

RECEPTION CENTER
PERSONNEL PORTAL MONITORING

1. PURPOSE

1.1 **Objective**

This procedure is to be used in the event of an evacuation of Emergency Planning Zone areas in conjunction with an emergency at Millstone Station.

2. PREREQUISITES

2.1 **Responsibilities**

2.1.1 Reception Center radiological monitoring personnel should report to, and be supervised by the Radiological Control Officer.

2.1.2 Assigned personnel should follow the appropriate checklists listed under the Instructions section.

3. INSTRUCTIONS

3.1 **Personnel assigned to personnel portal monitors** should refer to Attachment 1, "Personnel Portal Monitor Checklist" and perform the actions listed in the checklist. Refer to Attachment 2 "Portal Monitor Troubleshooting" if there are operational difficulties with the monitor.

4. ATTACHMENTS

4.1 Attachment 1, "Personnel Portal Monitor Checklist"

4.2 Attachment 2 "Portal Monitor Troubleshooting"

5. SUMMARY OF CHANGES

5.1 Added requirement to hold source at three levels when checking portal monitor prior to use to item 6B of Checklist.

5.2 Added recommendation to verify portal performance at 30 minute intervals to step 11 of Portal Monitor checklist.

5.3 Added note to skip to steps 7-8 if check source is not available, then complete steps 3 – 6 when source is in hand, and proceed to monitoring.

5.4 Added stipulation that portals should be separated by at least 5 feet as step 7b of checklist.

5.5 Updated emergency tech support number in step 6 of checklist after verifying with manufacturer.

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Attachment 1
(Sheet 1 of 6)
Personnel Portal Monitor Checklist

For the purpose of providing direction to staff assigned to set up, operationally check and operate portal monitors for radiological monitoring of personnel.

PORTAL MONITORING TEAM CHECK-LIST

1. MOVE a portal monitor to the Reception Center monitoring area as shown on the area floor plan. _____

2. ASSEMBLE the Portal Monitor as follows: _____



- A. ATTACH the vertical pillars (long PVC pipe sections labeled "A" and "B") to the foot plates with the wing nuts. _____

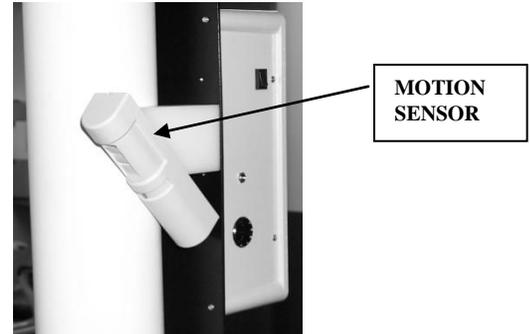
- B. FEED the coaxial cables, through the cross over tube (shorter PVC with elbows), one from each side and out the small hole. _____



Attachment 1
(Sheet 2 of 6)
Personnel Portal Monitor Checklist

C. VERIFY the power switch is in the "Off" position. _____

D. Ensure an AC power source is available. IF NOT, install six "D" batteries. _____



E. STAND the two pillars upright, approximately 32" apart. ORIENT the pillars so the tags marked "A" and "B" face each other. (NOTE: motion sensor should be on entry side to detect incoming personnel.) _____

F. ALIGN the crossover tube so the "A" marking matches the "A" pillar and the "B" marking matches the "B" pillar. _____



G. CONNECT the coaxial cables to the connectors in the top of each pillar. _____

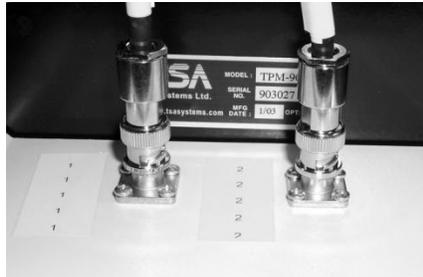


H. SLIDE the crossover tube firmly down onto the pillars until seated. _____

Attachment 1
(Sheet 3 of 6)
Personnel Portal Monitor Checklist

- I. CONNECT the two coaxial cables to the connectors marked “1” and “2” on the controller. _____

- J. IF AC power is used, CONNECT the power supply to the Controller. _____



- 3. MOVE the ¹³⁷Cs check source at least 15’ from the portal monitor. _____

NOTE: If check source is not yet available, proceed to steps 7 - 8. Steps 3 – 6 can be accomplished when source is in hand. Then continue at step 9.

- 4. SWITCH the power switch on. The unit will run several self checks. _____

- 5. IF the unit fails to operate properly, switch the power off, check all connections and repeat steps three and four. _____

- 6. UPON illumination of the “Ready” light, CONDUCT the source check as follows:



- A. RECORD the displayed background (BKG) level. _____

- B. CARRY the ¹³⁷Cs check source through the monitor several times to ensure the monitor alarms. Source should be located at ankle, waist and head level for these checks. _____

Attachment 1
(Sheet 4 of 6)
Personnel Portal Monitor Checklist

- C. WALK through the portal without a source to ensure the monitor does not alarm. _____
 - D. REPORT problems with the portal monitor to the Radiological Control Officer. _____
 - E. IF technical assistance is required, CALL 1-440-834-5600 ext. 5638. _____
7. PREPARE the area as follows:
- A. ESTABLISH pathways as shown in the area set up diagram. _____
 - B. ATTACH a sticky pad to the floor in front of the portal monitor. _____
 - C. ATTACH a large sticky pad to the floor just inside the main entrance to the facility. _____
 - D. ATTACH a presentation pad to the floor after the portal monitor. _____
 - E. MARK a stopping point several feet before the portal monitor. _____
 - F. POST the area to identify radiological boundaries. _____
 - G. INSURE at least a five-foot separation between portal monitors to prevent readings of one portal effecting the other. _____
 - H. POST direction signs to Secondary Monitoring and to Registration. _____
8. PREPARE monitoring staff as follows:
- A. OBTAIN dosimetry from Dosimetry Issue personnel _____
 - B. DON personal protective equipment as directed by the Radiological Control Officer. _____
9. INFORM the Radiological Control Officer that Portal Monitoring is ready to monitor evacuees. _____

Attachment 1
(Sheet 5 of 6)
Personnel Portal Monitor Checklist

CAUTION: DO NOT EAT, DRINK, OR SMOKE IN MONITORING AREA

10. MONITOR evacuees as follows:

- A. DIRECT lined up waiting people to stand behind the marked stopping point. _____
- B. GUIDE evacuees through the portal one at a time. _____
- C. IF a person passes through the portal with no alarm, ATTACH a green Tyvek wrist band to their wrist to indicate they are clean and DIRECT them to Registration. _____
- D. IF a person sets off the portal, DIRECT them to proceed to Secondary Monitoring _____
- E. IF a state or local emergency worker passes through the portal monitor, they do not need to go through the registration process since they are not evacuees. **Emergency workers should be asked if they have dosimetry that they want to turn in. If they are going to secondary monitoring, escort the individual first to Dosimetry Issue for return of dosimetry and completion of paperwork.**
- F. ENSURE Reception Center staff pass through the portal when exiting the Radiological Control Area _____

11. MAINTAIN monitoring station as follows:

- A. IF evacuees are contaminated, periodically STRIP the top layer from the sticky pad and dispose of in a radioactive waste container. _____
- B. IF a contaminated person steps through onto the white presentation pad, SUSPECT the pad may be contaminated and should be stripped or monitored with a CDV-700. _____
- C. IF a contaminated person contacts the portal sides, OBSERVE the background display. If background has increased, WIPE the side with Masselin (oily cloth). _____

Attachment 1
(Sheet 6 of 6)
Personnel Portal Monitor Checklist

- D. Approximately every 30 minutes, VERIFY that the portal monitors are functioning properly by observing the displayed background count (recorded in step 6A) and/or repeating the source check. (This will help reduce the risk of clearing large numbers of individuals using an inadequately performing portal monitor.) _____
- E. IF background level increases, SUSPECT changing radiation sources in the area such as radioactive waste containers, contaminated flooring, and contaminated people near the monitor.
- 12. UPON termination of assignment, MONITOR all Reception Center personnel who have worked in the radiological portion of the facility. _____
- 13. Upon completion of monitoring complete the following:
 - A. WIPE the monitor if contaminated. _____
 - B. Monitor yourself _____
 - C. TURN OFF the portal. _____
 - D. REMOVE the batteries. _____
 - E. DISSASSEMBLE the monitor. _____
 - F. REPACK and RETURN the device to storage. _____

Attachment 2
 (Sheet 1 of 2)
Portal Monitor Trouble Shooting

A variety of factors may impact the proper operation of the portal monitors. (Remember that each Host Community has one more portal than required for the number of people that need to be monitored). If the portal fails to operate properly, consider these actions:

Observed Problem	What it means	How to fix
Display reports “Det 1 lo 0” or “Det 2 lo 0”	A wire is not properly connected, a connection is damaged or a wire is damaged	Check all connections, if connections are tight, turn off the unit, swap the wires with other wires from the case or from another portal.
Display reports “Det 1 Lo” or “Det 2 Lo” with some value > 0	The background radiation levels at your location are lower than the “LO ALARM” setting.	Moving the portal several feet may increase the background enough for the portal to operate. If this does not work, check the “LO ALARM” parameter and adjust as necessary per step 12 below.
Display reports “Det 1 Hi” or “Det 2 Hi” with some value > 5000	The background radiation levels at your location are higher than the “HI ALARM” setting. If a pillar detects background above 5000 counts per second, the portal will not operate.	Verify the check source is stored at least 8 feet from the portal. If possible move the portal to a lower background area. Often in parking lots, this can be done by simply moving the unit into the center of the roadway – away from curbs, but it may be necessary to move several feet to find a lower background area.
The display looks something like this: <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px 0;"> <pre>A :! !! 0800 P :} OPASSED NURAM - R {}T ~ F :!"~</pre> </div>	The battery on the IC chip U3 has failed	Ask the Reception Center Manager to request the DEMHS Regional Coordinator contact the Millstone SEPL at the Hartford Armory. A replacement chip is available at the Armory.

Attachment 2
(Sheet 2 of 2)
Portal Monitor Trouble Shooting

Adjusting the Portal Parameters

These adjustments should only be made if other attempts to address the “Det lo” alarms have failed.

	Access the keypad by loosening the four large plastic screws and removing the clear plastic cover
	Press 0
	Enter the password (1234#)
	Press (1) for PARAMETERS
	Press (1) for HI/LO Levels
	Observe the LO ALARM setting
	If the LO ALARM setting is 500: <ul style="list-style-type: none">• Enter 400• Press (#) several times to return to the normal operating state• If the portal appears to be operational, conduct a source check.•
	If the “LO ALARM” setting is 400, press (#) several times to return to the operate mode and contact the Millstone SEPL at the Hartford Armory for further instructions.