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S71
1054.10
Revision 2
08/24/82

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THREE MILE ISLAND NUCLEAR STATION
UNIT NO. 2 EMERGENCY PLAN IMPLEMENTING PROCEDURE 1054.10
ONSITE/OFFSITE RADIOLOGICAL MONITORING

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Unit 2 Staff Recommends Approval

Approval _____ Date 8/12/82
Cognizant Dept. Head

Unit 2 PORC Recommends Approval

_____ Date 8/21/82
Chairman of PORC

Unit 2 Superintendent Approval

_____ Date 8/24/82

Mgr QA Approval

NA Date _____

NRC Approval

NA Date _____

Document ID: 0009w

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THREE MILE ISLAND NUCLEAR STATION
UNIT 2 EMERGENCY PLAN IMPLEMENTING PROCEDURE 1054.10
ONSITE/OFFSITE RADIOLOGICAL MONITORING

1.0 PURPOSE

The purpose of this procedure is to provide guidance to radiation monitoring teams for adequate onsite and offsite monitoring of radiation levels, following the accidental release of radioactive materials to the environment. The procedure establisnes monitoring team actions to obtain data required to make valid Radiological Assessments. The Radiation Monitoring Team is responsible for implementing this procedure.

2.0 ATTACHMENTS

2.1 Attachment I, Radiation Survey Log

2.2 Attachment II, Dosimeter Log

2.3 Attachment III, Airborne Particulate Sample Nomograph

3.0 EMERGENCY ACTION LEVELS

3.1 This procedure is to be initiated upon any of the following conditions:

a) Alert (as determined by Alert procedure 1054.2)

b) Site Emergency (as determined by Site Emergency Procedure 1054.3)

c) General Emergency (as determined by General Emergency Procedure 1054.4)

d) As directed by the Radiological Assessment Coordinator.

4.0 EMERGENCY ACTIONS

NOTE: Utilize appropriate radiological precautions when approaching 300 mRem whole body gamma exposure. Utilize appropriate respiratory protection in environments where airborne radioactivity levels exceed 1E-9 $\frac{\mu ci}{ml}$.

INITIALS

____4.1 Proceed to Unit 2 security trailer (Search 2) or EACC and obtain a portable radio, magnetic antenna, and pager. Ensure that both the "Hailer" switch and the "SLM" switch are in the off position if the radio is so equipped.

____4.2 Perform radio check with the (RAC). Inform the RAC of your pager number. (Use channel 3.)

____4.3 Proceed to an assigned emergency vehicle. Pick up emergency equipment (emergency kit, instrument kit, emergency respirators, siphon kit, teletector [on site team only], air sampler, and generator) at the South vehicle gate near TLD Building/EACC.

____4.4 Verify seals on the emergency kit and then operationally check radiation meters and portable air sampler. (Battery Check, air flow check, Visual Inspection.) Issue dosimeters to team members. Check the fuel level in the portable generator and operationally test it by running it momentarily.

____4.5 If emergency kit seals were broken, conduct a brief inventory of equipment.

____4.6 Ensure your dose rate meter is turned on from the time you complete operational check.

____4.7 Proceed to the designated monitoring location as directed by the RAC. (See map or directions in emergency kit for specifically designated monitoring point locations.)

____4.8 Perform dose rate surveys and airborne radioactivity monitoring as directed by the RAC (in accordance with), at designated monitoring locations. Record all dose rate and air sample results on Attachment I.

____4.9 Call in sampling results to the RAC and await further instructions.

____4.10 If radio communications are lost and the pager is activated, attempt to re-establish radio communications with the RAC. If radio communications cannot be re-established and if you are onsite, drive to the nearest plant page system phone or telephone and contact the RAC, or attempt to contact another monitoring team to relay information. If offsite, drive to the nearest telephone and call the RAC.

____4.11 Minimize personnel exposures by moving out of areas of high radiation when recording data or awaiting further instructions by the RAC.

____4.12 Ensure all team members keep track of their exposure on Attachment II.

____4.13 Maintain all completed Attachments I for permanent records. Return all completed forms to Rad Con coordinator at the OSC.

_____4.14 When the Environmental Assessment Command Center (EACC) is activated and takes control of offsite monitoring, begin reporting offsite surveys to the EACC.

5.0 FINAL CONDITIONS

_____5.1 Radiation monitoring established and being maintained as required.

ATTACHMENT I

Location/ Number	Date	Time	Open Window $\beta\gamma$mR/hr	Closed Window γmR/hr	Duration of Meter Reading	True β* mR/hr.	CPM(gross)	CPM(bkgd)	Vol (ft_3)	Activity (μCi/cc)

* $(\beta\gamma-\gamma) \times C_F$ = mRad/hr (true β^-)

Radiac Inst. S/N and Type _____ Cal. Due _____ Beta Correction Factor C_F _____
Air Sampler S/N _____ Flow Rate (SCFM) _____
Counting Inst. Used _____ S/N _____ Cal. Due _____
Date _____ Tech. _____

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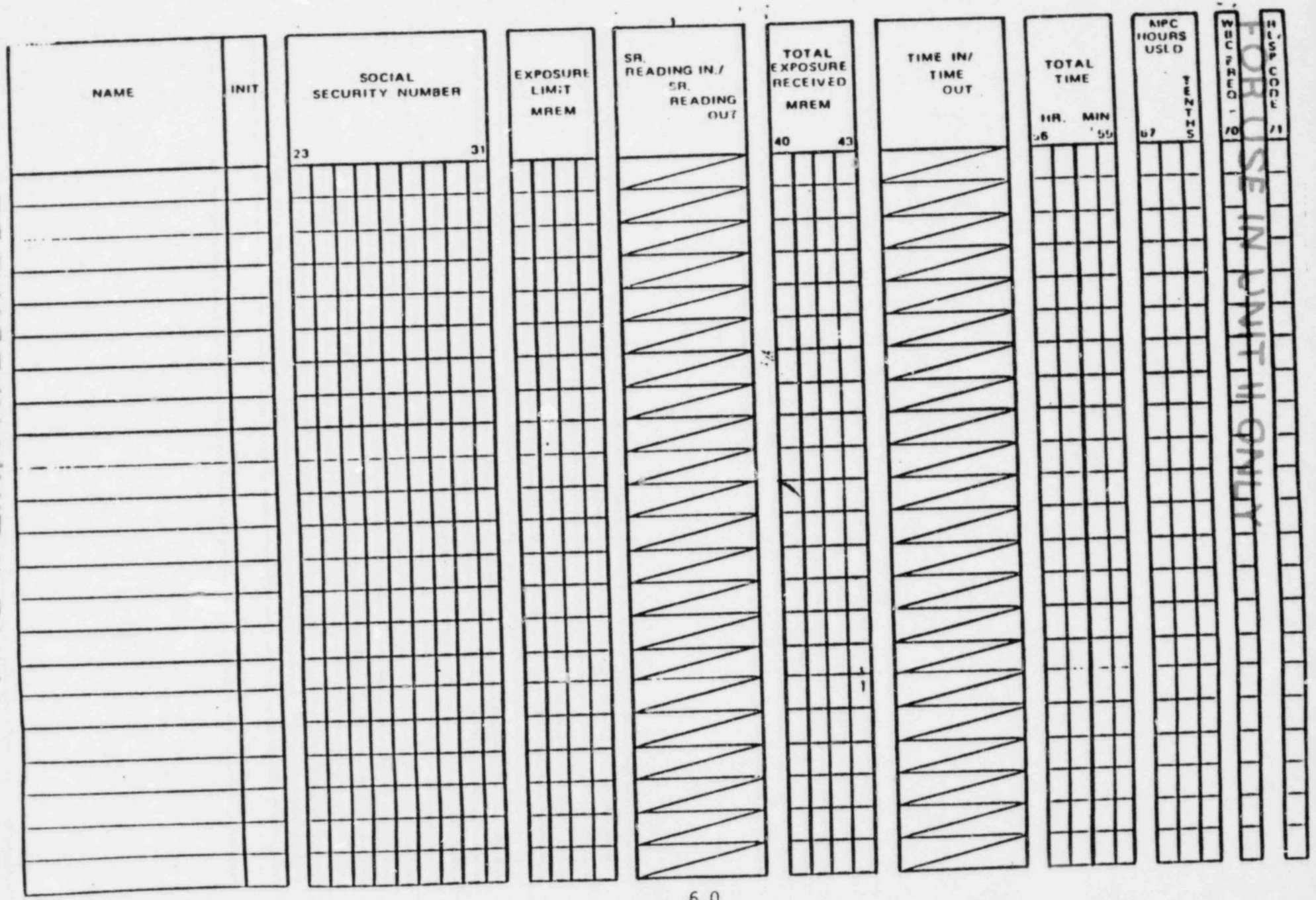
ATTACHMENT 1
DOSIMETER LOG

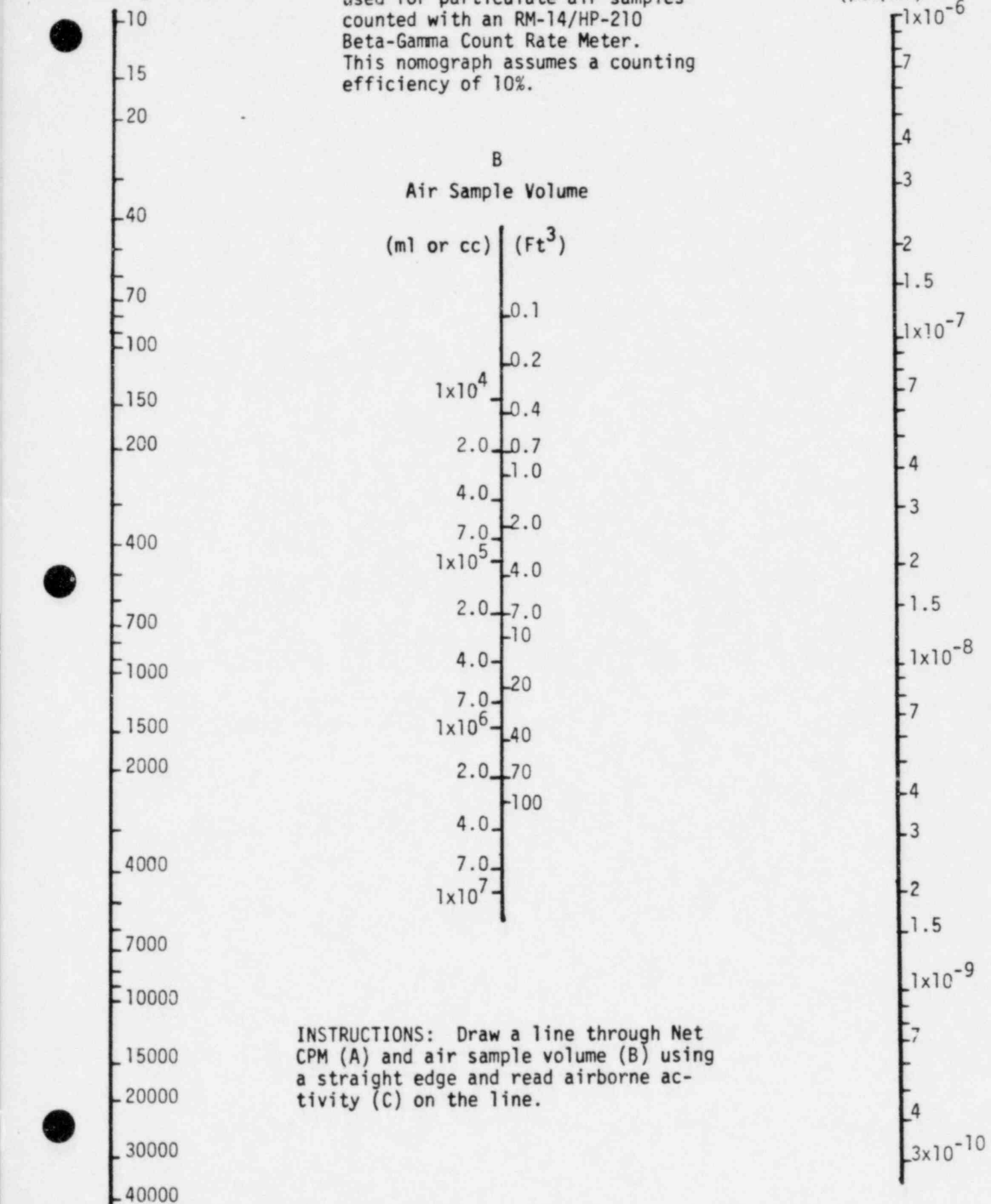


ATTACHMENT III

AIRBORNE PARTICULATE SAMPLE NOMOGRAPH

1054.10
C Revision 2

Note: This nomograph is to be used for particulate air samples counted with an RM-14/HP-210 Beta-Gamma Count Rate Meter. This nomograph assumes a counting efficiency of 10%.



INSTRUCTIONS: Draw a line through Net CPM (A) and air sample volume (B) using a straight edge and read airborne activity (C) on the line.

1057
Revision 3
08/25/82

Office of Nuc Reactor Reg.

THREE MILE ISLAND NUCLEAR STATION
UNIT NO. 2 ADMINISTRATIVE PROCEDURE 1057
EMERGENCY EQUIPMENT READINESS

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Unit 2 Staff Recommends Approval

Approval _____ Date 8/10/82
Cognizant Dept. Head

Unit 2 PORC Recommends Approval

W J Marshall Date 8/13/82
Chairman of PORC

Unit 2 Superintendent Approval

_____ Date 8/25/82

Mgr QA Approval

_____ Date 8/23/82

NRC Approval

NA Date _____

Document ID: 0016b

THREE MILE ISLAND NUCLEAR STATION
UNIT NO. 2 ADMINISTRATIVE PROCEDURE 1057
EMERGENCY EQUIPMENT READINESS

Table of Contents

List of Enclosures

Table of Contents (Cont'd)

1.0 GENERAL

1.1 Purpose

This procedure delineates the requirements to maintain availability and reliability of Emergency Equipment.

1.2 Scope

This procedure applies to the emergency equipment designated for use in implementing the Emergency Plan.

NOTE: Fire fighting emergency equipment used in implementing the Emergency Plan is listed in Procedure No. 2104-6.1, "Fire Protection System." Inventories and operational testing of this equipment is performed under the Operations Surveillance, Technical Specification, and Preventive Maintenance Programs and is beyond the scope of this procedure.

NOTE: Emergency Plan and Implementing Procedure binders issued by Document Controls are not listed in this procedure as they are maintained by the Document Controls Group in accordance with Administrative Procedure 1001.

1.3 References

1.3.1 TMI Unit 2 Emergency Plan.

1.3.2 Radiological Controls Procedure 1742, Operation and Calibration of Eberline RM-14 Beta-Gamma Survey Meter.

1.3.3 Radiological Controls Procedure 1758, Operation and Calibration of Portable Air Samplers.

1.3.4 Radiological Controls Procedure 1762, Operation and Calibration of the RO-2.

1.3.5 Radiological Controls Procedure 1772, Dosimeter Calibration and Leak Test.

1.3.6 Radiological Controls Procedure 4052, Selection, Prescription and use of Respiratory Protective Equipment.

1.3.7 Procedure 2104-6.1, Fire Protection System.

1.3.8 Administrative Procedure 1001, Document Control.

1.3.9 Radiological Controls Procedure 4053, Inspection, Maintenance, and Repair of Respiratory Protective Equipment.

1.3.10 RPSP 1616.3, Respiratory Cleaning and Testing Facility.

2.0 RESPONSIBILITIES

2.1 The Director - Radiological Controls has the ultimate responsibility for all radiological controls emergency equipment and its availability and reliability.

2.2 The Manager - Radiological Controls Field Operations, or his designee, shall assign personnel to perform inventory and calibration checks on the emergency kits and lockers under his jurisdiction.

2.3 The Radiological Controls Field Operations Foreman shall ensure that the following items are performed during an inventory:

2.3.1 Complete all inventory checklists for that kit/locker.

2.3.2 Replace all missing items.

2.3.3 Ensure all individual procedures contained in kits/lockers are controlled copies.

2.3.4 Verify calibrations, perform operational checks, note discrepancies on inventory checklist, and notify the Radiological Controls Field Operations Manager or Foreman of these discrepancies and/or broken locks or seals.

2.3.5 Emergency instrumentation removed from lockers/kits shall be replaced prior to end of working shift except during actual emergencies.

2.4 The Support Services Supervisor, or his designee, shall conduct the required inspections for all respiratory protective equipment. This will be accomplished by ensuring completion of the following:

1. Replace any equipment which is missing or requires maintenance.
2. Inspect each item per the requirements of Radiological Controls Procedure 4053 and RPSP 1616.3.
3. Place an Emergency Respiratory Equipment Inspection tag with each piece of equipment found acceptable.
4. Complete the Inventory Checklist for Full Face Respirators with Canisters (Enclosure XII), the Inspection of Emergency Respiratory Equipment for SCBA's (Enclosure X), and the Inspection of Emergency Respiratory Equipment for SCBA Cylinders (Enclosure XI). Retain the originals for review and filing by the Support Services Supervisor, with copies to the Site Emergency Preparedness Manager and the Supervisor Respiratory Protection.

2.5 The Radiological Controls Field Operations Foreman shall be notified of all emergency equipment usage at the end of its usage.

3.0 REQUIREMENTS

3.1 Inspections and Calibrations

3.1.1 Emergency kits/lockers shall have inventory and calibration checks performed quarterly, with the exception of respiratory protection equipment which shall be checked

after each use and once each calender month. Portable radiation monitoring, air sampling and other designated equipment shall be operationally checked per Enclosure VIII monthly.

3.1.2 Prior to removing an instrument for repair/calibration from any emergency equipment storage location, an alternate equivalent instrument shall be provided.

3.1.3 Calibrations of emergency instrumentation shall be performed in accordance with references 1.3.2 through 1.3.5.

3.1.4 Emergency lockers/kits shall be visually inspected for lock/seal integrity monthly. Lockers or kits with suspect integrity shall be inventoried. Emergency lockers/kits shall be inventoried after each use including use for training.

NOTE: Lock/seal integrity shall be checked prior to opening lockers/kits for operational check of portable radiation monitoring and air sampling equipment. Lockers/kits may be resealed immediately after operational checks are complete and equipment returned.

3.1.5 Perform an inventory/inspection or calibration at any time as directed by the Manager - Radiological Controls Field Operations.

3.2 Details

3.2.1 Emergency equipment and/or radiac instruments shall be located in the following areas in accordance with the Unit 2 Emergency Plan, to allow protection of Emergency Personnel and availability of equipment:

a. Control Room

b. Radiological Controls Lab (HP-2)

c. Onsite/Offsite Monitoring Kits

d. Search Two Trailer

e. Ambulance

f. Alternate near Site Emergency Operations Facility (AEOF)

g. Near Site Emergency Operations Facility (EOF)

h. Unit 2 Warehouse Building 3

i. Fire Brigade Vehicle

j. Environmental Controls Office (44 Luke Dr., Middletown, PA)

NOTE: The AEOF and the EOF are inventoried by Unit 1. The Environmental Controls Office is inventoried by the Environmental Controls Group. Checklists for these inventories are located in Administrative Procedure 1053.

3.2.2 Inventories shall only be considered complete when all required items are returned to the kit/locker, all

instruments in the kit/locker are within calibration and all operational checks on equipment/instruments are complete.

3.2.3 All emergency kits and lockers shall have seals or padlocks, as appropriate.

3.2.4 Key control for all emergency kits/lockers shall be maintained by the Radiological Controls Department with duplicates maintained in the Emergency Control Center (Control Room/Shift Supervisors Office).

3.2.5 All completed inventory checklists shall be returned to the Radiological Controls Field Operations Foreman/ Support Services Supervisor, as appropriate, for review and filing. A copy of the inventories shall be sent to the Site Emergency Preparedness Manager and Supervisor-Respiratory Protection (Respiratory Checklists Only).

3.3 Final Conditions

3.3.1 All equipment/instruments have been inventoried, and inventory checklists have been reviewed by the Radiological Controls Field Operations Foreman or Support Services Supervisor, as appropriate, and copies forwarded to the Site Emergency Preparedness Manager and the Supervisor-Respiratory Protection (Respiratory Checklists Only).

3.3.2 Used kits/lockers are reinventoried, resupplied and locked/sealed.

ENCLOSURE I
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Control Room Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Protective Clothing (Booties and Gloves)	25 Sets		N/A	N/A	N/A
REMP Map	1		N/A	N/A	N/A
Site Map	1		N/A	N/A	N/A
Isopleth Overlays (B, D, and F Stability)	1 each		N/A	N/A	N/A
Directions to Monitoring Stations	1 Book		N/A	N/A	N/A
Procedures - EPIP 1054.7, 1054.10, 1004.7	1 each		N/A		N/A
Tablets, Pens, Pencils, Wax Pencils	4 each		N/A	N/A	N/A
Flashlight with Spare Bulb and Batteries	1		N/A	N/A	
Scissors	1 pair		N/A	N/A	N/A
Cotton Swabs	1 bag		N/A	N/A	N/A
Air Sample Filters	2 boxes		N/A	N/A	N/A
Disc Smears	2 boxes		N/A	N/A	N/A

REMARKS:

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE I (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Control Room Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Smear/Air Sample Envelopes	1 box		N/A	N/A	N/A
Iodine Cartridges (Silver Zeolite)	5 Min/25 Max		N/A	N/A	N/A
Air Sampler (H 809 V or Equiv.)	1				
Dose Rate Meter (RO-2 or Equiv.)	1				
RM-14/HP-210 w/Sample Holder	1				
Planchets	5		N/A	N/A	N/A
Self Reading Dosimeters (Low Range)	5		N/A		N/A
Self Reading Dosimeters(High Range)	5		N/A		N/A
Dosimeter Charger	1			N/A	
Line Printer Paper	1 box		N/A	N/A	N/A
TRS-80 Video Display	1			N/A	*
TRS-80 Key Board	1			N/A	*
TRS-80 Expansion Interface	1			N/A	*
Power Line Filter	1		N/A	N/A	*

REMARKS: * Quarterly operational check consists of running a set of dose projections, as per ENCLOSURE X. (This should be done by a RAC qualified person.)

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE I (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Control Room Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
TRS-80 Tape Recorder w/Cable	1			N/A	*
TRS-80 Line Printer w/Cable	1			N/A	*
Dose Projection Cassette	1		N/A	N/A	*
Rad. Warning Signs and Ribbon	5/50'		N/A	N/A	N/A
Radiological Tape	2 Rolls		N/A	N/A	N/A
Masking Tape	5 Rolls		N/A	N/A	N/A
Inventory Checklist (Blank)	As Required		N/A		N/A

REMARKS: * Quarterly operational check consists of running a set of dose projections, as per ENCLOSURE X. (This should be done by a RAC qualified person.)

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE II
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Unit 2 HP Lab Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Protective Clothing (Full Set)*	10		N/A	N/A	N/A
Air Sample Filters	2 boxes		N/A	N/A	N/A
Disc Smears	2 boxes		N/A	N/A	N/A
Smear/Air Sample Envelopes	2 boxes		N/A	N/A	N/A
Iodine Cartridges (Silver Zeolite)	5 Min/25 Max		N/A	N/A	N/A
Dose Rate Meter (RO-2 or Equiv.)	2				
RM-14/HP-210	1				
Teletector	1				
Self Reading Dosimeters (Low Range)	10		N/A		N/A
Self Reading Dosimeters(High Range)	10		N/A		N/A
Dosimeter Charger	1			N/A	
Flash Light With Spare Bulb and Batteries	1		N/A	N/A	

REMARKS: * Full set consists of cloth coveralls, hood, cotton gloves, rubber gloves, plastic booties and rubber over shoes.

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE II (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Unit 2 HP Lab Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Tape (Masking or Duct)	5 Rolls		N/A	N/A	N/A
Site Map	1		N/A	N/A	N/A
Dose Projection Cassette	1		N/A	N/A	*
Air Sampler	1				
Inventory Checklist (Blank)	As Required		N/A		N/A

REMARKS: * Quarterly operational check consists of running a set of dose projections.

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE III
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Onsite/Offsite Monitoring Kits Type: Emerg. Kit ☐ Inst. Kit ☒ Emerg. Locker ☐ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Dose Rate Meter (RO-2 or Equiv.)	1/Kit				
RM-14/HP-210 With Sample Holder	1/Kit				
Portable Air Sampler (H 809 V or Equiv.)	1 Kit				
Teletector	1 (Onsite Kit Only)				
Self Reading Dosimeters (Low Range)	5/Kit		N/A		N/A
Self Reading Dosimeters(High Range)	5 (Onsite Kit Only)		N/A		N/A
Dosimeter Charger	1/Kit			N/A	
Inventory Checklists (Blank)	As Required		N/A		N/A

REMARKS: Two (2) Kits, each containing the equipment listed, will be located in the Vehicle Gate Emergency Locker.

Emergency Kit Locked or Sealed: _____
Signature

ENCLOSURE III (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Onsite/Offsite Monitoring Kits Type: Emerg. Kit [X] Inst. Kit [ ] Emerg. Locker [ ] Inventory Date: _____

Inventory performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
REMP Map	1 (Offsite Kit Only)		N/A	N/A	N/A
Site Map	1 (Onsite Kit Only)		N/A	N/A	N/A
Directions to Monitoring Locations	1 Book/Kit		N/A	N/A	N/A
Procedures EPIP 1054.10, 1054.12, RCP 4101, and 4104	1 Each/Kit		N/A		N/A
Tablets, Pens, Pencils, Wax Pencils	4 Each/Kit		N/A	N/A	N/A
Air Sample Filters	2 Boxes/Kit		N/A	N/A	N/A
Disc Smears	2 Boxes/Kit		N/A	N/A	N/A
Smear/Air Sample Envelopes	100/Kit		N/A	N/A	N/A
Planchets	5/Kit		N/A	N/A	N/A
Iodine Cartridges (Silver Zeolite)	5 Min/25 Max/ Kit		N/A	N/A	N/A
Radiological Warning Signs and Ribbon	5/50' (Onsite Kit Only)		N/A	N/A	N/A
Surgeon's Gloves	1 Box/Kit		N/A	N/A	N/A
Tape (Masking or Duct)	2 Rolls/Kit		N/A	N/A	N/A

REMARKS:

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE III (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Onsite/Offsite Monitoring Kits Type: Emerg. Kit [X] Inst. Kit [ ] Emerg. Locker [ ] Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Cotton Swabs	2 Bags/Kit		N/A	N/A	N/A
Absorbant Towels	1 Bundle/Kit		N/A	N/A	N/A
Scissors	1 Pair/Kit		N/A	N/A	N/A
Water Sample Bottles	5/Kit		N/A	N/A	N/A
Gasoline Siphon Kit	1/Kit		N/A	N/A	N/A
Portable Gasoline Powered Generators*	4 Total			N/A	
1054.10 Att. I	10/Kit		N/A		N/A
Flashlight With Spare Bulb and Batteries	1/Kit		N/A	N/A	
Inventory Checklists (Blank)	As Required		N/A		N/A

REMARKS: *Stored in Locker
Two (2) Kits, each containing the equipment listed will be located at the Vehicle Gate.

Emergency Kit Locked or Sealed: _____
Signature

ENCLOSURE IV
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Search Two Trailer Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Two Way Radio With Magnetic Antennas	3			N/A	
Telephone Beepers	3			N/A	
Emergency TLD's/E.R. Badges (In Gray Boxes)	50		N/A	N/A	N/A
TLD Issuance Forms (1054.19 Att.I)	10		N/A		N/A
Fire and Ambulance Crew Roster	1		N/A	N/A	N/A
Inventory Checklist (Blank)	As Required		N/A		N/A

REMARKS: Ensure radios are connected to battery chargers and on "trickle" charge.

Emergency Kit Locked or Sealed:

_____
Signature

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ENCLOSURE V
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Ambulance Kits * Type: Emerg. Kit [X] Inst. Kit [ ] Emerg. Locker [ ] Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Polyethylene Sheeting (4' x 8')	2/Kit		N/A	N/A	N/A
Polyethylene Bags (asst. sizes)	10/Kit		N/A	N/A	N/A
Rad Warning Signs/Ribbon	5/50'/Kit		N/A	N/A	N/A
Pens/Pencils/Note Pads	2 ea./Kit		N/A	N/A	N/A
Disc Smears	2 Boxes/Kit		N/A	N/A	N/A
Paper Coveralls	5 sets/Kit		N/A	N/A	N/A
Surgeon's Gloves w/cotton liners	20 pairs/Kit		N/A	N/A	N/A
Disposable Booties	10 pairs/Kit		N/A	N/A	N/A
Blanket	1/Kit		N/A	N/A	N/A
Masking Tape	2 Rools/Kit		N/A	N/A	N/A
Inventory Checklists (Blank)	as required		N/A		N/A

REMARKS: * One Ambulance kit is stored in the Unit II H.P. Lab and One Ambulance Kit is stored in the Site Ambulance.

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE VI
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Unit 2 Warehouse-Bldg 3 Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
REMP Map	1		N/A	N/A	N/A
Site Map	1		N/A	N/A	N/A
Procedures EPIP 1054.20, 1054.36	1 each		N/A		N/A
Tablets, Pens, Pencils, Wax Pencils	4 each		N/A	N/A	N/A
Polyethylene Sheeting (8' x 16' min)	2		N/A	N/A	N/A
Disc Smears	2 Boxes		N/A	N/A	N/A
Smear Envelopes	1 Box		N/A	N/A	N/A
RM-14/HP-210	1				
E-520 or Equiv.	1				
Masking Tape	5 Rolls		N/A	N/A	N/A
Radiological Warning Signs	5		N/A	N/A	N/A
Absorbant Towels	2 Bundles		N/A	N/A	N/A
Flashlight With Spare Bulb and Batteries	1		N/A	N/A	

REMARKS:

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE VI (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Unit 2 Warehouse-Bldg. 3 Type: Emerg. Kit ☐ Inst. Kit ☐ Emerg. Locker ☒ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Megaphones	2			N/A	
1054.36 ATTACHMENT I	150		N/A		N/A
1054.36 ATTACHMENT III	500		N/A		N/A
Emergency Notification Maps	3		N/A	N/A	N/A
1054.5 ATTACHMENT II 1054.20 ATTACHMENTS II AND III	50 ea.		N/A		N/A
Inventory Checklists (Blank)	as required		N/A		N/A

REMARKS:

Emergency Kit Locked or Sealed:

_____ _____
Signature

FOR USE IN UNIT II ONLY

ENCLOSURE VII
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Fire Brigade Vehicle Type: Emerg. Kit ☐ Inst. Kit ☒ Emerg. Locker ☐ Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Dose Rate Meter (RO-2 or Equiv.)	1				
RM-14/HP-210	1				
Portable Air Sampler - 12 VDC	1				
Telector	1				
Dosimeters (Low Range)	5		N/A		N/A
Dosimeters (High Range)	5		N/A		N/A
Dosimeter Charger	1			N/A	
Inventory Checklists (Blank)	As Required		N/A		N/A

REMARKS:

Emergency Kit Locked or Sealed:

_____
Signature

FOR USE IN UNIT II ONLY

ENCLOSURE VII (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Fire Brigade Vehicle Type: Emerg. Kit [X] Inst. Kit [ ] Emerg. Locker [ ] Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Site Map	1		N/A	N/A	N/A
Procedures RCP 4101, 4104	1 each		N/A		N/A
Tablets, Pens, Pencils, Wax Pencils	4 each		N/A	N/A	N/A
Flashlight With Spare Bulb and Batteries	1		N/A	N/A	
Polyethylene Sheeting (8' x 16' min.)	2		N/A	N/A	N/A
Disc Smears	2 Boxes		N/A	N/A	N/A
Air Sample Filters	2 Boxes		N/A	N/A	N/A
Smear/Air Sample Envelopes	1 Box		N/A	N/A	N/A
Planchets	5		N/A	N/A	N/A
Iodine Cartridges (Silver Zeolite)	5 min/25 max		N/A	N/A	N/A
Radiological Warning Signs/ Ribbon	5/50'		N/A	N/A	N/A
Tape (Masking or Duct)	5 Rolls		N/A	N/A	N/A

REMARKS:

Emergency Kit Locked or Sealed:

_____
Signature

ENCLOSURE VII (Cont'd)
INVENTORY CHECKLIST - EMERGENCY EQUIPMENT

Kit Location: Fire Brigade Vehicle Type: Emerg. Kit [X] Inst. Kit [ ] Emerg. Locker [ ] Inventory Date: _____

Inventory Performed By: _____ Reviewed: _____ Date: _____

ITEM	NUMBER REQUIRED	NUMBER PRESENT	S/N	CAL DATE/ REV. NO.	OPERATIONAL CHECK
Radiological Tape	2 Rolls		N/A	N/A	N/A
Ziplock Bags	20		N/A	N/A	N/A
Water Sample Bottles	5		N/A	N/A	N/A
Absorbant Towels	2 Bundles		N/A	N/A	N/A
Protective Clothing - Full Set*	8		N/A	N/A	N/A
Plastic Booties	25 pair		N/A	N/A	N/A
Surgeon's Gloves	1 Box		N/A	N/A	N/A
Rubber Gloves	1 Box		N/A	N/A	N/A
Inventory Checklists (Blank)	As Required		N/A		N/A

REMARKS: * Full Set consists of cloth coveralls, hood, cotton gloves, rubber gloves, plastic booties and rubber overshoes.

Emergency Kit Locked or Sealed:

_____
Signature

FOR USE IN UNIT II ONLY

ENCLOSURE VIII

Operational Check of Emergency Equipment

NOTE:	Initial each step as operational check of emergency equipment is performed.

Monthly (Initial as each instrument is checked Sat.)

Battery Check and Source Check of Portable Instrument on

Location and Instrument Type		Serial No.	Battery	Source Check	Initials
CONTROL ROOM	RO-2 or Equiv.				
	RM-14				
UNIT 2 HP LAB	RO-2 or Equiv.				
	RO-2 or Equiv.				
	RM-14				
	Teletector				
ONSITE MONITORING KIT	RO-2 or Equiv.				
	RM-14				
	Teletector				
OFFSITE MONITORING KIT	RO-2 or Equiv.				
	RM-14				
UNIT 2 WAREHOUSE RM-14					
	E-520 or Equiv.				
FIRE BRIGADE VEHICLE	RO-2 or Equiv.				
	RM-14				
	Teletector				

DATE COMPLETED: _____ REVIEWED BY: _____

ENCLOSURE VIII (Cont'd)

Air Sampling Equipment Check

Monthly:

1. Load Air Sampler with a cartridge and filter paper.
2. Turn Air Sampler on and verify flow.
3. Unload Air Sampler and return it to locker/kit.

Location of Air Sampler	Serial No.	Op Check	Initial
Control Room			
Unit 2 HP Lab			
Onsite Monitoring Kit			
Offsite Monitoring Kit			
Fire Brigade Vehicle			

Date Completed:_____ Reviewed By:_____

Radio Surveillance

Monthly

Radio Checks: Check operability by establishing communication with Control Room. Upon completion, reconnect the radios to the battery chargers and place on "trickle" charge as applicable.

Serial No.	Communication	Initials

Date Completed:_____ Reviewed By:_____

ENCLOSURE VIII (Cont'd)

Other Equipment

Monthly

For other battery powered equipment such as flashlights, megaphones, and dosimeter chargers; insert batteries, energize, and check for normal operation.

NOTE: When an Operational Check is satisfactorily performed, enter "Sat" in the appropriate block of the inventory checklist. If a check is not satisfactory, enter "Unsat" in the appropriate block and enter any explanatory notes in the remarks section.

Radio Surveillance

Quarterly

Every quarter, remove batteries from radios and exchange with security. (Insure radios are plugged in to chargers and on "trickle" charge upon returning to locker). Check beepers by switching the units on individually and listening for the short intermittent beeping sound.

Radio Serial Number	Battery Exchanged	Beeper Checked	Initials

Date Completed:_____ Reviewed By:_____

Portable Gasoline Powered Generator Surveillance

NOTE: Electrical personnel shall accompany Radiological Control Personnel for operational check of Portable Gasoline Powered Generators.

Quarterly

1. Start generator and warm up per instructions listed on the machine.

2. Load generator by plugging in air sampler unit and turn air sampler unit on.

ENCLOSURE VIII (Cont'd)

3. With volt-ohm meter check output of second female plug. Voltage should be 120 V. AC ± 10 V.

4. Turn off Air Sampler and measure output voltage of female plug. Voltage should be 120 V. AC ± 10 V.

5. Remove Air Sampler Unit plug from generator. Remove volt-ohm unit from generator.

6. Shut down the generator as per instructions listed on the machine.

7. Return Portable Gasoline Powered Generator to cabinet.

Generator Serial Number	Voltage While Loaded	Voltage While Unloaded	Initials

Date Completed:_____ Reviewed By:_____

ENCLOSURE IX

Functional Test of the TRS-80 Computer System

1.0 Remove cover from the TRS-80 Enclosure/desk carefully by lifting upwards and clearing the CRT (device that resembles a television).

2.0 Ensure that the system is connected as per EPIP 1054.7 Appendix A.

3.0 Plugging in of the AC, "OPERATION" step 6 of Appendix A, using the TRS-80 Line filter should be in the configuration as follows.

3.1 The 2-AC cords from the back of the Expansion Interface should be plugged into sockets marked "CPU" and "EI".

3.2 The CRT AC cord should be plugged into the sockets marked MON.

3.3 The remaining AC cords should be plugged into the sockets marked "PERIPHERAL" starting from 1.

3.4 The AC cord from the TRS-80 Line feeder should be plugged into a properly grounded socket and put the "POWER" switch into the "ON" position.

3.5 Proceed with the remaining steps of Appendix A.

4.0 When the program is RUN (executed) the following should occur (note computer questions are in quotes your response is in capital letters remember to press the Enter key after your response):

"IS RECORDER WDS-1A IN SERVICE AND ON SCALE?" Y

"ENTER WIND DIRECTION FROM WDS-1A:?" 180

"ENTER WIND SPEED FROM WDS-1A:? 5

"IS RECORDER TR-1928 IN SERVICE AND ON SCALE?" Y

"ENTER DELTA - TEMPERATURE FROM TR-1928:?" -1

When display asks you to "SELECT RELEASE PATHWAY FROM MENU" enter 1

"ENTER TODAY'S DATE:" today's date (demo used 12/31/81)

"ENTER CURRENT TIME (24 HOUR CLOCK):" current time (1453)

"IS HP-R-219 IN SERVICE AND ON SCALE?" Y

"IS STATION VENT FLOW RECORDER (HP-P-219 (R-8)) IN SERVICE?" Y

"ENTER STATION VENT FLOW IN FT/MIN:?" 2000

"ENTER HP-R-219 NOBLE GAS READING IN CPM:?" 1000

"ENTER THE CURRENT HP-R-219 PARTICULATE CHANNEL READING IN CPM:?" 1000

"ENTER THE PARTICULATE CHANNEL READING FROM 10 MINUTES EARLIER IN CPM:?" 10

The display will return to the MENU Enter CHOICE 8

"ENTER THE ESTIMATED DURATION OF THE RELEASE IN HOURS. IF UNABLE TO ESTIMATE ENTER <2>:?" 2

The display will give data concerning isotopic ratios and:

"ENTER PERCENT CESIUM:?" 50

"ENTER PERCENT STRONTIUM:?" 50

The display then shows some of the results. Press <SPACE BAR>. More results; press <SPACE BAR>. The DOSES are now displayed press <SPACE BAR>.

"OUTPUT TO LINE PRINTER?" Y

Printout will now be produced

"USE SAME METEROLOGICAL DATA?"

5.0 The test is now complete. If you could not reach this point because of system malfunction check all wire connection. If this is not the problem then contact either Emergency Planning or Radiological Technial Support - Dose and Effluent Assessment.

6.0 Compare the printout obtained with sample attached. Except for the date and time, they should be identical and the test was satisfactory. If not, hit the BREAK button and repeat process from step 4.0.

7.0 If the printout still is different contact either Emergency Planning or Radiological Technical Support - Dose and Effluent Assessment.

8.0 Return the system to the condition and position it was found in.

Date Completed _____ Reviewed by _____

THREE MILE ISLAND UNIT II PROJECTED DOSE CALCULATIONS

DATE: 12/31/81 TIME: 1453

PLUME TOWARDS: 0 Degrees SECTOR: N

WIND SPEED: 5 MPH STABILITY CLASS: B

HP-R-219 STATION VENT SOURCE TERMS

STATION VENT FLOW: 141760CFM = 6.69E + 07 CC/SEC

NOBLE GAS: 8.56E-04 CI/SEC
PARTICULATES: 1.81E-07 CI/SEC

TOTAL SOURCE TERMS FOR UNIT II (INCLUDING EPICOR II)

NOBLE GAS: 8.56E-04 CI/SEC
PARTICULATES: 1.81E-07 CI/SEC

CALCULATED OFF-SITE DOSES FOR 2 HOUR ESTIMATED RELEASE

WHOLE BODY DOSE (NOBLE GAS)

EA	LPZ	5 MILE EPZ	10 MILE EPZ
6.93E-05 MREM	1.39E-06 MREM	4.66E-07 MREM	2.96E-07 MREM

BETA SKIN DOSE (NOBLE GAS)

5.77E-03 MREM	1.15E-04 MREM	3.88E-05 MREM	2.46E-05 MREM

BONE DOSE: ADOLESCENT (ASSUMING 50 PERCENT CS-137 AND 50 PERCENT SR-90)

4.92E-02 MREM	9.85E-04 MREM	3.31E-04 MREM	2.10E-04 MREM

ESTIMATED TIME OF ARRIVAL OF PLUME

5	24	60	120
MINUTES	MINUTES	MINUTES	MINUTES

ESTIMATED TIME TO EXCEED PAG'S = 4.06E + 04 HOURS BASED ON BONE DOSE RATE.

30.0

ENCLOSURE X

INSPECTION OF EMERGENCY RESPIRATORY EQUIPMENT

SELF CONTAINED BREATHING APPARATUS

Month _____
Year _____
Reviewed by: _____

KIT NUMBER	LOCATION	CYLINDER HYDRO DATE	CYLINDER PRESSURE	REGULATOR EQUIPMENT NUMBER	REGULATOR CALIBRATION DATE	FACEPIECE NUMBER	COMMENTS	UNIT INSPECTION DATE	UNIT INSPECTION SIGNATURE
32	Unit No. 2 Control Room								
33	Unit No. 2 Control Room								
34	Unit No. 2 Control Room								
35	Unit No. 2 Control Room								
36	Unit No. 2 Control Room								
37	Unit No. 2 Control Bldg., 331' elev. (adjacent Turb. Bldg. entrance)								
38	Unit No. 2 Control Bldg., 331' elev. (adjacent Turb. Bldg. entrance)								
39	Unit No. 2 Control Bldg., 305' elev. (adjacent Turb. Bldg. entrance)								
40	Unit No. 2 Control Bldg., 305' elev. (adjacent Turb. Bldg. entrance)								
41	Unit No. 2 Turbine Bldg., 305' elev. (near elevator)								
42	Unit No. 2 Turbine Bldg., 305' elev. (near elevator)								
43	Unit No. 2 Control Bldg., 281' elev. (base of east stairway)								
44	Unit No. 2 Control Bldg., 281' elev. (base of east stairway)								
45	Unit No. 2 Control Bldg., 305' elev. (outside relay room)								
46	Unit No. 2 Control Bldg., 305' elev. (outside relay room)								

ENCLOSURE X (Cont'd)

INSPECTION OF EMERGENCY RESPIRATORY EQUIPMENT

SELF CONTAINED BREATHING APPARATUS

Month _____
Year _____
Reviewed by: _____

KIT NUMBER	LOCATION	CYLINDER HYDRO DATE	CYLINDER PRESSURE	REGULATOR EQUIPMENT NUMBER	REGULATOR CALIBRATION DATE	FACEPIECE NUMBER	COMMENTS	UNIT INSPECTION DATE	UNIT INSPECTION SIGNATURE
47	Unit No. 2 Control Bldg. area, 305' elev. (personnel access hatch area)								
48	Unit No. 2 Control Bldg. area, 305' elev. (personnel access hatch area)								
49	Unit No. 2 Control Bldg. area, 305' elev. (equipment access hatch area)								
50	Unit No. 2 Control Bldg. area, 305' elev. (equipment access hatch area)								
51	Unit No. 2 Auxiliary Bldg., 305' elev. (adjacent elevator)								
52	Unit No. 2 Auxiliary Bldg., 305' elev. (adjacent elevator)								
53	Unit No. 2 Auxiliary Bldg., 280' elev. (adjacent elevator)								
54	Unit No. 2 Auxiliary Bldg., 280' elev. (adjacent elevator)								
55	Unit No. 2 Auxiliary Bldg., 328' elev. (adjacent elevator)								
56	Unit No. 2 Auxiliary Bldg., 328' elev. (adjacent elevator)								
57	Unit No. 2 Service Bldg., 305' elev. (outside Rad Con Office)								
58	Unit No. 2 Service Bldg., 305' elev. (outside Rad Con Office)								
59	Unit No. 2 Service Bldg., 305' elev. (outside Rad Con Office								
60	Unit No. 2 Auxiliary Bldg., 305' elev. (north wall)								
61	Unit No. 2 Auxiliary Bldg., 305' elev. (north wall)								

FOR USE IN UNIT II ONLY

ENCLOSURE X (Cont'd)

INSPECTION OF EMERGENCY RESPIRATORY EQUIPMENT

SELF CONTAINED BREATHING APPARATUS

Month _____
Year _____
Reviewed by: _____

KIT NUMBER	LOCATION	CYLINDER HYDRO DATE	CYLINDER PRESSURE	REGULATOR EQUIPMENT NUMBER	REGULATOR CALIBRATION DATE	FACEPIECE NUMBER	COMMENTS	UNIT INSPECTION DATE	UNIT INSPECTION SIGNATURE
62	Fire Brigade Truck								
63	Fire Brigade Truck								
64	Fire Brigade Truck								
65	Fire Brigade Truck								
66	Fire Brigade Truck								
67	Fire Brigade Truck								
68	Fire Brigade Truck								
69	Fire Brigade Truck								
70	Unit No. 2 Cir. Water Chlorinator								
71	Unit No. 2 Cir. Water Chlorinator								
72	Epicor II								
73	Epicor II								
74	Decon Compound Rad Con Trlr.								
75	Decon Compound Rad Con Trlr.								

FOR USE IN UNIT II ONLY

ENCLOSURE XI

Inspection of Emergency Respiratory Equipment
Self-Contained Breathing Apparatus Cylinders

Month _____
Year _____
Reviewed by: _____

NUMBER	LOCATION	HYDRO DATE	PRESSURE	COMMENTS	SIGNATURE	DATE
1	Unit 2 Control Room					
2	Unit 2 Control Room					
3	Unit 2 Control Room					
4	Unit 2 Control Room					
5	Unit 2 Control Room					
6	Unit 2 Control Room					
7	Unit 2 Control Room					
8	Unit 2 Control Room					
9	Unit 2 Control Room					
10	Unit 2 Control Room					

ENCLOSURE XII

Inventory Checklist

Full Face Respirators With Canisters

Month _____

Year _____

LOCATION	NUMBER REQUIRED	NUMBER PRESENT MODEL FACEPIECE	NUMBER PRESENT TYPE CANISTER	NUMBER PRESENT QUANTITY	DATE/SIGNATURE
Control Room	50				
HP Lab	25				
Onsite					
Monitoring					
Kit	4				
Offsite					
Monitoring					
Kit	4				
Fire					
Brigade					
Vehicle	8				
Ambulance	4				

COMMENTS:

REVIEWED BY: _____