

CHARACTERISTICS OF INSTRUMENTS USED IN RADIATION MONITORING (A)

TYPE OF INSTRUMENT	TYPE OF RADIATION MEASURED	RANGE (TYPICAL)	MAIN USE
GEIGER MULLER COUNTER	BETA, X, GAMMA	$1-10^3$ μ Sv./h OR $5 \cdot 10^2-10^5$ CPM	1. RADIATION FIELD MEASUREMENTS 2. CONTAMINATION BY β AND γ EMITTERS
SCINTILLATION COUNTER	BETA, X, GAMMA	$10^{-1} - 2 \cdot 10^2$ μ Sv./h $50 - 25 \cdot 10^4$ CPM	SPECIALLY USEFUL IN MEASURING CONTAMINANT HAVING LOW ENERGY (E.G. U, Pu)
IONISATION CHAMBER	BETA, X, GAMMA	30 μ Sv./h-5Sv./h	GENERAL SURVEY

(A) MOST AVAILABLE INSTRUMENTS STILL USE REMS OR RÖNTGENS. THE APPROPRIATE CONVERSION FACTORS ARE:

1 Sv = 100 REMS.

TYPE OF INSTRUMENT	TYPE OF RADIATION MEASURED	RANGE (TYPICAL)	MAIN USE
GAS PROPORTIONAL COUNTER	ALPHA	$10^2 - 5 \cdot 10^5$ CPM	ALPHA BETA CONTAMINATION MONITORING
COUNTING EQUIPMENT			MEASUREMENT OF SAMPLE TAKEN FROM THE SCENE IN ORDER TO DETERMINE CONTAMINATION.
POCKET DOSIMETERS	X, GAMMA	0-1 Sv	PERSONAL MONITORING
TLD OR FILM	BETA, X, GAMMA	0.1 mSv UPWARDS	PERSONAL MONITORING
ALARMING DOSE RATE METER	X, GAMMA	5-500 μ Sv./h	GENERAL SURVEY
AIR SAMPLING			AIR CONTAMINATION MONITORING

EMERGENCY RESPONSE FOR
LOST OR STOLEN SOURCE OR MATERIAL

LOCAL EMERGENCY

COMPETENT

USER

PERSONNEL

AUTHORITY

RESPONSIBILITY

- . PHYSICAL SECURITY
- . CONTROL OF INVENTORY
- . NOTIFICATION OF COMPANY SUPERVISOR, COMPETENT AUTHORITY AND POLICE.
- . ATTEMPT TO LOCATE SOURCE
- . PROVIDE ASSISTANCE TO LOCAL EMERGENCY PERSONNEL AND COMPETENT AUTHORITY.

ASSIST, AS APPROPRIATE, IN LOCATING THE SOURCE

- . PROVIDE GUIDANCE ON PREPARATION OF PLANS 24 HOURS CAPABILITY TO RECEIVE REPORT FROM USER.
- . CO-ORDINATE WITH LOCAL POLICE.
- . ENSURE THAT RADIOLOGICAL SURVEYS OF AREAS ARE CARRIED OUT.
- . ENSURE THAT DOSES ARE ASSESSED.

WRITTEN
PROCEDURES

- . PHYSICAL SECURITY.
- . CONTROL OF INVENTORY
- . NOTIFICATION

USER

LOCAL EMERGENCY

PERSONNEL

NO SPECIAL
PROCEDURES

COMPETENT

AUTHORITY

- . GENERAL PROCEDURES FOR
RESPONSE
- . PROCEDURE TO LOCATE
KEY PERSONNEL.
- . APPROVE PLANS

EQUIPMENT	USER	LOCAL EMERGENCY PERSONNEL	COMPETENT AUTHORITY
	NORMAL DETECTION INSTRUMENTS AND DOSIMETER (NO SPECIAL EQUIPMENT)	NO SPECIAL EQUIPMENT	<ul style="list-style-type: none"> <li>. INSTRUMENTS, INCLUDING HIGH SENSITIVITY. <li>. ACCESS TO MEANS OF CONDUCTING MOBILE OR AERIAL SURVEY. <li>. DOSIMETERS.

USER

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

TRAINING AND
EXERCISES

. TRAINING IN
PROCEDURES.

NO SPECIAL TRAINING

. GENERAL RADIATION
PROTECTION TRAINING.
. EXERCISES IN
LOCATING LOST SOURCE.

	USER	LOCAL EMERGENCY PERSONNEL	COMPETENT AUTHORITY
ASSESSMENT OF POTENTIAL HAZARD	YES	RECEIVE ASSESSMENT FROM USER AND COMPETENT AUTHORITY.	YES

	USER	LOCAL EMERGENCY PERSONNEL	COMPETENT AUTHORITY
ACCESS CONTROL	RARELY	RARELY, ASSIST AS APPROPRIATE.	NA

USER

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

INTERVENTION
LEVELS

ALL LOSS AND THEFTS
SHOULD BE REPORTED

NA

EFFORTS TO LOCATE
SOURCES TO BE DECIDED
ON A CASE-BY-CASE
BASIS BASED ON
ASSESSMENT OF
POTENTIAL HAZARD.

	USER	LOCAL EMERGENCY PERSONNEL	COMPETENT AUTHORITY
MEDICAL	VERY UNLIKELY	NA	KNOWLEDGE OF AVAILABILITY

EMERGENCY RESPONSE TO CONTAMINATION ACCIDENTS

RESPONSIBILITIES	USER	LOCAL EMERGENCY PERSONNEL	COMPETENT AUTHORITY
	<ul style="list-style-type: none"> . DETECT CONTAMINATION ACCIDENT. . ESTABLISH AFFECTED AREA ONSITE. . NOTIFICATION OF LOCAL EMERGENCY PERSONNEL AND COMPETENT AUTHORITY. * IDENTIFY CONTAMINATED INDIVIDUALS ONSITE. * DECONTAMINATE WORKERS. . PREVENT FURTHER SPREAD OF CONTAMINATION ONSITE. 	<ul style="list-style-type: none"> ACCESS CONTROL OFFSITE FIREFIGHTING RESCUE ASSIST PREVENTION OF SPREAD OF CONTAMINATION OFFSITE 	<ul style="list-style-type: none"> . PROVIDE GUIDANCE ON PREPARATION OF PLANS. ESTABLISH AFFECTED AREA OFFSITE. . 24 HOURS CAPABILITY TO RECEIVE NOTIFICATION. . IDENTIFY CONTAMINATED INDIVIDUALS OFFSITE. . DECONTAMINATE MEMBERS OF PUBLIC. . PREVENT FURTHER SPREAD OF CONTAMINATION OFFSITE.

WRITTEN
PROCEDURES

USER

- . NOTIFICATION
- * DECONTAMINATION
- . FOR ACCESS CONTROL AND PREVENTING SPREAD OF CONTAMINATION.

LOCAL EMERGENCY
PERSONNEL

GENERAL PROCEDURES
FOR RESPONSE

COMPETENT
AUTHORITY

- . GENERAL PROCEDURES FOR RESPONSE.
- . PROCEDURE TO LOCATE KEY PERSONNEL.
- . APPROVE PLANS.

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

USER

EQUIPMENT

- . NORMAL DETECTION INSTRUMENTS.
- * SPECIALIZED RADIATION DETECTION INSTRUMENTS APPROPRIATE FOR THE SPECIFIC RADIOACTIVE MATERIAL.

NO SPECIAL EQUIPMENT

- . GENERAL SURVEY INSTRUMENTS.
- . SPECIALIZED RADIATION DETECTION INSTRUMENTS, CAPABILITY TO ANALYSE ENVIRONMENTAL SAMPLES.

USER

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

TRAINING AND
EXERCISES

* SPECIALIZED TRAINING
IN DECONTAMINATION.
. PERIODIC EXERCISES
IF UNENCAPSULATED
MATERIAL IS USED
SIGNIFICANT
QUANTITIES.

NO SPECIAL TRAINING.

SPECIALIZED TRAINING
IN DECONTAMINATION
AND ENVIRONMENTAL
MONITORING.

USER

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

ASSESSMENT
OF POTENTIAL
HAZARD

* ASSESSMENT OF DOSES
ONSITE.

RECEIVE ASSESSMENT
FROM COMPETENT
AUTHORITY OR USER.

ASSESSMENT OF DOSES
ONSITE AND OFFSITE.

USER

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

ACCESS CONTROL

. CONTROL ACCESS
BY WRITTEN
PROCEDURE.

ASSISTANCE AS
REQUESTED

. ESTABLISH ACCESS
CONTROLS OFFSITE.
. REQUEST ASSISTANCE
FROM LOCAL EMERGENCY
PERSONNEL.

USER

LOCAL EMERGENCY
PERSONNEL

COMPETENT
AUTHORITY

INTERVENTION
LEVELS

. COMPLY WITH LEVELS
. SET BY COMPETENT
AUTHORITY.

NA

. ESTABLISH SURFACE
CONTAMINATION LEVELS
ON A CASE BY CASE
BASIS.

	USER	LOCAL EMERGENCY PERSONNEL	COMPETENT AUTHORITY
MEDICAL	FOLLOW ADVICE OF COMPETENT AUTHORITY	PROVIDE TRANSPORTATION OF INJURED CONTAMINATED INDIVIDUALS.	PROVIDE MEDICAL REFERAL AS NECESSARY.

* USER MAY OBTAIN ASSISTANCE OF RADIATION PROTECTION EXPERTS AFTER THE ACCIDENT TO MEET THE REQUIREMENTS.