

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 1 of 31
---	--

INTEC	Technical Procedure	For Additional Info: http://EDMS	Effective Date: 08/20/13
-------	---------------------	-------------------------------------	--------------------------

Manual: 1774

USE TYPE 1

Change Number: 339479

\*The current revision can be verified on EDMS.

**NOTE:** *This section is to be completed by Three Mile Island Unit 2 (TMI-2) Independent Spent Fuel Storage Installation (ISFSI) Facility Manager or designated alternate.*

HSM No. \_\_\_\_\_ Date: \_\_\_\_\_

**REASON FOR HORIZONTAL STORAGE MODULE (HSM) ACCESS**

**Radiation monitoring:**       Monthly       Quarterly       Annual       N/A

Date last performed: \_\_\_\_\_ Must be completed by: \_\_\_\_\_

**Hydrogen sampling:**       Monthly       Quarterly       Annual       N/A

Date last performed: \_\_\_\_\_ Must be completed by: \_\_\_\_\_

**Filter Housing Leak Test:**       N/A

Date last performed: \_\_\_\_\_ Must be completed by: \_\_\_\_\_

**Other:**     N/A \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**1. INTRODUCTION**

**1.1 Purpose**

To access the rear HSM door for monitoring the storage activities of the TMI-2 ISFSI after storing a Dry Shielded Canister (DSC) in a HSM.

**1.2 Scope and Applicability**

This procedure defines the systematic actions required to access the HSM rear door, monitor the HSM vent system high-efficiency particulate air (HEPA) filter dose rates, perform DSC hydrogen sampling, and perform leak tests. The monitoring and sampling frequencies are identified in TMI-2 TS 3.1.1, 3.2.2, and 3.2.3.

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 2 of 31

**2. PRECAUTIONS AND LIMITATIONS**

- 2.1 The work described in this procedure will be performed in areas subject to radiological controls.
- 2.2 The lower explosive limit (LEL) for hydrogen is 5.0% by volume. (50,000 ppm)
- 2.3 Disposal of waste must be performed per MCP-1390, “Waste Generator Services Waste Management.”
- 2.4 The iTX gas analyzer must only be operated in ambient temperatures of 32 °F to 104 °F.
- 2.5 The surface dose rate of each HSM rear access door must not exceed 100 mrem/h (gamma and neutron); and the surface dose rate of each HEPA filter housing must not exceed 1,200 mrem/h (gamma and neutron). If these rates are exceeded, the cause of the dose rates must be evaluated within 7 days AND corrective action must be taken to restore dose rate limits within 30 days. (TMI-2 TS 3.2.2)**
- 2.6 **If the hydrogen concentration exceeds 0.5%, the DSC must be purged within 7 days until the hydrogen concentration is within limits. The HEPA filters for the DSC must be replaced within 24 hours after the DSC purge operation is complete. (TMI-2 TS 3.2.3).** Purging is completed per TPR-7069 “DSC Purging and HEPA Filter Changeout.”
- 2.7 **A leak check of the purge and vent filter housing double metallic seals on each DSC containing TMI-2 canisters must be performed within 7 days after insertion into the HSM and every 5 years during storage. (TMI-2 TS 3.1.1)**
- 2.7.1 **The leak rate of the purge and/or vent filter housing seals must not exceed  $1 \times 10^{-2}$  standard cc/sec. (TMI-2 TS 3.1.1)**
- 2.7.2 **If the leak rate of the metallic C-seal exceeds  $1 \times 10^{-2}$  standard cc/sec, then a contamination survey at the affected DSC filter housing interface must be performed within 24 hours AND the metallic C-seals must be reseated or replaced within 7 days AND a leak check performed within seven days. (TMI-2 TS 3.1.1 A)**
- 2.7.3 **If the filter housing seal leak rate is not restored within 7 days during storage operation, then contamination surveys must be performed at the affected DSC filter housing interfaces monthly AND a report must be submitted to the NRC within 90 days describing the condition, analysis, and corrective actions being taken. (TMI-2 TS 3.1.1 B)**

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 3 of 31
---	--

**2.7.4 If the purge and/or vent filter housing double metallic seals are replaced with double elastomeric seals during storage operations, then a report must be submitted to the NRC within 90 days describing the condition, analysis, and corrective actions being taken AND a leak check must be performed of the double elastomeric seals every year AND the elastomeric seals must be replaced after five years in service. (TMI-2 TS 3.1.1 C)**

2.8 If any TS limit is exceeded, the HSM must be placed in a safe configuration and the TMI-2 ISFSI Manager/alternate or TMI-2 FSO/alternate notified before proceeding.

2.9 Personnel must follow the applicable hazard mitigations detailed in Appendix D, Procedure Hazard Analysis.

### 3. PREREQUISITES

**NOTE 1:** *Steps 3.1.1 through 3.1.6 may be performed out of sequence to improve operational efficiency at the discretion of the Technical Lead (TL).*

**NOTE 2:** *The TL or procedure reader initials the initial line (indicating step is complete) regardless of which discipline completes the step.*

#### 3.1 Planning and Coordination

##### Initial

3.1.1 TL: Ensure the following personnel are available, as a minimum:

- A. TMI-2 ISFSI Tech Lead (1)
- B. Fuel Handling Operator (minimum of one for radiological surveys and leak testing, and two for hydrogen sampling)
- C. QA Representative (minimum of one for hydrogen sampling and leak testing. Not required for radiological surveys)
- D. RCT (1).

3.1.2 TL: Conduct a prejob briefing in accordance with MCP-3003, “Performing Pre-Job Briefings and Documenting Feedback.”

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 4 of 31
---	--

\_\_\_\_\_ 3.1.3 **TL: Verify (single sign-off) qualifications of all personnel that will operate or supervise the operation of equipment identified as important to safety during this procedure. (TMI-2 TS 5.3.2)**

\_\_\_\_\_  
TL Signature \_\_\_\_\_ Date

\_\_\_\_\_ 3.1.4 **TL:** Notify security of pending entrance into INTEC-1774.

\_\_\_\_\_ 3.1.5 **TL:** Ensure an ICP Radiation Work Permit (RWP) is in place.

\_\_\_\_\_ 3.1.6 **TL:** IF hydrogen sampling, THEN ensure Form INTEC-9142, “TMI-2 ISFSI Hydrogen Sample Analysis,” (issued by TMI-2 ISFSI engineering support) is attached to procedure.

**3.2 Special Tools, Equipment, Parts, and Supplies**

**NOTE:** *The following list of tools specifies the minimum quantities and capacities required.*

\_\_\_\_\_ 3.2.1 **TL:** Ensure the following equipment and tools are available, are positioned, and record equipment ID and calibration information.

<b>HSM Monitoring, DSC Hydrogen Sampling, and Filter Housing Leak Test Tools</b>		
✓	Item	Comments
<b>TOOLS FOR OPENING HSM</b>		
	Wrenches 32 mm socket and ratchet or adjustable wrench	Used for the HSM rear access door and transportation cover bolts.
	Anti-seize lubricant	For application to bolts prior to installation.
	Rolling ladder with side rails	For access to the DSC purge and vent filter housings while installed in the HSM.
	PPE As required	

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 5 of 31
---	--

<b>HSM Monitoring, DSC Hydrogen Sampling, and Filter Housing Leak Test Tools</b>		
✓	<b>Item</b>	<b>Comments</b>
<b>TOOLS FOR HYDROGEN SAMPLING</b>		
	iTX Hydrogen Analyzer	_____ Equipment ID No.      Calibration Due Date
	iTX Water Stop (Part # 1810-2277 rev-2)	
	Calibration Gas (For bump test)	Lot number _____ Expiration Date _____ Gas type and concentration _____ Accuracy _____
	Calibrated torque wrench (Selected torque wrench must have a range such that desired torque of 160 inch pounds falls somewhere in the middle third of the torque wrench range.)	_____ Equipment ID No.      Calibration Due Date
	Sample tubing and connector(s)	For installation of the Gas Analyzer.
	Vent port sample cover and associated O-rings	
	Purge port sample cover and associated O-rings.	
<b>TOOLS FOR FILTER HOUSING LEAK TESTS</b>		
	Calibrated Torque Wrench (Selected torque wrench must have a range such that desired torque of 85 foot pounds falls somewhere in the middle third of the torque wrench range.)	_____ Equipment ID No.      Calibration Due Date
	Extension Cord	For Leak Test Pump.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 6 of 31
---	--

3.2.2 QA: IF performing hydrogen sampling or filter housing leak tests, THEN verify that the equipment and tools listed in Step 3.2.1 are as follows:

- A. In current calibration
- B. The calibration information has been recorded correctly
- C. The torque wrenches are of the correct range.

---

QA Representative Signature

---

Date

### 3.3 Approvals and Notifications

3.3.1 TL: Verify (single sign-off) that all prerequisites have been satisfied, and approval is given for work to commence.

---

TL Signature

---

Date

### 3.4 Training

3.4.1 Ensure the training requirements in Appendix D are met.

## 4. INSTRUCTIONS

**NOTE 1:** *Steps NOT having a designated performer before them will be performed by operations personnel.*

**NOTE 2:** *Operations (OPS) may assist the RCT in recording radiation level data in Appendix A. In this event, the RCT will ensure the data has been entered correctly.*

### Initial

\_\_\_\_\_ 4.1 RCT: **Perform gamma and neutron radiation survey at the surface of the rear access door. (TMI-2 TS 3.2.2)**

4.1.1 RCT or OPS: Document radiation survey results for the rear access door on Appendix A.

4.1.2 RCT: Establish radiological control boundaries as appropriate.

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 7 of 31

\_\_\_\_\_ 4.2 While wearing protective eyeglasses with side shields and leather or rubber gloves, open HSM rear access door as the RCT monitors for increase in radiation fields.

4.2.1 Inspect rear door to ensure it remains operational and the vent holes in rear door are free of blockage.

4.2.2 TL: IF the rear door needs maintenance attention, THEN ensure the problem and the need to initiate a work request is documented in the Facility Log.

\_\_\_\_\_ 4.3 Perform radiation monitoring and contamination surveys.

4.3.1 OPS or RCT: Remove the purge and vent filter housing dust covers.

**NOTE:** *Steps 4.3.2 and 4.3.3 may be performed out of sequence.*

4.3.2 RCT: **Perform gamma and neutron radiation surveys at the surface near the center of the purge and vent filter housings. (TMI-2 TS 3.2.2)**

4.3.2.1 OPS or RCT: Document radiation survey results of the vent and purge filter housings on Appendix A.

4.3.3 RCT: Perform gamma radiation survey around general area of the purge and vent filter housings.

4.3.3.1 OPS or RCT: Document the highest gamma readings on Appendix A including the location of the reading.

**NOTE 1:** *Results of contamination surveys are used for the annual REMP report required by TMI-2 TS 5.5.3c.*

**NOTE 2:** *The results of the contamination survey will be completed in Appendix A, by the RCT, after the smears have been counted.*

4.3.4 RCT: Perform contamination survey at the surface of the purge and vent filter housings.

4.3.5 RCT: Perform contamination survey at the HSM drain.

\_\_\_\_\_ 4.4 IF hydrogen sampling is to be performed at this time, THEN perform sampling per Appendix B, DSC Hydrogen Concentration Sampling.

\_\_\_\_\_ 4.5 IF leak test is to be performed at this time, THEN perform the leak test per Appendix C, Filter Housing Leak Test.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 8 of 31
---	--

- \_\_\_\_\_ 4.6 OPS or RCT: Replace the purge and vent filter housing dust covers.
- \_\_\_\_\_ 4.7 Close and lock the HSM rear access door.
  - 4.7.1 IF the rear access door bolts need anti-seize lubrication, THEN while wearing protective eyeglasses with side shields and leather or rubber gloves, apply lubricant to the bolts.
- \_\_\_\_\_ 4.8 Ensure that the HSM drain is free of visible obstructions.
- \_\_\_\_\_ 4.9 TL: Ensure HSM rear access door is locked.
- \_\_\_\_\_ 4.10 Perform procedure closeout.
  - 4.10.1 TL: Request all personnel signing or initialing steps in this procedure to complete the information in the table below:

Printed Name	S Number	Job Function	Initials	Signature

- 4.10.2 TL: Perform a postjob review as directed by MCP-3003.
- 4.10.3 TL: Verify (single sign-off) that all procedure steps have been completed, initialed or initialed and signed as appropriate.

\_\_\_\_\_ TL Signature \_\_\_\_\_ Date

**5. RECORDS**

Completed copy of TPR-7066, “Periodic HSM Monitoring, DSC Sampling, and Filter Housing Leak Tests,” including Appendix A, TMI-2 ISFSI Radiological Survey Report Form 434.14, “Pre-Job Briefing Checklist” (If used)

**If Hydrogen Sampling is performed, the following records apply:**

Appendix B, DSC Hydrogen Concentration Sampling

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 9 of 31

Form INTEC-9142, “TMI-2 Hydrogen Sample Analysis”

**If leak test is performed the following records apply:**

Appendix C, Filter Housing Leak Test

Completed copy of TPR-6304, “Small Volume Pressure Change Leak Test,” and associated forms

**NOTE:** [MCP-557, “Records Management,”](#) the [INL Records Schedule Matrix](#), and associated NRC [record types list](#) provide current information on the storage, turnover, and retention requirements for these records.

**6. REFERENCES**

Drawing 623548, “CPP-1774 TMI Dry Shielded Canister Vent Purge Port Hydrogen Sampling Covers Assembly”

EDF-4771, “Comparison of Year 2003 TMI-2 IFSI Hydrogen Measures with Requirements”

MCP-1390, “Waste Generator Services Waste Management”

MCP-3003, “Performing Pre-Job Briefings and Documenting Feedback”

MCP-3562, “Hazard Identification, Analysis, and Control of Operational Activities”

SAR-II-8.4, “TMI-2 Safety Analysis Report”

TPR-6304, “Small Volume Pressure Change Leak Test”

TSR-8.4, “Technical Specifications for Three Mile Island–Unit 2 Independent Spent Fuel Storage Installation”

**7. APPENDIXES**

Appendix A, TMI-2 ISFSI Radiological Survey Report

Appendix B, DSC Hydrogen Concentration Sampling

Appendix C, Filter Housing Leak Test

Appendix D, Procedure Hazard Analysis

Appendix D, Procedure Basis

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 10 of 31
---	---

**Appendix A  
TMI-2 ISFSI Radiological Survey Report**

HSM No.: \_\_\_\_\_ RWP No.: \_\_\_\_\_ Log No.: \_\_\_\_\_ Date: \_\_\_\_\_

Work Activity: \_\_\_\_\_

Instrument Type: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Efficiency: \_\_\_\_\_

Calibration Due Date: \_\_\_\_\_

Scaler Background (cpm)    alpha \_\_\_\_\_                      beta \_\_\_\_\_

Scaler MDA (dpm)            alpha \_\_\_\_\_                      beta \_\_\_\_\_

Count Rate Meter Background (cpm) \_\_\_\_\_

HSM Rear Door Surface Radiation (mrem/h)\*:                      gamma \_\_\_\_\_                      neutron \_\_\_\_\_

Purge Filter Housing Surface Radiation (mrem/h)\*:                      gamma \_\_\_\_\_                      neutron \_\_\_\_\_

Vent Filter Housing Surface Radiation (mrem/h)\*:                      gamma \_\_\_\_\_                      neutron \_\_\_\_\_

Highest Dose Rate (mrem/h) & Location:                      gamma: \_\_\_\_\_                      Location: \_\_\_\_\_

Purge Filter Housing Surface Contamination (dpm/100 cm<sup>2</sup>)\*\*                      alpha \_\_\_\_\_                      beta \_\_\_\_\_

Purge Filter Housing Interface Contamination (dpm/100 cm<sup>2</sup>\*\*\*\*)                      alpha \_\_\_\_\_                      beta \_\_\_\_\_

Vent Filter Housing Surface Contamination (dpm/100 cm<sup>2</sup>)\*\*                      alpha \_\_\_\_\_                      beta \_\_\_\_\_

Vent Filter Housing Interface Contamination (dpm/100 cm<sup>2</sup>\*\*\*\*)                      alpha \_\_\_\_\_                      beta \_\_\_\_\_

Drain Line Contamination (dpm/100 cm<sup>2</sup>)\*\*                      alpha \_\_\_\_\_                      beta \_\_\_\_\_

Other location Contamination (dpm/100 cm<sup>2</sup>)                      alpha \_\_\_\_\_                      beta \_\_\_\_\_

Comment: \_\_\_\_\_

Performed By\*\*\*: \_\_\_\_\_ Reviewed By: \_\_\_\_\_

Facility Manager or Alternate: Verify (single sign-off) that combined radiation levels (gamma plus neutron) are less than 100 mrem/h at the surface of the HSM rear access door.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Facility Manager or Alternate: Verify (single sign-off) that the combined radiation levels (gamma plus neutron) are less than 1,200 mrem/h at the surface of the vent and purge filter housings.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\* Technical Specification related survey measurement.

\*\* REMM required survey measurement. Retain smears for gamma spectroscopy analysis

\*\*\* If survey information cannot be adequately described above, then attach Form 431.84, "TMI-2 ISFSI Radiological Survey Report."  
Form 431.84 attached: Yes \_\_\_\_\_ No \_\_\_\_\_

\*\*\*\* **Required if filter housing leak test fails (TMI-2 TS 3.1.1).** Retain smears for gamma spectroscopy analysis.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 11 of 31
---	---

**Appendix B****DSC Hydrogen Concentration Sampling**

1. Perform DSC Hydrogen Concentration Sampling.

**NOTE 1:** *Steps 1.1 and 1.2 may be performed concurrently as directed by TL.*

**NOTE 2:** *Step 1.3 for starting the iTX analyzer may be performed any time that it is needed (such as after battery change out) or as directed by TL.*

**NOTE 3:** The same bolts are used to attach the purge port and vent port sample covers and are called sample cover bolts.

Initial

- 1.1 Install vent port sample cover as follows:

- 1.1.1 Do NOT use any lubricant on rubber O-rings.

- 1.1.2 Ensure rubber O-rings are in good condition and are installed into the sample cover seal grooves.

- 1.1.3 IF the four sample cover bolts require anti-seize lubricant, THEN while wearing protective eyeglasses with side shields and leather or rubber gloves, apply anti-seize lubricant to the four sample cover bolts.

- 1.1.4 While wearing protective eyeglasses with side shields and leather or rubber gloves, install the vent port sample cover with the four sample cover bolts using a criss-cross pattern.

- 1.1.4.1 Torque the sample cover bolts to 160 in. • lb in three increments (snug, 80 in. • lb, and 160 in. • lb).

- 1.1.4.2 QA: Verify sample cover bolts are torqued to 160 in. • lb.

---

QA Representative Signature

---

Date

- 1.2 Install purge port sample cover as follows:

- 1.2.1 Do NOT use any lubricant on rubber O-rings.

- 1.2.2 Ensure rubber O-rings are in good condition and are installed into the sample cover seal grooves.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 12 of 31
---	---

1.2.3 IF the four sample cover bolts require anti-seize lubricant, THEN while wearing protective eyeglasses with side shields and leather or rubber gloves, apply anti-seize lubricant to the four sample cover bolts.

1.2.4 While wearing protective eyeglasses with side shields and leather or rubber gloves, install the purge port sample cover with the four sample cover bolts using a criss-cross pattern.

1.2.4.1 Torque the sample cover bolts to 160 in. • lb in three increments (snug, 80 in. • lb, and 160 in. • lb).

1.2.4.2 QA: Verify sample cover bolts are torqued to 160 in. • lb.

---

QA Representative Signature

Date

**NOTE:** *The iTX analyzer needs to run for ten minutes or more prior to the bump test. Once started, the iTX analyzer may be left on through the whole series of samples or as directed by the TL.*

\_\_\_\_\_ 1.3 IF the iTX analyzer has NOT been started, THEN start the iTX analyzer by pressing and holding the “On” button until it beeps.

\_\_\_\_\_ 1.4 Set the iTX analyzer to the zero mode and zero the instrument.

\_\_\_\_\_ 1.5 Perform a bump test, to test the LEL sensor to hydrogen gas as follows:

1.5.1 IF a post-sample hydrogen bump test has been completed for the previous sample on the same day, THEN perform the following:

1.5.1.1 Record temperature and hydrogen concentration of Post Sample bump test in line 2 of Form INTEC-9142.

1.5.1.2 GO TO Step 1.5.11 to perform verification WITHOUT RETURNING TO this step.

1.5.2 IF NOT already attached, THEN attach regulator to the hydrogen gas cylinder.

1.5.3 Attach iTX to bump test tubing.

1.5.4 Open regulator.

1.5.5 Check that the sensors are responding to the calibration gas.

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 13 of 31

- 1.5.6 Set iTX mode to PPM.
- 1.5.7 Monitor the iTX reading until the reading shows no increasing trend for approximately one minute.
- 1.5.8 Record iTX temperature and hydrogen concentration of Pre Sample bump test in line 2 of Form INTEC-9142.
- 1.5.9 Close regulator.
- 1.5.10 Remove iTX from bump test cylinder.
- 1.5.11 TL: Verify (single sign-off) on line 2 of Form INTEC-9142 that the iTX bump-test result is within the acceptable range identified on the form.
  - 1.5.11.1 IF the iTX bump test is NOT within acceptable range, THEN repeat bump test as directed by the TL.
  - 1.5.11.2 IF the repeat bump test is NOT within acceptable range, THEN return the iTX to the calibration lab for calibration and re-sample the DSC following satisfactory iTX calibration.
- 1.6 Obtain first hydrogen sample as follows:
  - 1.6.1 Set the iTX analyzer to peaks mode and clear the peaks.
  - 1.6.2 Connect iTX analyzer to the pump and sample tubing, including the water stop.
  - 1.6.3 Check that low flow alarm responds.
  - 1.6.4 Connect sample tubing to the sample fitting (center) on the vent port sample cover as shown in Figure 1, iTX Analyzer Connection to Sample Cover.

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 14 of 31

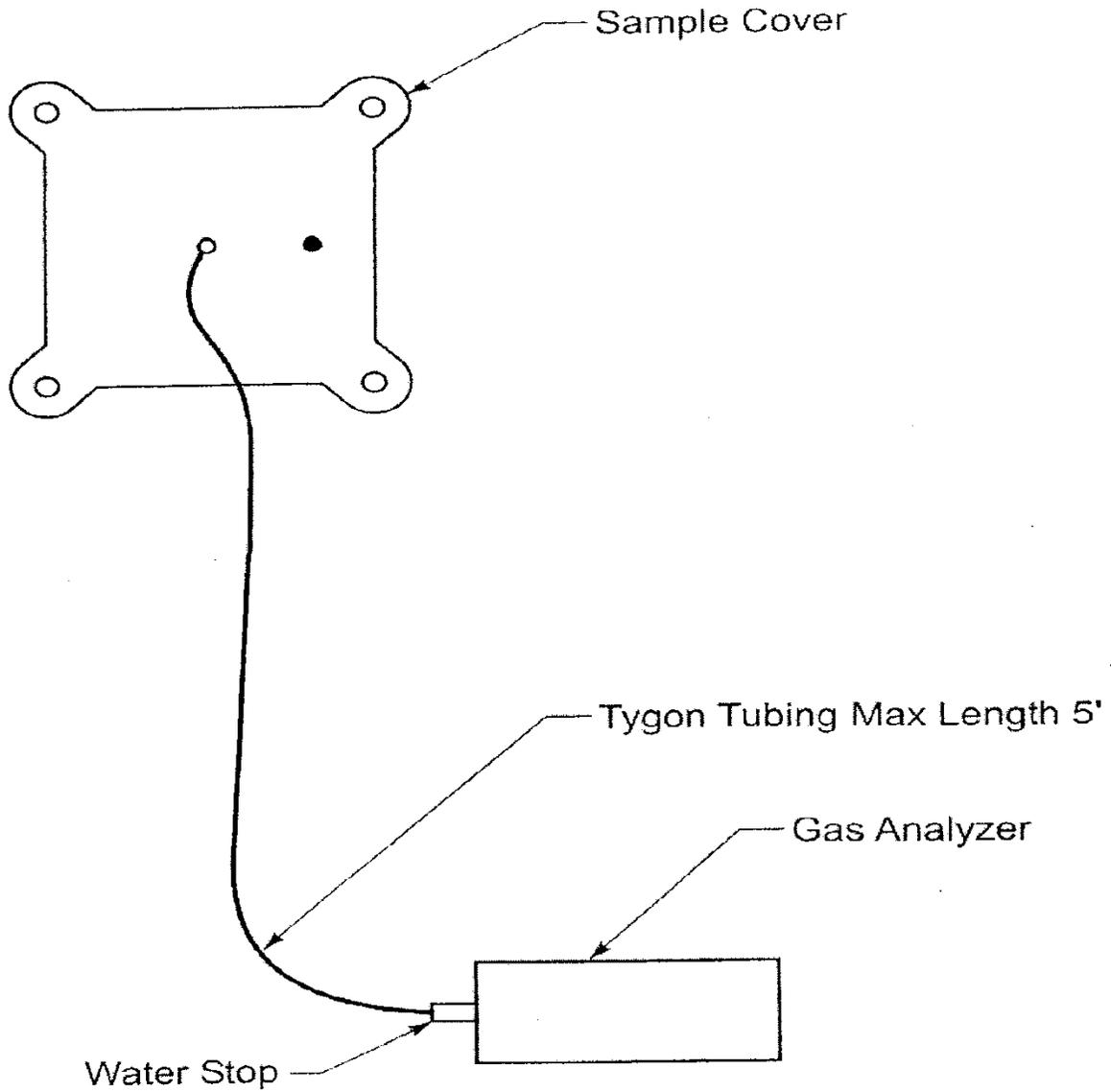


Figure 1. iTX analyzer connection to sample cover.

<p><b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b></p>	<p>Identifier: TPR-7066                  Revision*: 19                  Page: 15 of 31</p>
--	--

**NOTE:** *Sampling should be considered complete when the iTX reading shows no increasing trend for approximately one minute, which may be the final minute of the 10-minute purge period.*

1.6.5 Allow a minimum of 10 minutes for the sample lines and void spaces to purge.

Beginning Time	Ending Time
----------------	-------------

- 1.6.5.1 Monitor iTX analyzer during sampling.
    - 1.6.5.1.1 IF sample temperature is greater than 104 ° F or less than 32 ° F,  
OR oxygen is below 10%,  
OR low flow alarms,  
THEN notify the TL and proceed as directed.
    - 1.6.5.1.2 IF any of the above alarms or abnormal conditions occurred,  
THEN list them in the space below.
- 
- 
- 
- 

1.6.6 After sampling is complete, record iTX instrument readings for hydrogen concentration, percent oxygen, and temperature of sample gas, on line 3 of Form INTEC-9142.

1.7 Obtain a second sample as follows:

- 1.7.1 Separate the iTX analyzer from the pump to interrupt sample flow.
- 1.7.2 Allow the iTX ppm (LEL) sensor to clear in fresh air.

<p><b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b></p>	<p>Identifier: TPR-7066                  Revision*: 19                  Page: 16 of 31</p>
--	--

**NOTE:** *Sampling should be considered complete when the iTX reading shows no increasing trend for approximately one minute, which may be the final minute of the 3-minute sample time.*

1.7.3 Reconnect iTX analyzer to the pump and allow a minimum of three minutes for sample.

_____	_____
Beginning Time	Ending Time

1.7.3.1 Monitor iTX analyzer during sampling.

1.7.3.1.1 IF sample temperature is greater than 104 °F or less than 32 °F,  
OR oxygen is below 10%,  
OR low flow alarms,  
THEN notify the TL and proceed as directed.

1.7.3.1.2 IF any of the above alarms or abnormal conditions occurred,  
THEN list them in the space below.

---



---



---



---

1.7.4 After the sample is complete, record the second sample results for hydrogen concentration, percent oxygen, and temperature of sample gas on line 4 of Form INTEC-9142.

1.7.5 Remove the sample tubing from the vent port sample cover.

1.7.6 Check that low flow alarm responds.

1.7.7 Disconnect the iTX analyzer from the pump.

1.7.7.1 RCT: Survey iTX equipment as it is removed from the vent port sample cover.

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 17 of 31

**NOTE:** *Steps 1.7.8 and 1.8 may be performed concurrently at the Technical Lead's discretion.*

1.7.8 While wearing protective eyeglasses with side shields and leather or rubber gloves, remove the vent and purge port sample covers.

1.7.8.1 RCT: Survey equipment as it is removed.

1.8 Perform a post-sample Hydrogen bump test.

1.8.1 IF NOT already attached,  
THEN attach regulator to the hydrogen gas cylinder.

1.8.2 Attach iTX to bump test tubing.

1.8.3 Open regulator.

1.8.4 Check that the sensors are responding to the calibration gas.

1.8.5 Set iTX mode to PPM.

**NOTE:** *When the iTX reading shows no increasing trend for approximately one minute, the iTX bump test is completed.*

1.8.6 Monitor the iTX reading until the reading shows no increasing trend for approximately one minute.

1.8.7 Record iTX temperature and hydrogen concentration in line 5 of Form INTEC-9142.

1.8.8 Close regulator.

1.8.9 Remove iTX from bump test cylinder.

1.8.10 TL: Verify (single sign-off) on line 5 of Form INTEC-9142 that the iTX bump-test result is within the acceptable range identified on the form.

1.8.10.1 IF the iTX bump test is NOT within acceptable range,  
THEN repeat bump test as directed by the TL.

1.8.10.2 IF the repeat bump test is NOT within acceptable range,  
THEN return the iTX to the calibration laboratory for calibration and re-sample the DSC following satisfactory iTX calibration.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 18 of 31
---	---

1.8.11 IF this is the last sample for this sample period,  
THEN turn off iTX analyzer.

**NOTE:** *Steps 1.9, 1.10, and 1.11 may be completed out of sequence at the discretion of supervision.*

1.9 TL: IF directed by TMI-2 ISFSI Engineering Support,  
THEN repeat sample using a clean copy of the procedure Appendix B.

1.10 TMI-2 ISFSI Manager: **Verify (single sign-off), from Form INTEC-9142, hydrogen concentration is less than 0.5% by volume (5,000 ppm). (TMI-2 TS 3.2.3)**

\_\_\_\_\_  
TMI-2 ISFSI Manager Signature

\_\_\_\_\_  
Date

1.11 GO TO Section 4.5, and continue with procedure,  
WITHOUT RETURNING TO this step.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 19 of 31
---	---

## Appendix C

### Filter Housing Leak Test

1. QA (Level II or III Leak Test Inspector): **Perform purge and vent filter housing leak tests as follows: (TMI-2 TS 3.1.1)**

**NOTE 1:** *Steps 1.1, 1.2, 1.3, and 1.4 may be repeated in sequence to complete a leak test for the purge or vent filter housings.*

**NOTE 2:** *Step 1.1 may be repeated out of sequence if QA (Level II or Level III Leak Test Inspector) suspects excessive leakage from the connector.*

**NOTE 3:** *In Step 1.1, Teflon tape may be used as required when installing the connector.*

#### Initial

- 1.1 QA (Level II or III Leak Test Inspector): Remove thread protector and connect the leak test equipment to the test port between the seals of the filter housing using a standard 1/4 inch VCO to 1/8 inch NPT connector (facility supplied), as the RCT monitors for changes in radiological conditions.

- 1.2 QA (Level II or III Leak Test Inspector): Perform purge or vent filter housing leak test.

1.2.1 GO TO TPR-6304, "Small Volume Pressure Change Leak Test," and **perform purge or vent filter housing leak test (Appendix A), after completing Sections 1 through 4 of the procedure, THEN RETURN TO Step 1.2.2. (TMI-2 TS 3.1.1)**

1.2.2 Record leak test results obtained from TPR-6304.

Purge Filter Housing  
Leak Test Results: \_\_\_\_\_

Vent Filter Housing  
Leak Test Results: \_\_\_\_\_

- 1.3 QA (Level II or III Leak Test Inspector): Disconnect the leak test equipment from the test port on the filter housing and install thread protector as the RCT monitors for changes in radiological conditions.

- 1.4 RCT: Survey the filter housing and leak test equipment including the in-line HEPA filter.



<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 21 of 31
---	---

1.5.4 QA (Level II or III Leak Test Inspector): Perform second purge and vent filter housing leak tests as follows: (TMI-2 TMI-TS 3.1.1)

**NOTE 1:** Steps 1.5.4.1, 1.5.4.2, 1.5.4.3, and 1.5.4.4 may be repeated in sequence to complete a leak test for the purge or vent filter housings.

**NOTE 2:** Step 1.5.4.1 may be repeated out of sequence if the QA (Level II or Level III Leak Test Inspector) suspects excessive leakage from the connector.

**NOTE 3:** In Step 1.5.4.1, Teflon tape may be used as required when installing the connector.

1.5.4.1 Remove thread protector and connect the leak test equipment to the test port between the seals of the filter housing using a standard 1/4 inch VCO to 1/8 inch NPT connector (facility supplied), as the RCT monitors for changes in radiological conditions.

1.5.4.2 Perform second purge or vent filter housing leak test as follows:

1.5.4.2.1 GO TO TPR-6304, and perform the second purge or vent filter housing leak test (Appendix A), after completing Sections 1 through 4 of the procedure, THEN RETURN TO Step 1.5.4.2.2. (TMI-2 TS 3.1.1)

1.5.4.2.2 Record second leak test results obtained from TPR-6304.

Purge Filter Housing  
Leak Test Results: \_\_\_\_\_  
Vent Filter Housing  
Leak Test Results: \_\_\_\_\_

\_\_\_\_\_  
QA (Level I or II Leak Test Inspector)                      Date  
Signature

1.5.4.3 Disconnect the leak test equipment from the test port on the filter housing and install thread protector as the RCT monitors for changes in radiological conditions.

**PERIODIC HSM MONITORING, DSC SAMPLING, AND  
FILTER HOUSING LEAK TESTS**

Identifier: TPR-7066

Revision\*: 19

Page: 22 of 31

1.5.4.4 RCT: Survey the filter housing and leak test equipment including the in-line HEPA filter.

1.5.5 TL: IF leak test rate is greater than  $1 \times 10^{-2}$  standard cc/sec after reseating housing,  
THEN remind ISFSI manager of the following:

1.5.5.1 **IF the leak test fails after reseating bolts,  
THEN replace the seals per TPR-7068 and repeat leak test procedure within seven days. (TMI-2 TS 3.1.1)**

1.5.5.2 **IF leak rate is NOT restored within seven days,  
THEN initiate monthly contamination surveys at the DSC-vent housing interface AND submit a 90 day report to the NRC. (TMI-2 TS 3.1.1)**

1.5.5.3 IF the metallic c-seals were replaced with elastomeric seals,  
THEN remind ISFSI facility manager of the following:

1.5.5.3.1 **IF the metallic C-seals were replaced with elastomeric seals,  
THEN submit report to the NRC within 90 days describing the condition, analysis, and actions being taken. (TMI-2 TS 3.1.1)**

1.5.5.3.2 **IF the metallic C-seals were replaced with elastomeric seals,  
THEN schedule annual leak tests for the affected DSC. (TMI-2 TS 3.1.1)**

\_\_\_\_\_ 1.6 GO TO Section 4.6 to replace purge and vent filter housing dust covers, WITHOUT RETURNING TO this step.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 23 of 31
---	---

**Appendix D**

**Procedure Hazard Analysis**

Highly Hazardous Activity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			HPSC No.: TPR-7066		
<b>Disciplines (SMEs) involved in hazard analysis:</b> (Checking the box indicates discipline is/was involved in the hazard analysis for this procedure.)					
	<b>Discipline</b>		<b>Discipline</b>		<b>Discipline</b>
<input checked="" type="checkbox"/>	Industrial Safety	<input checked="" type="checkbox"/>	RCT/RAD Eng.	<input checked="" type="checkbox"/>	Engineering
<input checked="" type="checkbox"/>	Industrial Hygiene	<input type="checkbox"/>	Env. Protection	<input checked="" type="checkbox"/>	Operations
<input type="checkbox"/>	Fire Protection	<input checked="" type="checkbox"/>	Quality Assurance	<input type="checkbox"/>	Other:
<b>Required Job Training/Required Personal Protective Equipment</b>					
<b>Training</b>			<b>PPE</b>		
RadWorker II			Anti-c clothing as required per RWP		
TMI General Employee Training			Leather or rubber gloves		
TMI-2 ISFSI Storage Operations Lead			Protective eyeglasses with side shield		
Heat Stress			Substantial footwear (when working under this TPR)		
Portable Ladders			Safety shoes (for work in areas where heavy dropped, falling, or rolling object hazards exist)		
Hantavirus					

Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
1. General work on the TMI-2 ISFSI pad	1a. Slipping or tripping	1a. Remove ice and sand icy spots as appropriate or maintain awareness of surroundings, and wear safety shoes.
	1b. Extreme temperature environment	1b. Establish work stay times per MCP-2704, "Heat and Cold Stress." Wear cold weather clothing and gloves or ice vests as appropriate.
	1c. Contamination and radiation	1c.1 Complete Radiation Work Permit. Put in RadCon hold points at procedure steps where RCT surveys radiation or contamination levels are identified.  1c.2 Wear Anti-c clothing per RWP.
2. Gather equipment and supplies	2a. Work may disturb areas with rodent feces or urine	2a. Do <u>NOT</u> disturb area and contact appropriate personnel for cleanup.
	2b. Back strain	2b. Use proper lifting techniques when moving or removing equipment/supplies, and discuss techniques during pre-job briefing.
	2c. Pinch points	2c. Maintain awareness of surroundings, maintain safe body positioning, and wear leather gloves.
3. Enter INTEC-1774	3a. Back strain	3a. Use proper lifting techniques when manually removing snow or ice and discuss techniques during pre-job briefing.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 24 of 31
---	---

4. RCT survey radiation and contamination levels at various points at the rear of the HSM and establish appropriate controls	4a. Contamination and radiation	4a. See general hazards.
5. Open HSM rear access door	5a. Eye or skin irritant from Anti Seize	5a. Wear protective eyeglasses with side shields and rubber or leather gloves when handling Anti Seize.
	5b. Pinch points	5b. Maintain awareness of surroundings, maintain safe body positioning, and wear leather gloves.
	5c. Removal of shielding	5c.1 Work per Radiation Work Permit. 5c.2 RadCon survey prior to and during opening rear access door.
6. Remove purge and vent filter housing dust covers	6a. Ladder use	6a. Personnel must have had Portable Ladder training. Use rolling ladder with side rails.
7. RCT surveys radiation and contamination levels at the purge and vent filter housings	7a. Contamination and radiation	7a. See general hazards.
8. Install vent and purge filter housing sample covers	8a. Eye or skin irritant from Anti Seize	8a. Wear protective eyeglasses with side shields, rubber or leather gloves when handling Anti Seize
	8b. Pinch points	8b. Maintain awareness of surroundings, maintain safe body positioning, wear leather gloves.
	8c. Manual lifting of covers	8c. Use proper lifting techniques, wear safety shoes.
	8d. Ergonomic hazards	8d. Use ladder or platform to properly position body.
	8e. Lead coated material (only when using purge filter cover containing lead seal)	8e. Lead Awareness training and wear leather gloves.
9. Remove sample tubing from vent filter housing sample port	9a. Contamination and radiation	9a. See general hazards.
10. Remove the vent and purge filter housing sample covers	10a. Eye or skin irritant from Anti Seize	10a. Wear protective eyeglasses with side shields, rubber or leather gloves when handling Anti Seize.
	10b. Pinch points	10b. Maintain awareness of surroundings, maintain safe body positioning, wear leather gloves.
	10c. Manual lifting of heavy objects	10c. Use proper lifting techniques.
	10d. Ergonomic hazards	10d. Use ladder or platform to properly position body.
11. QA perform vent housing seal leak test per TPR-6304, "Small Volume Pressure Change Leak Test"		Hazard controls for this activity are in TPR-6304.
12. Install the vent filter housing dust cover	12a. Using a ladder	12a. Personnel must have had Portable Ladder training. Use rolling ladder with side rails.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: <b>25</b> of 31
---	--

13. Close and lock HSM rear access door	13a. Eye or skin irritant from Anti Seize	13a. Wear protective eyeglasses with side shields, rubber or leather gloves when handling Anti Seize.
	13b. Pinch points	13b. Maintain awareness of surroundings, maintain safe body positioning, and wear leather gloves.

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 26 of 31
---	---

**Appendix E**

**Procedure Basis**

Procedure Review Table							
Review Discipline	Rev.	DFC Intent <sup>b</sup> Change	DFC Nonintent <sup>c</sup> Change	Review Discipline	Rev.	DFC Intent <sup>b</sup> Change	DFC Nonintent <sup>c</sup> Change
OSB Chairperson	X <sup>a</sup>	X	X	Industrial Safety			
Qualified Operator	X	X	X	Engineering			
Radiological Engineering				Industrial Hygiene			
Environmental				Facility Safety Officer	X	X	X
Quality	X	X	X	Safety Analysis	X	X	X
NFM/Doc Owner	X	X	X	Compliance Lead	X	X	X

a. X = review required.  
 b. Reviews for intent DFCs require the same discipline reviews required for a revision.  
 c. Reviews for nonintent DFCs can be performed with only Operations management and a qualified operator’s review and then implemented for immediate use. However, the remaining discipline reviews, as indicated by an asterisk (\*), must be obtained within two (2) weeks. See MCP-2985, “Chapter XVI – Operations Procedures,” for definitions of intent and nonintent changes.

Step	Basis	Source	Citation
General	Detailed written procedures will be developed and maintained for the applicable ISFSI operations, maintenance, surveillance, and testing described in Section 5.1.1 and 5.1.2.	TMI-2 SAR	9.4.1

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 27 of 31
---	---

Step	Basis	Source	Citation
General	Operating procedures will be developed for the NUHOMS-12T system to ensure these sequences are followed to: minimize the amount of time required to complete the subject operations; minimize personnel exposure; and assure that all operations required for DSC loading, closure, transfer, and storage are performed safely.	TMI-2 SAR	5.1
General	To comply with this policy (refers to as low as reasonably achievable [ALARA]), all levels of line management are accountable for radiological performance. The responsibility for compliance with the radiological protection requirements and for minimizing personnel radiation exposure begins at the worker level and broadens as it progresses upward through the line organization. Line managers are responsible for taking all necessary actions to ensure that requirements are implemented and that performance is monitored and corrected as necessary. Radiological control technicians (RCTs) assist line management by routinely evaluating and monitoring all radiological conditions. Also, RCTs oversee activities to ensure that all reasonable precautions are taken by personnel.	TMI-2 SAR	7.1.1
General	Radiological monitoring and contamination control at the ISFSI will be performed to ensure that radiation exposure and release limits contained in 10 CFR Part 20 will not be exceeded. The ISFSI will be added to the existing radiological control program which monitors, as appropriate, radiation levels, contamination levels, and airborne radioactivity.	TMI-2 SAR	7.3.4

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 28 of 31
---	---

Step	Basis	Source	Citation
2.2	The lower explosive limit for hydrogen gas is 5% by volume. The hydrogen concentration inside each DSC must not exceed 0.5% by volume. This TS limit protects against potential explosive conditions.	TMI-2 SAR	8.2.8
2.3	All waste produced by the TMI-2 ISFSI is handled and disposed of in accordance with the existing procedures for handling waste. INL has existing facilities to treat and dispose both liquid and solid waste.	TMI-2 SAR	6.0, 6.4, 6.5
2.5	The surface dose rate of each HSM rear access door shall not exceed 100 mrem/h (gamma and neutron). If these rates are exceeded, the cause of the dose rates must be evaluated within 7 days and corrective action must be taken to restore the dose rates within limits within 30 days.	TMI-2 TS  Procedure hazard analysis	3.2.2
2.5	The surface dose rate of each HEPA filter housing shall not exceed 1,200 mrem/h (gamma and neutron). If these rates are exceeded, the cause of the dose rates must be evaluated within 7 days and corrective action must be taken to restore the dose rates within limits within 30 days. These checks must be performed monthly during the first year, quarterly during the second through fifth years, and annually thereafter.	TMI-2 TS  Procedure hazard analysis	3.2.2
2.6	If the hydrogen concentration exceeds 0.5%, purge the DSC within 7 days until the hydrogen concentration is within limits AND replace the HEPA filters for the DSC within 24 hours after the DSC purge operation is complete. (TS 3.2.3) Purging is completed per TPR-7069 “DSC Purging and HEPA Filter Changeout.”	TMI-2 TS	3.2.3

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 29 of 31
---	---

Step	Basis	Source	Citation
2.7 4.5 Appendix A, Appendix C, 1 1.2.1 1.5.2 1.5.4 1.5.5.1 1.5.5.2 1.5.5.3.1 1.5.5.3.2	<p>A leak check of the vent housing double metallic seals on each DSC containing TMI-2 canisters must be performed within 7 days after insertion into the HSM and every 5 years during storage. The leak rate of the vent housing seals shall not exceed <math>1 \times 10^{-2}</math> standard cc/sec. If the leak rate of the metallic C-seal exceeds <math>1 \times 10^{-2}</math> standard cc/sec, then a contamination survey at the affected DSC-vent housing interface must be performed within 24 hours AND the metallic C-seals must be reseated or replaced AND a leak check performed within seven days.</p> <p><u>IF</u> the vent housing seal leak rate is not restored within 7 days,  <u>THEN</u> perform contamination surveys at the affected DSC-vent housing interface monthly AND submit report to NRC describing the condition, analysis, and corrective actions being taken within 90 days.</p> <p><u>IF</u> the metallic seals are replaced with double elastomeric seals,  <u>THEN</u> submit a report to the NRC describing the condition, analysis, and actions being taken within 90 days AND perform a leak check of the elastomeric seals every year AND replace the elastomeric seals after five years in service.</p>	TMI-2 TS	3.1.1
2.9	Personnel must follow the applicable hazard mitigations detailed in Appendix D, Procedure Hazard Analysis.	Procedure hazard analysis	
3.1.3	Personnel who operate or supervise the operation of equipment identified as important to safety must be trained and certified under the NRC approved training program.	TMI-2 TS	5.3.2

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 30 of 31
---	---

Step	Basis	Source	Citation
3.1.4	Security must be notified of pending entrance into INTEC-1774, which is a secured facility.	Procedure hazard analysis	
3.1.5	<p>Consistent with the DOE-ID’s overall commitment to keep occupational radiation exposures ALARA, specific plans and procedures will be followed by ISFSI operations personnel to ensure that ALARA goals are achieved consistent with the intent of Regulatory Guides 8.8 (7.4) and 8.10 (7.5) and the requirements of 10 CFR Part 20.</p> <p>ICP Radiation Work Permit, must be completed and on hand or readily available and must designate the appropriate anti-clothing that must be worn during the operation.</p>	<p>TMI-2 SAR</p> <p>Procedure hazard analysis</p>	7.1.3
3.2.2	QA must verify proper specifications and inspections of all quality related equipment.	QA requirement	
4.1 Appendix A	The surface dose rate of each HSM rear access door shall not exceed 100 mrem/h (gamma and neutron). If these rates are exceeded, the cause of the dose rates must be evaluated within 7 days and corrective action must be taken to restore the dose rates within limits within 30 days.	TMI-2 TS	3.2.2
4.2 4.7.1 Appendix B 1.1.3 1.1.4 1.2.3 1.2.4 1.7.8	Whenever anti-seize lubricant is applied or equipment lubricated with anti-seize is handled, protective eyeglasses with side shields and leather or rubber gloves must be worn.	<p>Exposure Assessment 1278.00</p> <p>Procedure hazard analysis</p>	
4.2.1 4.2.2	The maintenance program involves inspection of the vent access doors to ensure they remain operational and no blockage occurs in the vent areas.	TMI-2 SAR	4.3.11

<b>PERIODIC HSM MONITORING, DSC SAMPLING, AND FILTER HOUSING LEAK TESTS</b>	Identifier: TPR-7066 Revision*: 19 Page: 31 of 31
---	---

Step	Basis	Source	Citation
4.3.2	The surface dose rate of each HEPA filter housing shall not exceed 1,200 mrem/h (gamma and neutron). If these rates are exceeded, the cause of the dose rates must be evaluated within 7 days and corrective action must be taken to restore the dose rates within limits within 30 days. These checks must be performed monthly during the first year, quarterly during the second through fifth years, and annually thereafter.	TMI-2 TS	3.2.2
4.3.2 Appendix A	Perform a radiation survey at the vent of each DSC. Frequency: Monthly during first year Quarterly during second through fifth years Annually thereafter. <b>NOTE:</b> <i>Frequency shall be determined by the number of years after DSC insertion into HSM or the most recent entry into Condition A.</i>	TMI-2 TS	3.2.2
4.3.4 4.3.5 NOTE 1 Appendix A	Results of contamination survey are used for the annual REMP report required by TS 5.5.3c.	TMI-2 TS	5.5.3
Appendix B, 1.2.4	The torque value for the aluminum sample covers is 13 + 5 - 0 ft • lb per Drawing 623548. 15 ft • lb provides a single value at which to torque that is within this range.	Drawing 623548	
Appendix B, 1.6.3 1.7.6	Verifying the low flow alarm after the sample is a recommendation of EDF-4771	EDF-4771	Section 4
Appendix B, 1.6.5	A sample time of 10 minutes is required to empty the void spaces of all oxygen and to obtain a representative sample.	EDF-4771	Section 4