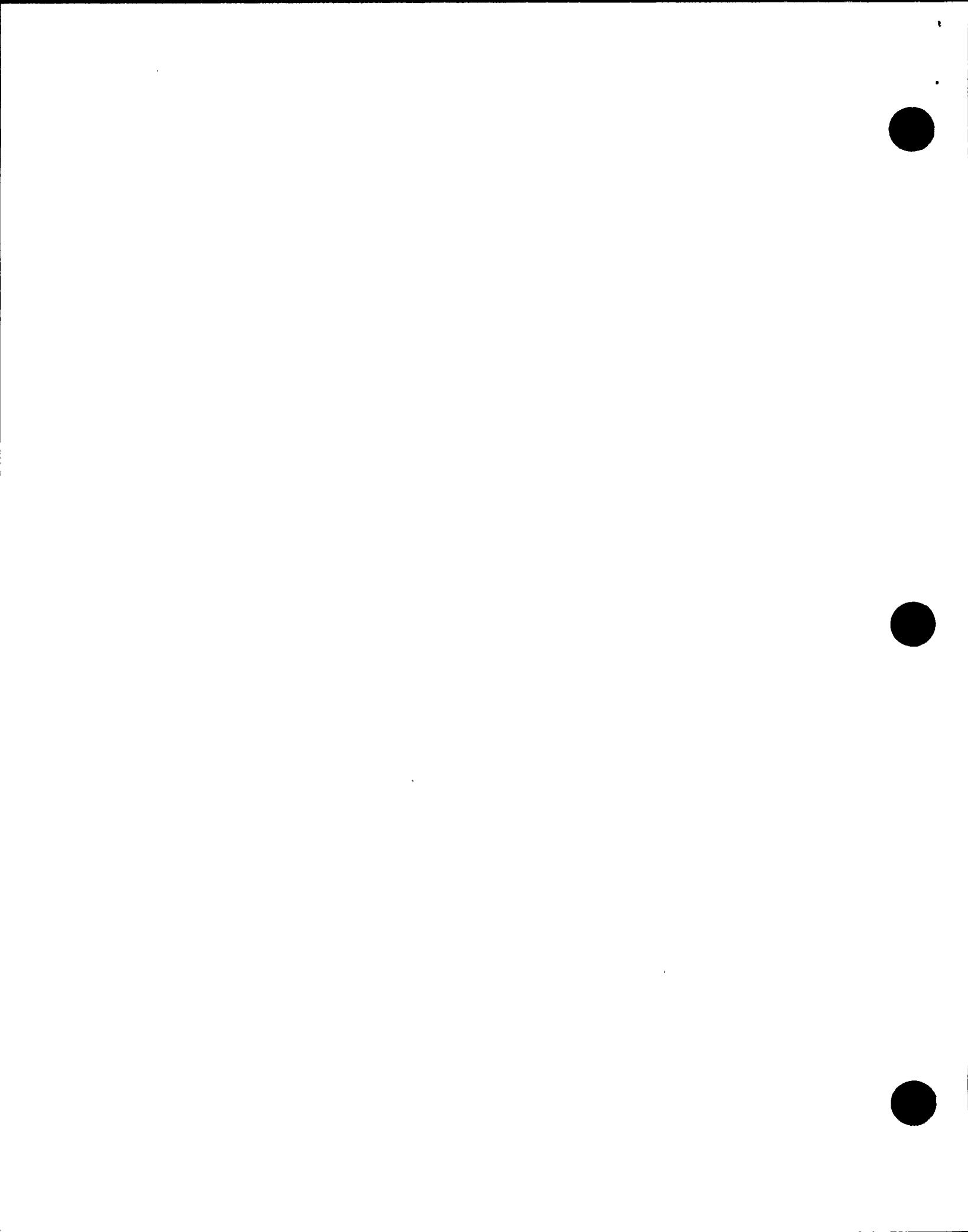
This inspection was a routine, announced inspection of the Unit 1 and Unit 2 Radiological Controls Program. Areas reviewed were:

- Licensee Actions on Previous Findings
- ALARA
- External Exposure Controls

3.0 Licensee Actions on Previous Findings

3.1 (Closed) Inspection Follow-up Item (50-220/85-25-07): Licensee to review and evaluate the adequacy of alpha contamination and alpha airborne radioactivity analysis methodology. The licensee's methodology did not incorporate alpha self-absorption factors.

The licensee reviewed the analysis methodology and revised procedures to incorporate alpha self-absorption correction factors. The licensee utilizes two methods to determine alpha airborne radioactivity. The primary



method uses chemistry preparation and analysis of the air sample. The second method uses direct counting of air samples. The inspector noted that this latter method did not include a priori sample volumes or sample count times to ensure meeting a specified minimum detectable activity (MDA) for analysis. Licensee personnel indicated procedures would be revised to incorporate requirements for meeting an a priori specified MDA. This item is closed.

- 3.2 (Closed) Inspector Follow-up Item (50-220/86-6-01; 50-410/86-46-01): Licensee to upgrade the radiation protection personnel retraining and requalification program as described in their Retraining/Requalification Action Plan. Licensee also to establish administrative controls for the training and qualification of temporary radiation protection personnel.

The licensee upgraded the Retraining/Requalification Program consistent with the Action Plan. Administrative controls for training and qualifying temporary radiation protection personnel were also established. This item is closed.

- 3.3 (Closed) Inspector Follow-up Item (50-220/81-04-08): NRC to review licensee personnel monitoring device.

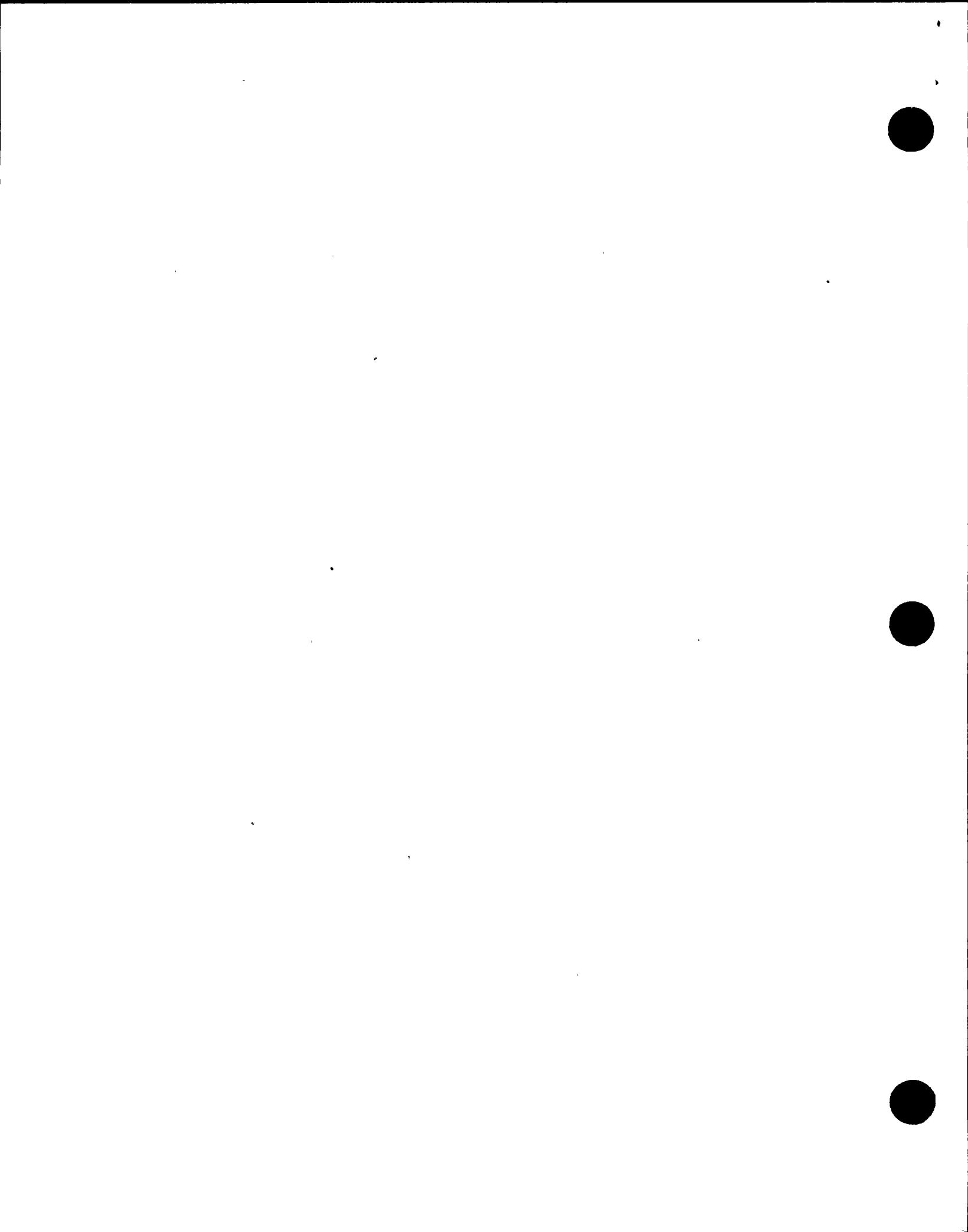
The licensee was using a film badge as the primary personnel external exposure monitoring device with a TLD badge as back-up. On February 1, 1988, the licensee replaced the film badge with a Panasonic 802 TLD badge as the primary external monitoring device. The licensee's personnel dosimetry program is certified through the National Voluntary Laboratory Accreditation Program (NVLAP). The licensee is currently performing additional testing of the TLDs with radiation sources and energies over and above the minimum required for NVLAP certification. Inspector discussions with cognizant licensee personnel regarding current test results did not indicate any apparent problems. This item is closed.

- 3.4 (Closed) Violation (50-220/86-08-01): Licensee did not provide training to workers in accordance with 10 CFR 19.12.

The inspector reviewed this matter with respect to licensee corrective actions described in an August 14, 1986, letter to NRC, Region I. The licensee implemented the corrective actions described in this letter. This item is closed.

- 3.5 (Closed) Violation (50-220/86-04-03): Licensee did not perform a survey as required by 10 CFR 20.201 to assure compliance with 10 CFR 20.103.

Inspector review indicated the licensee implemented corrective actions described in their August 14, 1986, letter to NRC, Region I. This item is closed.



3.6 (Closed) Inspector Follow-up Item (50-410/85-32-09): Licensee to complete shield survey.

The licensee completed the shield survey specified in the start-up test program. Inspector review of shield surveys performed by the licensee at 100% power indicated no significant radiation streaming problems. Several areas did exhibit radiation levels above the expected levels described in the Final Safety Analysis Report (FSAR). The licensee has issued requests to enhance shielding or revise the FSAR to address the minor anomalies identified. This item is closed.

3.7 (Closed) Inspector Follow-up Item (50-220/84-05-02): NRC to review training records for contractor Radiation Protection Technicians used during the outage.

The inspector reviewed selected training records of technicians used during the outage. The technicians were provided designated training. This item is closed.

3.8 (Closed) Inspector Follow-up Item (50-220/80-11-23): Licensee to establish methods to provide for identification and correction of contamination related problems.

This item was reviewed and closed in NRC Inspection 50-220/82-06. This item is closed for administrative purposes.

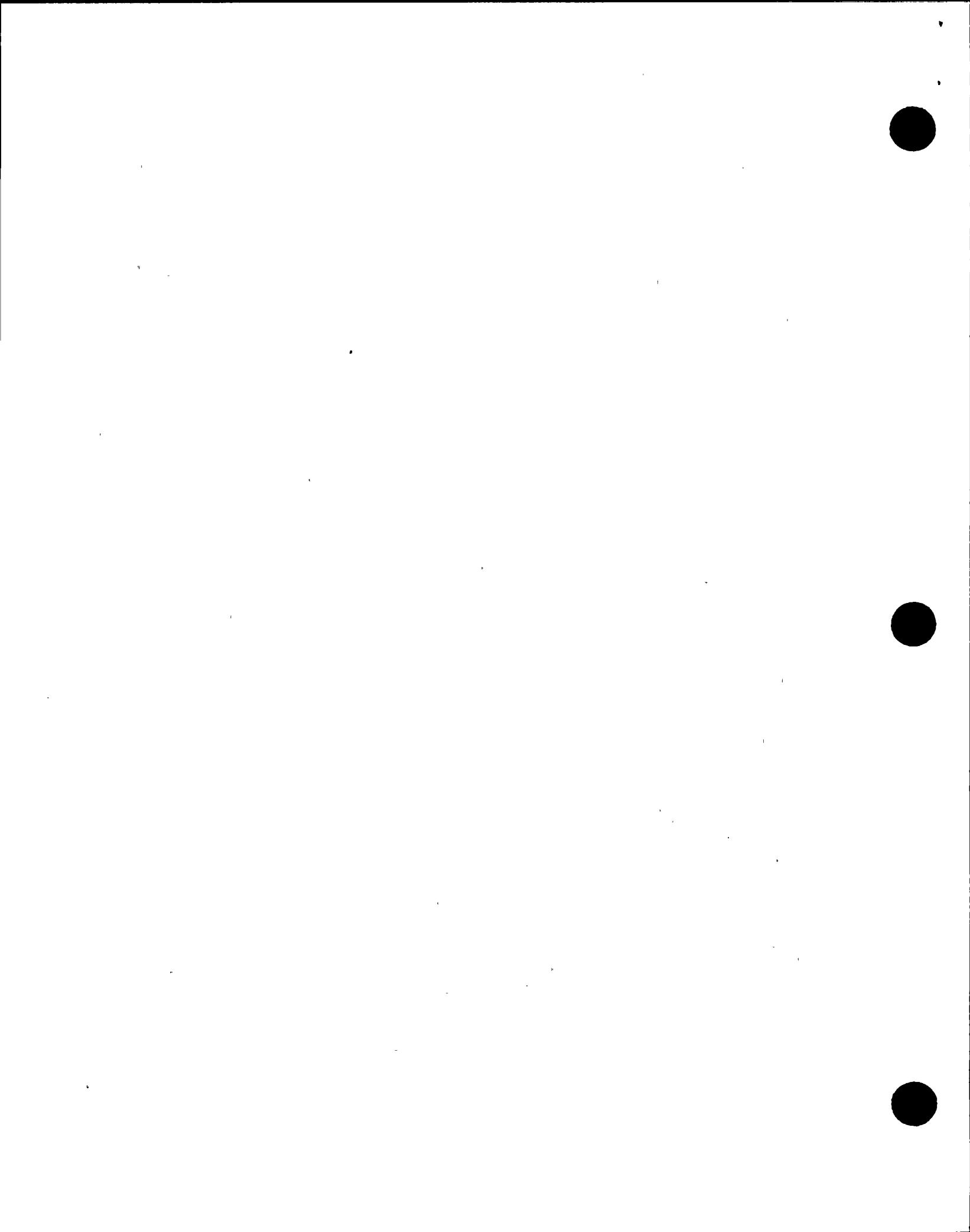
3.9 (Closed) Inspector Follow-up Item (50-220/84-14-09): Licensee to provide data to demonstrate that the General Atomic high range containment monitors are environmentally qualified.

The licensee provided data that showed that the monitors are appropriately qualified. This item is closed.

3.10 (Closed) Inspector Follow-up Item (50-410/87-22-05): This item contained three sub-items:

Item 1 (Closed): Provide respirators for personnel collecting post-accident samples which eliminates the need to remove and replace respirator facepieces.

The licensee obtained respirators which do not require removal or replacement of the facepiece when connecting into a breathing air supply. Appropriate personnel have been trained on the use of this equipment. The inspector noted approved procedures for the respirator had not been established and implemented. The respirators had been placed in emergency kits about two months prior to this inspection. The licensee immediately revised and approved procedures for the use of the respirators.



Item 2 (Closed): Licensee to revise post-accident sampling procedures to include precaution statements to preclude technicians from taking radwaste samples which may increase background radiation levels in the post-accident sampling station. Samples will be collected only with supervisory approval.

The licensee revised applicable procedures to incorporate the precaution statements.

Item 3 (Closed): Licensee to incorporate vendor specified maintenance requirements into applicable procedures for maintenance of the post-accident sampling system.

The licensee revised applicable procedures and incorporated maintenance requirements.

3.11 (Closed) Inspector Follow-up Item (50-220/87-22-09): This item contained five sub-items.

Item 1 (Closed): Licensee to calibrate the flow measuring devices on the PINGs. The PINGs are used in the Emergency Operations Facility and Technical Support Center to assess airborne radioactivity levels.

The licensee calibrated the flow measuring devices and incorporated steps into applicable procedures to provide for periodic recalibration of the devices.

Item 2 (Closed): Licensee to evaluate capability of PINGs to provide acceptable airborne radioactivity data when operating in radiation fields.

The licensee evaluated the capability of the PINGs to operate in radiation fields. Appropriate guidance for operation of PINGs in radiation fields was included in applicable procedures.

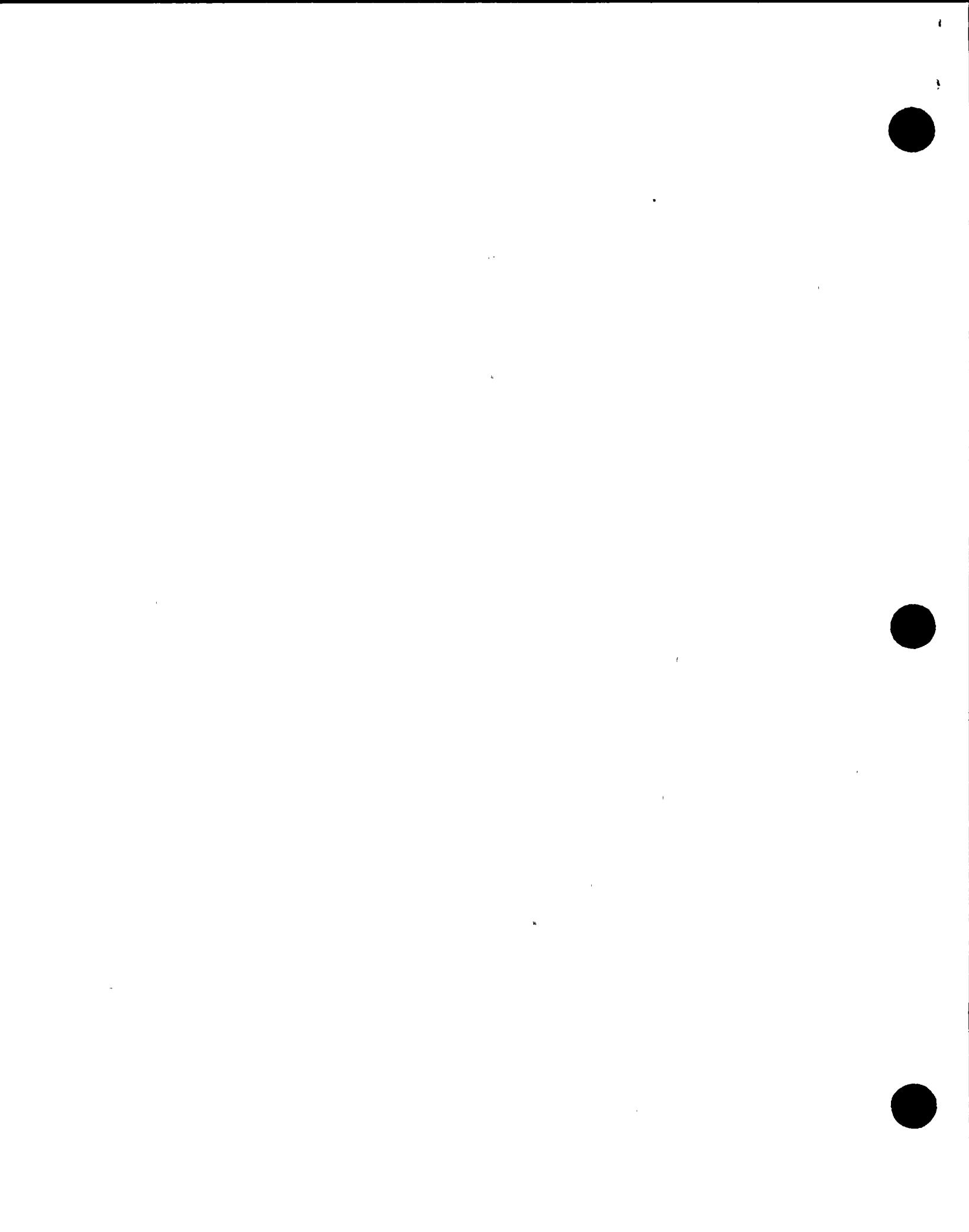
Item 3 (Closed): Licensee to provide practical factors training for in-plant post-accident sampling teams.

The licensee provided practical factors training to appropriate personnel and included retraining requirements into applicable procedures.

Item 4 (Closed): Licensee to revise procedures to show correct location of battery carts used by in-plant post-accident sampling teams.

The licensee revised procedures to describe correct location of battery carts.

Item 5 (Closed): Licensee to provide guidance as to where to store post-accident samples after analysis.



The licensee revised applicable procedures to specify a location for storage of samples. Guidance was also included regarding shielding of samples and other radiological controls.

- 3.12 (Closed) Inspector Follow-up Item (50-410/87-22-08). This item contained two sub-items:

Item 1 (Closed): Licensee to review and correct calibration procedures for high range containment monitors to address calibration error due to shielding.

The licensee revised applicable procedures to incorporate guidance to account for shielding when calibrating the high range containment monitor detectors.

Item 2 (Closed): Licensee to repair and place in-service high range containment monitor detectors C and D.

The licensee repaired and placed detectors C and D in-service.

- 3.13 (Closed) Unresolved Item (50-220)/88-04-02): NRC to review circumstances and licensee corrective actions associated with a personnel contamination event by a hot particle which occurred on December 22, 1987. A preliminary review of the circumstances and licensee corrective actions was performed during NRC Inspection No. 50-220/88-04 except for the following matters which had yet to be reviewed:

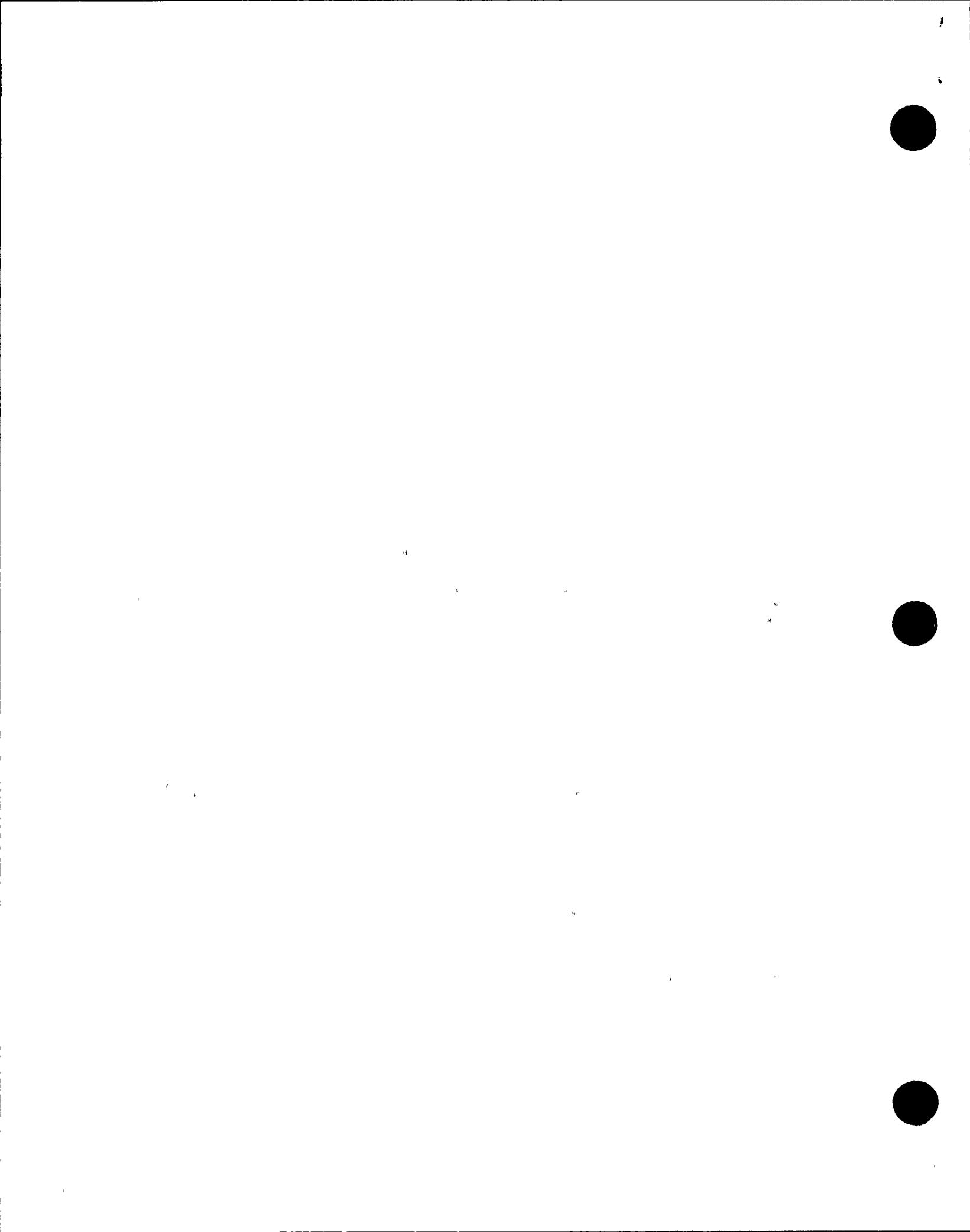
Item 1: A skin dose calculation performed by a radiation protection technician was in error. The technician used a wrong correction factor. Licensee corrective action for this matter remained open.

The error was identified by the licensee during a review of the calculation.

Inspector review found that the licensee revised the skin dose assessment procedure to improve guidance to technicians in the area of performance of skin dose determinations following contamination with hot particles. All appropriate personnel were re-instructed in the revised procedure.

Item 2: The licensee had previously experienced personnel contamination with hot particles on the Refueling Floor on May 29, 1987. It was not apparent why more aggressive controls were not in place to prevent the skin exposure on December 22, 1987.

Inspector review indicated the circumstances surrounding the May 29, 1987, skin contamination did not appear similar to the December 22, 1987, skin contamination. Due to this dissimilarity between the two contamination incidents, controls established since the May 29 incident most likely would not have prevented the December 22 incident.



Item 3: The licensee's evaluation of the December 22, 1987, skin contamination report detailed numerous long-term corrective actions to prevent recurrence. The implementation of these corrective actions was reviewed.

Inspector review indicated that, with one exception, the licensee had implemented the long-term corrective action detailed in a January 13, 1988, memorandum. The one exception involved failure to revise the on-the-job training (OJT) program for radiation protection technicians to include a task requirement on how to handle a contaminated individual when contamination with a hot particle is suspected. The licensee revised the program prior to the inspector leaving the site.

Within the scope of review of this unresolved item, no violations were identified. However, the following matter was brought to the licensee's attention:

The procedure used to provide guidance for performing skin dose assessments allows individuals to re-enter the restricted area and receive additional exposure if delays are encountered when performing the skin dose assessment. The inspector indicated personnel should be prohibited from re-entering the restricted area and receiving additional exposures until a reasonable skin dose assessment has been made.

The licensee indicated this matter would be reviewed and appropriate action (as necessary) initiated.

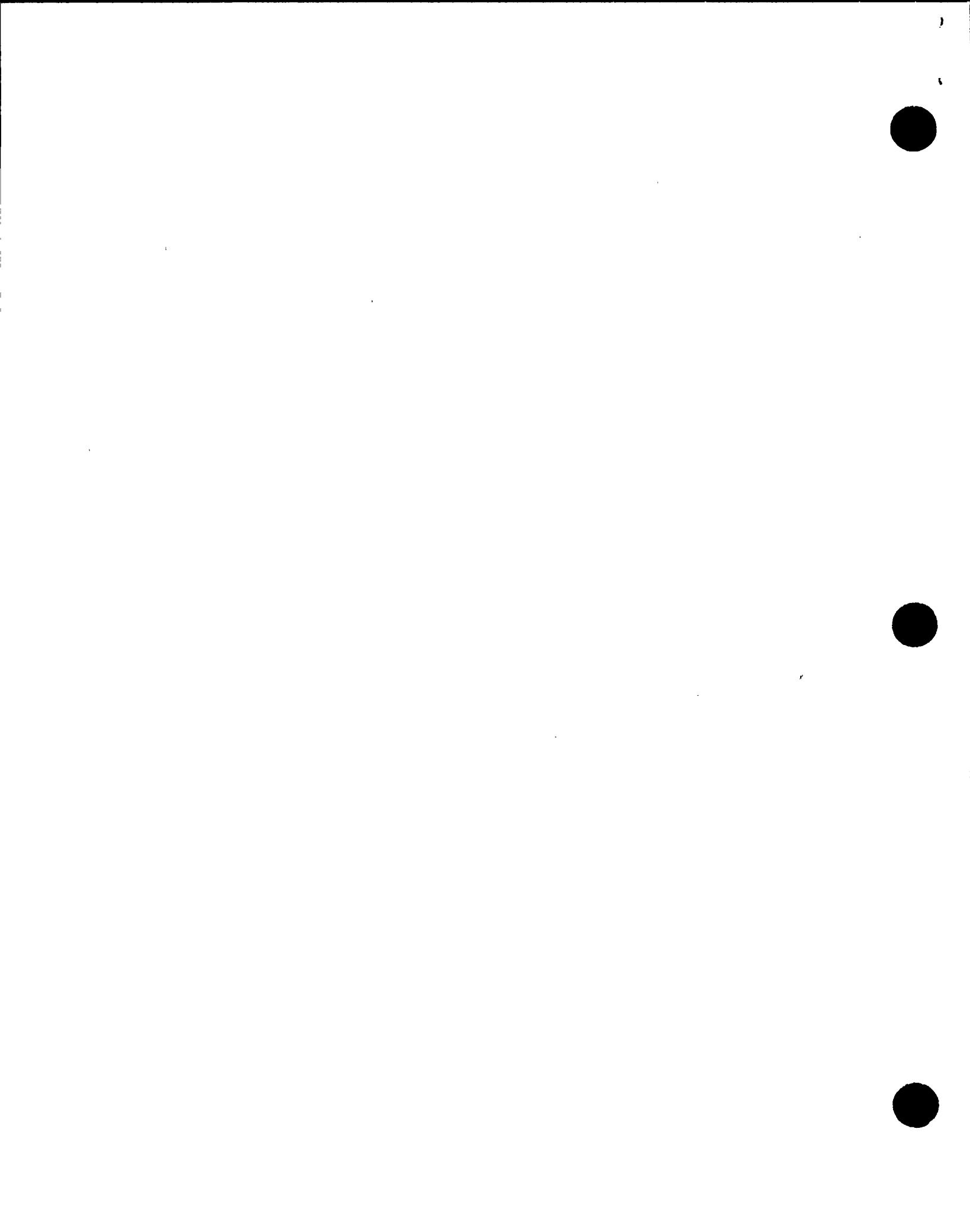
3.14 (Closed) Violation (50-220/87-17-01): The licensee failed to follow radiation protection procedures.

The inspector reviewed the corrective actions as described in the licensee's November 11, 1987, letter (NMP1L 0200) to the NRC. The corrective actions were implemented as described. This item is closed.

4.0 ALARA

The inspector reviewed the implementation and adequacy of selected aspects of the licensee's program for maintaining occupational radiation exposures as low as is reasonably achievable (ALARA). The review was with respect to the criteria contained in the following:

- Regulatory Guide 8.8, Revision 3, "Information Relevant to Ensuring that Occupational Exposure at Nuclear Power Plants will be As Low As is Reasonably Achievable."
- Regulatory Guide 8.10, Revision 1R, "Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As is Reasonably Achievable."
- Procedure S-TDP-10, "Placement of Temporary or Permanent Radiation Shielding."



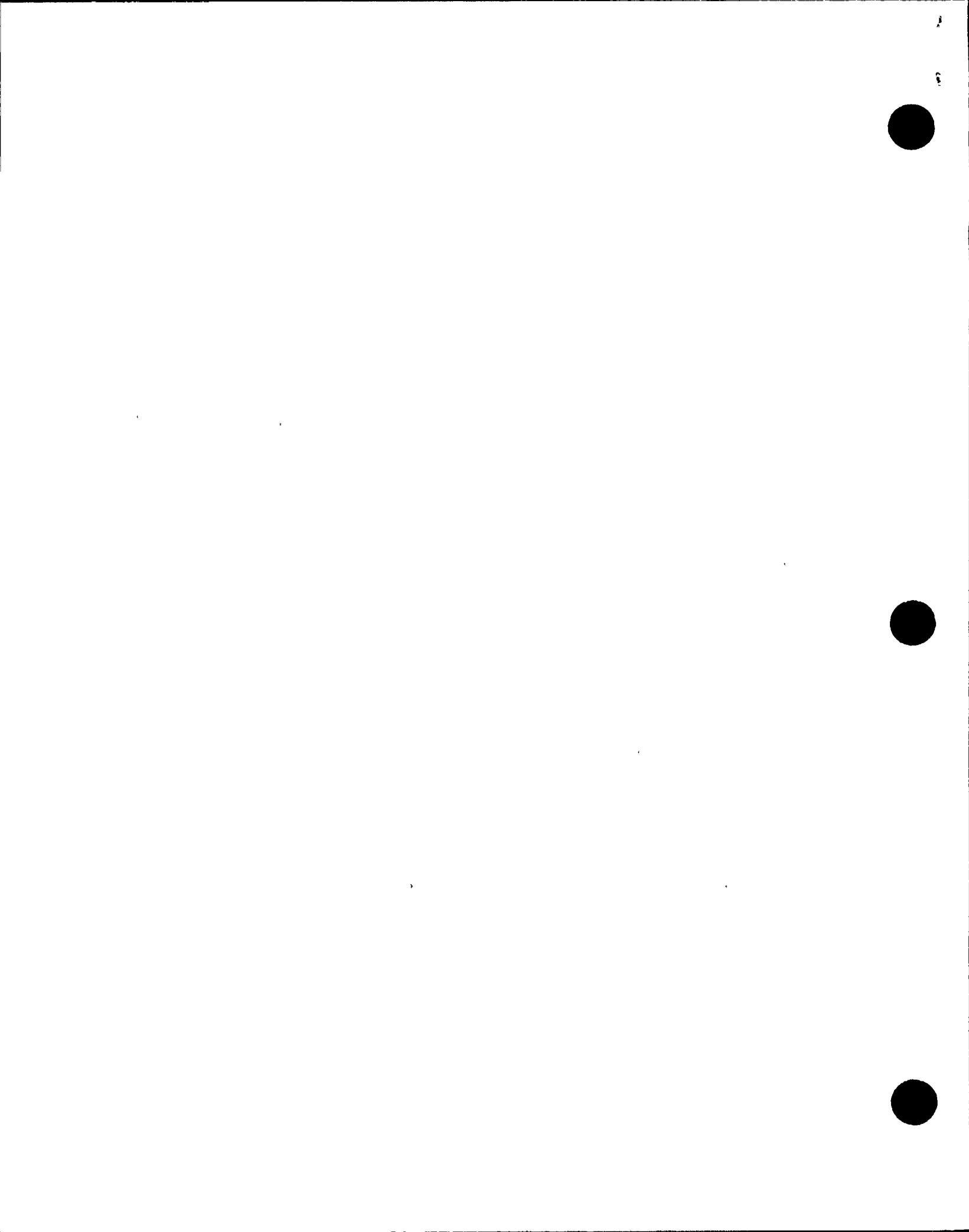
The evaluation of the licensee's performance in the area was based on:

- discussions with cognizant personnel
- review of documentation.

Within the scope of this review, no violations were identified. However, the following weaknesses were observed and brought to the licensee's attention:

- The ALARA Site Coordinator was also responsible for the Internal Exposure Control and Respiratory Protection Programs. The inspector noted that this was an unusually large scope of responsibilities, and that program quality may be affected during times of increased demands. The licensee indicated that management of the Internal Exposure Control and Respiratory Protection Programs would be evaluated.
- All installations of temporary shielding, regardless of their nature, must be approved in accordance with procedure S-TDP-10. Due to an increase in modification work packages, shielding requests, which were typically processed on-site by Technical Services, are now approved by the Corporate Office. Consequently, approval times for the requests has increased from less than a week to over a month. The licensee was aware of the delays and was evaluating how to best expedite their processing.
- Man-rem tracking by job compared the average exposure per unit (i.e. man-rem/pump motor) rather than the actual exposures. The inspector stated that important variances in man-rem expenditures may be lost by relying on only the average exposures. The licensee stated that although data was not summarized in this fashion, it was available in the ALARA review packages.
- A lack of communication between the Chemistry and ALARA groups had lead to a concern as to the appropriateness of the requirement to prewrap stainless steel piping with a non-chloride containing material prior to the placement of herculite covered lead blankets. When brought to the licensee's attention, the Unit 1 Chemistry supervisor discussed their concern of Inter-granular Stress Corrosion Cracking (IGSCC) as it relates to the chloride containing herculite materials with the Site ALARA Coordinator. This conversation was documented in a memo to the "AP 7.1 Chemistry File" dated April 21, 1988. The need for the prewrap is being reviewed by the licensee.

The inspector stated that although some good ALARA initiatives have been noted in the program, additional effort to correct organizational weaknesses, intra-departmental communication, and the man-rem tracking system would enhance the program.



5.0 External Exposure Controls

The inspector reviewed the following elements of the licensee's External Exposure Control Program:

- posting, barricading, and access control (as necessary) of radiation and high radiation areas
- adequacy and implementation of the radiological controls specified on Radiation Work Permits.

The review was with respect to criteria contained in:

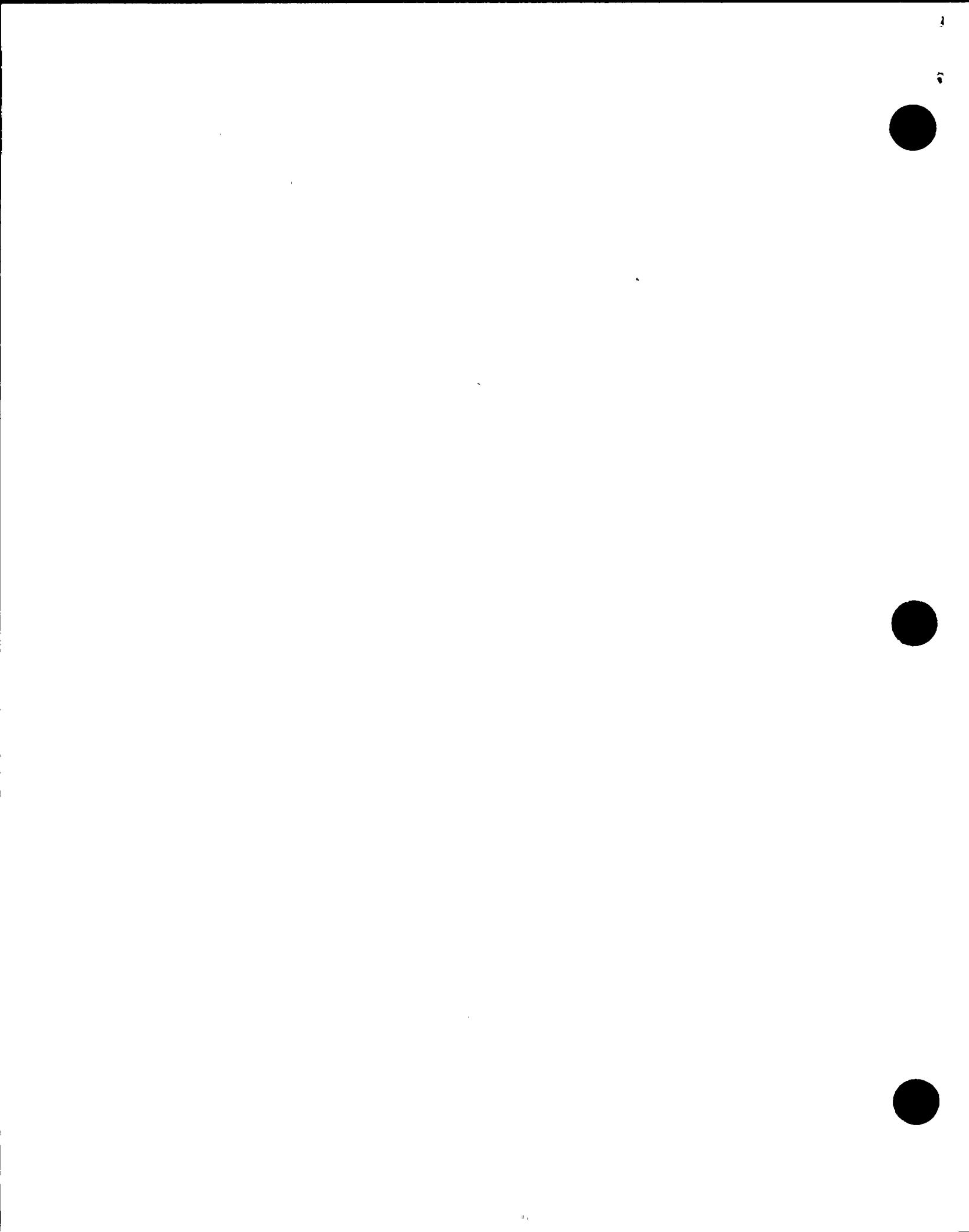
- 10 CFR 20, "Standards for Protection Against Radiation"
- Applicable Licensee Procedures

The evaluation of the licensee's performance in this area was based on:

- observation by the inspector of on-going work during tours of the facility
- discussions with licensee personnel
- review of documentation.

Within the scope of this review, no violations were identified. However, the following concerns were noted and brought to the licensee attention:

- During a tour of the Unit 2 Turbine Area, the inspector found door T-306-7 leading to the turbine, a posted high radiation area, unlocked. Although the area immediately surrounding the high pressure turbine was in excess of 1000 mr/hr, the licensee had barricaded, posted, and placed flashing warning lights around the high pressure turbine as permitted by license conditions. The licensee took immediate corrective actions and changed the lock for control as a locked high radiation area. In addition, the licensee plans to strengthen controls in this area by installing a locked fence around the high pressure turbine area. These controls will be reviewed in a future inspection (50-410/88-12-01).
- A review of the Nonconformance Event Transmittals (NETs) indicated several occasions, five in the last year, where respirators were issued to and/or worn by individual's whose qualification dates were not current. Four of the five individuals were Health Physics technicians. The inspector noted that in one instance (NET 1-87-42) involving a maintenance worker, the NET did not address the misissue of the respirator by the HP staff, nor did it specify any long term corrective actions. This issue has been identified by both INPO and the NRC in previous inspections. The licensee notified the plant staff of the



concern in several memo's (NMP-30240 and NMP-30241, dated December 9, 1987, and NMP-32465 dated March 11, 1988). Although the licensee has taken recent measures to improve controls, the inability to adequately control the distribution of respiratory protection equipment continues to be of concern and will be reviewed in a future inspection.

6.0 Exit Meeting

The inspectors met with licensee representatives (denoted in Section 1 of this report) on April 22, 1988. The inspectors summarized the purpose, scope and findings of the inspection. No written material was provided to the licensee.

