



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

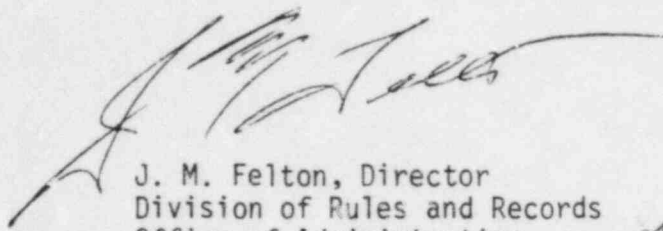
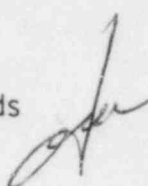
January 18, 1984

50-454/455 Byron

~~50-295/304 Zion~~

MEMORANDUM FOR: Chief, Document Management Branch, TIDC
FROM: Director, Division of Rules and Records, ADM
SUBJECT: REVIEW OF UTILITY EMERGENCY PLAN DOCUMENTATION

The submitter of the attached document has expressed no desire to withhold any information contained therein. Therefore, this material may now be made publicly available.


J. M. Felton, Director
Division of Rules and Records
Office of Administration 

Attachment: As stated

8401260178 840118
PDR ADOCK 05000454
F PDR

POST-ACCIDENT VENT STACK SAMPLING OF THE
WIDE-RANGE GAS MONITOR

A. STATEMENT OF APPLICABILITY:

This procedure provides instructions for obtaining particulate and iodine grab samples off of the General Atomics Wide-Range Gas Monitor, (1(2)RE-PR029) during post-accident conditions.

B. REFERENCES:

1. "Wide-Range Gas Monitor Equipment Manual," General Atomics Company, 1982.
2. BZP 380-10, "Post-Accident Sampling of Reactor Coolant, Radwaste, and Containment Air-General."

C. PREREQUISITES:

1. Obtain a high range dose rate instrument (Eberline RO-3A or equivalent) prior to performing grab sampling.
2. Obtain a spare particulate filter/iodine cartridge assembly.
3. Obtain an adjustable wrench and a 3/4-inch wrench to be used in the grab sampling procedure.
4. Obtain the Wide-Range Gas Monitor (WRGM) cask transporting cart from the Rad-Chem offices.

D. PRECAUTIONS:

1. The following protective clothing as a minimum shall be required (as specified in BZP 380-10) when performing post-accident sampling:
 - a. Cloth coveralls
 - b. Hood
 - c. Cloth shoe covers and rubbers
 - d. Cotton and plastic or rubber gloves

A P P R O V E D

DEC - 7 1983

B. O. S. R.

NOTE

In the event of high airborne activity, a full face respirator shall be worn.

2. Time in a radiation field should be limited to that necessary to perform the required operations. Wear proper dosimetry as specified in BZP 380-10.
3. This procedure involves the handling of particulate and iodine samples that could be highly radioactive during post-accident conditions; use extreme caution when handling the samples.

(3367P)

8312250076 831214
CF ~~ADOCK 05000295~~
CP

date 8/10/85 0097

4. A dose rate instrument shall be on at all times during this procedure to constantly monitor radiological conditions.
5. Care must be taken not to damage the shield assembly or yourself during transport (due to the excessive weight - 270 pounds - of the lead cask).
6. A screwdriver is needed in the Control Room to set the grab sampling time.

E. LIMITATIONS AND ACTIONS:

1. This procedure is limited to particulate and iodine grab sampling in U-1/U-2 vent stacks (477' level at Column L-18) during post accident conditions.
2. Grab sampling of the Wide-Range Gas monitor is initiated at the Main Control Room control panel or at the monitor itself. Grab sampling initiated in the Main Control Room is automatically timed (0-99.9 seconds); grab sampling at the monitor is manually timed.
3. GRAB SAMPLE 2 is to be used in post-accident grab sampling only.

NOTE

GRAB SAMPLE 2 is the High Range grab sampler on the WRGM skid. It is located in the cask labeled "GRAB SAMPLE 2" on the lower portion of the skid.

4. There should be a clean filter-cartridge assembly in the grab sample shield assembly prior to initiating grab sampling.
5. Main Control Room initiated grab sampling will normally be performed by the Control Room Operator in conjunction with the Rad-Chem Technicians.
6. If LOCAL grab sampling is performed, FLOW must be verified in the high range sample path (FLOW button on the RM-11 unit should be backlit).
7. Isokinetic flow must be occurring during grab sampling to assure a representative sample. Loss of isokinetic flow will result in a LOSS OF ISOKINETIC FLOW CONTROL alarm on the RM-11.

F. MAIN BODY:

1. If grab sampling is to be initiated from the Main Control Room control panel, proceed to step F.2; if grab sampling is to be initiated at the monitor itself, proceed to step F.3.
2. Main Control Room initiated grab sampling.

A P P R O V E D

UEU - 7 1983

B. O. S. R.

NOTE

The Main Control Room control panel for the Wide-Range Gas Monitor is located on panel 1PM10J.

- a. Set the grab sampling time on the control panel to 60 seconds, by means of the screwdriver adjustments on the face of the panel.
 - b. Depress the START TIMER pushbutton for the MID/HIGH range timer. The timer reads out in XX.X seconds and counts up from zero to the preset time.
 - c. When the preset time is reached, the grab sampling operation is automatically terminated and the display reset.
 - d. Proceed to step F.4. for removal of the grab sample assembly.
3. Locally initiated grab sampling (at the monitor itself).

NOTE

Notify the Main Control Room before performing locally initiated grab sampling. Locally initiated grab sampling should only be performed in the event an operator is unavailable to initiate sampling at the WRGM control panel in the control room.

- a. Open the electrical enclosure door (located on the upper right hand side of the sample conditioning skid) and place the SKID CONTROL switch to the LOCAL position.

NOTE

The REMOTE CONTROL DISABLED lamp should light.

- b. Place the FILTER SELECTOR HIGH RANGE switch to the GRAB 2 position for the desired grab sample time (to be determined by health physics supervision).
 - c. At the end of the grab sampling time, return the FILTER SELECTOR HIGH RANGE switch to its original position.
 - d. Return the SKID CONTROL switch to the REMOTE position.
 - e. Proceed to step F.4. for removal of the grab sample assembly.
4. The MID/HIGH RANGE GRAB SAMPLE 2 filter/cartridge assembly is located in the shielded lead container on the lower level of the sample conditioning skid.
5. Close the isolation valves on both sides of each quick disconnect fitting on the sample lines (a total of four valves).

A P P R O V E D

DEC - 7 1983

B. O. S. R.

6. Remove the bolts holding the sample line to the bracket on the shield assembly.
7. Release the two quick disconnect fittings.
8. Take a contact reading of the shield assembly. If the dose rate is less than or equal to 10 mrem/hr proceed to step 13; if not proceed to step 9.
9. Unbolt the shield assembly from the sampling skid by removing the four 3/8-inch bolts.
10. Place the shield assembly onto the WRGM (Wide Range Gas Monitor) transporting cart.
11. Transport the cart and shield assembly from the vent stack area to the 451' elevation of the Auxiliary Building using the dumbwaiter located on the 475' 6" level of the Aux Building (Column Q-18).
12. Using the Auxiliary Building elevator, transport the samples to the Hot Lab to prepare for counting. If the radiation levels near the cart are excessive (e.g., greater than 500 mR/hr), control personnel access to the route taken by the cart.
13. Open the shield assembly door. (If the shield assembly has been transported to the Hot Lab, perform this operation in the post-accident fume hood.)
14. Remove the filter holder ring clamp and remove the filter cartridge assembly.

NOTE

The filter-cartridge assembly is potentially highly radioactive; therefore, caution must be exercised when handling the samples. Maintain exposures ALARA.

15. Using remote handling tools, transport the particulate filter and charcoal cartridge to the Hot Lab/Counting Room for analysis.
16. Install a clean filter and cartridge into a clean filter-cartridge assembly.
17. Inspect the rubber o-ring (functions to assure a proper seal) and replace if damaged.
18. Assemble the clean filter assembly and tighten the ring clamp.

A P P R O V E D

DEC - 7 1983

B. O. S. R.

19. Place the filter assembly into the shield assembly and latch the door shut. (If the shield assembly has been transported to the Hot Lab, return it to the sampling skid and bolt the assembly to the skid, in its original position.)

NOTE

Remember to constantly monitor area dose rates.

20. Reconnect the quick disconnect fittings and replace the sample line bracket.
21. Open the four isolation valves. (The monitor is now ready for further sampling.)

G. CHECKOFF LISTS:

1. None

APPROVED

DEC - 7 1983

B. O. S. R.

FINAL

RADIOLOGICAL PRECAUTIONS FOR POST-ACCIDENT
SAMPLE ANALYSIS
(PRIMARY RESPONSIBILITY - RAD CHEM DIRECTOR)

A. STATEMENT OF APPLICABILITY:

The purpose of this procedure is to provide radiological precautions to be exercised for the handling of post-accident samples in the Hot Lab and Counting Room.

B. REFERENCES:

1. BRP 1000-1, "Commonwealth Edison Company Radiation Protection Standards."
2. BCP 800-4, "Post-Accident Boron Analysis Using Fluoroborate Selective Ion Electrode and Sulfuric Acid."
3. BCP 800-10, "Preparation of Radioiodine Samples for Counting."

C. MAIN BODY:

CAUTION

ASSUME THAT ALL SAMPLES ARE EXTREMELY RADIOACTIVE UNLESS DETERMINED OTHERWISE BY SURVEY.

1. Protective clothing, respirators, and contamination control equipment should be available at the work site for use as required.
2. Minimum protective clothing shall consist of a lab coat and either one pair of rubbers or two pairs of latex (surgeon's) gloves.
3. In the work area, radiological control protective covers for floors and work surfaces shall be in-place as directed by Rad-Chem.
4. Periodic air samples should be taken in the work area(s) and analyzed to ensure habitability.
 - a. A work area with an airborne activity level of less than or equal to 3×10^{-9} $\mu\text{Ci/cc}$, unidentified gross beta, is considered acceptable.
5. Post-accident dosimetry monitoring will be required during analysis as follows:
 - a. Film/TLD Badge
 - b. One (1) 0-200 mR Self-Reader
 - c. One (1) 0-500 mR Self-Reader

APPROVED

DEC - 7 1983

B.O.S.R.

- d. One (1) 0-5 R Self-Reader
 - e. Two (2) Finger Ring Dosimeters
6. Film/TLD badge and self-readers are to be worn at the waist unless otherwise directed. A finger ring shall be worn on each hand.
7. Two individuals should be present for the analysis:
- a. One individual to perform the analysis of the particular sample(s).
 - b. A second individual to perform monitoring, assess dose rates, and record data as required.
8. Radiological control surveillance should involve two types of instruments:
- a. A functioning high range dose rate instrument, e.g., Eberline RO-3A Special, should be available along with a spare.

NOTE

The ion chamber may need to be bagged to prevent internal contamination due to radioactive gases. The bag should not exceed 10 mg/cm² in thickness at the chamber window.

- b. A G-M type survey instrument, Eberline E-530 with appropriate probe, for contamination control monitoring.

CAUTION

ASSUME CONTAMINATION LEVELS ARE ABOVE STANDARD LIMITS OF 1000 DPM/100cm² BETA/GAMMA AND/OR 20 DPM/100cm² ALPHA UNTIL THE RECOVERY PHASE OF THE ACCIDENT HAS BEGUN.

- 1) Apparent contamination generated by spills should be contained to prevent its spread.
- 2) Full scale contamination surveys may not be adequately performed until the recovery phase of the accident is in effect.

NOTE

The effectiveness of contamination monitoring will depend on the type of accident and the resultant radiological conditions in the work area(s), hot lab or counting room.

9. Avoid cross-contamination by disposing of lab equipment as radioactive waste. Any droplets of liquid from this operation will result in high surface contamination.

A P P R O V E D

NOV 1983

10. Frequently change rubber gloves when diluting and analyzing samples.
11. A shielded area, with approved containers, should be available in both the hot lab and counting room for storage of radioactive wastes until proper disposal can be achieved.
 - a. If this storage area should significantly raise the background or increase risk of exposure to personnel, another area outside of these facilities should be designated to handle the waste.
12. A laboratory fume hood designed to handle highly radioactive materials should be readily available.
13. If the sample to be analyzed is liquid, it should be kept in the cart/cask (shielded storage) until it is necessary to transfer it to the fume hood for sample preparation.
14. After transferring the sample to the fume hood, survey the hood for exposure rates.
 - a. Allow the sample to stand for a few minutes to allow removal of any residual gaseous products.
15. Specialized equipment for removal of screw caps, extension tongs, and temporary shielding should be available in both the hot lab and counting room.
16. Prior to transferring the sample to the counting room for analysis, survey the sample for any further personnel protection that may be required.
17. Evaluate the samples awaiting analysis and consider establishing relative priorities for each before the backlog gets excessive. Samples and data used for evaluating whether offsite protective action guides have been exceeded should get the highest priority.
18. Continue monitoring background radiation levels for increases in the Counting Room and/or Hot Lab.
19. Continue to monitor for personnel exposure. Regularly check pocket dosimeter readings and use calculations to update exposure status.

NOTE

During all phases of sample preparation and analysis, monitor dose rates.

20. When finished analyzing a sample, seal the sample in a bag and properly label for identification. This should be performed for all samples whether it is to be disposed of or kept for future reference. Place the labeled sample in a predesignated shielded area.

A P P R O V E D

DATE

B. O. S. R.

21. An appropriate log should be kept on all samples analyzed. The log should contain the following:
- a. Origin and type of sample (i.e. unit number, or building and level, system; solid, liquid, or gaseous).
 - b. The type of analysis performed.
 - c. The detector and settings used to count the sample.
 - d. Results of the analysis.
 - e. Disposition of sample following analysis.

APPROVED

S. O. S. R.

