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SUBJECT: Special Rept 1-SR-89-005, Suppl 1: on 890505-08, radiation monitoring unit inoperable for greater than 72 h.

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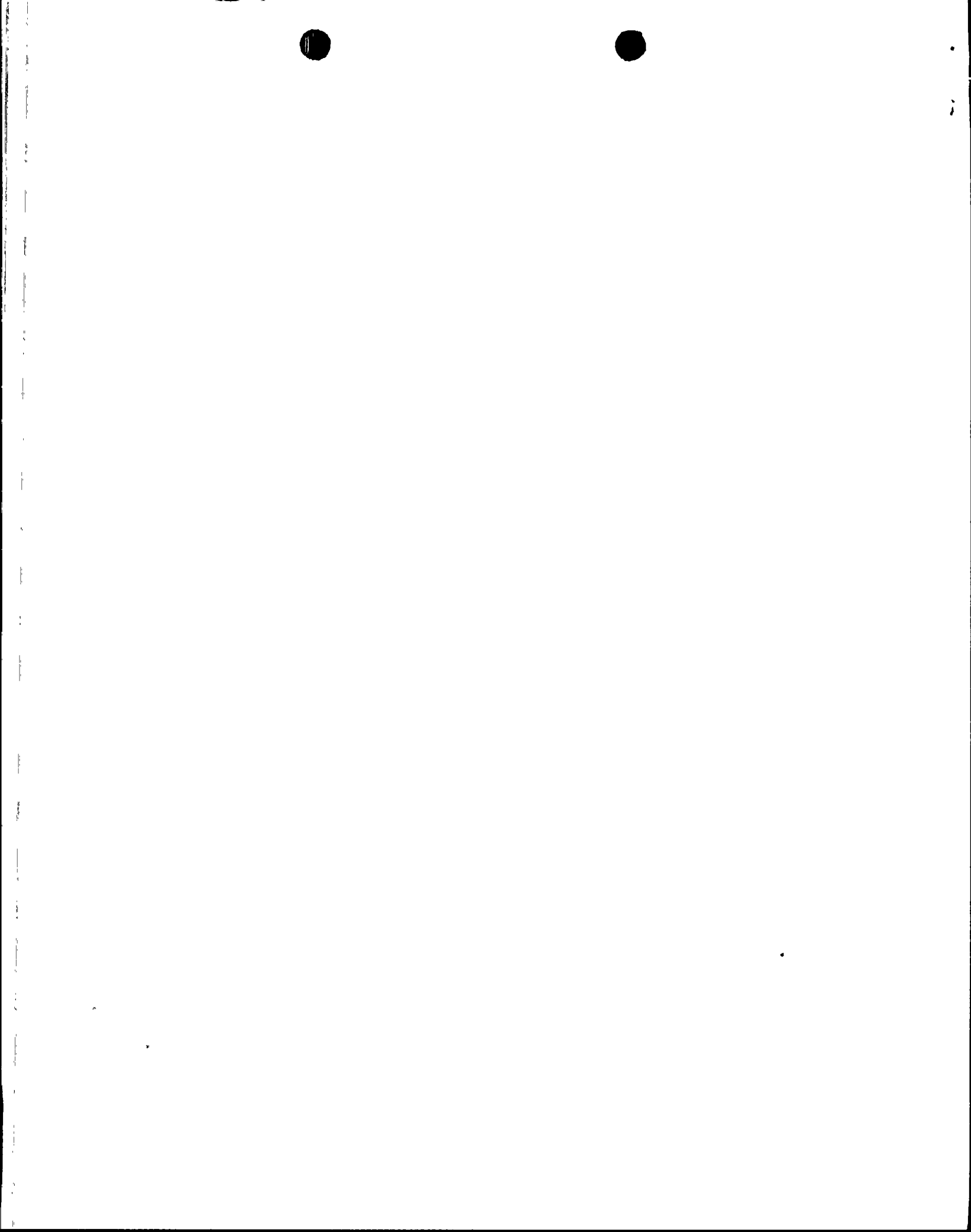
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Arizona Public Service Company

PALO VERDE NUCLEAR GENERATING STATION
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

192-00606-JML/TDS/SBJ
December 16, 1989

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

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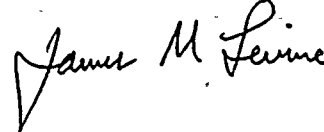
Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528 (License No. NPF-41)
Supplement to Special Report 1-SR-89-005
File: 89-020-404

Attached please find Supplement Number 1 to Special Report 1-SR-89-005 prepared and submitted pursuant to Technical Specification 3.3.3.8 ACTION 42. This report discusses the inoperability of a high range radiation effluent monitor.

If you have any questions, please contact T. D. Shriver, Compliance Manager, at (602) 393-2521.

Very truly yours,



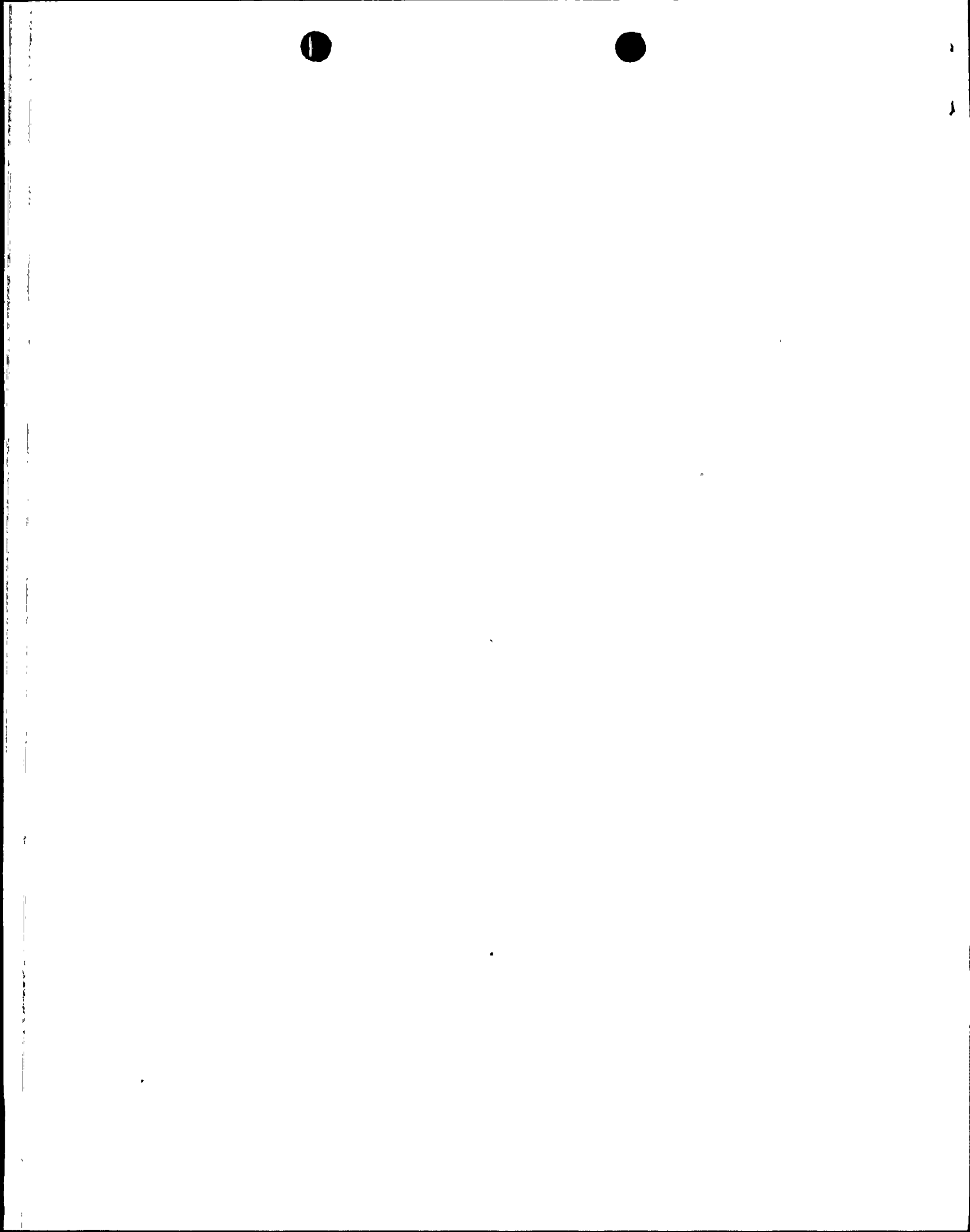
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Attachment

cc: W. F. Conway (all w/a)
J. B. Martin
T. J. Polich
M. J. Davis
A. C. Gehr

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PALO VERDE NUCLEAR GENERATING STATION UNIT 1

Radiation Monitoring Unit Inoperable Greater Than 72 Hours

License No. NPF-41

Docket No. 50-528

Supplement to Special Report No. 1-SR-89-005

I. DESCRIPTION OF WHAT OCCURRED:

A. Initial Conditions:

During this event between May 5, 1989 and May 8, 1989, Unit 1 was in Mode 5 (COLD SHUTDOWN).

B. Reportable Event Description (Including Dates and Approximate Times of Major Occurrences):

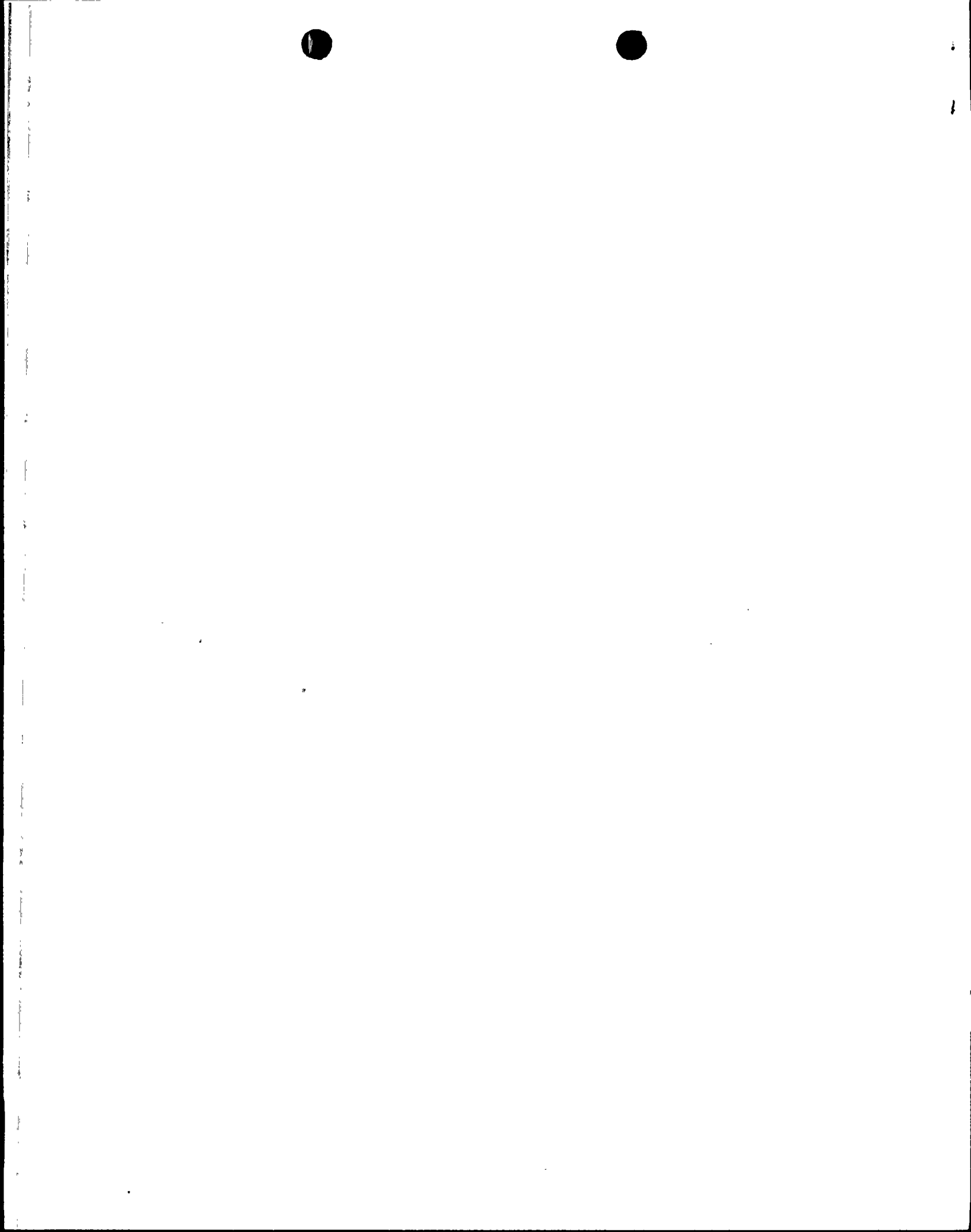
Event Classification: Submitted in accordance with ACTION 42.b of Technical Specification 3.3.3.8.

At approximately 1805 MST on May 8, 1989, Plant Ventilation Radiation Effluent Monitor (RU-144) was discovered with two of three particulate filter/iodine cartridge assemblies not tightly sealed, thereby, rendering the monitor inoperable. Investigation determined that the assemblies had not been adequately restored during troubleshooting conducted May 6, 1989.

RU-144 has three (3) channels, each with a particulate filter/iodine cartridge assembly. Each assembly consists of a particulate filter and iodine cartridge contained in a removeable cannister assembly. Each cannister assembly is installed in a fixed holder in the monitor. Sample flow is directed through one cannister assembly at a time. As radioactive particulates and iodine are collected in the filters, the radiation levels will increase. At a predetermined radiation level, the sample flow is automatically redirected to the next standby filter/cartridge assembly.

Prior to this event, on May 5, 1989 at approximately 0815 MST, the Low Range and High Range Plant Ventilation Radiation Effluent Monitors (RU-143 and RU-144 respectively) were declared inoperable for performance of Surveillance Test (ST) 36ST-9SQ04, "Radiation Monitoring Quarterly Functional Test." This ST provides direction for functional verification of radiation monitor performance. During the source check portion of the ST on RU-144, one of the three detectors monitoring the filter/cartridge assemblies did not properly respond.

The Instrumentation and Control (I&C) Technician (utility, non-licensed) performing the ST notified the Shift Supervisor and



appropriate troubleshooting work instructions were prepared. Troubleshooting commenced at approximately 0715 MST on May 6, 1989. Part of the troubleshooting required access to two of the particulate filter/iodine cartridge assemblies. The troubleshooting identified a deteriorated cable connection and the troubleshooting work document was amended to include instructions for reworking the connector. Upon completion of the work, the I&C Technician reinstalled the assembly into the holder. However, the holder was not properly locked down to prevent bypass flow.

Following completion of the work, a Chemistry Technician (utility, non-licensed) performed a visual check of RU-144 but did not identify that the assembly holders were not properly locked down. The Chemistry Technician then performed Surveillance Test 75ST-9ZZ07, "Effluent Monitoring System Daily Surveillance Testing" on RU-143 and verified the setpoints in accordance with 36ST-9SQ04, "Radiation Monitor Quarterly Functional Test" to declare the monitor operable. At approximately 1040 MST on May 7, 1989, RU-143 and RU-144 were declared operable.

During a routine tour at approximately 1805 MST on May 8, 1989, a Chemistry Effluent Technician (utility, non-licensed) found two of the three particulate filter/iodine cartridge assembly holders not properly locked down. The Assistant Shift Supervisor (utility, licensed) was notified and RU-144 was declared inoperable.

Technical Specification 3.3.3.8 requires RU-144 be operable at all times. ACTION 42 requires that when the monitor is inoperable greater than 72 hours, the following actions be taken:

- a. Initiate the Preplanned Alternate Sampling Program to monitor the appropriate parameter(s) when it is needed.
- b. Prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within 30 days..."

These action requirements were met. The following action was taken to restore RU-144 to an operable status:

- a. The assemblies were locked down.
- b. A filter check and leak rate test were performed in accordance with an approved procedure.
- c. The Effluent Monitor Daily Surveillance Test, "75ST-9ZZ07," was performed satisfactorily.

At approximately 2300 MST on May 8, 1989, RU-144 was declared OPERABLE. The total time of inoperability for RU-144 was approximately 81 hours and 50 minutes.



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C. Status of structures, systems, or components that were inoperable at the start of the event that contributed to the event:

Not applicable - no structures, systems, or components were inoperable which contributed to the event.

D. Cause of each component or system failure, if known:

Not applicable - no component or system failures were involved.

E. Failure mode, mechanism, and effect of each failed component, if known:

Not applicable - no component failures were involved.

F. For failures of components with multiple functions, list of systems or secondary functions that were also affected:

Not applicable - no component failures were involved.

G. For failures that rendered a train of a safety system inoperable, estimated time elapsed from the discovery of the failure until the train was returned to service:

Not applicable - no failures were involved.

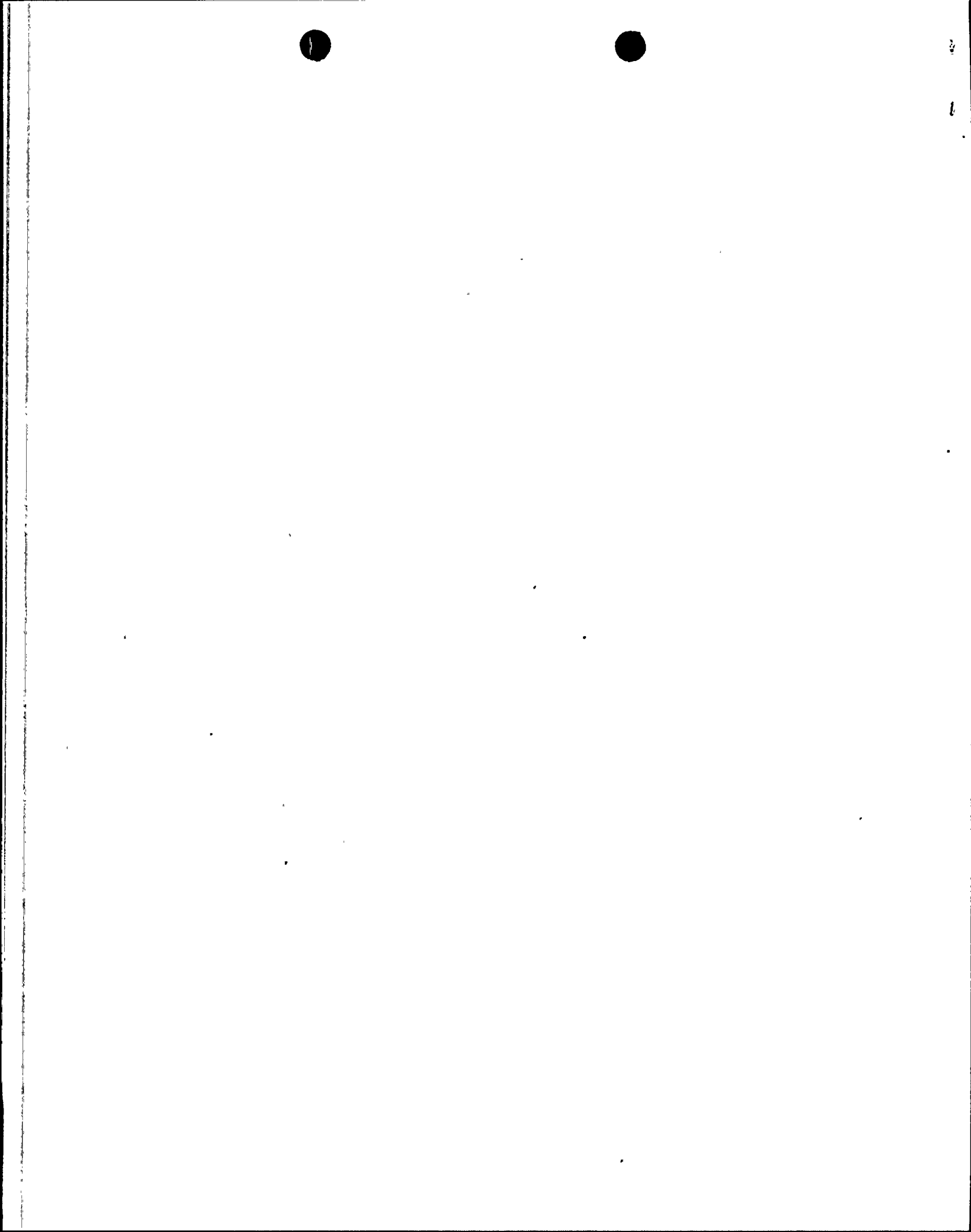
H. Method of discovery of each component or system failure or procedural error:

Not applicable - there were no component or system failures or procedural errors.

I. Cause of Event:

The cause of this event was a personnel error by the Chemistry Technician who did not adequately verify the configuration of the particulate filter/iodine cartridge filter assembly after work had been performed on the monitor. An investigation of this event revealed the following were contributing factors to the event.

- 1) Incomplete communications between the I&C Technician and the Chemistry Technician as to the scope of the RU-144 work, especially in regard to the sample holder.
- 2) The Work Order did not include a section requiring the Chemistry Technician to inspect the particulate filter/iodine cartridge filter holder and sample chamber for operability.
- 3) The Chemistry Technician had not been qualified adequately in the high range monitors as evidenced by being unable to identify the proper position of the sample holder lock down mechanism.



- 4) The Chemistry procedure for media change out in RU-142, 144 and 146 did not verify the correct position of the sample chamber or require independent verification.

J. Safety System Response:

Not applicable - no safety system response was expected and none were received.

K. Failed Component Information:

Not applicable - no failed component was involved in this event.

II. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THIS EVENT:

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments are calculated and adjusted in accordance with the methodology and parameters in the Off-Site Dose Calculation Manual (ODCM) to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20.

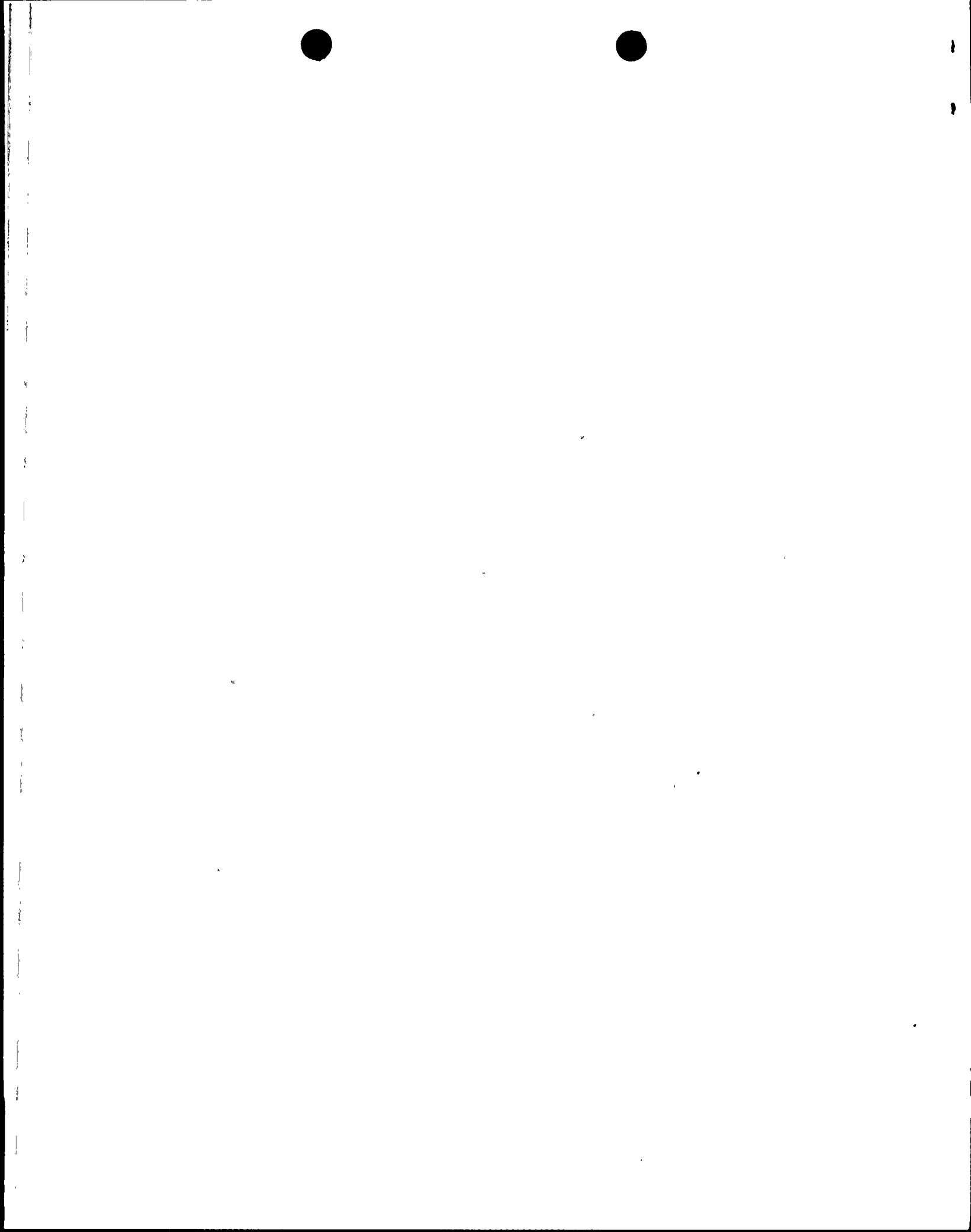
There are two separate radioactive gaseous effluent monitoring systems: the low range effluent monitors for normal plant radioactive gaseous effluents and the high range effluent monitors for post-accident plant radioactive gaseous effluents. The low range monitors operate at all times until the concentration of radioactivity in the effluent becomes too high during post-accident conditions. The high range monitors only operate when the concentration or radioactivity in the effluent is above the setpoint of the low range monitors.

Throughout this event the Plant Ventilation Exhaust was monitored with the Low Range Monitor (RU-143) or an alternate sample cart. Release activities did not approach a level requiring the high range monitor (RU-144). Thus, there is no impact on the health and safety of the public.

III. CORRECTIVE ACTIONS:

A. Immediate:

1. Chemistry positioned the locking mechanism to obtain a seal on the particulate filter/iodine cartridge assembly. The Radiation Monitor was leak rate tested in accordance with an approved procedure. Chemistry then performed the daily channel check Surveillance Test, "75ST-9ZZ07."
2. The responsible individual has received appropriate counseling/disciplinary action.



3. As an interim measure, all work order packages for high range effluent monitors have a signoff for Chemistry to perform a leak check on the sample chamber per 75RP-9ZZ64. This will be performed any time the chamber has been disturbed.
4. 75RP-9ZZ64, "RMS Sample Collection", has been revised to include a section addressing verification of correct position of the sample chamber and operability of the monitors after work has been performed on the high range monitor.
5. A qualification card has been implemented for the High Range Monitors and will be completed by Chemistry Effluent Technicians. Completion of this qualification card will ensure understanding of the devices utilized for securing the filters and actions to be taken when the devices are removed or missing.

B. Action to Prevent Recurrence:

1. Radiation Monitoring Calibration Tests, 36ST-9SQ09, 36ST-9SQ10 and 36ST-9SQ11 will be revised to provide direction for Chemistry to perform a leak check per the leak check procedure. This will be completed by December 31, 1989.
2. As a permanent corrective action, Chemistry Standards and Plant Standards will identify the appropriate retests for monitor operability and incorporate them into the retest procedure. This will be completed by December 31, 1989.

IV. SIMILAR EVENTS

A similar event was reported under LER 529/88-17. As a result of this event, a complete revision to the Radiological Effluent Program procedures was initiated. Completion dates for this program upgrade were provided in a letter to the commission on March 27, 1989. The corrective action which could have prevented this event were in progress and therefore could not have prevented this event.

