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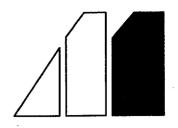


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MILLSTONE NUCLEAR POWER STATION CHEMISTRY PROCEDURE











PASS Containment Air Sample

CP 3804L Rev. 2

NOTE

A review by the Emergency Planning Department is required whenever this procedure is revised or whenever changes are made to this procedure which impact the ability to collect and analyze a PASS sample.

A review by the Radiological Engineering Services is required whenever modifications to this procedure may impact dose limit time and motion study calculations.

Approval Date: 3/22/01

Effective Date: 3/28/01

Level of Use Continuous

Millstone Unit 3 Chemistry Procedure

PASS Containment Air Sample

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1. PURPOSE

1.1 Objective

Provide instructions for operation of the Unit 3 containment air post accident sample system for containment air sample acquisition during Station Emergency Response Organization (SERO) activation when high radioactivity levels, due to an accident, may preclude the normal (conventional) sampling method.

This procedure satisfies requirements identified in Unit 3 Technical Specifications 6.8.1, 6.8.4 d, 6.8.4.e and the Millstone Nuclear Power Station Emergency Plan.

This procedure was developed using the reactor technical manual for the containment air PASS (Ref.6.2) and other documents identified herein.

1.2 Discussion

The time required to collect and analyze samples should be 3 hours or less from the time the ADTS makes the decision to obtain a sample using PASS.

If conditions arise that will not allow Sections 4.1 through 4.4 to be completed, the procedure user will be directed to Section 4.8, "Restoration from PASS Sample Acquisition," to return the system to normal.

Attachment 4 contains a simplified drawing of the containment air post accident sample system.

1.3 Applicability

This procedure is applicable during SERO activation when in-plant radioactivity levels are too high to permit containment air sampling via the normal (conventional) method.

1.4 Frequency

Performance of this procedure may be repeated periodically during SERO activation.

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2. PREREQUISITES

2.1	Genera	l	
 	2.1.1	SERO is activated.	
 	2.1.2	Heat tracing panel 31 for at least 1/2 hour.	HTS-PNLA3 (OP 3352) has been energized
 _	2.1.3	Key has been obtained	ed to unlock the following:
		Train A 3SSP*V51	<u>Train B</u> 3SSP*V52
		3SSP*V59	3SSP*V60
		3HCS*V2	3HCS*V9
		3HCS*V3	3HCS*V10
		3HCS*V6	3HCS*V13
 	2.1.4	Health Physics has be sample will be taken.	een notified that a containment air PASS
	2.1.5	Health Physics has ev	valuated need for RWP.
 _	2.1.6	Lab ventilation is ope	erating.
<u>_</u>	2.1.7	Lead brick shielding	has been placed in lab ventilation hood.
 	2.1.8	Computer radioisoto calibrated.	pic analysis system in operation and
 	2.1.9	Gas chromatograph has been initiated for	has been set up and calibrated or calibration PASS containment air sample analysis.
 _	2.1.10	Proper operation of sverified.	sample syringes in PASS suitcase has been
	2.1.11	14.4 cc gas vial has be	een stoppered and evacuated.
_	2.1.12	One train of SLCRS	in operation.

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	_	2.1.13	Assistant I	Manager of	f Radio	logical Dose A	t (MRDA) or the assessment (AMRDA) include the following:
	Che	ck Reque	sted Analys			Sample Equip	
		Gas isotoj	pic			"GAS ISOTO stoppered and vial	PIC" syringe, evacuated 14.4 cc gas
		Gas comp	oosition			"GAS COMP'	'syringe
	Che	ck Sampl	e Point		-		
		_	Recombin	er Train A			
		Hydrogen	Recombin	er Train B			
		2.1.14	Containme follows:	ent Air PAS	SS Tear	n has complete	ed pre-job brief as
	- .		design	ates, assen	nbles, a	Support Cent nd briefs the C n of this proce	ter (MOSC) – Containment Air PASS edure
			Super of Rac	visor (OSC diological (diological (CARPS Consequ) with the conc sence Assessm	Radiological Protection currence of the Manager ent (MRCA) – specifies mplementation of this
	2.2	Docum	ents				
		2.2.1	CP 801/28 Calibration), "Gas	Chromatograp	oh Operation and
		2.2.2	CP 801/28 Maintenar				py Counting System
		2.2.3	CP 3804K	(Att), "PA	SS Sam	ple Equipmen	t Inventory"
		2.2.4	MP-16-0	CAP-SAP	201, "Co	ondition Repor	rt Initiation"
		2.2.5	RP16, "Tr	ouble Repo	orting"		
		2.2.6	RWP for I	PASS samp	le colle	ction.	
		2.2.7	Gas sampl	e isotopic	printou	t	
Level Conti			STOP	THINK	ACI	REVIEW	CP 3804L Rev. 2 4 of 37

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2.3 Personnel

- 2.3.1 Assistant Director, Technical Support (ADTS)
- 2.3.2 Manager of Radiological Dose Assessment (MRDA) or Assistant Manager of Radiological Dose Assessment (AMRDA)
- 2.3.3 Manager of Operational Support Center (MOSC)
- 2.3.4 Operational Support Center Assistant Radiological Protection Supervisor (OSC ARPS)
- 2.3.5 Manager of Control Room Operations (MCRO)
- 2.3.6 Manager of Radiological Consequence Assessment (MRCA)
- 2.3.7 Containment Air PASS Team consisting of the following personnel:
 - At least two Chemistry Technicians
 - At least one Health Physics Technician

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2.4 Tools and Consumables

- 2.4.1 Located in Unit 3 Chemistry Lab
 - 14.4 cc gas vial
 - 14.4 cc gas vial stopper
 - 24 Lead bricks
 - PASS transport cart
 - Syringe transfer container
 - 250 µl syringe labeled "GAS ISOTOPIC"
 - 2.0 ml syringe labeled "GAS COMP"
 - Key to 3SSP-PNL2 (Issued to U3 Chemistry personnel)
 - Key to the following valves:

Train A	<u>Train B</u>
3SSP*V51	3SSP*V52
3SSP*V59	3SSP*V60
3HCS*V2	3HCS*V9
3HCS*V3	3HCS*V10
3HCS*V6	3HCS*V13

- Watch
- 2.4.2 Located in PASS Cabinet in H₂ Recombiner Building
 - Spare syringe needles
 - 3SSP-SAS2 septums
 - 1/2" socket wrench
 - Phone headset
 - Scribe
 - Tweezers
 - Septum insertion tool
 - Calculator
 - Damper operating tool
 - Flat-tipped screwdriver
 - Valve wrench

2.5 Responsibilities

- 2.5.1 The ADTS shall make the decision to obtain a sample using PASS.
- 2.5.2 The Manager of Operational Support Center designates, assembles and briefs the PASS team.

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ACT

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- 2.5.3 The Manager of Radiological Consequence Assessment specifies PASS team radiological controls.
- 2.5.4 The Operational Support Center Assistant Radiological Protection Supervisor assigns HP technicians and briefs the PASS team on radiological conditions.
- 2.5.5 The Manager of Radiological Dose Assessment or the Assistant Manager of Radiological Dose Assessment specify PASS team sampling and analysis requirements.

2.6 Definitions

- 2.6.1 SLCRS supplementary leak collection and release system
- 2.6.2 CR Condition Report

3. PRECAUTIONS

- 3.1 The inside of 3SSP-SAS2, containment air sample module, is potentially contaminated. Proper Health Physics practices and RWP requirements must be followed to prevent the spread of contamination.
- 3.2 Nitrogen pressures >100 psig can damage the tubing in 3SSP-PNL2.

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4. INSTRUCTIONS

- 4.1 Preparation for PASS Sample Acquisition
 - 4.1.1 PERFORM the following and INITIAL CP 3804L-001:
 - VERIFY "General Prerequisites" have been completed
 - REVIEW Section 3, "Precautions"
 - 4.1.2 <u>IF</u> during performance of Sections 4.1 through 4.8 any operational problems are encountered, RECORD noted problems on CP 3804L-001.
 - 4.1.3 <u>IF</u> during performance of Sections 4.1 through 4.4, operational problems are encountered that will **not** allow sampling to be completed, Go To Section 4.8, "Restoration from PASS Sample Acquisition."
 - 4.1.4 PROCEED to containment air sample module with the following:
 - Stoppered and evacuated 14.4 cc gas vial
 - Key to 3SSP-PNL2 (Issued to U3 Chemistry personnel)
 - Key to the following valves:

Train A	Train B
3SSP*V51	3SSP*V52
3SSP*V59	3SSP*V60
3HCS*V2	3HCS*V9
3HCS*V3	3HCS*V10
3HCS*V6	3HCS*V13

- Watch
- CP 3804L-001 and CP 3804L-002
- Syringe transfer container
- 4.1.5 UNLOCK 3SSP-PNL2, containment air sample remote panel.
- 4.1.6 Refer To Attachment 1 and CHECK system alignment.
- 4.1.7 NOTIFY MCRO of the following:
 - a. 3HVR*DMP60 will be opened

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IF in operating Modes 1-4, Enter LCO 3.6.6.2 for 3HVR*DMP60 [Ref. 6.1] PERFORM one of the following: 1) IF hydrogen recombiner train A was selected in step 2.1.13, NOTIFY MCRO that the following valves will be opened if not already open: 3HCS*V2, recombiner 1A supply outer isolation 3HCS*V3, recombiner 1A supply inner isolation 3HCS*V6, recombiner RBNR-1A return isolation 2) IF hydrogen recombiner train B was selected in step 2.1.13, NOTIFY MCRO that the following valves will be opened if not already open: 3HCS*V9, recombiner 1B supply outer isolation 3HCS*V10, recombiner 1B supply inner isolation 3HCS*V13, recombiner RBNR-1B return isolation IF in operating Modes 1-4, Track Tech Spec surveillance requirements of 4.6.1.1.a for the valves opened in step 4.1.7 c. NOTE Constant communications with the control room are required when 3HCS*V2, 3HCS*V3, 3HCS*V6, 3HCS*V9, 3HCS*V10, or 3HCS*V13 are opened in Modes 1-4. IF in operating Modes 1-4, DON phone headset and 4.1.8 ESTABLISH communications with Control Room. PERFORM the following: 4.1.9 Using damper operating tool, OPEN 3HVR*DMP60, 3SSP-SAS1/SAS2 exhaust isolation damper [Ref. 6.1] OPEN 3HVR-DMP1301, 3SSP-SAS2 exhaust damper [Ref. 6.1]. CP 3804L Level of Use Rev. 2 REVIEW Continuous

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4.1.10 PERFORM the following at 3SSP-PNL2, containment air sample remote panel:
a. ZERO timer.
b. PUSH and HOLD "POWER ON" button for 1 to 2 seconds to energize remote operating module and RECORD time:

NOTE

A lit fuse indicator light indicates the fuse is blown.

- c. VERIFY line fuses and blower fuse indicator lights are **not** lit.
- d. OPEN 3SSP-V53, nitrogen supply to containment air sample PNL2.

NOTE

3SSP-PCV82 may require periodic adjustment to maintain 45-50 psig outlet pressure.



Nitrogen pressures >100 psig can damage the tubing in 3SSP-PNL2.

e. ADJUST 3SSP-PCV82, nitrogen pressure regulator, to 45-50 psig.

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The inside of 3SSP-SAS2, containment air sample module, is potentially contaminated. Proper Health Physics practices and RWP requirements must be followed to prevent the spread of contamination.

- 4.1.11 At 3SSP-SAS2, containment air sample module, CHECK exhaust fan is running.
- 4.1.12 <u>IF</u> exhaust fan is **not** running, PERFORM the following at 3SSP-PNL2, containment air sample remote panel:
 - a. PUSH "POWER ON" button to de-energize panel.
 - b. PUSH and HOLD "POWER ON" button for 1 to 2 seconds to energize remote operating module and RECORD time:
 - c. At 3SSP-SAS2, containment air sample module, CHECK exhaust fan is running.
 - d. IF exhaust fan is not running, NOTIFY MOSC.

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NOTE

If hydrogen recombiner train A is running, the following valves will already be open:

- 3HCS*V2, recombiner 1A supply outer isolation
- 3HCS*V3, recombiner 1A supply inner isolation
- 3HCS*V6, recombiner RBNR-1A return isolation



CAUTION



It is imperative **not** to push in on the hand wheel when operating the following valves unless SM/US permission is obtained. This engages the clutch override and could result in damage to the valve.

Train A			<u>Train B</u>		
3HCS*V2	3HCS*V6	3SSP*V59	3HCS*V9	3HCS*V13	3SSP*V60
3HCS*V3	3SSP*V51		3HCS*V10	3SSP*V52	

- 4.1.13 <u>IF</u> hydrogen recombiner train A was selected in step 2.1.13, UNLOCK and OPEN the following valves:
 - 3HCS*V2, recombiner 1A supply outer isolation
 - 3HCS*V3, recombiner 1A supply inner isolation
 - 3HCS*V6, recombiner RBNR-1A return isolation
 - 3SSP*V51, containment air sample return cross-connect
 - 3SSP*V59, containment air sample supply cross—connect

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CAUTION



It is imperative **not** to push in on the hand wheel when operating the following valves unless SM/US permission is obtained. This engages the clutch override and could result in damage to the valve.

Train A Train B

3HCS*V2 3HCS*V6 3SSP*V59 3HCS*V9 3HCS*V13 3SSP*V60

3HCS*V3 3SSP*V51 3HCS*V10 3SSP*V52

NOTE

If hydrogen recombiner train B is running, the following valves will already be open:

- 3HCS*V9, recombiner 1B supply outer isolation
- 3HCS*V10, recombiner 1B supply inner isolation
- 3HCS*V13, recombiner RBNR-1B return isolation
 - 4.1.14 <u>IF</u> hydrogen recombiner train B was selected in step 2.1.13, UNLOCK and OPEN the following valves:
 - 3HCS*V9, recombiner 1B supply outer isolation
 - 3HCS*V10, recombiner 1B supply inner isolation
 - 3HCS*V13, recombiner RBNR-1B return isolation
 - 3SSP*V52, containment air sample return cross—connect
 - 3SSP*V60, containment air sample supply cross-connect
 - 4.1.15 At 3SSP-PNL2, containment air sample remote panel, POSITION the following valves as indicated:
 - a. 3SSP-V2037 to "OPEN."
 - b. 3SSP-V2035 to "SAMPLE."
 - c. 3SSP-V112 to "OFF."
 - d. 3SSP-V2034 to "OFF."

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ALARA



3SSP-PNL2, containment air sample remote panel, requires a 15 minute warm-up period. The time that the instrument was energized is recorded on Chem Form 3804L-1. The PASS Team Health Physics Technician will determine the best location to wait for the completion of the warm-up.

4.1.16 REQUEST Health Physics Technician determine most appropriate location to wait for completion of 15 minute warm—up of 3SSP—PNL2, containment air sample remote panel.

- End of Section 4.1 -

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4.2	Sample	Acquisition
	4.2.1	Refer To step 4.1.10 b. or step 4.1.12 b. and VERIFY 15 minute warm—up of 3SSP—PNL2, containment air sample remote panel, is complete.
	4.2.2	Refer To CP 3804L-001 and MARK box corresponding to hydrogen recombiner train being sampled.
	4.2.3	At 3SSP-PNL2, containment air sample remote panel, POSITION 3SSP-V112 to "SAMPLE INFLUENT."
	4.2.4	At 3SSP*PNL3, post accident sample panel, PERFORM the following:
		a. ROTATE "AIR SAMPLE PUMP P4 SPEED CONTROL" knob fully clockwise.
		b. PUSH "AIR SAMPLE PUMP P4" start button to start 3SSP-P4
	4.2.5	RECORD time purge started:
	4.2.6	At 3SSP-PNL2, containment air sample remote panel, RECORD flow rate:lpm
	4.2.7	PERFORM the following calculation to determine purge time in minutes.
		Purge time = 220 / purge flow rate in lpm
		Purge time = 220 / lpm = minutes
	4.2.8	WHEN purge time has passed, ISOLATE sample as follows:
		a. At 3SSP*PNL3, post accident sample panel, ADJUST 3SSP-P4 speed control to achieve a sample flow rate of 10 to 12 lpm indicated on 3SSP-PNL2, containment air sample remote panel.
		b. At 3SSP-PNL2, containment air sample remote panel, RECORD flow rate: lpm
		c. POSITION 3SSP-V2037 to "CLOSE."

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- d. CHECK that flow rate is less than value recorded in step 4.2.8 b.e. WAIT 1 minute.
- f. POSITION 3SSP-V2035 to "BYPASS AND FLUSH."
- g. Refer To CP 3804L-001 and RECORD sample date and time.
- h. POSITION 3SSP-V112 to "OFF."
- 4.2.9 At 3SSP*PNL3, post accident sample panel, PUSH "AIR SAMPLE PUMP P4" stop button to stop 3SSP-P4.

- End of Section 4.2 -

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	4.3	System	Flush Prior To Sample Retrieval
		4.3.1	At 3SSP-PNL2, containment air sample remote panel, INITIATE nitrogen purge as follows:
			a. POSITION the following valves as indicated:
			1) 3SSP-V112 to "NITROGEN FLUSH."
			2) 3SSP-V2037 to "OPEN."
			3) 3SSP-V2034 to "ON."
			b. RECORD flow rate:lpm
			c. WAIT 3 minutes.
			d. POSITION 3SSP-V2037 to "CLOSE."
			e. CHECK that flow rate is less than value recorded in step 4.3.1 b.
			f. WAIT 3 minutes.
			g. POSITION the following valves as indicated:
			1) 3SSP-V2034 to "OFF."
			2) 3SSP-V112 to "OFF."
			3) 3SSP-V2037 to "OPEN."
Health Physics Technician	>	4.3.2	Based on radiation reading in sample module room, DIRECT Chemistry Technicians to perform one of the following:
			 Go To step 4.3.1 and REPEAT flush
			 Go To Section 4.4 and retrieve samples
			- End of Section 4.3 -

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4.4 Retrieval of Containment Air Samples

- 4.4.1 At 3SSP-SAS2, containment air sample module, OPEN cabinet door.
- 4.4.2 <u>IF</u> gas isotopic sample was requested in step 2.1.13, PERFORM the following:
 - a. VERIFY needle is screwed fully into 250 µl syringe labeled "GAS ISOTOPIC."

NOTE

3SSP-V2036 is open when handle is inline with needle guide.

- b. OPEN 3SSP-V2036, containment air sample module internal bypass valve.
- c. INSERT syringe into needle guide until syringe nut is engaged.



ALARA



- 1. Do **not** unscrew syringe body more than 2 turns counterclockwise. Excessive turns will disengage needle from syringe.
- 2. Steps 4.4.2 d. through g. should be performed rapidly to minimize exposure.
 - d. Rapidly DRAW 250 µl gas sample into syringe and TURN syringe body 2 turns counterclockwise to lock sample in syringe.
 - e. REMOVE syringe from needle guide and INSERT needle into stoppered 14.4 cc gas vial.
 - f. HOLD syringe tip and TURN syringe body 2 turns clockwise to unlock syringe and INJECT contents of syringe into stoppered 14.4 cc gas vial.
 - g. PLACE syringe and gas vial into syringe transfer container and PLACE lid on syringe transfer container.

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- h. CLOSE 3SSP-V2036, containment air sample module internal bypass valve.
 IF gas composition sample was requested in step 2.1.13, PERFORM the following:
- a. VERIFY needle is screwed fully into 2.0 ml syringe labeled "GAS COMP."
- b. OPEN 3SSP-V2036, containment air sample module internal bypass valve.
- c. INSERT syringe into needle guide until syringe nut is engaged.



4.4.3

ALARA



- 1. Do **not** unscrew syringe body more than 2 turns counterclockwise. Excessive turns will disengage needle from syringe.
- 2. Steps 4.4.3 d. and e. should be performed rapidly to minimize exposure.
 - d. Rapidly DRAW 1 cc gas sample into syringe and TURN syringe body 2 turns counterclockwise to lock sample in syringe.
 - e. REMOVE syringe from needle guide and PLACE syringe into syringe transfer container and PLACE lid on syringe transfer container.
 - f. CLOSE 3SSP-V2036, containment air sample module internal bypass valve.
 - 4.4.4 CLOSE cabinet door.

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NOTE

If sufficient personnel are available, Sections 4.5 and 4.8 may be performed simultaneously.

- 4.4.5 <u>WHEN</u> all samples requested in step 2.1.13 have been retrieved, PERFORM the following:
 - TRANSPORT samples to laboratory and Go To Section 4.5, "Sample Analysis"
 - Go To Section 4.8, "Restoration from PASS Sample Acquisition"
 - End of Section 4.4 -

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STOP

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4.5 Sample Analysis **DETERMINE** handling requirements as follows: 4.5.1 Health **Physics** Technician OPEN transport container cover and MEASURE dose rate. IF dose rate is greater than or equal to 1 rem/hr, NOTIFY b. OSC ARPS and REQUEST instructions for handling. IF dose rate is less than 1 rem/hr, DIRECT Chemistry Technicians to handle samples as normal radioactive samples and to minimize radiation exposure when performing required analyses. 4.5.2 PERFORM PASS sample analysis as follows: Chemistry Technician Refer To the following Sections as applicable and PERFORM analysis: Section 4.6, "Gas Isotopic Analysis" Section 4.7, "Gas Composition Analysis" WHEN analyses are complete, REPORT results to MRDA or 4.5.3 AMRDA. Refer To CP 3804L-001 and SIGN and DATE "Performed By" 4.5.4 section. 4.5.5 IF copies of results are requested, FAX or SEND copies of the following to requesting individuals: Attachment 2 CP 3804L-001 IF Section 4.8. "Restoration from PASS Sample Acquisition," has 4.5.6 not been completed, Go To Section 4.8 and COMPLETE PASS system restoration.

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End of Section 4.5 –



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4.6	Gas Iso	otopic Analysis
	4.6.1	PLACE 2.5 cm shelf in detector to be used for gas isotopic analysis.
	4.6.2	DETERMINE gas isotopic activity as follows:
		vv. st. C.H

- a. Using the following information, Refer To CP 801/2801/3801AT, "Gamma Spectroscopy Counting System Maintenance and Operation," and ANALYZE sample:
 - Open cave
 - Applicable geometry for shelf being used
 - Five minute count time
 - General library
 - Sample volume of 0.250 cc
 - Sample date and time as recorded on CP 3804L-001
- b. <u>IF</u> dead time is greater than or equal to 20%, PERFORM the following:
 - 1) ABORT count.
 - 2) REPLACE shelf with next higher shelf.
 - 3) Go To step 4.6.2.
- c. STORE gas vial in shielded location.

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	d.	DETERMINE background as follows:
		1) Using the following information, Refer To CP 801/2801/3801AT, "Gamma Spectroscopy Counting System Maintenance and Operation," and PERFORM background count on detector that was used for gas isotopic analysis.
		Open cave
		 Applicable geometry for shelf that was used
		Five minute count time
		General library
		• Sample volume of 0.250 cc
<u></u>		2) RECORD all identified isotopes and their associated background activity levels in μCi/cc on Attachment 2.
	e.	Refer To Attachment 2 and CALCULATE gas activity as follows:
		 Refer To gas isotopic printout and RECORD all identified isotopes and their associated activity levels in μCi/cc.
 		 For each isotope listed, SUBTRACT background activity from printout activity and RECORD as isotope activity in μCi/cc.
		3) ADD isotope activities and RECORD as gas activity in μ Ci/cc.
·		 Refer To CP 3804L-001 and RECORD gas activity in μCi/cc in "Sample Data" table.
4.	6.3 PI	ACE empty "GAS ISOTOPIC" syringe in shielded location.
		- End of Section 4.6 -

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4.7 Gas Composition Analysis

NOTE

The "GAS COMP" results are for information only and are not used in any sample calculations.

- 4.7.1 Refer To CP 801/2801/3801AD, "Gas Chromatograph Operation and Calibration," and ANALYZE 2.0 ml syringe labeled "GAS COMP" for the following:
 - % hydrogen
 - % oxygen
 - % nitrogen
- 4.7.2 PLACE empty "GAS COMP" syringe in shielded location.
- 4.7.3 <u>WHEN</u> analysis is complete, Refer To CP 3804L-001 and RECORD gas composition results in % in "Sample Data" table.

- End of Section 4.7 -

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4.8 Restoration from PASS Sample Acquisition

NOTE

Entry into Section 4.8 may occur at any time during performance of Sections 4.1 through 4.4. Some steps in Section 4.8 may already be completed depending on the entry point.

I	
4.8.1	IF sample flow was achieved at any time during PASS sample FLUSH PASS system as follows:
	a. <u>IF Section 4.3</u> , "System Flush," has not been performed, PERFORM Section 4.3.
	b. At 3SSP-PNL2, containment air sample remote panel, POSITION 3SSP-V2035 to "SAMPLE."
	c. INITIATE nitrogen purge as follows:
	1) POSITION 3SSP-V112 to "NITROGEN FLUSH."
	2) POSITION 3SSP-V2037 to "OPEN."
	3) POSITION 3SSP-V2034 to "ON."
	d. RECORD flow rate:lpm
	e. WAIT 3 minutes.
	f. POSITION 3SSP-V2037 to "CLOSE."
	g. CHECK that flow rate is less than value recorded in step 4.8.1 d.
	h. WAIT 3 minutes.
4.8.2	POSITION the following valves as indicated:
	a. 3SSP-V2034 to "OFF."
	b. 3SSP-V112 to "OFF."

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3SSP-V2037 to "OPEN."



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- 4.8.3 Refer To CP 3804L-002 and VERIFY or INITIAL valve lineup for valves at 3SSP-PNL2.
- 4.8.4 CLOSE 3SSP-V53, nitrogen supply to containment air sample PNL2.
- 4.8.5 PUSH "POWER ON" button to de-energize panel.
- 4.8.6 CLOSE and LOCK panel door.
- 4.8.7 PERFORM the following:
 - a. CLOSE 3HVR-DMP1301, 3SSP-SAS2 exhaust damper [Ref. 6.1].
 - b. Using damper operating tool, CLOSE 3HVR*DMP60, 3SSP-SAS1/SAS2 exhaust isolation damper [Ref. 6.1]

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It is imperative **not** to push in on the hand wheel when operating the following valves unless SM/US permission is obtained. This engages the clutch override and could result in damage to the valve.

Train A	_		Train B		
	3HCS*V6	3SSP*V59	3HCS*V9	3HCS*V13	3SSP*V60
3HCS*V3	3SSP*V51		3HCS*V10	3SSP*V52	

- c. <u>IF</u> hydrogen recombiner train A was selected in step 2.1.13, PERFORM the following:
 - 1) CLOSE and LOCK the following valves
 - 3SSP*V51, containment air sample return cross—connect
 - 3SSP*V59, containment air sample supply cross—connect
 - 2) <u>IF</u> train A hydrogen recombiner is **not** running, CLOSE and LOCK the following valves:
 - 3HCS*V2, recombiner 1A supply outer isolation
 - 3HCS*V3, recombiner 1A supply inner isolation
 - 3HCS*V6, recombiner RBNR-1A return isolation

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CAUTION



It is imperative **not** to push in on the hand wheel when operating the following valves unless SM/US permission is obtained. This engages the clutch override and could result in damage to the valve.

Train A			<u>Train B</u>		
3HCS*V2	3HCS*V6	3SSP*V59	3HCS*V9	3HCS*V13	3SSP*V60
3HCS*V3	3SSP*V51		3HCS*V10	3SSP*V52	

- d. <u>IF</u> hydrogen recombiner train B was selected in step 2.1.13, PERFORM the following:
 - 1) CLOSE and LOCK the following valves
 - 3SSP*V52, containment air sample return cross—connect
 - 3SSP*V60, containment air sample supply cross—connect
 - 2) <u>IF</u> train B hydrogen recombiner is **not** running, CLOSE and LOCK the following valves:
 - 3HCS*V9, recombiner 1B supply outer isolation
 - 3HCS*V10, recombiner 1B supply inner isolation
 - 3HCS*V13, recombiner RBNR-1B return isolation
- 4.8.8 Refer To CP 3804L-002 and VERIFY remainder of valve lineup.
- 4.8.9 Refer To CP 3804L-002 and PERFORM independent verification of system lineup.

NOTE

When this step is completed, constant communications with the control room in Modes 1-4 is no longer required.

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4.8.10 NOTIFY MCRO of the following:

- IF closed in step 4.8.7 c.2), the following valves are closed and locked:
 - 3HCS*V2, recombiner 1A supply outer isolation,
 - 3HCS*V3, recombiner 1A supply inner isolation
 - 3HCS*V6, recombiner RBNR-1A return isolation
- IF closed in step 4.8.7 d.2), the following valves are closed and locked:
 - 3HCS*V9, recombiner 1B supply outer isolation
 - 3HCS*V10, recombiner 1B supply inner isolation
 - 3HCS*V13, recombiner RBNR-1B return isolation
- IF in operating Modes 1-4, NOTIFY MCRO that tracking requirements of Tech Spec surveillance 4.6.1.1.a are no longer required for valves that were reported closed and locked
- 3HVR*DMP60 is closed
- <u>IF</u> in operating Modes 1-4, REQUEST MCRO exit LCO 3.6.6.2 for 3HVR*DMP60 [Ref. 6.1].
- PASS system is secured.
- <u>IF</u> in operating Modes 1-4, REQUEST permission to secure constant communications with control room
- 4.8.11 RETURN valve key.
- 4.8.12 SUBMIT completed CP 3804L-002 to Chemistry Supervision for review.

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- 4.8.13 <u>IF</u> operational difficulties were encountered, PERFORM one or both of the following:
 - Refer To RP16, "Trouble Reporting," and INITIATE trouble report for applicable equipment and RECORD TR number on CP 3804L-001
 - Refer To MP-16-CAP-SAP01, "Condition Report Initiation," and INITIATE CR and RECORD CR number on CP 3804L-001
- 4.8.14 RECORD number of needle punctures for the containment air septum in PASS log.



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Step 4.8.15 may not be performed due to the radiation levels in the hydrogen recombiner building.

- 4.8.15 OBTAIN permission from MOSC and PERFORM the following:
 - IF containment air septum has been punctured 10 times or more since its last replacement, Refer To Attachment 3 and REPLACE septum
 - Refer To CP 3804K (Att), "PASS Sample Equipment Inventory," and INVENTORY PASS sampling equipment and LOCK PASS cabinet door handle
- 4.8.16 SIGN and DATE "Performed By" block on CP 3804L-001.
- 4.8.17 SUBMIT the following completed documents to Chemistry Supervision.
 - CP 3804L-001
 - CP 3804K (Att), "PASS Sample Equipment Inventory"

Chemistry Supervision 4.8.18 SUBMIT copy of reviewed CP 3804L-001 and applicable CR's to system engineer.

End of Section 4.8 –

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5. REVIEW AND SIGNOFF

- 5.1 The review and signoff for this procedure is located in the following attachments and forms:
 - Attachment 2
 - Attachment 3
 - CP 3804L-001
 - CP 3804L-002

6. REFERENCES

- 6.1 PIR 3-93-021, "SLCRS Boundary Breach"
- 6.2 Technical Manual for Containment Air Post Accident Sample System," General Dynamics Corporation, Electric Boat Division, Reactor Plant Services
- 6.3 Installation, Operating, and Maintenance Instructions Model MB-151 Post Accident Air Sample Compressor
- 6.4 Regulatory Guide 1.97
- 6.5 Post Accident Sample System Component Instruction Literature
- 6.6 INPO Good Practice CT-707, "Post-Accident Sampling Preparedness"
- 6.7 NUREG 0737
- 6.8 S&W DWG. No 12179-EM-155A
- 6.9 S&W DWG. No 12179-EM-115A
- 6.10 S&W DWG. No 12179-CP-402001
- 6.11 S&W DWG. No 12179-CP-402002
- 6.12 S&W DWG. No 12179-CP-402003
- 6.13 S&W DWG. No 12179-CP-402004
- 6.14 S&W DWG. No 12179-CP-402006

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- 6.15 S&W DWG. No 12179-CP-402009
- 6.16 S&W DWG. No 12179-CP-4020014
- 6.17 S&W DWG. No 12179-CP-4020015
- 6.18 S&W DWG. No 12179-CP-4020053
- 6.19 S&W DWG. No 12179-CP-4020054
- 6.20 S&W DWG. No 12179-CP-4020056
- 6.21 S&W DWG. No 12179-CP-402700
- 6.22 Correspondence B11121, "Millstone Nuclear Power Station, Unit No. 3, Response to Chemical Engineering Branch DSER Open Item," dated April 9, 1984, from Northeast Utilities to the NRC
- 6.23 Correspondence B11177, "Millstone Nuclear Power Station, Unit No. 3, Response to Chemical Engineering Branch DSER Open Item," dated May 10, 1984, from Northeast Utilities to the NRC
- 6.24 NUREG-1031, "Safety Evaluation report related to the operation of Millstone Nuclear Power Station, Unit No. 3," dated August 2, 1984.
- 6.25 DCR M3-98034, "Setpoint Change to 3GSN-PCV106, 3SSP-PCV80, and 3SSP-PCV82"
- 6.26 DCN DM3-00-0638-98, "Setpoint Change to 3GSN-PCV106, 3SSP-PCV80, and 3SSP-PCV82"
- 6.27 Engineering Calculation 3SSP-01632-I-3

7. <u>SUMMARY OF CHANGES</u>

- 7.1 Added simplified drawing of containment air PASS system.
- 7.2 Added flat—tipped screwdriver and valve wrench to tools and consumables.
- 7.3 Deleted "(Obtained from MCRO)" from valve key description.
- 7.4 Changed basis for 45-50 psig on 3SSP-PCV82 to Engineering Calculation 3SSP-01632-I-3.

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- 7.5 Added caution associated with remotely operated valves that have clutches.
- 7.6 Added numerous signoffs to substeps.
- 7.7 Added initial system alignment check and deleted associated steps in body of procedure.
- 7.8 Deleted step to remove counting shelf when counting background.
- 7.9 Changed steps to allow hydrogen recombiner isolations to remain open if hydrogen recombiner is running.
- 7.10 Added steps to generate TR and/or CR when operational difficulties are encountered.
- 7.11 Added bullet to request permission from SM/US prior to securing constant communications.
- 7.12 Added requirement to obtain permission from MOSC to changeout septum and inventory PASS equipment. Added alara above step.
- 7.13 Changed septum changeout frequency to every 10 punctures.
- 7.14 Added containment air equipment to CP 3804K (Att), "PASS Sample Equipment Inventory," and deleted inventory list from this procedure. Added requirement to lock PASS cabinet door handle when inventory is completed.
- 7.15 Added step to submit PASS inventory to Chemistry Supervision.
- 7.16 Added step to submit copy of reviewed chemistry form CP 3804L-001 and applicable CR's to system engineer.
- 7.17 A note was added to the cover page of this procedure to ensure a review is performed by the Radiological Engineering Services whenever modifications to this procedure are made that may impact dose limit time and motion study calculations. This is in response to AR 99005798-06.









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Attachment 1 Initial System Alignment Check (Sheet 1 of 1)

Component ID		Davida	Performed	
	Description	Position	Initial	Date
	3SSP-PNL2			
3SSP-V2027	Containment air remote module N2 supply isolation valve	OP		
3SSP-V2029	Containment air remote module N2 storage tank isolation valve	CL		
3SSP-V2030	Containment air remote module N2 storage tank vent valve	CL		
3SSP-PCV82	Nitrogen pressure regulator	Backed Off		
	Outside "A" Recombiner Cubicle			
		Observe sign at 3		6
3SSP-V46	Air sample pump P4 inlet isolation valve	OP		
	Post Accident Sample Module Room			, <u> </u>
3SSP-V2036	Containment air sample module internal bypass valve	CL		
3SSP-V188	3-way divert valve to iodine filter FLT1	BYP		
3SSP-V189	lodine filter FLT1 outlet isolation valve	CL		
3SSP-V191	lodine filter FLT1 inlet isolation valve	CL		

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Attachment 2 Containment Air Gas Activity Worksheet

(Sheet 1 of 1)

	Printout Activity -	Background =	Isotope Activity
Isotope	Printout Activity (2-place accuracy) (µCi/cc)	Background (μCi/cc)	Isotope Activity (2-place accuracy) (μCi/cc)
	(100,00)		
	, o Gos	Activity	
NOTE: Gas Activity all isotope activities	y = summation of (2-s)	Activity place accuracy) (μCi/cc) [
Prepared by:	D	Pate:	

SUBMIT completed attachment to Chemistry Supervision.

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Attachment 3 3SSP-SAS2 Septum Replacement

(Sheet 1 of 1)

NOTE

The required tools and consumables can be found in the PASS cabinet located in the H_2 recombiner building.

 1.	DON protective clothing as directed by Health Physics.
 2.	Using 1/2" socket, UNSCREW and REMOVE needle guide.
 3.	<u>IF</u> old septum did not come out with septum holder, REMOVE old septum using scribe or tweezers.
 4.	Using tweezers and septum insertion tool, INSTALL new septum.
 5.	Using 1/2" socket wrench, INSTALL needle guide.
 6.	RECORD septum replacement in PASS log.
	Replaced by: Date:
	SUBMIT completed attachment to Chemistry Supervision.

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