

AP 1001  
Figure 1001-8

Three Mile Island Nuclear Station  
Special Operating Procedure

SIDE 1  
SOP No. 2-81  
(From SOP Log Index)

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

Rev. 0

Unit No. 2  
Date 4-9-79

1. Title Chemical & Radiochemical Sampling and Analysis Procedure for Air & Water Samples  
2. Purpose (Include purpose of SOP) See attached

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

See attached

4. Generated by ED Yochheim Date 4/8/79  
(BFW)

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 [Signature] 4/28/79
- (b) SOP is not valid after [Signature] 4/28/79   
(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 questions are answered "yes", the change must be approved by the Unit Superintendent.

7. Review and Approval

ED Yochheim Approved - Shift Supervisor 4/9/79

ACTA W. R. [Signature] Reviewed - List members of PDRC contacted 4/9/79

NRC NOTED [Signature]

[Signature] Approved - Unit Superintendent 4/9/79

<u>[Signature]</u>	<u>4/9/79</u>	Date
<u>[Signature]</u>	<u>4/9/79</u>	Date
<u>[Signature]</u>	<u>4/9/79</u>	Date
<u>[Signature]</u>	<u>4/9/79</u>	Date

8. SOP is Cancelled 132 125

Shift Supervisor/Shift Foreman \_\_\_\_\_ Date \_\_\_\_\_

SPECIAL OPERATING PROCEDURE

CHEMICAL & RADIOCHEMICAL SAMPLING  
AND ANALYSIS PROCEDURE FOR AIR  
AND WATER SAMPLES

Prepared By:

E. D. Yochheim

E. D. Yochheim

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PROCEDURE FOR CHEMICAL & RADIOCHEMICAL SAMPLING  
AND ANALYSES OF AIR & WATER SAMPLES

General

- 1.0 All air and water samples for chemistry and radiochemistry analyses will be handled in accordance with this procedure.
- 2.0 Persons will be designated as sample coordinators, lab supervisors, shift chemists, chem. techs. (HP foreman, HP techs), aux. operators, and drivers and will be assigned to a shift team with this as their responsibility. Where possible, these individuals should be consistent from shift to shift.

Objective

- 1.0 This procedure is written to establish an efficient and workable method for sampling, analyses, data evaluation and distribution.
- 2.0 This procedure supercedes and replaces "Procedure for sampling air/water."

Responsibilities

- 1.0 Sample coordinator
  - a. Determines details of analysis request
  - b. Prepares sample tag
  - c. Establishes tentative priority
  - d. Assess work load of labs (B & W, Unit I, Unit II) and Counting facilities (B & W, Met-Ed, SAI, RMC)
  - e. Determines final priority and schedule (resolves conflicts with sample requestor).
  - f. Directs execution of analyses
  - g. Receives/reports data results
- 2.0 Lab Supervisor
  - a. Schedules and directs chem. techs.
  - b. Coordinates with HP
  - c. Reports chemistry results to sample coordinator
- 3.0 Shift Chemist
  - a. Provides chemistry support (problem solutions) to the shift superintendent
  - b. Interfaces with shift supervisor on chemistry/radiochemistry problems
- 4.0 HP Foreman
  - a. Schedules and directs HP techs. in the collection of air samples
  - b. Works in cooperation with lab supervisor in the collection of water samples containing radionuclides.

5.0 Chem. Techs.

- a. Obtain chemistry/radiochemistry samples

NOTE: Because of sample collection & analysis frequency, aux operators may collect sump samples and deliver them directly to Lab Supervisor. Should this be the case, the sample coordinator will be notified by the Lab Supervisor in order that the standard format for obtaining results and relaying them to the appropriate individual can be maintained.

- b. Performs chemical analyses
- c. Logs results of chemical analyses, in lab notebook

6.0 Driver

- a. Distribute radiochemistry and air samples to appropriate counting facility per sample tag
- b. Returns counted radiochemical samples to Unit I reactor building hatch area for archives.
- c. Obtains results from counting labs on a 45 minute schedule and delivers xerox copies of them to sample coordinator
- d. Returns original copies of counting data to lab performing analyses.

7.0 HP Techs

- a. Collect air samples
- b. Collect reactor building gas samples
- c. Distribute above samples to appropriate counting facility per sample request tag.
- d. Returns counted radiochemical samples to Unit I reactor building hatch area for archives.

8.0 Auxiliary Operator

- a. Collects sump samples as required.
- b. Delivers samples to lab supervisor

Procedure

Note: Figure 1 diagrams the flow chart for collection of air, gas, and water samples;

Figure 2 shows an example of the sample request tag

1.0 Water Samples

- 1.1 Any individual requesting a sample will contact the sample coordinator with sufficient details of analyses wanted and priority of sample.
- 1.2 The sample coordinator will contact the lab supervisor as to the nature of the sample, he will also prepare a sample tag detailing priorities and analyses requested (see figure 2)

- 1.3 The lab supervisor will instruct a chem. tech. to obtain the sample under the cognizances of HP and appropriate RWP's if necessary.
- 1.4 The Chem. Tech. will obtain the sample
  - 1.4.1 Chemistry analyses will be performed and logged in the lab notebook; results will be given to the lab supervisor for communication with the sample coordinator.
  - 1.4.2 Radiochemistry samples will be delivered to the appropriate counting facility as per the sample request tag by the driver.
  - 1.4.3 In certain instances, auxiliary operators will collect sump samples for analyses. In these instances, they will deliver the samples to the laboratory supervisor for chemical and radiochemical analysis. At such time, the aux. op. or their supervisor must notify the sample coordinator with the appropriate information analagous to the sample requestor.
- 1.5 The counting facility will analyze the sample based on the priority assigned.
  - 1.5.1 If high/urgent priority is assigned the labs will phone results to the sample coordinator.
  - 1.5.2 If other priority assigned, the labs will submit the data to the driver who will xerox the results and submit the xerox copies to the sample coordinator. The driver will return the original data to the appropriate lab.
- 1.6 The driver will schedule his activities so as to contact each of the counting labs, and the sample coordinator on a once/45 min. basis.
- 1.7 The sample coordinator will distribute the results to the requestor (and other cognizant individuals as necessary) on a timely basis.
- 1.8 Individuals who are not sample requestors but have need of the data collected can obtain the results through the sample coordinator.
  - 1.8.1 Shift supervisors, shift foreman and shift superintendents may obtain chemistry data directly from the shift chemist if desired.
- 2.0 Air and Gas Samples
  - 2.1 Based on sample frequencies previously established and implemented by HP, the HP foreman shall direct the HP techs. to collect air samples.
  - 2.2 The HP foreman on his designee must notify the sample coordinator with pertinent sample collections and analysis information.
  - 2.3 The HP techs will distribute the samples to the appropriate lab per instruction of the sample coordinator. The HP tech must also obtain a sample request tag from the sample coordinator prior to delivering the sample to the counting facility.

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- 2.4 The HP techs will collect counted samples and distribute them to the Unit 1 reactor building hatch for archives.
- 2.5 Since reactor building gas samples for  $H_2$ ,  $N_2$ , and  $O_2$  analyses are performed by the HP techs, the techs should report the results to the HP foreman. The HP foreman must contact the sample coordinate with the results as soon as possible.

Sample Request Tag

Sample# \_\_\_\_\_ Priority: \_\_\_\_\_ Date: \_\_\_\_\_

Sample ID & Unit # \_\_\_\_\_ Time: \_\_\_\_\_

Requestor: \_\_\_\_\_ Ext# \_\_\_\_\_

Phone Results To: \_\_\_\_\_ Ext# \_\_\_\_\_

Type of sample: Air \_\_\_\_\_ flow rate \_\_\_\_\_

Liquid \_\_\_\_\_ volume \_\_\_\_\_

Analysis Requested: \_\_\_\_\_

Scan Sample Sent To: Met-Ed: \_\_\_\_\_ B & W: \_\_\_\_\_

SAI: \_\_\_\_\_ RMC: \_\_\_\_\_

Other: \_\_\_\_\_

Name of Collector \_\_\_\_\_ Date & Time \_\_\_\_\_

Chemical Results \_\_\_\_\_

Signature: \_\_\_\_\_ Date & Time \_\_\_\_\_

Scan Completed \_\_\_\_\_ Results Transmitted To \_\_\_\_\_

Signature \_\_\_\_\_ Date & Time \_\_\_\_\_

Attach results to this form and send to sample coordination center.

Chem results received & transmitted To: \_\_\_\_\_

Results received & transmitted To: \_\_\_\_\_

Signature \_\_\_\_\_ Date & Time \_\_\_\_\_

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To be completed by Sample Coordinator

To be completed by Chem Supervisor

To be completed by Lab

To be completed by Coordinator

