

AP 11-01

Figure 1001-8

Three Mile Island Nuclear Station

Special Operating Procedure

SIDE 1 Rev. 2

SOP No. 2-95
(From SOP Log Index)

NOTE: Instructions and guidelines in AP 1001
must be followed when completing
this form.

NR C

Unit No. IIDate 4/24/79

1. Title RCS Sampling for total gas Manual
2. Purpose (include purpose of SOP) To obtain a total gas sample from heatdown.
Rev. 2: To allow work in fuel handling building area
during sample taking.

3. Attach procedure to this form written according to the following format.

A. Limitations and Precautions

1. Nuclear Safety
2. Environmental Safety
3. Personnel Safety
4. Equipment Protection

attached

B. Prerequisites

C. Procedure

4. Generated by William Pittle. Date 4/24/79

5. Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.

(a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by NR

(b) SOP is not valid after _____
(fill in circumstances which will result in SOP being cancelled) NR

6. (a) Is the procedure Nuclear Safety Related?

If "yes", complete Nuclear Safety Evaluation. (Side 2 of this Form) Yes No

- (b) Does the procedure affect Environmental Protection?

If "yes", complete Environmental Evaluation. (Side 2 of this Form) Yes No

- (c) Does the procedure affect radiation exposure to personnel?

If "yes", complete Radiation Exposure Evaluation. (Side 2 of this Form) Yes No

NOTE: If all answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Station Superintendent/Unit Superintendent.

7. Review and Approval

Approved - Shift Supervisor W. Pittle 4/24/79 B. Beldrich 4/24/79
 Reviewed - List members of PORC contacted J. M. Bellamy 4/24/79
N.R.C. 4/24/79 J. E. March 4/24/79
B.W. Williams 4/24/79 J. L. Paolino 4/24/79

Approved-Station Superintendent/Unit Superintendent G. K. Kuebler 4/24/79

8. SOP is Cancelled

Shift Supervisor/Shift Foreman

Date 32 341

RCS SAMPLING FOR TOTAL GAS (MANUAL)

LIMITATIONS AND PRECAUTIONS

1. Personnel involved in the actual sampling process must be in Scott air packs. Anyone in the HP area must be in full face respirators with charcoal filters.
2. Communications should be established and maintained with the HP lab in Unit 1 during sampling. The results of any radiation survey should be retained for future reference.
3. Remain as close to the South Wall as possible during sampling and recirculation. Minimize exposure by standing in low radiation field where possible.
4. Survey sample lines in area of fuel handling building and hot machine shop during and after recirculation, using a detector.
5. Personnel doing the sampling should wear at least 3 pairs of rubber gloves while the individual handling the sample bomb should wear lead lined gloves.
6. The individual handling the sample bomb should wear a lead apron with a TLD on top as well as under the apron. Extremity badges must be worn. The individuals doing valve lineups should also wear lead aprons and ILU's on/under the apron.
7. If all pressurizer instrumentation is lost, valve lineup per Z-50, Rev. 3. (Test of alternate pressurizer level indication) should be established.

PREREQUISITES

1. RCS temperature ~280°F
2. Bubble in the pressurizer
3. One RCP operating
4. RCS pressure about 1000 psig (constant)

NOTE: These conditions are at the discretion of the Shift Supervisor.
RCS pressure should be maintained constant during the sampling to ensure a valid total gas measurement.
5. Installed sampling flask must be removed
6. Aux. and Fuel Handling building doors must be closed and Unit 1 control room notified to monitor RMS.

P 1001
Figure 1001-8

Three Mile Island Nuclear Station
Special Operating Procedure

SIDE 1 REV 1
SOP No. 2-95
(From SOP Log Index)

NOTE: Instructions and guidelines in AP 1001
must be followed when completing
this form.

Unit No. 2

Date _____

Title RCS Sampling For Total GAs (Manual)

Purpose (include purpose of SOP) Intent: To obtain a total gas sample from the RC Letdown

Reason: To ~~end~~ control contamination problem experienced during collection of first sample

Attach procedure to this form written according to the following format:

A. Limitations and Precautions

1. Nuclear Safety
2. Environmental Safety
3. Personnel Safety
4. Equipment Protection

Attached

B. Prerequisites

C. Procedure

Generated by E.D. Yodkin Date 4-15-79

Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.

(a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by 11/15/79

(b) SOP is not valid after 11/15/79
still in circumstances which will result in SOP being cancelled

(a) Is the procedure Nuclear Safety Related?

If "yes", complete Nuclear Safety Evaluation. (Side 2 of this Form) Yes No

(b) Does the procedure affect Environmental Protection?

If "yes", complete Environmental Evaluation. (Side 2 of this Form) Yes No

(c) Does the procedure affect radiation exposure to personnel?

Yes No

NOTE: If all answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Unit Superintendent.

Review and Approval

Approved - Shift Supervisor John M. Hart 4/15/79

Reviewed - List members of PORC contacted John M. Hart 4/15/79

R.P. Warren 4/15/79 J.D. P. Tally 4/15/79

G.L. Paulus 4/15/79 J.C. Gil 4/15/79

Approved - Unit Superintendent John M. Hart 4/15/79

SOP is Cancelled

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AP 1001

Figure 1001-8

Three Mile Island Nuclear Station
Special Operating Procedure

SIDE 1

SOP No. Z-95

(From SOP Log Index)

Unit No.

Date 4/11/79

NOTE: Instructions and guidelines in AP 1001
must be followed when completing
this form.

1. Title RCS Sampling For Total Gas (Manual)

2. Purpose (Include purpose of SOP)

To obtain a total gas sample from the bldwn.

3. Attach procedure to this form written according to the following format.

A. Limitations and Precautions

1. Nuclear Safety
2. Environmental Safety
3. Personnel Safety
4. Equipment Protection

B. Prerequisites

C. Procedure

Attachment

REVERSE

4/11/79 82030

Generated by G. F. Beld Jr.

Date 4/11/79 80340

Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.

(a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by 4/11/79

(b) SOP is not valid after 4/11/79

(Fill in circumstances which will result in SOP being cancelled)

6. (a) Is the procedure Nuclear Safety Related?

If "yes", complete Nuclear Safety Evaluation. (Side 2 of this Form) Yes No

(b) Does the procedure affect Environmental Protection?

If "yes", complete Environmental Evaluation. (Side 2 of this Form) Yes No

(c) Does the procedure affect radiation exposure to personnel?

Yes No

NOTE: If all answers are "no", the change may be approved by the Shift Supervisor. If any question is answered "yes", the change must be approved by the Unit Superintendent.

7. Review and Approval

B.W. Weller 4/12/79 Approved - Shift Supervisor

ALARA D. L. Brown 4/12/79 Approved
Reviewed - List members of PORC contacted

V. T. Doherty
M. J. O'Leary

4/12/79

Date

4/12/79

Date

4/12/79

Date

4/12/79

Date

G. F. Beld Jr. 4/12/79 Approved - Unit Superintendent

Shift Supervisor/Shift Foreman

Date

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PROCEDURE

1.0 Sampling techniques will be practiced by all personnel prior to entering the sample room. Review photographs and any other training aids to ensure familiarity with techniques.

2.0 Log PRAM readings on data sheet. (Enclosure 3)
Instate Rolling Shield will then be installed as per Enclosure I.

3.0 Ensure that sample hood ventilation is on, then call Unit #1 control room & have Fan #26 secured.

NOTE: This step ensures that any escaping material is drawn into the sample hood and not into the sample room proper.

4.0 Setup communications between the Unit #1 HP area, the Unit #1 control room, and the Unit #2 Control Room. Ensure that Unit #1 Auxiliary Building sump is not being processed to waste.

5.0 The waste container should contain sodium thiosulfate buffered to a pH of 9.0 - 9.5 with sodium hydroxide. Attach tygon tubing to the vents of SN-V-5 and SII-V-109 and run the tubing under the sodium thiosulfate solution in the waste container. This step ensures that gaseous iodine will be kept in solution when the vents are opened.

5.0.2 Connect tygon tubing to demin water outlet and tape to top of bomb to provide sample cooling after sampling.

6.0 Place the letdown sampling line on recirculation as follows:

6.1 Shut or check closed valves CA-V6, CA-V10, CA-V3, and CA-V1 (Control Room)

6.2.1 Using the shield placed in front of the sample bomb connections, place the sample bomb on the rack and tighten fittings with a wrench.

6.2.2 Open or check open the sample bomb inlet and outlet valves (not numbered). Verify that valves, SII-V-5 and SII-V-109 are open. Check the vent lines for SN-V-5 & SII-V-109 are closed.

6.3 To ensure a hot sample is taken, close valves SN-V-1, SN-V-3 and SN-V6. Open valve SN-V-2.

6.4 Shut or check shut SN-V-7, SII-V-8, SII-V-174, SN-V-176, and SII-V-87

6.5 Lineup discharge flow to the makeup tank by opening SN-V-110, SN-V-4, SN-V-161, SII-V-163, SII-V-10, SN-V-182

6.6.1 Verify RCV-123 open (Unit 1 Sampling Room) Open valves CA-V-6 and CA-V-10 (Control Room). Check that pressure on gauge (CA-6-PI) reads approximately 60 psig.

CAUTION: Avoid overpressure as this will pop safety valve SN-R-1 and release liquid to the Unit #1 Auxiliary Building Sump.

6.6.2 During recirculation ($\sim 1/2$ hr) take contact radiation reading on bomb and log pram readings on data sheet, page 6.

7.0 After recirculating the letdown sample for a minimum of one hour, isolate the sample bomb as follows:

7.1 Shut sample bomb outlet valve and sample bomb inlet valve.

CAUTION: Valves must be shut in this order to prevent sample degassification.

7.2 Shut valves CA-V-6 and CA-V-10 (Control Room)

7.3 Shut valves SII-V-161

A. Close SII-V-5 & SII-V109

7.4 Slowly open vent valves for SII-V-5 and SII-V-109 to the waste container. Record PRAM readings on data sheet page 6.

7.5 Cool sample bomb by opening demineralized water for approx. five minutes.

~~8.0 Using the rolling shield and a wrench, remove the sample bomb and place in the temporary shield.~~

~~8.1 Wheel temporary shield into hot lab.~~

~~8.2 Remove 3/8 in. tubing legs and install caps. Use sealant if required.~~

~~8.3 Wrap bomb with fam-rubber and place capped bomb assembly in shipping container. Install cap and purge with argon.~~

~~*8.4 Reestablish lineup per 7-50, REV. 3~~

See next page
for section 8

8.0 Using ~~the~~ ~~spikes~~ and A WRENCH, REMOVE THE SPIKE BOMB, LOSEN BUT DO NOT REMOVE THE LEGS TO THE BOMB AND DRAIN THE EXCESS LIQUID (~5 ml) INTO THE ^{A POLYETHYLENE} ~~WHEEL~~ ~~SAC WITH~~ CONTAINER. ABSORBENT MATERIAL.

8.01 PLACE THE BOMB AND LEGS ONTO THE CART ^{AND} INSIDE THE TEMPORARY SHIELDING.

8.1 WHILE TEMPORARY SHIELD IS IN HOT LAB. REMOVING 1 OUTER PAIR OF ~~WHEELS~~ RUBBER GLOVES AND 1 OUTER PAIR OF SHOE COVERS IN HOWEVER PRIOR TO ENTERING HOT LAB.

8.2 REMOVE THE SIMPLE BOMB FROM THE TEMPORARY SHIELD AND PLACE UNDER THE HOT LAB HOOD.

8.2.1 REMOVE THE $\frac{3}{8}$ " IN. BOMB TURNING LEGS AND INSTALL CAPS. USE SEALANT IF REQUIRED.

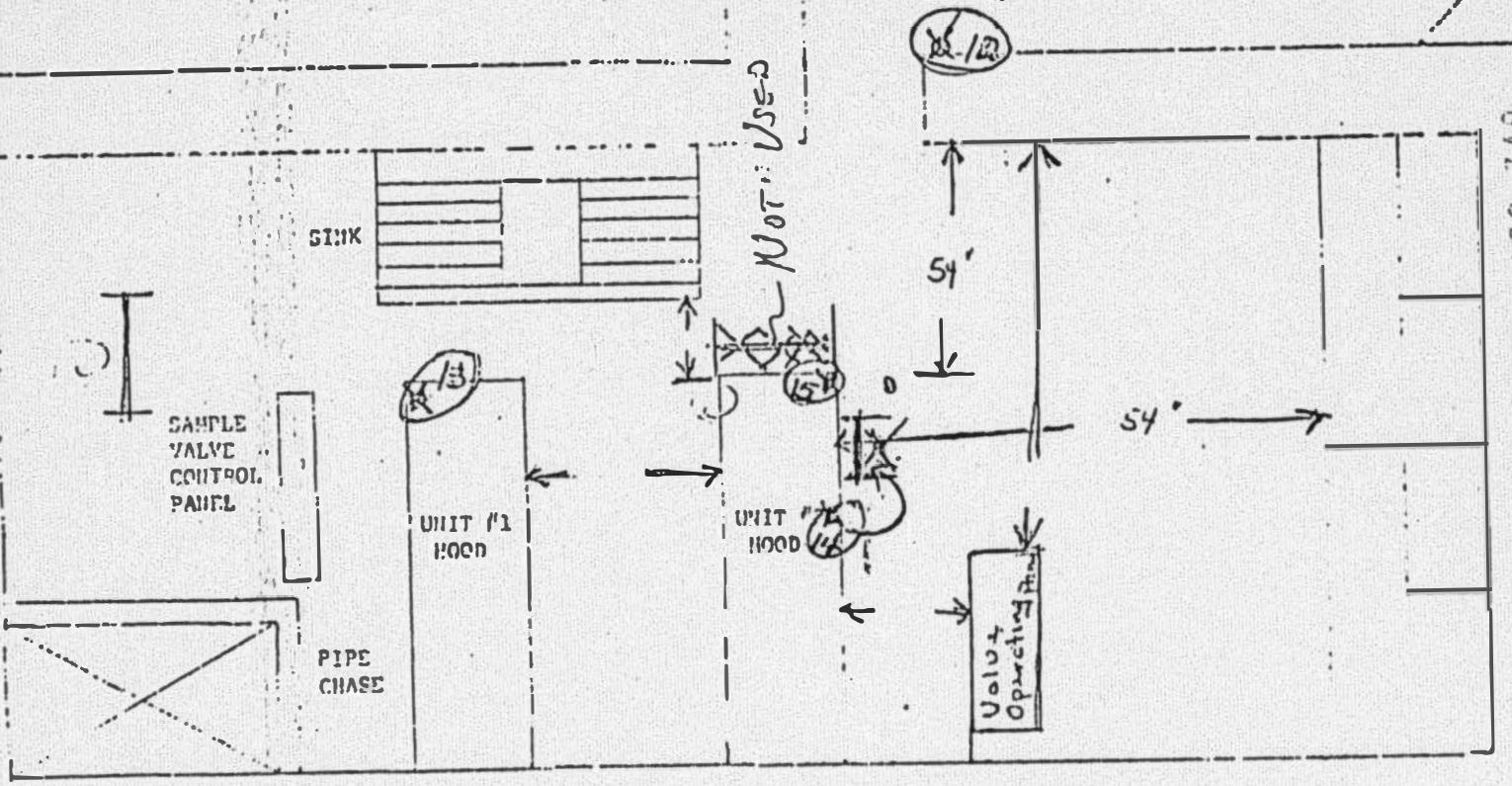
8.3 WRAP BOMB WITH FORM RUBBER AND PLACE CAPPS BOMB IN INNER SHIPPING CONTAINER.

8.3.1 INSTALL CAPS ON ~~THE~~ INNER SHIPPING CONTAINER AND AFTER PURGE WITH ~~ARGON~~. NOTE: PURGE ~~THE~~ MUST BE EXHAUSTED INTO HOT LAB SIMPLE HOOD.

8.3.2 PLACE INNER SHIPPING CONTAINER ON THE CART AND WHEEL TO THE HOT LAB DOOR EXIT.

8.3.3 PLACE THE INNER SHIPPING CONTAINER INTO THE 55 GAL DRUM SHIPPING CART LOCATED JUST OUTSIDE THE HOT LAB TEST AREA. NOTE: THIS SHOULD BE DONE ^{HIP} ~~BY INDIVIDUAL~~ ~~IN THE OUTSIDE OF THE HOT LAB TO AVOID CONTAMINATION~~ TRANSPORT OUT OF THE HOT LAB.

NUC. SAMPLE ROOM
AREA = 3



RADIATION READINGS IN R/MIN

(E) = BACKGROUND

= RAM's

= rolling shields

X = Position of Sample Person

DATE _____

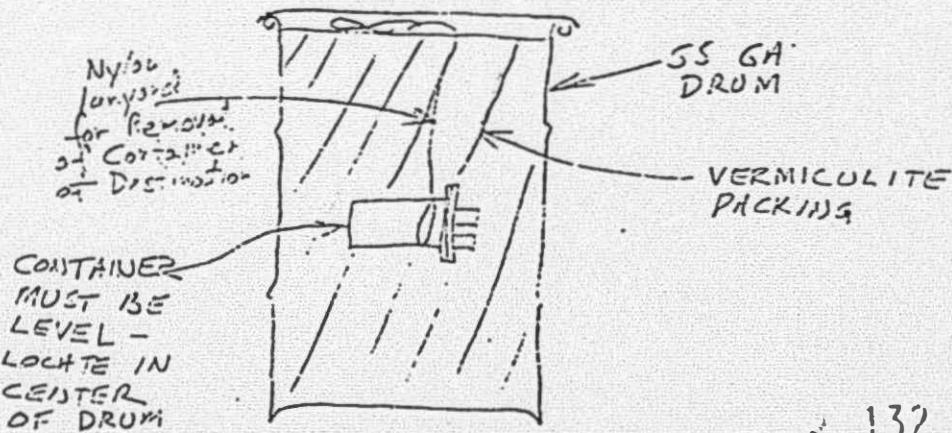
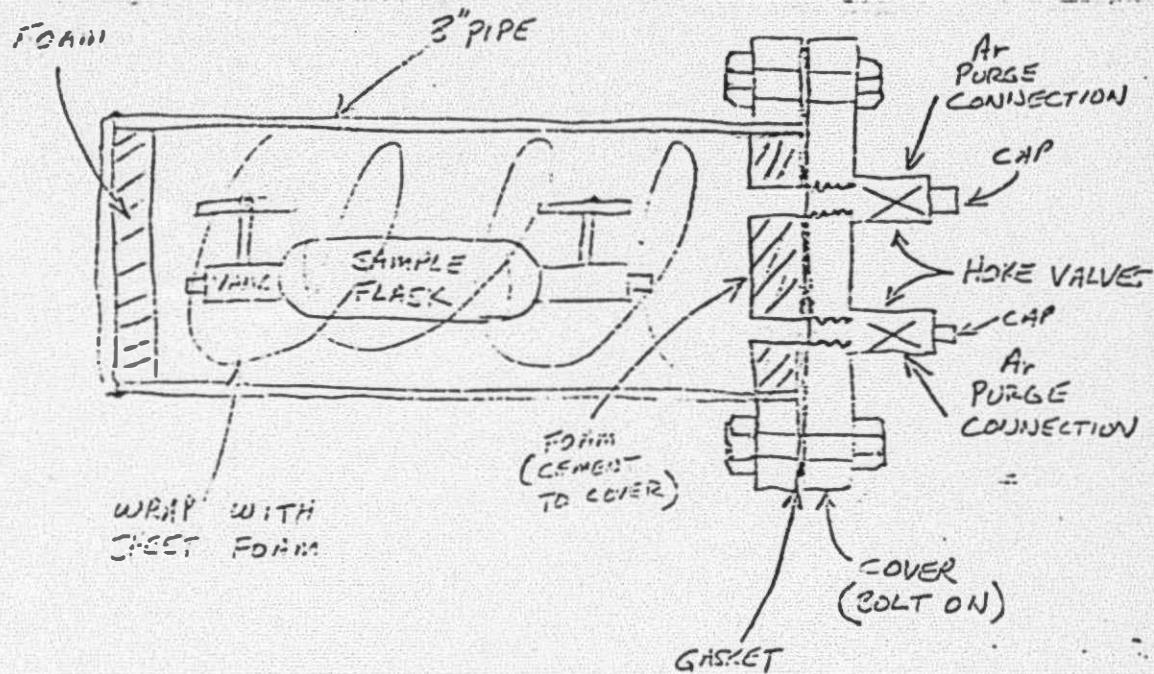
TIME _____

INSTRUMENT _____

TECHNICIAN _____

MEMO from:

TOM MULLEAVY

SHIPPING CONTAINER

RAD MONITOR WITH SHOWER SINK AREA

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