

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

RFB

MAR 25 1976

Niagara Mohawk Power Corporation
Attention: Mr. R. R. Schneider
Vice President
Electric Operations
300 Erie Boulevard, West
Syracuse, New York 13202

License No. DPR-63
Inspection No. 76-02
Docket No. 50-220

Gentlemen:

This refers to the inspection conducted by Mr. K. Plumlee of this office on January 28-30, 1976 at the Nine Mile Point 1 Facility of activities authorized by NRC License No. DPR-63 and to the discussions of our findings held by Mr. K. Plumlee with Mr. T. Lempges and others of your staff at the conclusion of the inspection, and to a subsequent telephone discussion between Mr. K. Plumlee and Mr. T. Perkins on February 11, 1976.

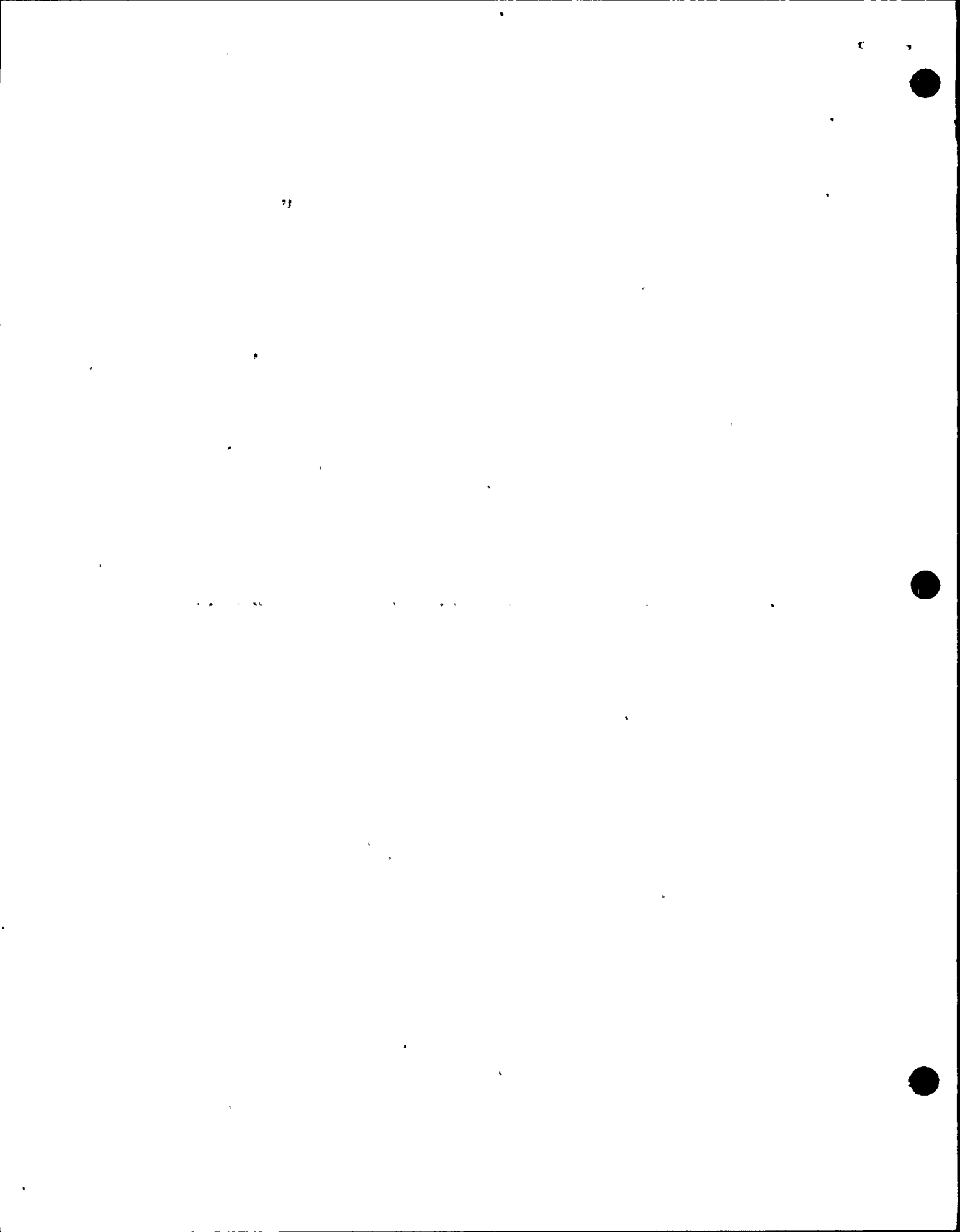
Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, measurements made by the inspector, and observations by the inspector.

In addition, our inspector examined those activities conducted under your license relating to the subjects covered in your letters to the Director of Inspection and Enforcement dated October 16, 1975 and October 23, 1975, and your letter to Mr. J. P. O'Reilly dated December 29, 1975. We have no further questions regarding these matters.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. These items of noncompliance have been categorized into the levels as described in our correspondence to you dated December 31, 1974. This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations.

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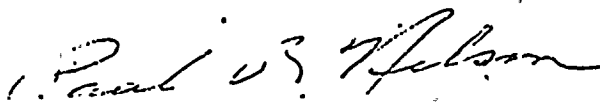
Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved.

We note that you identified the items of noncompliance through your internal management system, reported them in a timely manner, and initiated reviews and corrective actions on these matters; therefore, no response with respect to these items is required.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons on the basis of which it is claimed that the information is proprietary, and should be prepared so that proprietary information identified in the application is contained in a separate part of the document. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

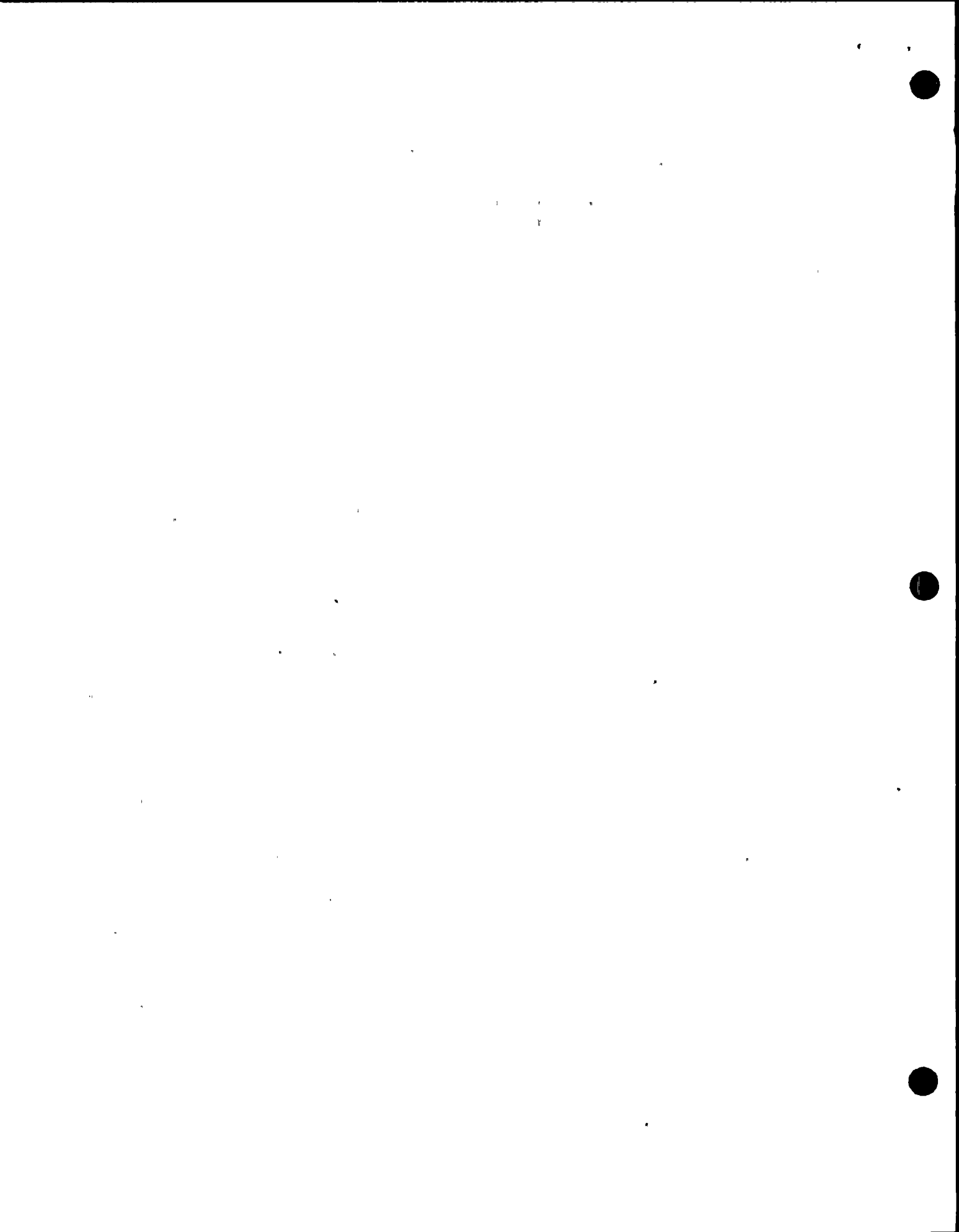
Sincerely,



Paul R. Nelson, Chief
Fuel Facility and Materials Safety
Branch

Enclosures:

1. Appendix A, Notice of Violations
2. IE Inspection Report No. 50-220/76-02



Niagara Mohawk Power Corporation

-3-

cc: T. E. Lempges, General Superintendent, Nuclear Generation
T. J. Perkins, Station Superintendent
C. L. Stuart, Operations Supervisor
E. B. Thomas, Jr., Esquire
A. Z. Roisman, Counsel for Citizens Committee for
Protection of the Environment (Without Report)

bcc:

IE Mail & Files (For Appropriate Distribution)

PDR

Local PDR

NSIC

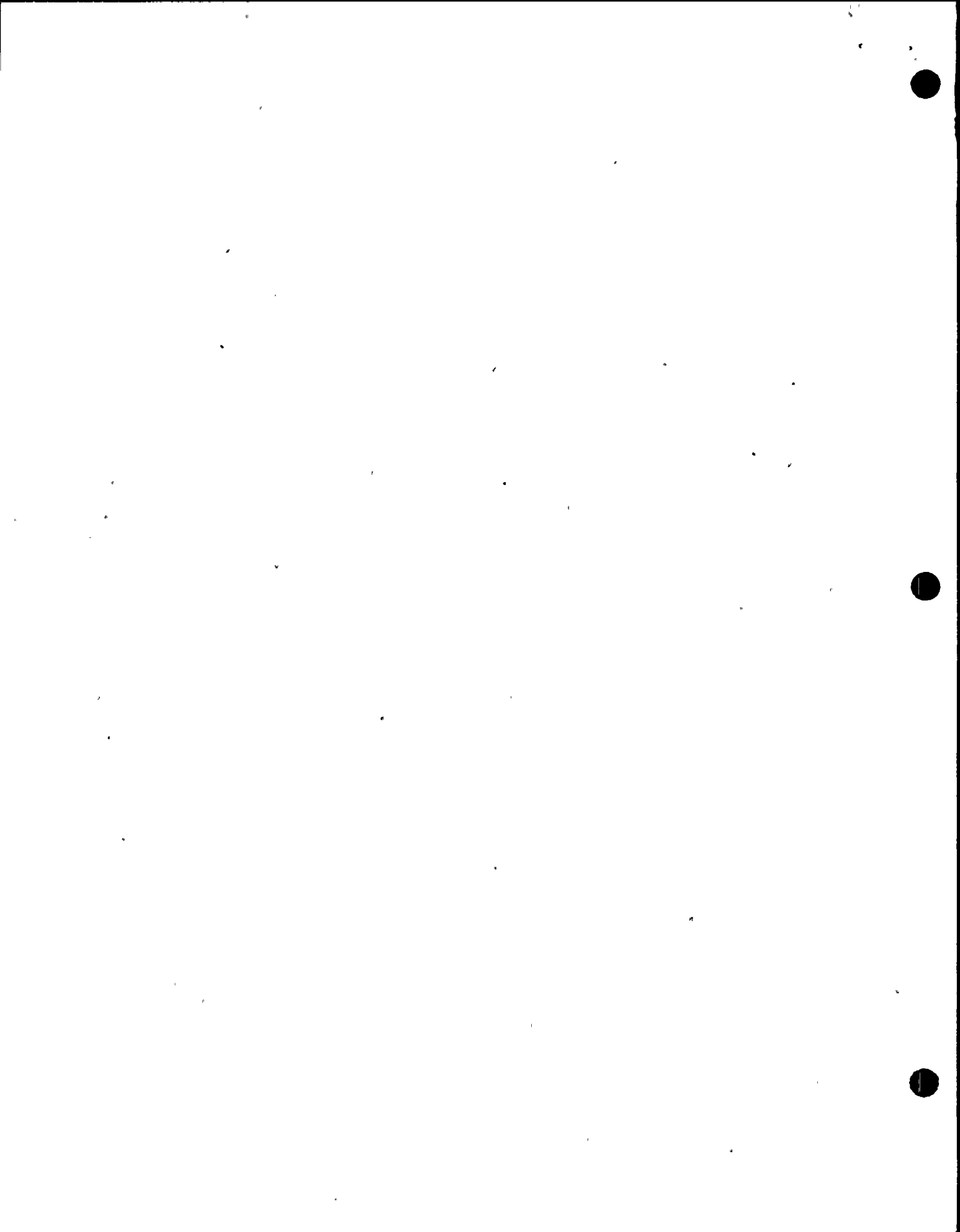
TIC

REG:I Reading Room

Region Directors (II, III, IV) (Report Only)

State of New York

A. Z. Roisman, Counsel for Citizens Committee for
Protection of the Environment



APPENDIX A

NOTICE OF VIOLATIONS

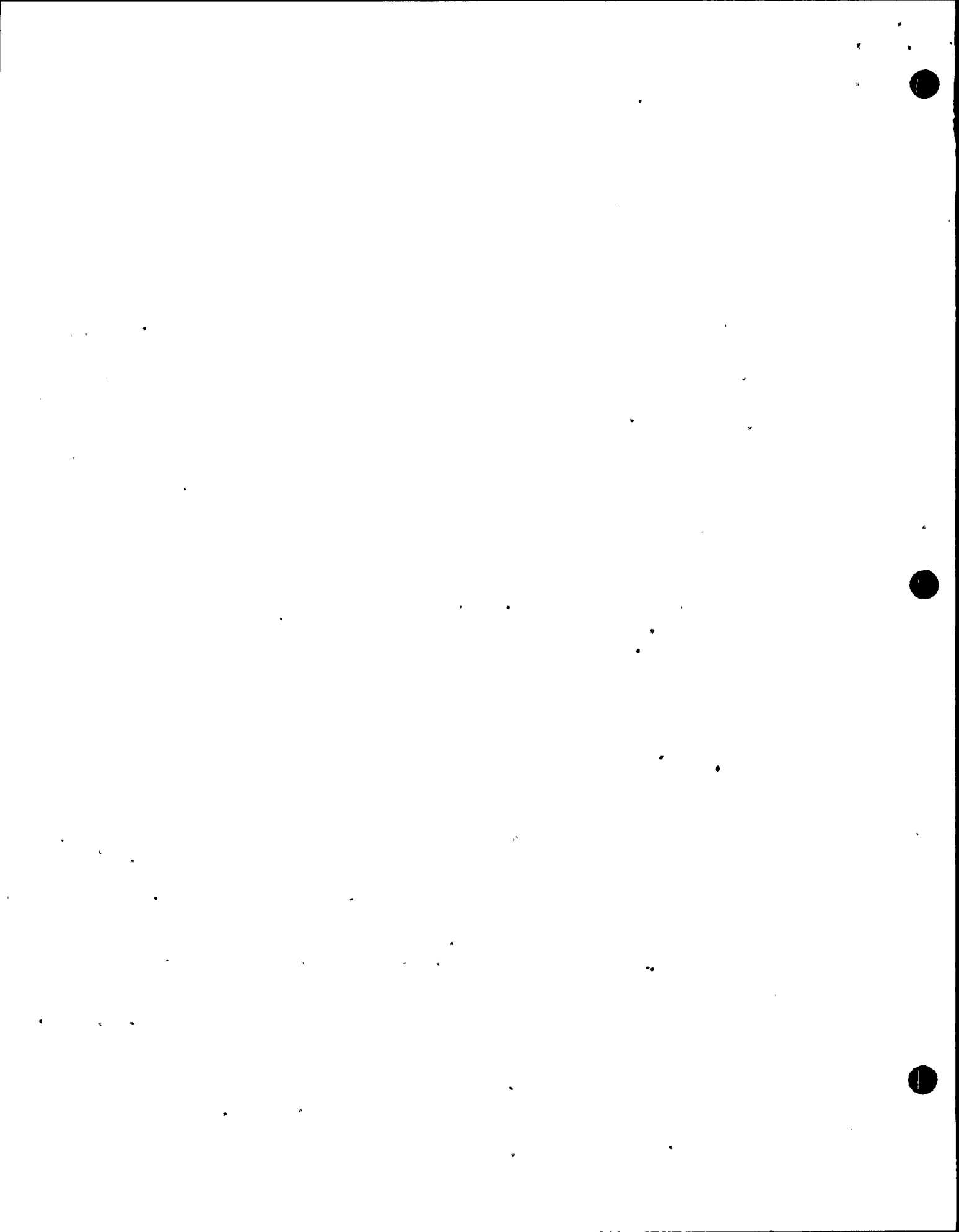
Niagara Mohawk Power Corporation
Syracuse, New York 13202
License No. DPR-63

Based on the results of an NRC inspection conducted on January 28 through 30, 1976, it appears that certain of your activities were not conducted in full compliance with the conditions of your NRC Reactor License No. DPR-63 as indicated below:

- A. Contrary to the requirements of 10 CFR 20.103(a) and (b) which limit exposures of individuals in restricted areas to specified concentrations of airborne radioactive materials:
- (1) One individual was exposed in the reactor cavity for four minutes on September 16, 1975 to concentrations measured to be 9.3×10^{-6} uCi/ml of Cobalt-60 and 2.2×10^{-6} uCi/ml of Managanese-54. When averaged over a 40 hour week, this exposure was twice the maximum permissible combined concentration.
 - (2) Two individuals equipped with supplied air masks were exposed in the steam reheaters during September 22-24, 1975 to a concentration measured to be 6×10^{-8} uCi/ml of Iodine-131. Their uptakes were 3.4 and 1.3 times the amount standard man would receive in 40 hours at the maximum permissible limit of 9×10^{-9} uCi/ml of Iodine-131.

This item is an infraction.

- B. A deficiency identified through your internal audit program and which was corrected or corrective action was initiated, is set out in the attached inspection report.



AS OF NOTICE
MAR 29 1976
REGION 1 HAS NOT OBTAINED PROVISIONARY
CLEARANCE IN ACCORDANCE WITH 10 CFR 2790

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION I

IE Inspection Report No: 50-220/76-02

Docket No: 50-220

Licensee: Niagara Mohawk Power Corporation

License No: DPR-63

300 Erie Boulevard, West

Priority: _____

Syracuse, New York 13202

Category: C

Safeguards Group: _____

Location: NMP-1, Scriba, New York

Type of Licensee: BWR, 1850 Mwt (GE)

Type of Inspection: Routine, Radiological Protection

Dates of Inspection: January 28-30, 1976

Dates of Previous Inspection: January 21-23, 1976

Reporting Inspector: Karl E. Plumlee
Karl E. Plumlee, Radiation Specialist

3-24-76
DATE

Accompanying Inspectors: _____

DATE

DATE

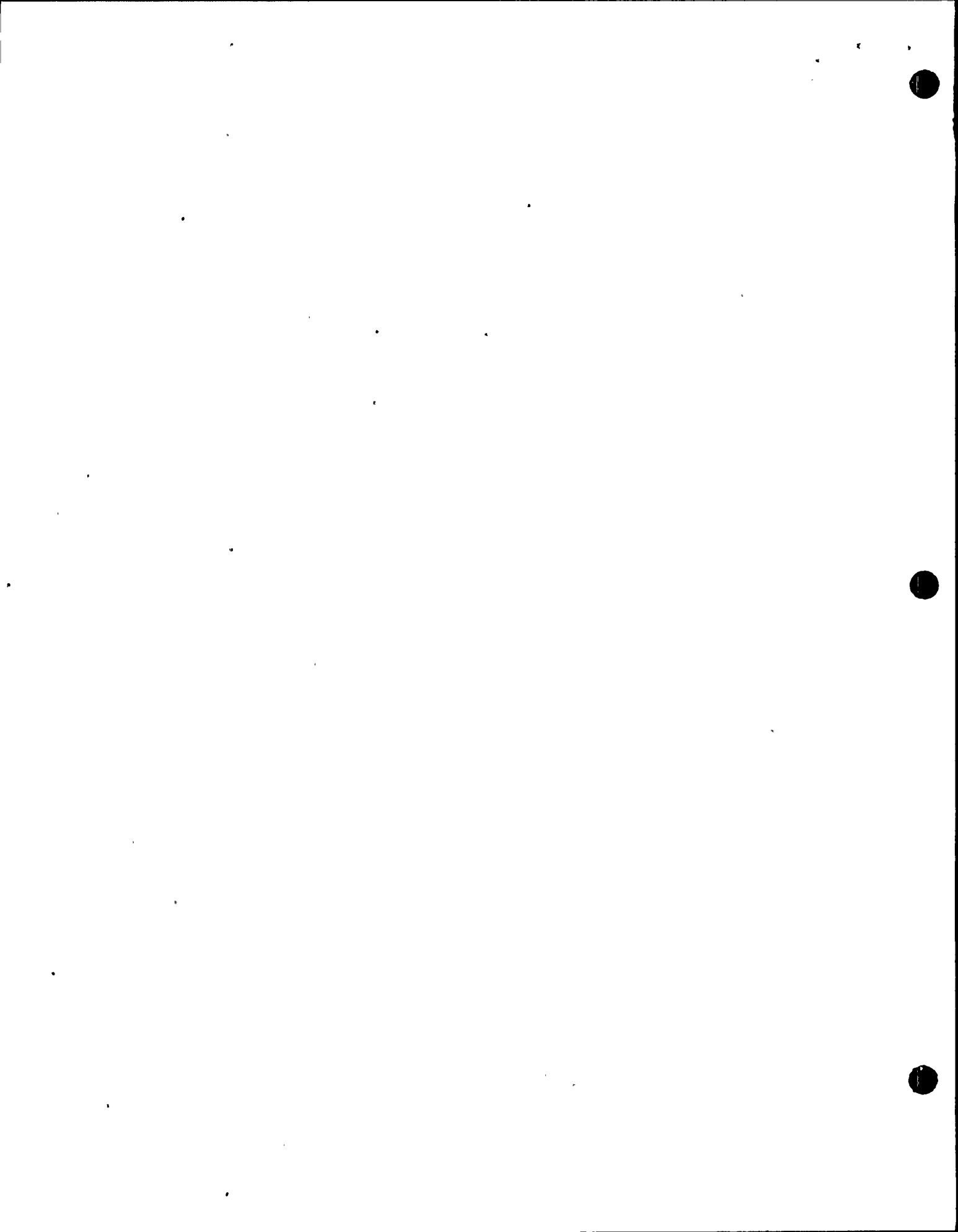
DATE

Other Accompanying Personnel: _____

DATE

Reviewed By: Peter J. Knapp
Peter J. Knapp, Section Chief, Radiation Support Section

3-24-76
DATE



SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

1. Violations

None

2. Infractions

See Other Significant Findings item A.3.a.

3. Deficiencies

See Other Significant Findings item A.3.b.

Licensee Action on Previously Identified Enforcement Action

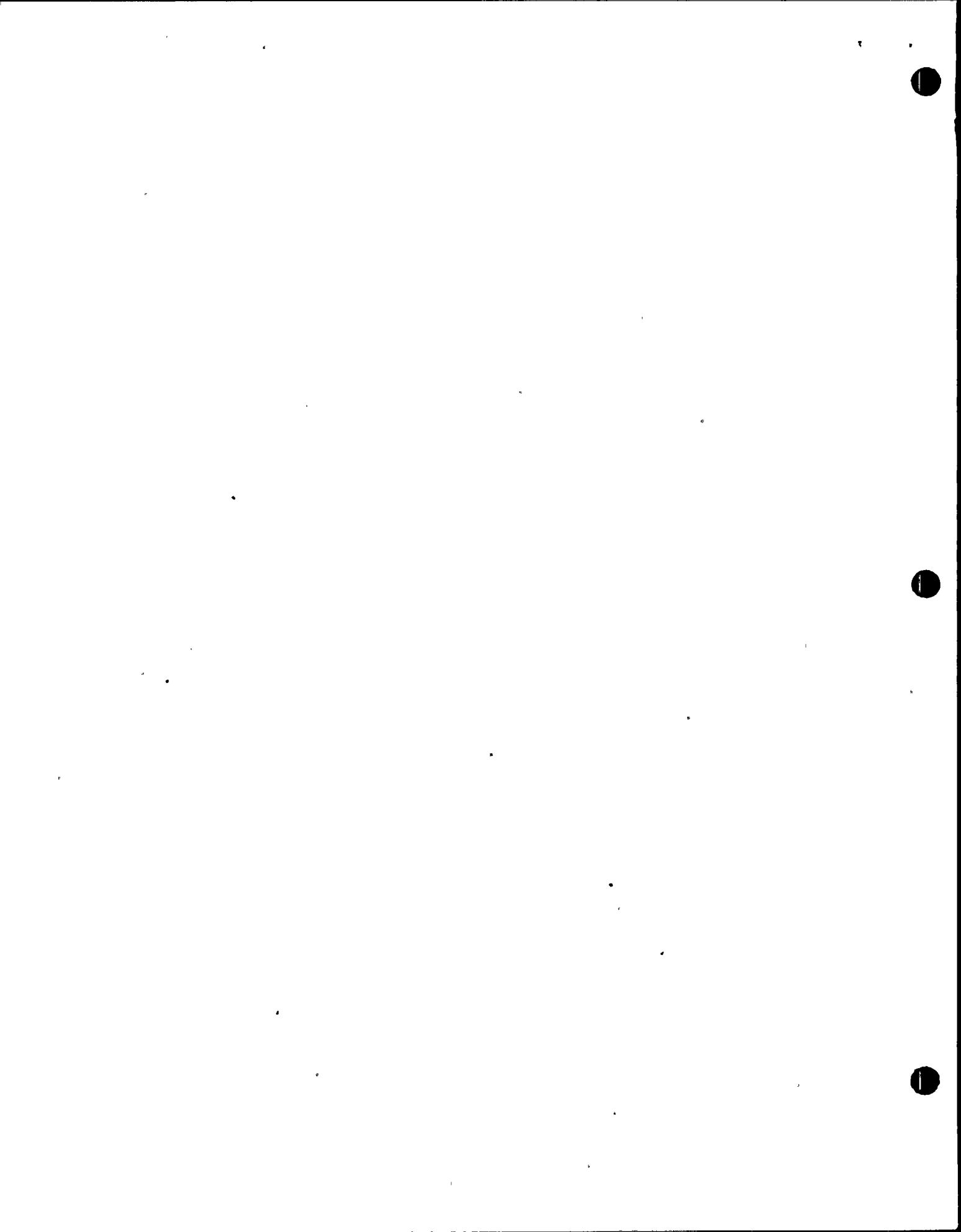
Licensee has applied by a letter dated February 4, 1976 for a license provision to possess a sealed 0.5 gram plutonium(-beryllium) neutron source that was identified during Inspection No. 50-220/75-12 as being possessed without current license authorization. The inspector has no further questions on this matter at this time. (Details, 8)

Design Changes

None

Licensee Events

- A. Exposure of a technician to airborne radioactive materials on September 16, 1975 - reported by licensee's letter dated October 16, 1975. (See Other Significant Findings, A.3.a(1))
- B. Exposures of two contractor's employees to airborne I-131 during September 22-24, 1975 - reported by licensee's letter dated October 23, 1975. (See Other Significant Findings, A.3.a(2))



- C. Failure to analyze a stack gas sample cartridge for the week of November 23-29, 1975 - reported by licensee's letter dated December 29, 1975. (See Other Significant Findings, A.3.b)

Other Significant Findings

A. Current Findings

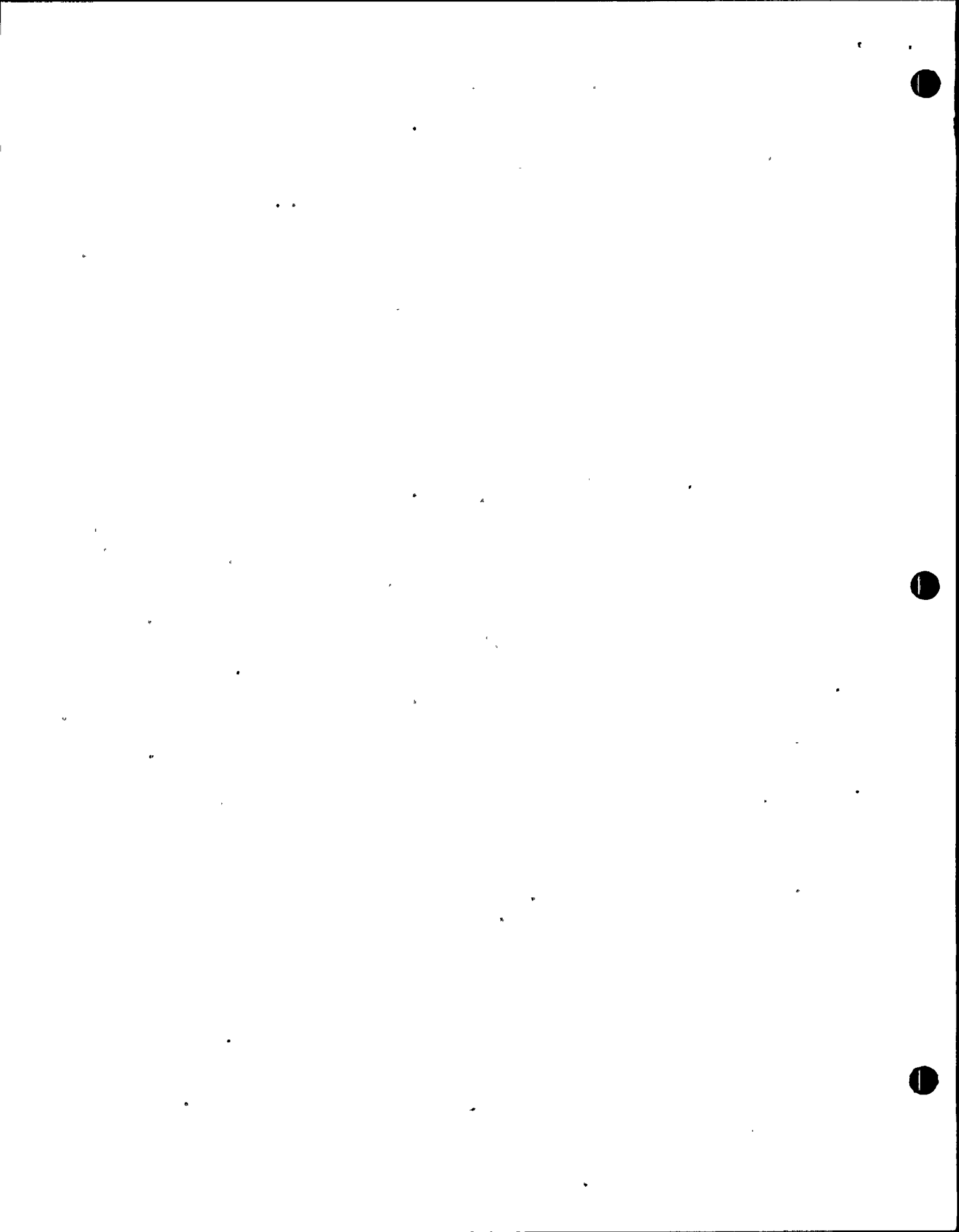
1. Acceptable Areas

No inadequacies were identified during inspection of the following areas:

- a. Health Physics staffing. (Details, 4)
- b. Licensee's audits of health physics activities. (Details, 9)
- c. Training and qualification in health physics. (Details, 10)
- d. Inventory and leak tests of radioactive sources. (Details, 11)
- e. Survey records. (Details, 12)
- f. Personnel traffic control. (Details, 12)
- g. Shipping accidents (none).
- h. Notifications and reports. (Details, 3, 5 and 6)
- i. Posting of notices. (Details, 3)
- j. Reactor water chemistry. (Details, 13)
- k. Dewatering of radwaste. (Details, 14)

2. Unresolved Items

None



3. Infractions and Deficiencies Identified by the Licensee

- a. The licensee's letters dated October 16 and 23, 1975, reported that:

Contrary to the requirements of 10 CFR 20.103(a) and (b) which limit exposures of individuals in restricted areas to specified concentrations of airborne radioactive materials:

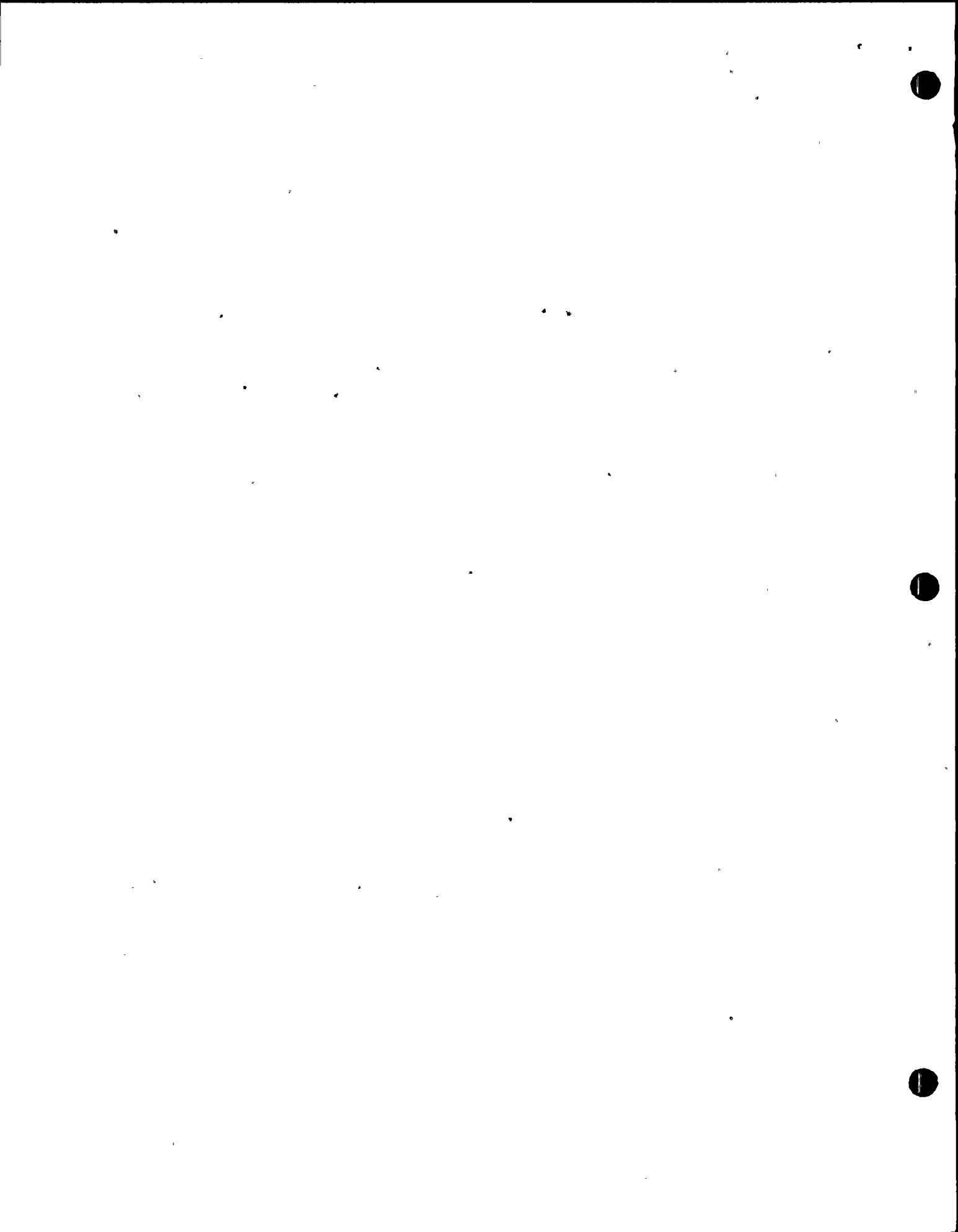
- (1) One individual was exposed in the reactor cavity for four minutes on September 16, 1975 to concentrations measured to be 9.3×10^{-6} uCi/ml of Cobalt-60 and 2.2×10^{-6} uCi/ml of Manganese-54. When averaged over a 40 hour week this exposure was twice the maximum permissible combined concentration.
- (2) Two individuals equipped with supplied air masks were exposed in the steam reheaters during September 22-24, 1975 to a concentration measured to be 6×10^{-8} uCi/ml of Iodine-131. Their uptakes were 3.4 and 1.3 times the amount standard man would receive in 40 hours at the maximum permissible limit of 9×10^{-9} uCi/ml of Iodine-131. (Details, 5 and 6)

- b. The licensee's letter dated December 29, 1975 reported that:

Contrary to the requirements of environmental Technical Specification 2.4.4.I a weekly analysis of a stack gas sample cartridge was not obtained for November 23-29, 1975. (Details, 7)

B. Status of Previously Identified Unresolved Items

1. Operation of the new liquid waste concentrator (Inspection Report No. 50-220/75-22) - This item is considered resolved. (Details, 15)
2. Purity of piped breathing air supply (Inspection Report No. 50-220/75-12) - This item remains unresolved. (Details, 16)



3. Licensee's guidelines for reduction of man-Rem of exposure during refueling (Inspection Report No. 50-220/75-22) - This item is considered resolved. (Details, 9.c)
4. Dewatering of solid waste drums (Inspection Report No. 50-220/75-22) - This item is considered resolved. (Details, 14)

Management Interview

A management interview was conducted at the Nine Mile Point 1 Facility on January 30, 1976.

Persons Present

J. Duell, Assistant Radiochemistry and Radiation Protection Supervisor
E. Leach, Radiochemistry and Radiation Protection Supervisor
T. Lempges, General Superintendent, Nuclear Generation
M. Silliman, Results Supervisor

Items Discussed

A. Purpose of the Inspection

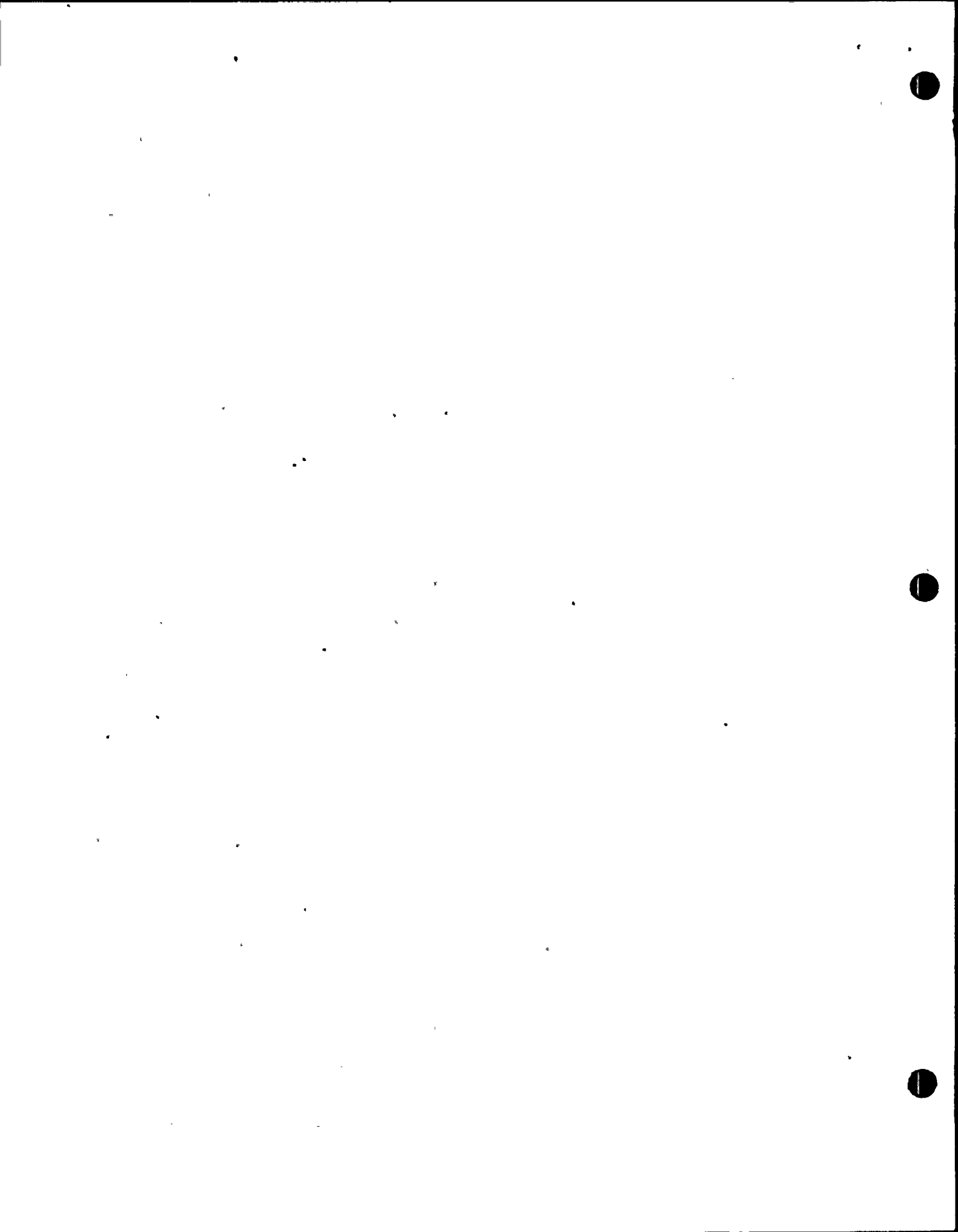
The inspector stated that this was an inspection of radiological protection activities and of the licensee's reportable events involving radiation protection.

B. Acceptable Areas

The items discussed are as identified under the "Other Significant Findings" section of this report.

C. Items of Noncompliance

The items discussed are as identified under the "Enforcement Action" section of this report.



DETAILS

1. Persons Contacted

N. Allen, Clerk
L. Bollin, Instrument and Control Supervisor
W. Bryant, Quality Control Supervisor
J. Duell, Assistant Radiochemistry and Radiation Protection Supervisor
P. Gaines, Radiochemistry and Radiation Protection Technician
M. Hedrick, Environmental Supervisor
E. Leach, Radiochemistry and Radiation Protection Supervisor
J. Lubber, Clerk
Z. Miahky, Radiochemistry and Radiation Protection Foreman
T. Perkins, Station Superintendent
J. Shea, Shift Supervisor
C. Stuart, Operations Supervisor
B. Taylor, Assistant Instrument and Control Supervisor

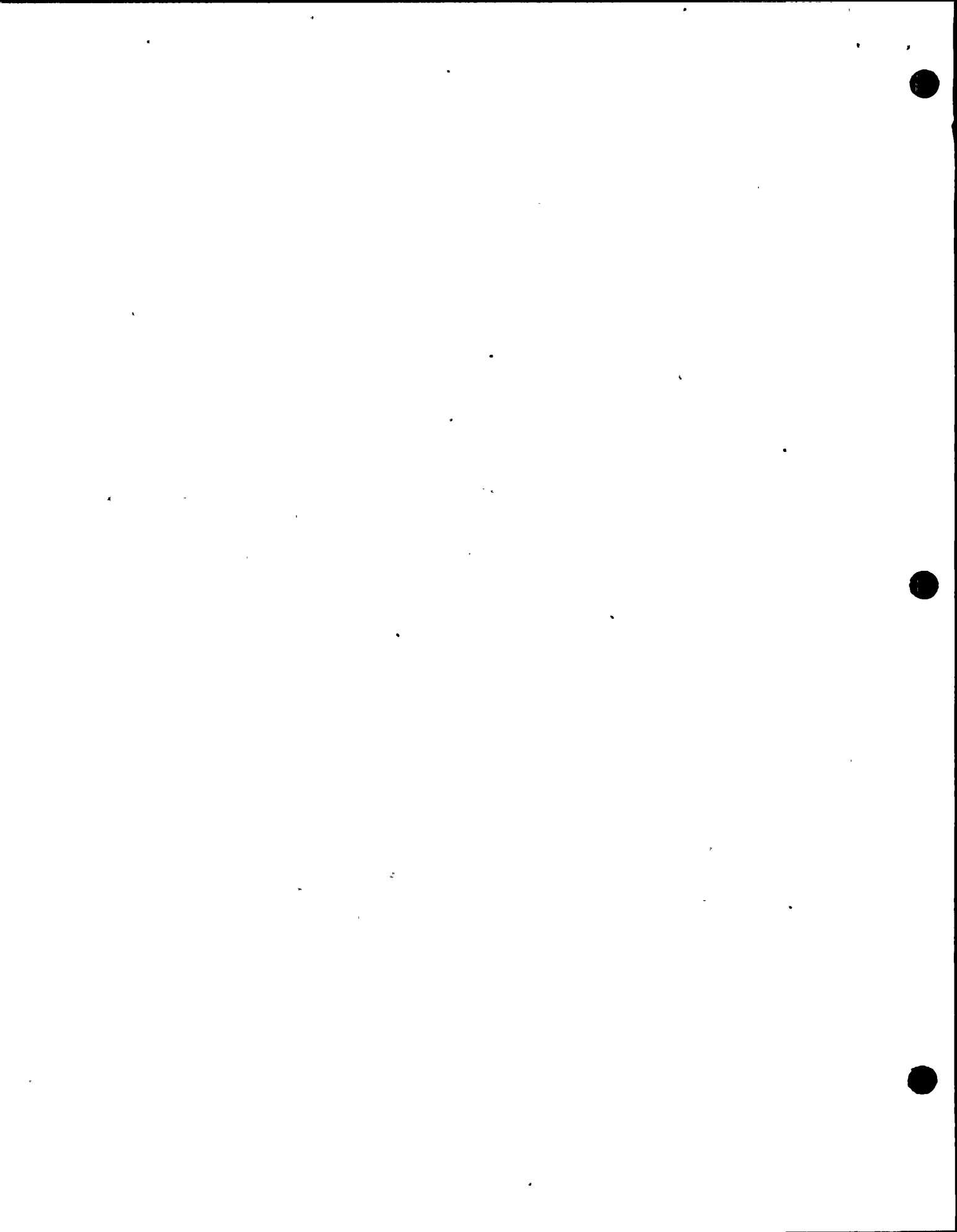
2. Scope of the Inspection

This was an inspection of facility operation, radiological protection activities and the licensee's follow up on reported events.

3. Plant Records

The inspector reviewed the following records for the periods indicated and found that they appeared to be acceptable.

Organization chart as of January 29, 1976
Posted information as of January 29, 1976
Radiation Work Permits in use on January 29, 1976
Completed Radiation Work Permits for September through December 1975
Records of surveys and air samples for September through December 1975
NRC Form 4 equivalent records for 1975
NRC Form 5 equivalent records for 1975
Film badge printout for third and fourth quarters, 1975
TLD quarterly records for 1975
Whole body counting records for 1975
Bioassay records for September through December 1975
Record sheet of personnel removed from JAF/NMP site
Reports to terminated employees for 1975
Certifications for radioactive sources on site, 1968 - on
Inventory records for radiation sources for 1975



Leak test records for radioactive sources for 1975
Station water chemistry daily, and monthly summary sheets for 1975
Reactor water/reactor water cleanup, daily and weekly data sheets
for 1975
Reactor water activity balance sheets for 1975
Reactor water chemistry (monthly) summary sheets for 1975
Condensate and feedwater chemistry summary sheets for 1975
Stored water chemistry sheets for 1975
Torus and closed loop chemistry sheets for 1975
Miscellaneous systems chemistry summary sheets for 1975
SORC meeting minutes for 44 meetings from August 15, 1975 to
December 31, 1975

4. Health Physics Organization and Staffing

Changes in the licensee's health physics organization were reviewed with respect to technical specification requirements.

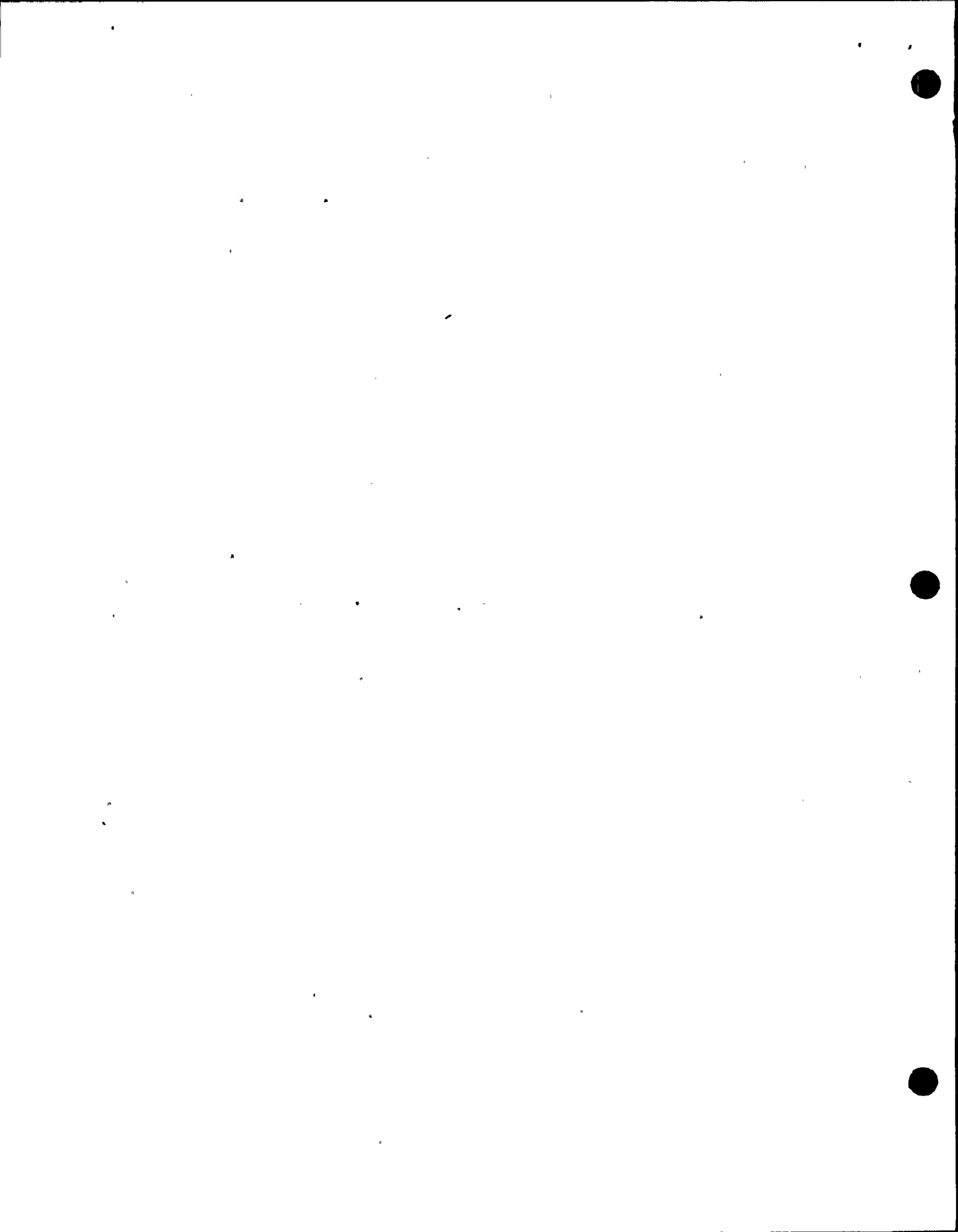
The previous Radiochemistry and Radiation Protection supervisor terminated and an assistant was promoted to that post during January 1976.

The present Radiochemistry and Radiation Protection supervisor's qualifications were listed in a letter to the Director of the Office of Nuclear Reactor Regulation dated February 4, 1976, and include bachelor's and master's degrees in chemistry and 13 years of applied work, four of which were at the Nine Mile Point 1 facility, related to radiation protection.

No problems were identified in this area.

5. Exposure of an Individual in the Reactor Cavity

The inspector reviewed the records of the exposure of a health physics technician that occurred on September 16, 1975, during a survey of the bellows area in the reactor cavity. The licensee reported this item in a letter dated October 16, 1975. The following information was reviewed.



- a. The technician wore a half-mask type respirator which was not NIOSH approved.
- b. The survey included air sampling which (subsequently) showed that the airborne concentrations were:
 9.3×10^{-6} uCi/ml Cobalt-60
 2.2×10^{-6} uCi/ml Manganese-54
- c. The time required for the survey was estimated to have taken 4 minutes, but the licensee's subsequent evaluation of the air samples showed that the combined levels were twice the 10 CFR 20.103(a) limit for the time involved.

The cause of exposure exceeding the 10 CFR 20 limit was lack of a timely evaluation during the job.

The licensee's corrective action included a temporary work restriction on the individual; and procedural provisions to reduce airborne contamination by wetting down the surface involved, reduction of exposure by requiring the use of NIOSH approved equipment in such areas, and increased emphasis on timeliness of measurements.

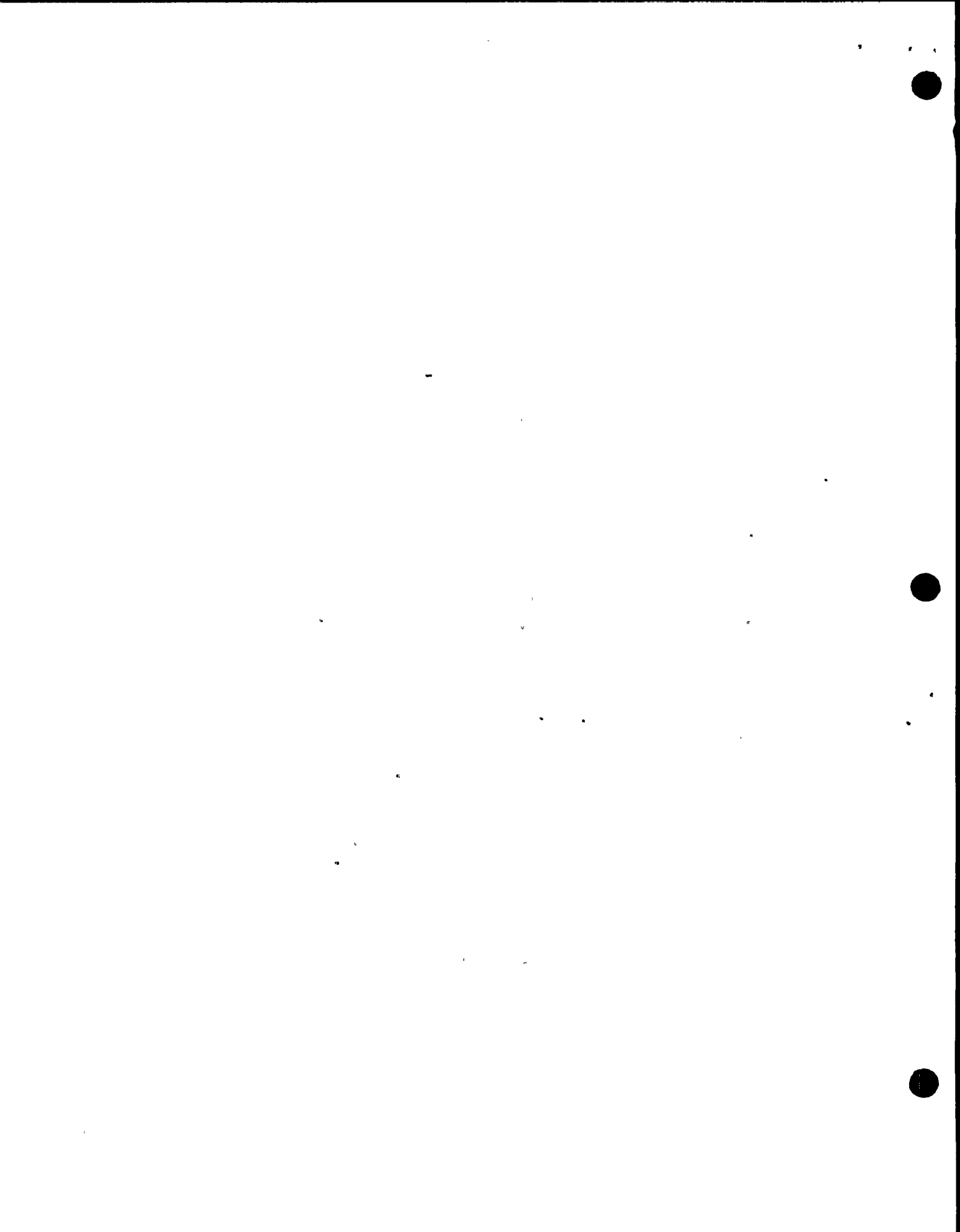
The licensee's reporting, reviewing and corrective action on this item were reviewed.

The inspector has no further questions on this item.

6. Exposures of Two Individuals in the Steam Reheaters

The inspector reviewed the records of the exposures of two contractor's employees to Iodine-131 during September 22-24, 1975, while repairing steam reheaters as reported by the licensee's letter dated October 23, 1975. The following information was reviewed.

- a. Two of several workers present appeared to have exceeded the 10 CFR 20.103 limit for I-131.
- b. The licensee had equipped these workers with NIOSH approved supplied air masks for which a protection factor of 1,000 was allowed by Technical Specification 6.12.1.



- c. Air samples in the work area indicated a concentration of 6×10^{-8} uCi/ml of I-131. Although this is seven times the 40 hour mpca of 9×10^{-9} uCi/ml specified by 10 CFR 20.103(a) for personnel without approved respiratory protection, this concentration is well below that allowed with the respiratory equipment indicated above. Individual air monitoring was not provided.
- d. The licensee's subsequent body count data were evaluated by the inspector in accordance with the ICRP-10 model which indicated uptakes of 1,900 and 760 nanocuries of I-131 for these two individuals, respectively. The corresponding airborne concentration inhaled by these workers appeared to have been 3.4 and 1.3 times the 9×10^{-9} uCi/ml 40 hour mpca limit for I-131. These values fall within the range reported by the licensee.

As stated in the licensee's October 23, 1976 letter these exposures exceeded the limit stated by 10 CFR 20.103. Inspection verified that the licensee identified and reviewed this item, reported the exposures in a timely manner, and initiated corrective action to prevent a recurrence. This included a re-evaluation of the need for improved monitoring, procedures and training of personnel.

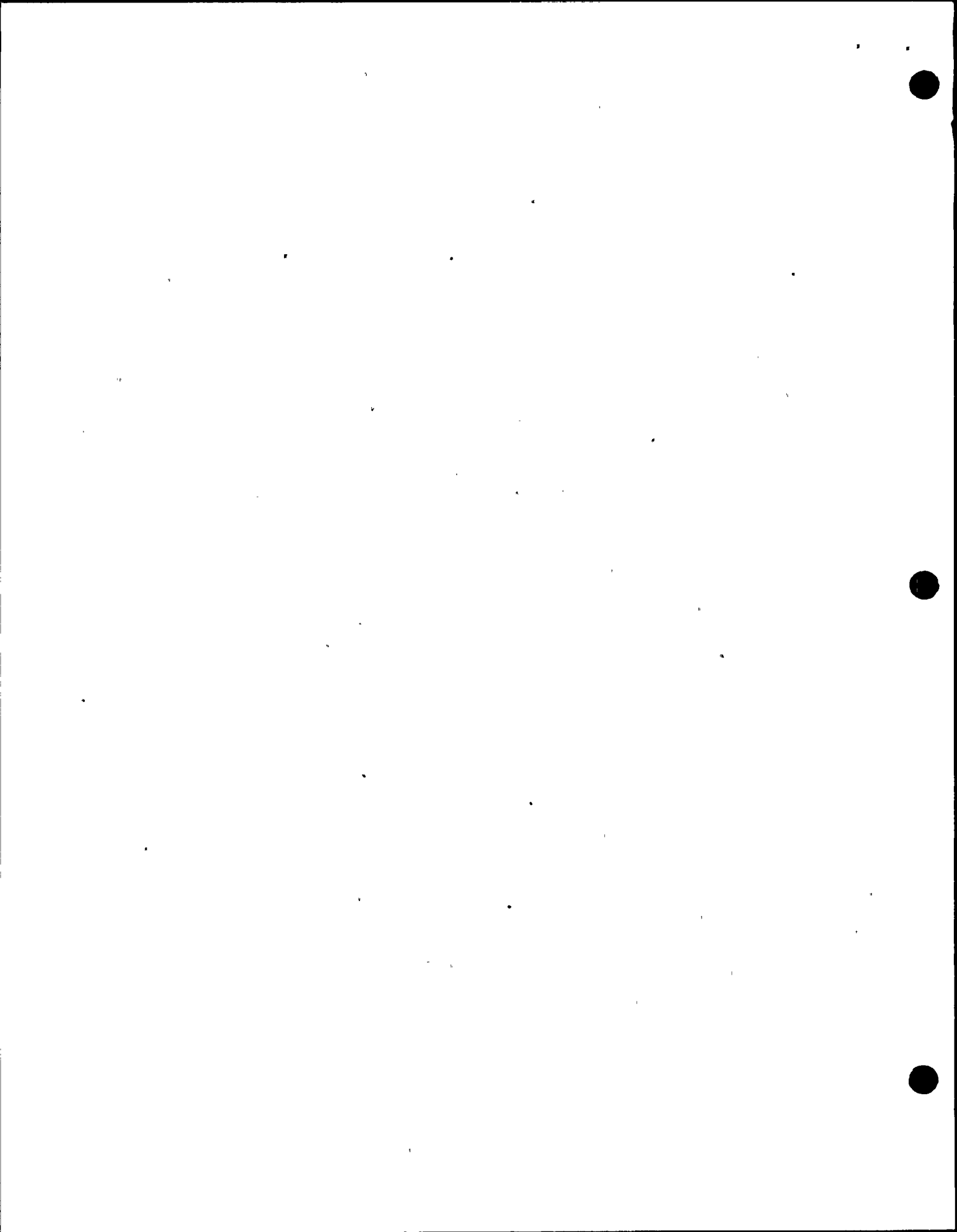
The inspector reviewed the licensee's applicable record of air samples, whole body counts, bioassay results, and training and qualification for use of respiratory protection. The inspector has no further questions on these matters.

7. Stack Sample Cartridge Analyses

The licensee reported by a letter dated December 29, 1975 that contrary to the requirement of environmental technical specification 2.4.4.I.b, a weekly analysis of the stack gas sample cartridge for November 23-29, 1975 was inadvertently omitted, and that corrective action was taken.

Inspection of sample records verified that weekly analyses were performed except for the week indicated above. Inspection of gas release records for the year 1975 and for January 1976 did not identify any further problems.

The inspector has no further questions on this matter.



8. Plutonium Source

Inspection No. 50-220/75-12 identified the licensee's possession of a sealed plutonium beryllium source without authorization by a current license.

Follow up on this inspection verified that licensee has made application for a license provision to possess this source; in a letter dated February 4, 1976.

This item will be followed up on a subsequent inspection.

9. Licensee's Audits of Health Physics Activities

Inspection of the licensee's records verified that the following items were audited either by radiation protection personnel, supervisory personnel, Site Operations Review Committee (SORC) or by Safety Review and Audit Committee (SRAC).

No problems were identified involving audits.

a. Audits of contractor's services including:

Contract health physics technician's work
Film badge service
Bioassay service
TLD service

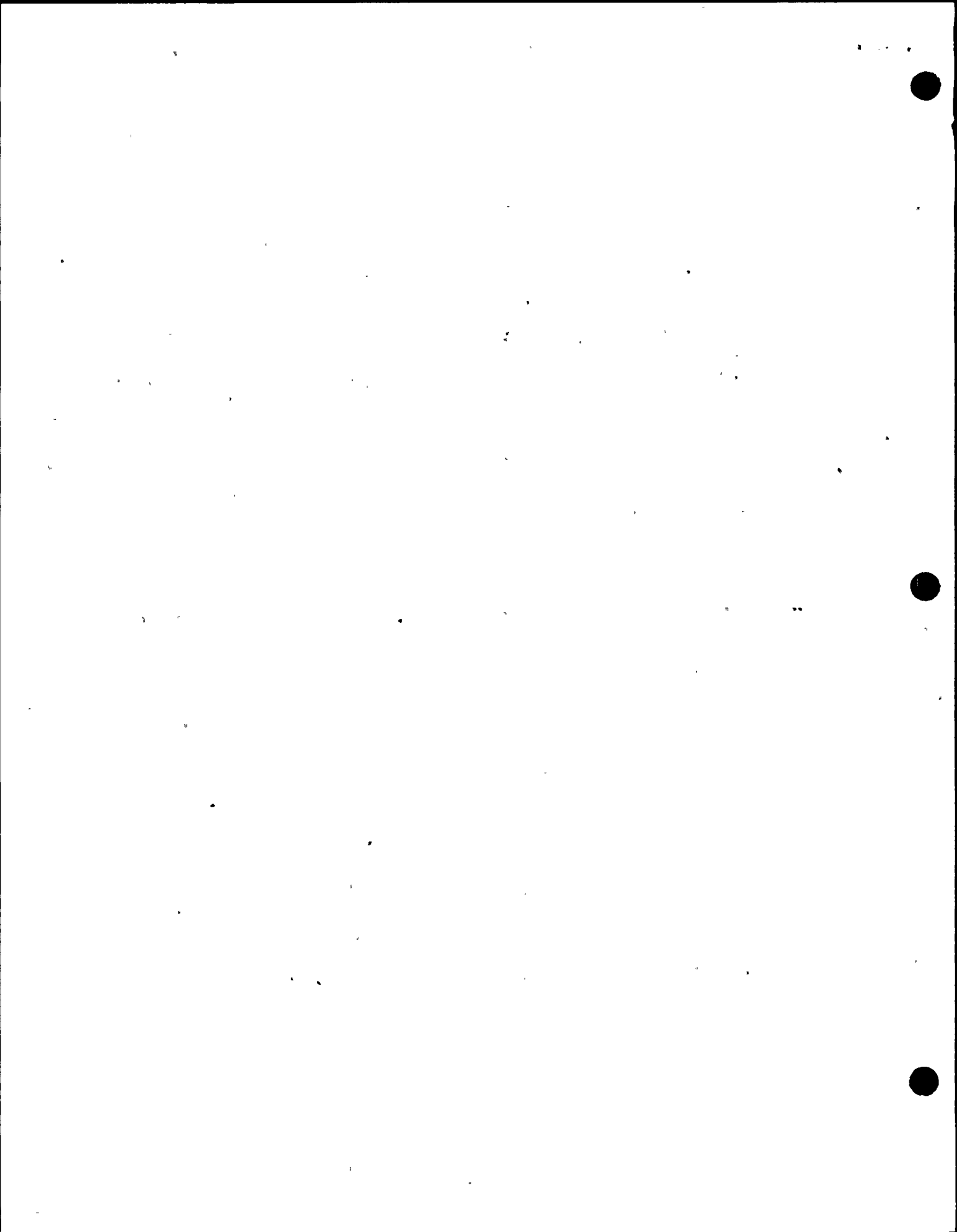
b. Audits of NMP-1 radiological protection activities including:

Radiation protection exposure records
Instrument calibration records -
Records on radwaste releases
Records on receiving and shipping of radioactive materials
Reports to terminated personnel

c. Control of exposures during year 1975:

Total man-rem exposure for year - 665
Reduction from previous year - 128
Ratio of actual to projected exposure was 1.2 (including additional jobs not included in the projection). This item was previously discussed in Inspection Report No. 50-220/75-22.

The inspector has no further questions on this matter.



10. Training and Qualification of Personnel

Part of the inspection effort was to verify that personnel were indoctrinated and qualified in accordance with the licensee's Radiation Protection Procedures, Section V-C before they worked in the facility.

Based on a review of a sample consisting of 35 records for NMP-1 employees and contractor's employees no problems were identified. This sample did not include security personnel records, which are filed separately and which were reviewed on Inspection No. 50-220/76-01.

11. Inventory and Leak Tests of Radioactive Sources

Part of the inspection effort was to verify that calibration sources possessed by the licensee were inventoried and leak tested (if sealed) in accordance with license requirements.

Records for 25 sources were reviewed.

No problems were identified in the licensee's inventorying and semi-annual leak testing of sealed radioactive sources.

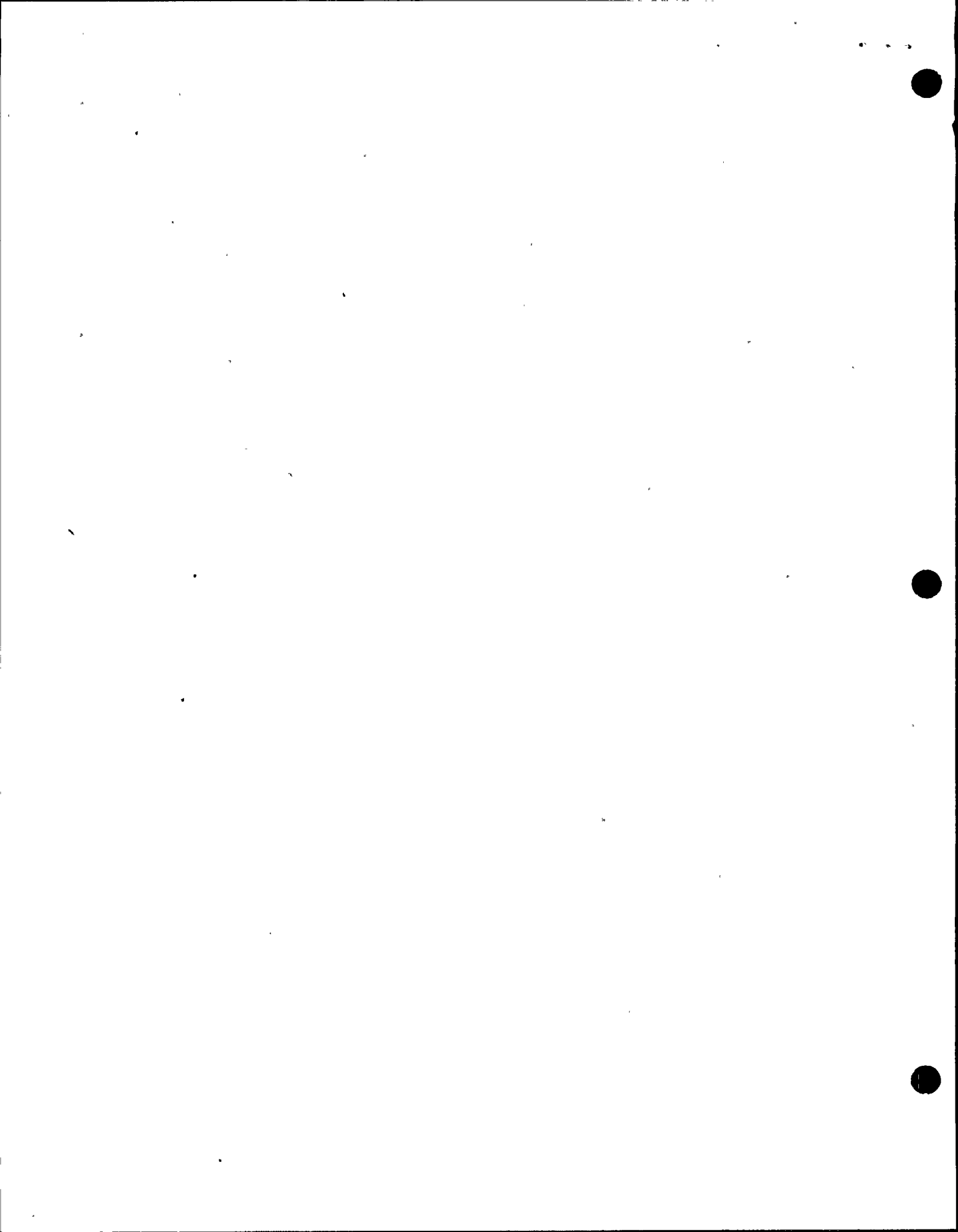
12. Area Surveys, Posting and Access Control

Part of the inspection effort was to verify the licensee's compliance with requirements of 10 CFR 20 and technical specification 6.13 for surveying, posting and controlling access to radiation areas and high radiation areas.

Review of survey records, and observation of occupancy, posting and access controls during tours of the facility did not identify any problems.

13. Water Chemistry

Part of the inspection effort was to verify the licensee's control of pH, chemical purity and radioactivity of reactor water in accordance with Technical Specification Sections 3.2.3 and 3.2.4.



Inspection of records for 1975 and January, 1976 and observation of indicators during a tour of the facility did not identify any instance where reactor water conductivity exceeded 2 umho/cm or chloride ion exceeded 0.1 ppm, or gross iodine concentration exceeded 25 uCi/gram of water during continued reactor operation. The inspector has no further questions on this item.

14. Dewatering of Drums Containing Solid Waste

Inspection Report No. 50-220/75-22 discussed the licensee's corrective action following a refusal to bury drums found to contain liquid at the burial site.

On this inspection, the inspector and a licensee's representative inspected several open drums that will be dried up by addition of a drying material prior to closure for shipment to the burial site. Clear liquid was observable in three of ten drums inspected. The licensee's representative stated that the remaining space in each drum was sufficient for addition of drying material and that would be done before shipment.

The inspector has no further questions on this matter.

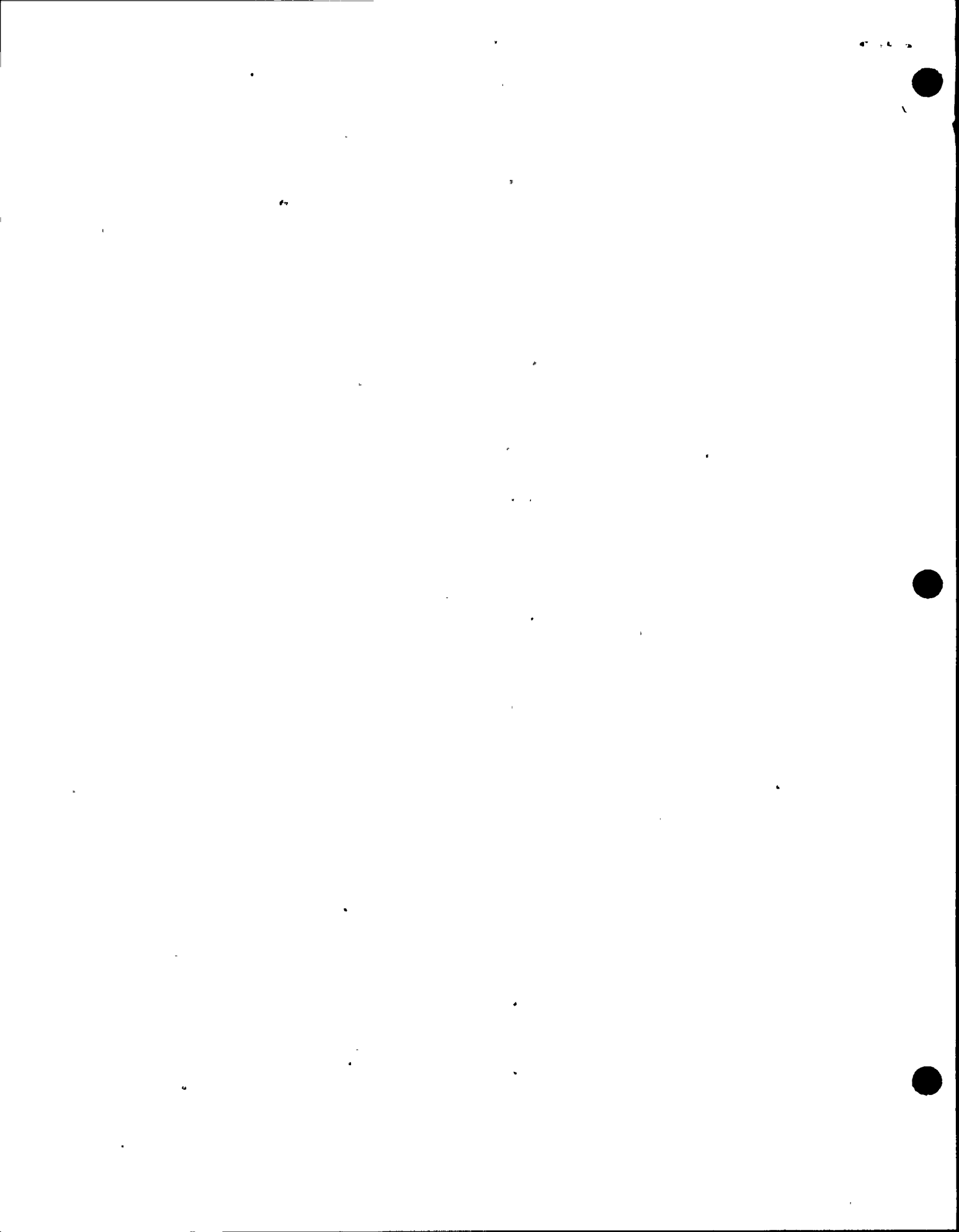
15. Liquid Radwaste Concentrator

As described by Inspection Report No. 50-220/75-22 the licensee had replaced the liquid waste concentrator with a larger concentrator but unexpected liquid carryover sometimes occurred during operation of the new concentrator.

During this inspection the licensee's representative stated that satisfactory operation was being obtained. Operation of this equipment is now under direction of the Radiochemistry and Radiation Protection personnel whereas in inspection No. 75-22 the shift operating personnel were responsible.

Observation of concentrator performance during this inspection and discussion of its operation did not identify any problems.

The inspector has no further questions on this matter.



16. Licensee's Evaluation of Piped Breathing Air Supply

During discussion of the piped breathing air supply, the licensee's representative stated that this study had been assigned but was not yet complete.

This item will be followed up on a subsequent inspection.

