RADIOLOGICAL PROTECTION

I. PURPOSE

This annex provides Trumbull County with a radiological program and outlines the organization, personnel, equipment and procedures necessary to protect the citizens from potential effects of a disaster involving radioactive materials.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. While many types of incidents could arise, involving radioactive materials, the threat of a nuclear-related incident from the transportation of radioactive sources remain an item of primary concern. Although there are no major institutions, facilities, or sites with radioactive materials or sources within the county, the threat of a transportation incident requires that this subject be addressed.

2. The protection of people, vital facilities, and the return to stable conditions will require a capability to detect, monitor, report, analyze, and decontaminate radiological hazards. Sheltering from radioactive fallout or other radioactive material may be required for population protection.

3. In any radiological situation, radiation measuring and detecting instruments to be issued to, and used by trained personnel, are the means of gaining accurate radiological information for analysis.

B. Assumptions

1. In the event of attack upon the United States, the county will be subject to the effects of radioactive fallout.

2. All political subdivisions in Trumbull County are responsible for the safety of persons and property in their respective jurisdictions.

3. Sheltering from radioactive fallout or other radioactive material may be required for population protection.

4. While there are licensing protocols through the Ohio Department of Health (ODH) for radioactive substances that may be used in industrial, education and medical use, accidental or malicious uses may be possible.

5. Industrial accidents may occur. Industry representatives best understand the characteristics of specific products, and often have both the equipment and expertise to advise and help respond at the site.

6. Local response agencies should have Standard Operating Guidelines (SOGs) for handling incidents with hazardous materials releases.

7. Shipments of limited quantities of radioactive materials occasionally become involved in accidents and could produce containment loss and related contamination; however, the potential hazard from such shipments is low.

8. Large quantity and safeguard radioactive materials are shipped in special containers designed to withstand severe accident conditions. Such containers can contain amounts of radioactive material that if released due to an accident, could cause serious health and safety effects over large areas.

9. State and federal response resources are available to provide technical assistance and oversight of cleanup activities. The state can also request personnel and equipment from federal agencies.

10. In the event of a radiological event, emergency services, vital services (hospitals, utilities, etc.) and essential industries (food processing, storage and distribution and pharmaceutical manufacture and supply) may be required to operate in a fallout radiation environment. Each organization should prepare a SOG to operate in this type of environment.

III. CONCEPT OF OPERATIONS

A. Execution

1. The County EMA is responsible for forming and developing a Radiological Protection (RP) Program and ensuring the proper execution of this plan in time of emergency.

2. The Radiological Protection Organization will collect and report data on nuclear incidents, spills, or releases and accompanying hazards.

3. The Radiological Protection Organization will use all resources as necessary/actions to furnish radiological information to all levels of government as a basis for decisions affecting:

a. The periods of shelter occupancy

b. Control of radiation exposure of emergency workers during shelter and post shelter periods

c. Decontamination activities

d. Food and water supplies

e. Restoration of vital facilities

f. Relocation of people to avoid radiation

g. Rescue, medical and welfare operations

h. Public service organizations

The Radiological Protection Organization may consist of:

a. Radiological Protection Organization Director and Deputy
b. Radiological Analyst Specialist
c. Plotter Specialist
d. Radiological Response Strike Team
e. Radiation Monitors (RM)
f. Shelter Monitors (SM)
g. Radioactive Decontamination Leader (RDL) with Decontamination Personnel.

B. General Operating Procedure

1. Notification and Technical Assistance

a. Notification: Ref. Annex C, Notification and Warning, for details of alerting and confirmation calls and contacts in the event of an emergency in this county.

b. Agency notification for technical assistance

(1) The EMA Director and Sheriff's Office will also notify potentially involved, or supporting, offices and agencies within the county along with the Ohio EMA in the event of an emergency involving radionuclide.

The agencies and individuals to be notified will vary according to the emergency and the degree of involvement and support they are capable of furnishing.

(a) Many of these local agencies, upon determination (either on or off site) that the incident may be of a magnitude to warrant additional (technical/logistical) support above and beyond initial capabilities.

(b) This support may, in part, be furnished from neighboring jurisdictions in accordance with Mutual Aid or other agreements:

2. State Technical Support

   a. The State of Ohio EMA may, as required by the dictates of the situation, be required or requested to furnish additional on-site or off-site technical assistance in a radiological emergency.

      (1) For additional state-level radiological monitoring and assessment actions/capabilities, ref: Ohio Emergency Operations Plan, Radiological Annex.

3. A Disaster Analysis Section (DAS) will be established in the County EOC for the period of the technical emergency. This section will receive and analyze radiological data from monitors and make recommendations on protective actions for residents throughout the county.

4. Activate Monitors, stationed in dispersed monitoring locations throughout the county, will perform:

   a. On-station/site monitoring when radiation is expected or when radiation is present every 30 minutes, or one hour, depending upon issued guidelines if radiation is present, readings will be executed by CD-V-777 instrumentation.

   b. Detailed mobile monitoring when radiation levels will permit limited outside operations on a controlled risk basis.

5. Shelter monitors, when activated, will be positioned in each public shelter to provide:

a. Detailed radiological data for the conduct of safe shelter operations.

b. Radiation exposure records for all shelter occupants as a basis for decisions concerning out-of-shelter and post-shelter living and work assignments.

6. Communications between shelters, care centers, assembly areas, monitoring points, and the county EOC shall be by telephone (as available) or emergency service radio as back-up.

C. Specific Response to Radioactive Material Incidents (For Weapons Effects, Ref. Appendix 1)

1. There is a need for a swift, efficient, well-coordinated response from all sources; government (local/state/federal) and private (contractors and carriers)

2. Responders vary with each incident, depending upon notifications, capabilities and limitations. Often, these groups may operate independently with a potential for delay or conflict. Cooperation is therefore essential between all levels of government and must be maintained at the site and at the EOC/assessment room.

a. Local authorities are essential to response inasmuch as local public safety agencies are normally the first responders to a site, making initial emergency action decisions to include site/area security, evacuations, and emergency medical treatment.

b. State agencies may often provide advanced guidance and expertise (with resources) along with the legal authority to enforce response decisions.

c. Private sources may also be involved in a response commitment. Industrial representatives may best understand the characteristics of specific products and equipment, along with handling techniques.

3. In hazardous materials incidents involving radioactive materials, the Emergency Management Agency will assume the primary role of coordinating activities of the other agencies.

4. Local Law Enforcement Agencies

Radiological incidents or nuclear detonation can occur in both rural and urban areas, on local, state, or federal highway networks. Should a local police agency be among the first on the scene in a transportation related incident, regular enforcement duties should be continued, additional actions in:

a. It is important to note that only essential activities are carried out in proximity to the incident site prior to the arrival of technically qualified personnel (State RRTs).

b. Local law enforcement agencies may be called upon for escort or possible transport duties for the Radiological Response Team (RRT), as well as maintenance of communications between the site and control headquarters of the RRT.

c. Upon notification of a radiological incident state level assistance should be summoned as soon as possible.

5. Local Fire Department

Local fire departments are usually called upon to fight fires in which radioactive materials may be involved. The fire may be associated with a carrier, or a site/facility for the storage of radioactive materials. With fires, two potential hazards exist regarding radionuclides: the melting shielding surrounding the radioactive source, and the vaporization of the sources (known as pyrophoric metals). Although the possibility of either event is remote, it is important that fire departmental plans and training consider them. The following actions are included in departmental duties:

a. In fire fighting, follow normal procedures for suppression, or life saving actions.

b. Remain out of the exposure plume/pathway and, as far as possible from cargo compartments, storage sites, etc.

c. Firemen should wear positive-pressure, self-contained breathing apparatus (SCBA), and the fire should be treated as one involving toxic materials or chemicals and extinguished as quickly as possible.

d. A fog stream is preferable to a high pressure stream; however, fire should be fought by any practical means available (if uranium (U) or plutonium (Pu) metals are known to be present, the fire should be flooded for quick

extinguishing). The amount of water should be kept to a minimum, but the first priority should be to extinguish the fire. (See DOT Emergency Response Guidebook.)

e. Representatives of the State EMA will arrive at a site as soon as possible to evaluate the radiation control aspects of the incident and to assist in the preparations for protective action or recovery operations.

6. Airport Officials

a. Notification of the Ohio Emergency Management Agency, Phone (614) 889-7150, and the County Emergency Management Agency, Phone (330) 675-2666.

b. Essential information for the State EMA and County EMA is listed in the Accident Reporting Checklist (Tab 3, Form attached to this annex).

(1) To minimize interruptions in the normal operations of an airport, rapid reporting is essential.

c. If it appears that there may be contamination of the cargo compartment, and subsequent contamination of cargo/baggage, the cargo and the aircraft are to be detailed in subsequent evaluation and instructions from the State EMA. If there is a possibility of radioactive contamination either on the ramp or within the airport buildings, these areas are to be isolated to limit the possible spread of contamination.

7. Truck and Rail Freight Terminals

If it is discovered that a container of radioactive material has been severely damaged, or it is apparent that the possibility of contamination exists (leaking or broken container) the supervisor of the terminal must be contacted immediately. It is the responsibility of the supervisor, or his designated assistant, to:

a. Report the incident, or apparent incident, immediately to the Ohio Emergency Management Agency.

b. If there is contamination, or apparent contamination, within the cargo compartment of a transporting carrier, this should be included in the initial report to the EMA.

c. Take steps as indicated in Section D Incident Initial Actions (below). Only essential actions should be carried out in proximity to the incident scene prior to the arrival of, or consultation with, Ohio EMA Radiation Response Team personnel.

8. City and County Health Departments

City and county health departments will, as applicable, be responsible jurisdictional areas. Under the direction of the Ohio Department of Health, this may include the collection of environmental samples and the conduct of radiation surveys. Coordination with local USDA offices and the County Agricultural Extension Agency should be made.

D. Incident Initial Actions

The following steps are to be carried out by on-scene responders to a radiological incident. Law enforcement and fire officials have the primary responsibilities to carry out the actions cited herein until such time as an advanced response team arrives at the scene:

1. Restrict the area of the incident

Keep the general public as far as possible/practical from the incident scene. (See Tab 5, Radioactive Materials Safe Distances Chart) Keep upwind of fire/smoke to the maximum extent possible. Areas downwind of fires should be evacuated of resident populace, particularly in the event of smoke and ash deposition.

2. Perform necessary life saving measures.

If medical attention is indicated, assist in arrangements for medical assistance. Physicians and/or hospitals should be notified if contamination is suspected in conjunction with any victim. This information is to be relayed by the transporting service or local public safety agency.

3. If there is a fire or danger of fire, assistance should be summoned from the nearest fire department. All materials should be handled with mechanical means, or protective gear (gloves, suits, air packs, etc.) in order to avoid contact with skin or clothing. Clothing and tools at the scene should be treated as Acontaminated≅ until applicable measures have been initiated for clearance.

4. Contact the County EMA and/or the State Emergency Management Agency as soon as possible.

   Immediate notification is essential so that the accident response team can be activated and dispatched to the accident location.

5. Detain all persons involved with the incident or potentially contaminated by the incident, except those requiring emergency medical care/evacuation, at the scene until the accident response team arrives.

   Upon arrival of the team, individuals will be monitored, decontaminated, if necessary, and cleared after further medical treatment or released. Record names, addresses, and phone numbers from those individuals who cannot, or will not, stay at the incident scene.

6. Eating, drinking, or smoking in the incident area is to be prohibited.

E. Population Exposure, Radiological Exposure Control (Dosage and Reporting)

1. Dosimeters should be read once every 1/2 hour, at a minimum, but more often if possible.

2. The on-scene radiological officer should record dose rate records for each individual exposed. See Tab 7 Radiation Exposure Record.

3. If the EOC is activated, these dose rates should be continually reported to the EOC by the on-scene RO and recorded at the EOC.

4. The dose received by each individual should be kept to a minimum.

5. When an emergency worker's dose rate is nearing 25R, he/she should be replaced by another worker.

6. When lifesaving activities are involved, a maximum lifetime limit of 100R may be accepted. This applies only if the saving of a human life may result by incurring this level of exposure.

7. The decision for authorizing emergency workers to incur exposures in excess of EPA general protective guidelines should only be made in dire life-threatening circumstances and under guidance from local health/physics personnel. The person in charge of an incident would handle this situation on a case by case basis utilizing volunteers only.

F. Public Exposure Control/Decontamination

1. The attached Safe Distance Chart (Tab 5 to this annex) will be used to determine areas needing to be evacuated.

2. All citizens located within the area will need to be monitored and decontaminated if readings from the CDV 700 register twice the local (uncontaminated) background or higher.

3. In the event of a nuclear attack, the entire county will probably be affected by radiation fallout.

4. Man Rems may be determined by multiplying the number of people affected by exposure.

G. Decontamination (General)

1. In order to determine the need for decontamination, exposed individuals, areas and equipment need to be monitored with a CDV 700.

2. All citizens located within an incident area will be subject to monitoring and/or decontamination should CD V 700 reading register .1 Mr/hr or higher.

3. Tabs 10, 11, 12, and 13 to this annex list methods of decontamination.

H. Phases of Emergency Management

1. Mitigation activities may include but are not limited to:

a. Establish a radiological program.

b. Designate a radiological officer.

c. Develop a radiological reporting and analysis network

2. Preparedness activities may include but are not limited to:

a. Select and train radiological personnel for radiological accident or nuclear attack.

b. Conduct radiological exercises.

c. Maintain radiological monitoring equipment.

d. Establish priorities for decontamination facilities.

e. Conduct public information and education programs.

f. Provide training for RDOs, monitors, shelter mangers and for weapons effects reporting.

3. Response activities may include but are not limited to:

a. Activate radiological staff.

b. Deploy radiological teams to pre-arranged locations.

c. Activate the radiological reporting (WER) network.

d. Intensify public information and education on radiation safety.

e. Activate medical teams to handle radiation exposure injuries.

f. Distribute bulk-stored RADEF instruments.

g. Request mutual-aid for RADEF support from near-by counties and assistance from Ohio EMA (1-614-688-3363).

4. Recovery activities may include but are not limited to:

a. Continue ground and aerial monitoring.

b. Initiate decontamination activities.

c. Continue public information and education programs.

d. Continue damage assessment activities.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. The Radiological Protection (RP) Organization will consist of the EMA Director, the Radiological Officer, Plotters, Loggers (for the EOC), and such monitors (for field reporting and data compilation), as are trained in the public safety sector of the county.

1. A Disaster Analysis (or Damage Assessment) Section located in the EOC. (See III.B.3. above)

2. The appointed RP section/element will be co-located with the Disaster Analysis/Damage Section in the EOC. As a minimum, this section will consist of: 1 RDO, 1 Analyst, and one Plotter per shift (as shifts are established). All personnel should be qualified in 16-hour basic Radiological Monitoring Course, or others as required, in order to fulfill assigned duties.

3. A Radiological Officer is responsible for all RP operations.

4. The organization will ensure the provision of trained personnel at monitoring stations, self-protection facilities, and public shelters. See Appendix 1 and its attachments.

5. It will further ensure trained personnel, equipment, and facilities for decontamination stations.

B. Radiological Monitoring Team Staffing

1. Local radiological monitoring team staffing and appointments are a responsibility of the EMA Director, acting in concert with public safety and response offices:

   a. Police and Fire Departments

   b. Health Department

   c. Hospitals

   d. Others, as required

2. Personnel will be trained in accordance with applicable federal and state guidelines as disseminated to the county.

3. Monitoring teams may not always remain stable in their make-up. This is due, in part, to the requirements of the situation. The county addressed herein is adjudged to be confronted with two basic types of emergency: Transportation and/or fixed-sited radiological situations. As a result, team make-up should consist of (ideally):

   a. Transportation Emergencies

      (1) Fire Department Representative (team member)

(2) Health and/or Facility Representative (team member)

b. Fixed Site Emergencies

(1) Fire Representative (alternate team captain)

(2) Health and/or facility representative (team member)

4. Augmentation may be available from other sources:

a. Ohio EMA
b. OSP
c. State Health Department

C. Duties

1. Countywide Executive Committee/CEOs

a. Implement protective measures and actions (evacuation, sheltering, and decontamination) based on recommendations from county and state offices (Health Departments, Ohio EMA, etc.)

2. Radiological Officer (RO)

a. Supervises the county-wide radiological program. Serves as the senior Radiological Defense Officer (RDO) during exercises and emergencies.

b. Directs monitoring and reporting procedures of radiological protection organization.

c. Prepares and presents radiological situation briefings to EOC (Operations and Executive Groups).

d. Prepares radiological information for the Public Information Officer.

e. Submits required radiological situation reports to the State EOC.

f. Provides decontamination guidance to emergency services.

g. Advises County Executive Committee on protective measures necessary for the protection of citizens threatened by the radiation hazards. Measures are to be based upon

EPA Protective Action Guides (PAGs) as well as peacetime emergency criteria established by the NRC, EPA, DHEW, etc.

h. Identifies specific support resources for radiological/chemical analysis, environmental assessment, biological sampling, plume movement tracking and contamination surveys.

I. Maintains an inventory of radiological monitoring and decontamination equipment (to include location/sites).

j. Provides guidance to the Emergency Operations Center (EOC) staff, monitoring stations, shelter staffs and the general public on the full range of nuclear weapons effects, including the radiological hazard and fire and blast effects.

k. Estimates operational impacts of radiation on local governments.

l. Maintains close contact with the radiological monitoring network, shelters neighboring jurisdictions, the State EOC, and the military support elements, ensure the exchange of weapons effects or other data on a 24-hour basis; (not less than every 12-hours) or more often as required.

3. Assistant Radiological Officer

a. Serves as chief assistant to the Radiological Officer.

b. Serves as Assistant Radiological Defense Officer in EOC (wartime).

c. Fills any vacant position in radiological staff, as required.

4. Analysts (wartime position)

a. Records and analyzes incoming radiological data to determine location, intensity and hazard to life, also predicts probable radiation decay times by mathematical extrapolation.

b. Determines areas where activity is permitted or restricted and for how long.

c. Identifies hazardous situations requiring immediate remedial action by emergency services.

d. Prepares estimates of shelter emergence time for EOC staff and the sheltered.

e. Analyzes decontamination requirement for all other activities and situations.

5. Plotters (wartime position)

a. Records incoming data in appropriate format.

b. Prepares and maintains:

(1) Meteorological information/Data

(2) Fallout forecasts

(3) Message and reporting logs

(4) Dose and dose rate plots

6. Radiological Response Team (RRT) Personnel (Team Chief)

a. Serves as the primary response team for peacetime radiological incidents.

b. Serves as a community based cadre of radiological defense personnel.

c. Develops radiological defense plans and SOPs.

d. Trains initial response personnel in monitoring for nuclear attack preparedness and first response actions in peacetime.

e. Conducts refresher/update training for radiological monitors.

f. Serves as a cadre to conduct accelerated SURGE training in a national emergency.

g. Ensures the availability, operability, periodic maintenance and proper distribution of radiological instruments in assigned departments.

h. Notifies the local and state EMA authorities of a radiological emergency.

I. When necessary, performs all RM duties.

7. Radiation Monitors (RM)

a. Serves as a first responder in peacetime radiological emergencies.

b. Serves as a self-protection monitor in a nuclear attack environment.

c. Uses survey meters to identify areas of contamination and the type and exposure rate of radiation.

d. Applies radiation protection principles of time/distance/shielding (mass) in reduction of public exposure to ionizing radiation.

e. Demonstrate knowledge and proficiency in the field of dosimetry to include use of chargers and the determination of accumulated doses of radiation.

f. Perform shelter monitoring duties as necessary

g. Reports Weapons Effects observations, See Appendix 1.

8. Shelter Monitors (SM) (Wartime position only)

a. Performs RM duties as above.

b. Supports sheltered population by providing guidance on:

(1) Actions to reduce radiation levels in shelters.

(2) Means and timing for relation of shelter living restrictions.

(3) Expected exposure levels.

D. Responsibilities of Agencies

1. The County Emergency Management Agency is responsible for:

a. The development and formation of a Radiological Protection Program including, but not limited to:

(1) Classes and refresher classes for monitors, response team, and RDOs

(2) SOP guidance

(3) Training materials, instructors

(4) Coordinating team/personnel appointment with response and/or supporting agencies to ensure proper team make-up and response capabilities.

b. Initial response to all radiological emergencies in the jurisdiction:

(1) Ensuring warning/notification actions

(2) Advising State EMA (Tech. Hazards) and coordinating requests for state-level technical assistance.

c. Distribution of radiological monitoring equipment to law enforcement agencies, fire departments, EMS, Shelters and other agencies/sites for emergency use.

d. Augmentation of radiological monitoring teams, as required.

e. Preparing weapons affects reports and damage assessment reports for submission to the State and Federal Government.

2. Emergency Medical Services are responsible for:

a. Advising the public on protective measures and treatment with regard to radioactive exposure.

b. Provision of medical care for radiation-related injuries.

c. Ensuring 1 RRT per Service and 1 RM per CD V-777 set issued are trained for proper response.

3. Law Enforcement Agencies are responsible for:
a. Receipt/transmission of NAWAS Data (within capabilities).

b. Responding (within capabilities) to peacetime incidents.

4. Fire Services are responsible for:

a. Serving as Primary first responders for peacetime incidents.

b. Ensuring 1 RRT per station and one monitor per CD V-777 kit issued are trained for proper response.

5. Department of Public Works/Engineering Departments are responsible for:

a. Organization and execution decontamination operations.

b. Develops a self-protection plans.

6. Public Health

a. Provision of recommendations to the county commissioners on allowable radiological exposures to the public and/or other protective actions.

b. Provision of a staff representative to the RADEF Section at the EOC (during wartime activation).

7. All Emergency Services, Vital Facilities and Essential Industries.

a. In the event of a nuclear attack, emergency services, vital facilities and essential industries may be required to operate in a radiation environment. Examples include:

(1) Hospitals

(2) Food processing plants

(3) Law enforcement/fire departments

(4) Defense related industries

b. Each service, or facility, must prepare procedures and plans for operations within such an environment.

V. DIRECTION AND CONTROL

A. The Radiological Officer (RO) is responsible for the following actions with regard to radiological safety in the jurisdiction:

1. Coordination with all radiological technicians, managers, and others with current, or pending, radiological assignments (monitor, etc.)

2. Establishment of operations within the EOC, as required, to include plotting, analysis, assessment, and coordination of monitoring and decontamination actions.

3. Advising EOC staff and the general populace on necessary protective actions to ensure continuous emergency operations and survival.

VI. CONTINUITY OF GOVERNMENT

A. The line of succession for the Radiological Officer is as follows (by position):

1. Radiological Officer

2. Assistant Radiological Officer

B. Refer to **Tab 6**, Procedures for the Relocation and Safeguarding of Vital Records in the Basic Plan, and **Tab 3**, Procedures for the Protection of Government Resources, Facilities, and Personnel in Annex N, Resource Management.

VII. ADMINISTRATION AND LOGISTICS

A. Training and Exercises

1. Each emergency service, vital facility and essential industry will have one representative appointed and trained for radiological response with no less than two Radiological Monitors trained for each instrument set issued to a given facility or service.

2. Additional monitoring and response training will be conducted when personnel are available for classes. Refresher training will be furnished for all RMs, RRTs and RDOs at least every two years.

3. Accelerated training of RM, SM and Decontamination Specialists will be conducted in the event of:

a. An imminent Nuclear/Radiological Emergency

b. When mass distribution of instruments is necessary

c. Upon Presidential/gubernatorial order of evacuation of high risk areas.

4. Emergency service personnel will be exercised in the conduct of nuclear attack scenarios as well as in peacetime radiological incidents. As a minimum, the Radiological Defense System will be tested every two years in accordance with planning reviews, updates and other requirements. (See Section VIII.)

B. Equipment

1. Radiological monitoring equipment. (All located with HAZMAT team at 640 North River Road Suite B Warren, Ohio 44483).

2. Many fire departments possess protective turnout gear, clothing and instrumentation to perform tasks in a hazardous environment. This may not be disposable and must be subject to decontaminated or outright replacement.

3. Given a SURGE situation, in an international emergency, this county may be the recipient of an additional amount of hazard-specific technological equipment, to include 100 additional radiological monitoring kits from the Ohio EMA as authorized/directed by FEMA.

C. Monitoring Stations

1. All fire departments and EMS stations in the county are designated as potential monitoring stations within Trumbull County.

2. All self-protection facilities and shelters are considered to be back-up monitoring stations.

3. Other monitoring stations will be established as necessary.

VIII. PLAN DEVELOPMENT AND MAINTENANCE

A. All organizations with radiological protection duties are responsible for reviewing this annex annually and submitting new or updated information to the Radiological Protection Annex Coordinator. This is to commence one year from the approval date of this document or as necessary, based upon assessments of drills, tests and exercises or actual events. Actions will also take into consideration changes in governmental structure assignments or offices.

B. All organizations with radiological protection assignments are also responsible for SOPs, mutual aid agreements, letters of agreement, 24-hour recall personnel rosters, and resource manuals, to include source, location and quantity of materials, supplies and replacement items (such

documents must cite any radiation specific items or the State Radiological Protection Plan and provisions for mutual aid and related assistance).

C. The County Radiological Protection Annex Coordinator is responsible for incorporating changes and revisions into this annex and submitting the revised annex to the Emergency Management Director on an annual basis or more often if necessary.

D. The County EMA Director is responsible for printing and distributing changes, updates and revisions to this annex to all departments, agencies and organizations retaining a copy of this plan.

IX. AUTHORITIES AND REFERENCES

A. **Authorities**

1. 29 CFR 1910.120
2. National Fire Protection Association (NFPA) 472 and 473

B. **References**

1. National Council of Radiation Protection (NCRP) – Report #138 (Terrorism Incidents Involving Radioactive Materials)
2. US EPA – Report #400 (Protective Limits)
3. North American Emergency Response Guidebook, 2012
4. CPG 2-1, Radiological Defense Preparedness, Sep 1989
5. Application of Protective Action Guides for Radiological Dispersion Devices and Improvised Nuclear Device Incidents, 2006
6. Target Capabilities List 2.0, Homeland Security, 2005
7. State and Local Guide (SLG) 100, "Guide for Increasing Local Government
8. Civil Defense Readiness During Periods of International Crisis".
9. State and Local Guide (SLG) 101, “Guide For All-Hazard Emergency Operations Planning
10. Radiation Injury Treatment Network (RITN) Radiation Injury Referral Guidelines RITN, June 2014

X. ADDENDUMS

Tab 1 Radiological Instrument Inventory

Tab 2 Accident Reporting Checklists

Tab 3 Radioactive Materials Accidents

Tab 4 Initial Response Actions (Safe Distances) Flow Chart

Tab 5 State Assistance Flow Chart

Tab 6 Radiation Exposure Record

Tab 7 Decision Aid for Emergency Decontamination (Flow Chart)

Tab 8 Decision Aid Evaluating Health & Safety Aspects Decontamination

Tab 9 Equipment Needed for Maximum Decontamination

Tab 10 Minimum Decontamination Layout for Levels A, B, & C

Tab 11 Maximum Decontamination Layout for Levels A, B, & C

Tab 12 Decontamination of Vehicle and Equipment

Appendix 1 Radiological Protection for Nuclear Attack Hazard

- Attachment 1 International Nuclear Incident Event Scale
- Attachment 2 JumpSTART Pediatric Casualty Incident Triage
- Attachment 3 SALT Mass Casualty Triage Algorithm
- Attachment 4 Simple Triage and Rapid Treatment
- Attachment 5 Example Triage Tag

Appendix 2 Managing SURGE Needs

- Attachment 1 SURGE checklist

Radiological Instrument Inventory

Type of Instrument	Number in Stock	Location (Office, Vehicle)	City	Owner (Local/State)
Detectors				

ACCIDENT REPORTING CHECKLIST

Below is a checklist or guideline on information to be transmitted when requesting assistance or reporting a radiological incident to the proper authority.

1. Identify the fact that you are calling about a radioactive materials incident.

2. Location and brief nature of the incident, including description of package(s).

3. a. There is _____, is no _____ injury to personnel.

   b. Personnel are _____, are not _____ expected to have been exposed or contaminated.

   c. There is _____, is no _____ evidence of release of radioactive material.

4. Evidence of any other hazardous materials.

5. Carrier and shipper and/or consignee.

6. Terrain and weather.

7. Personnel and equipment on the scene and actions under way.

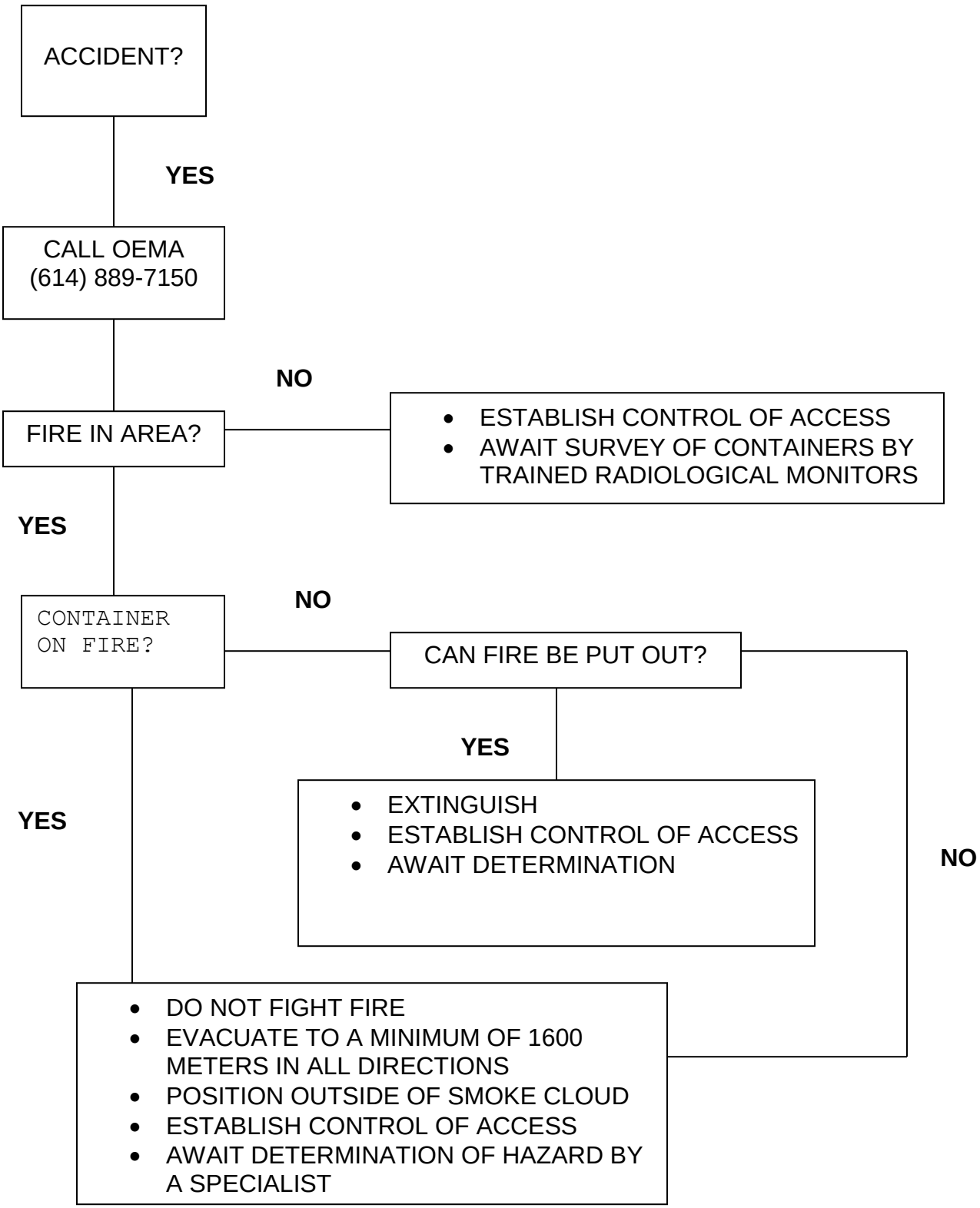
8. Your name and call back phone number.

9. If readily available from shipping papers, labels, or package markings, the following will be of value. Do not delay your call for assistance to obtain this information; however, you can always call back.

   a. Shipper's name
   b. Radioisotope(s)
   c. Number of curies
   d. White I, Yellow II, or Yellow III labels
   e. Transport index (TI) of package(s)
   f. Physical and chemical form
   g. Package identification (specification Type A or B, certification number, exemption number, etc.)

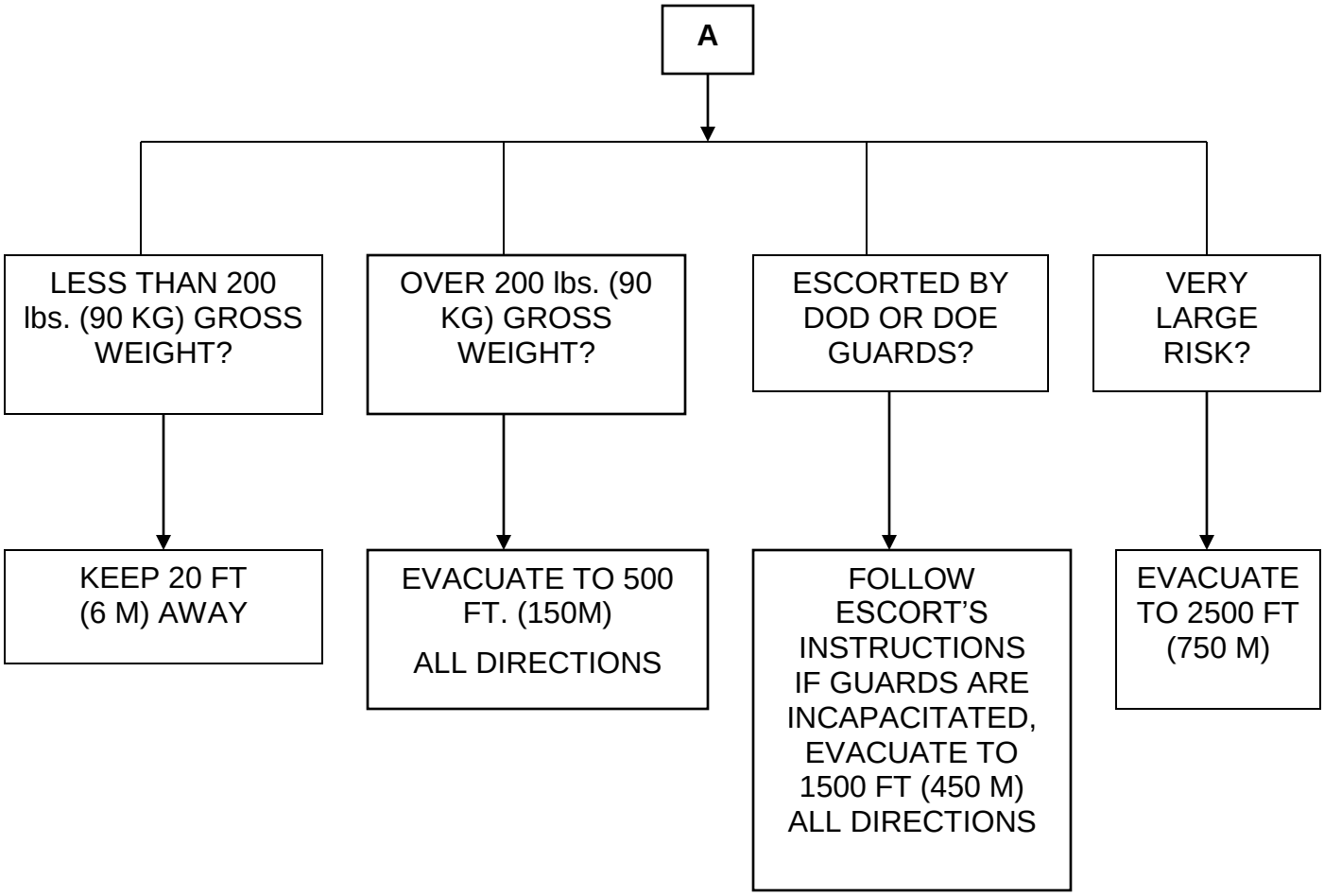
10. If emergency service personnel responders have radiation survey meters and have been properly trained in their use, indicate types of instruments used and readings obtained. Again, unless specifically directed, do not delay communications to get this information.

RADIOACTIVE MATERIALS ACCIDENTS



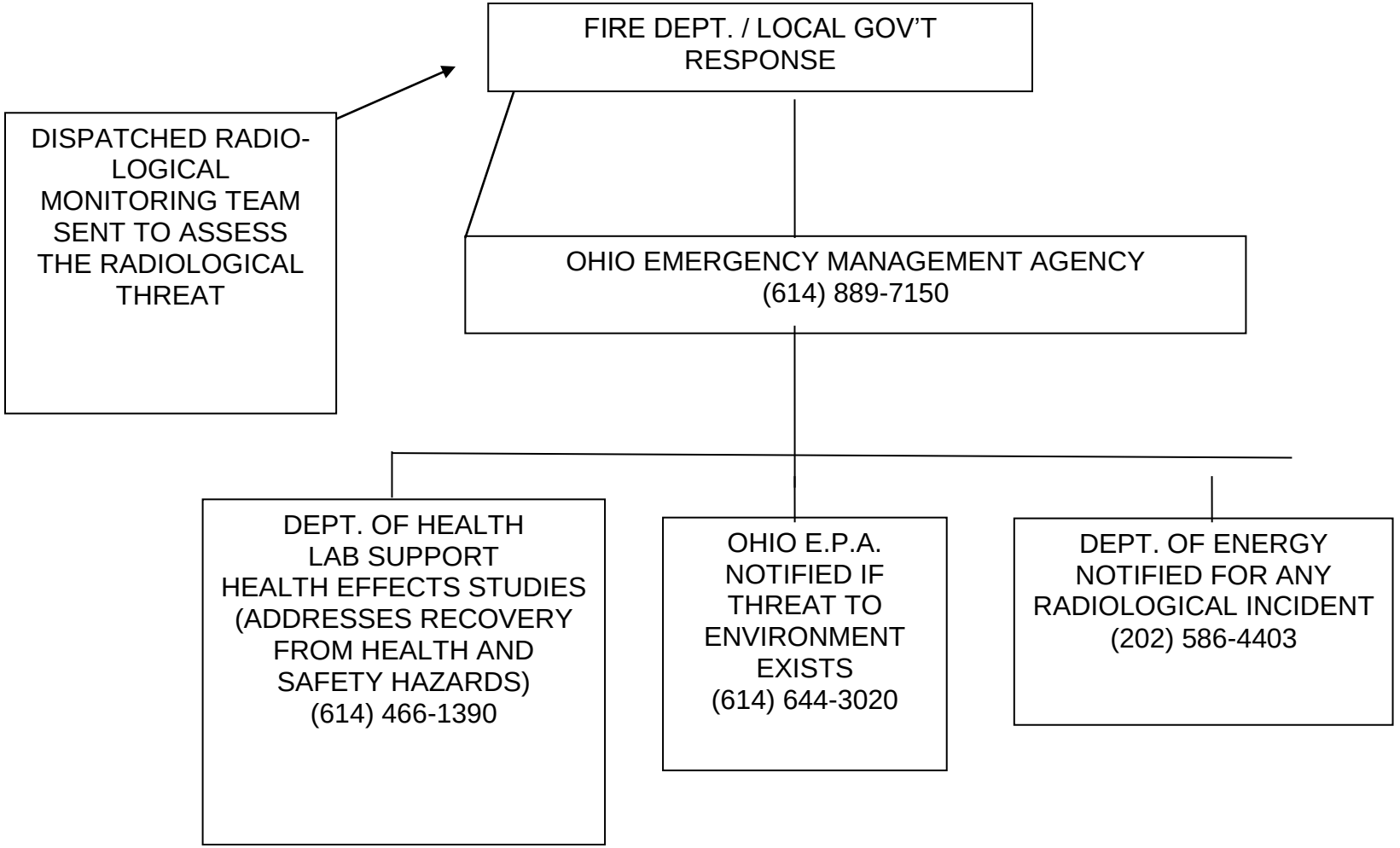
INITIAL RESPONSE ACTIONS-- SAFE DISTANCE

Class
RADIOACTIVE MATERIAL
Size
ALL



STATE ASSISTANCE FOR RADIOLOGICAL RESPONSE

RADIOLOGICAL INCIDENT



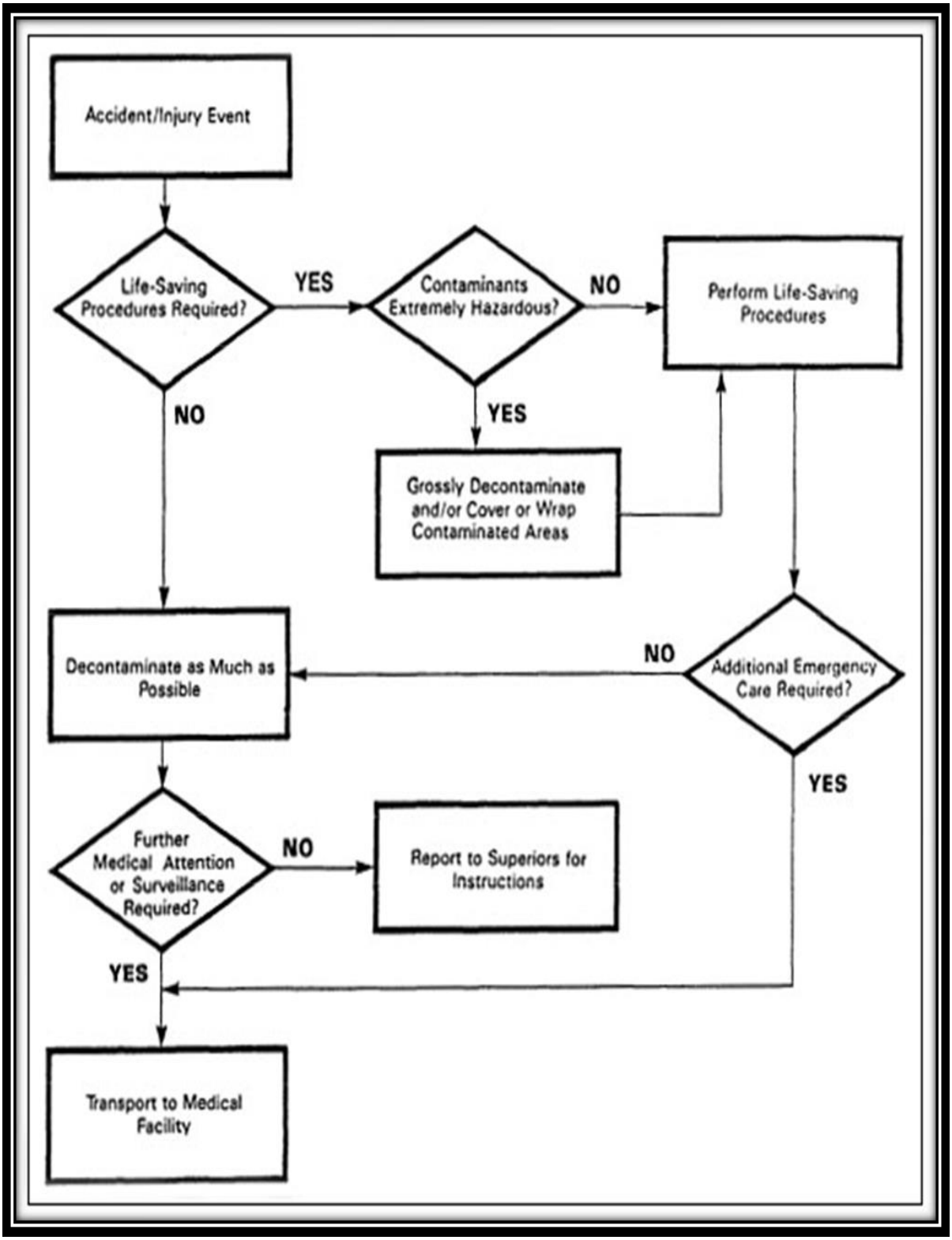
RADIATION EXPOSURE RECORD

NAME_____ SOCIAL SECURITY #_____

ORGANIZATION_____

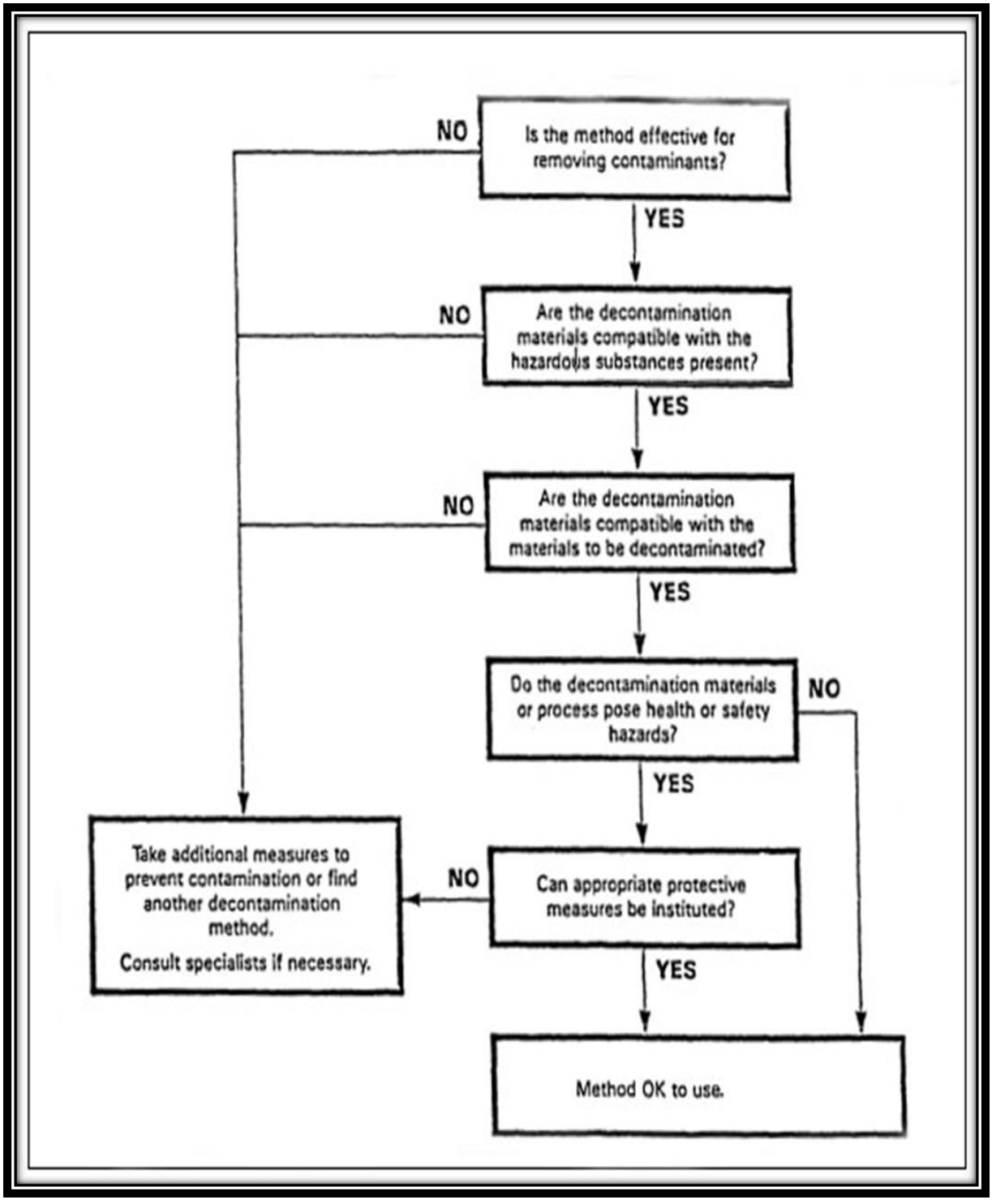
		CDV-742			CDV-730			CDV-138		
MISSION	DATE	SERIAL#	INITIAL	FINAL	SERIAL#	INITIAL	FINAL	SERIAL#	INITIAL	FINAL
		TOTAL			TOTAL			TOTAL		

Decision Aid for Emergency Decontamination



Decision Aid for Evaluating

Health & Safety Aspects of Decontamination



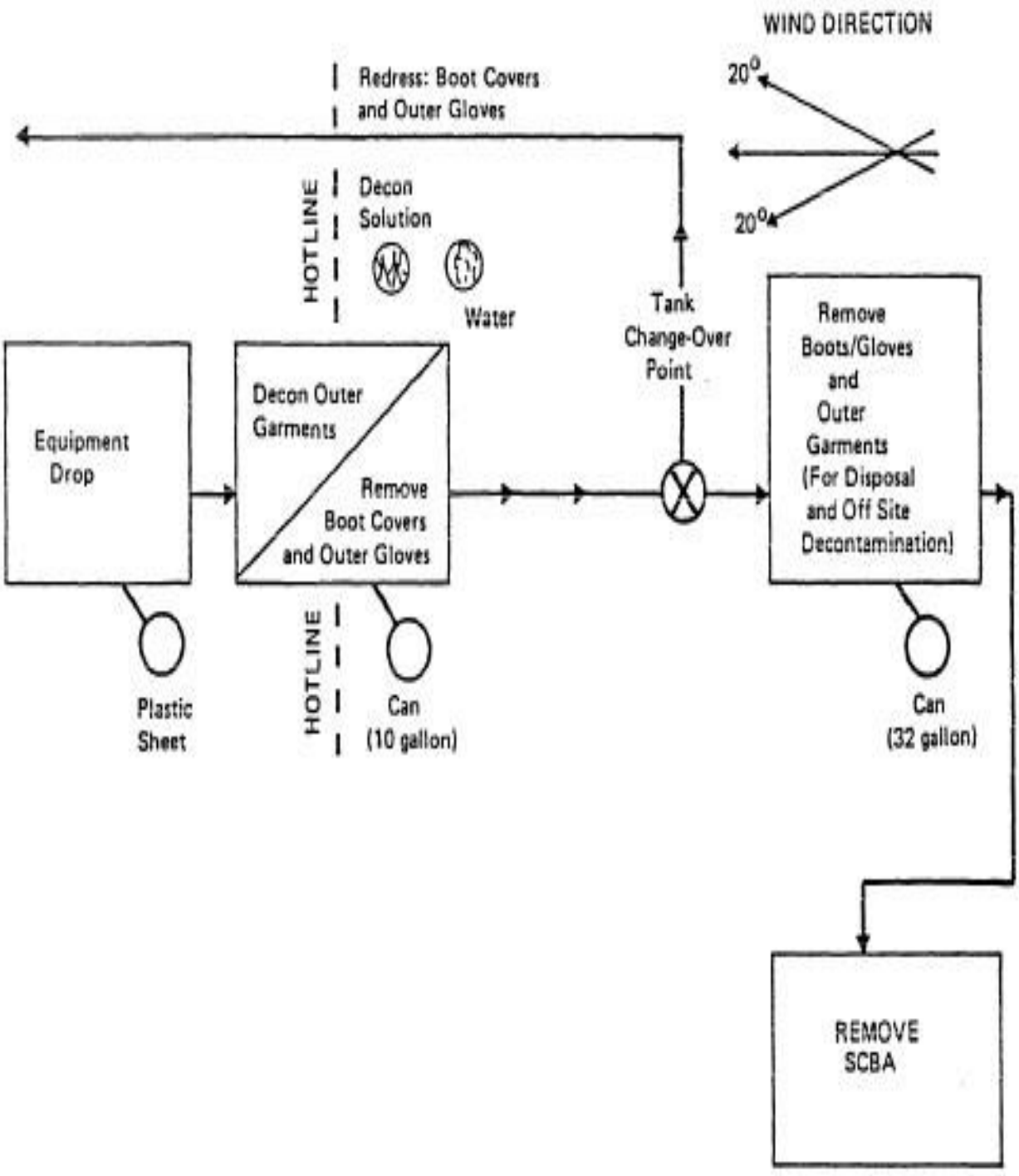
EQUIPMENT NEEDED TO PERFORM MAXIMUM DECONTAMINATION LEVELS A, B, & C

Station 1:	a. Various Size Containers b. Plastic Liners c. Plastic Drop Cloths	Station 10:	a. Containers (20-30 Gallons) b. Plastic Liners c. Bench or Stools d. Boot Jack
Station 2:	a. Containers (20-30 Gallons) b. Decon Solution or Detergent Water c. 2-3 Long-Handled (Soft-Bristled Scrub)	Station 11:	a. Rack b. Drop Cloths c. Bench or Stools
Station 3:	a. Containers (20-30 Gallons) Station OR High-Pressure Spray Unit b. Water c. 2-3 Long-Handled. Soft-Bristled Scrub Brushes	Station 12:	a. Table
		Station 13:	a. Basin or Bucket b. Decon Solution c. Small Table
Station 4:	a. Containers (20-30 Gallons) b. Plastic Liners	Station 14:	a. Water b. Decon Solution c. Small Table
Station 5:	a. Containers (20-30 Gallons) b. Plastic Liners c. Bench or Stools	Station 15:	a. Containers (20-30 Gallons) b. Plastic Liners
Station 6:	a. Containers (20-30 Gallons) b. Plastic Liners	Station 16:	a. Containers (20-30 Gallons) b. Plastic Liners
Station 7:	a. Containers (20-30 Gallons) Station b. Decon Solution c. 2-3 Long-Handled. Soft-Bristled Scrub Brushes	Station 17:	a. Containers (20-30 Gallons) b. Plastic Liners

Station 8:	a. Containers (20-30 Gallons) Station OR High-Pressure Spray Unit Station b. Water c. 2-3 Long-Handled. Soft-Bristled Scrub Brushes	Station 18:	a. Water b. Soap c. Small Table d. Basin or Bucket e. Field Showers f. Towels
Station 9:	a. Air Tanks or Face Masks and Cartridge Depending on Level b. Tape c. Boot Covers d. Gloves	Station 19:	a. Dressing Trailer Needed in Inclement Weather b. Tables c. Chairs d. Lockers e. Cloths

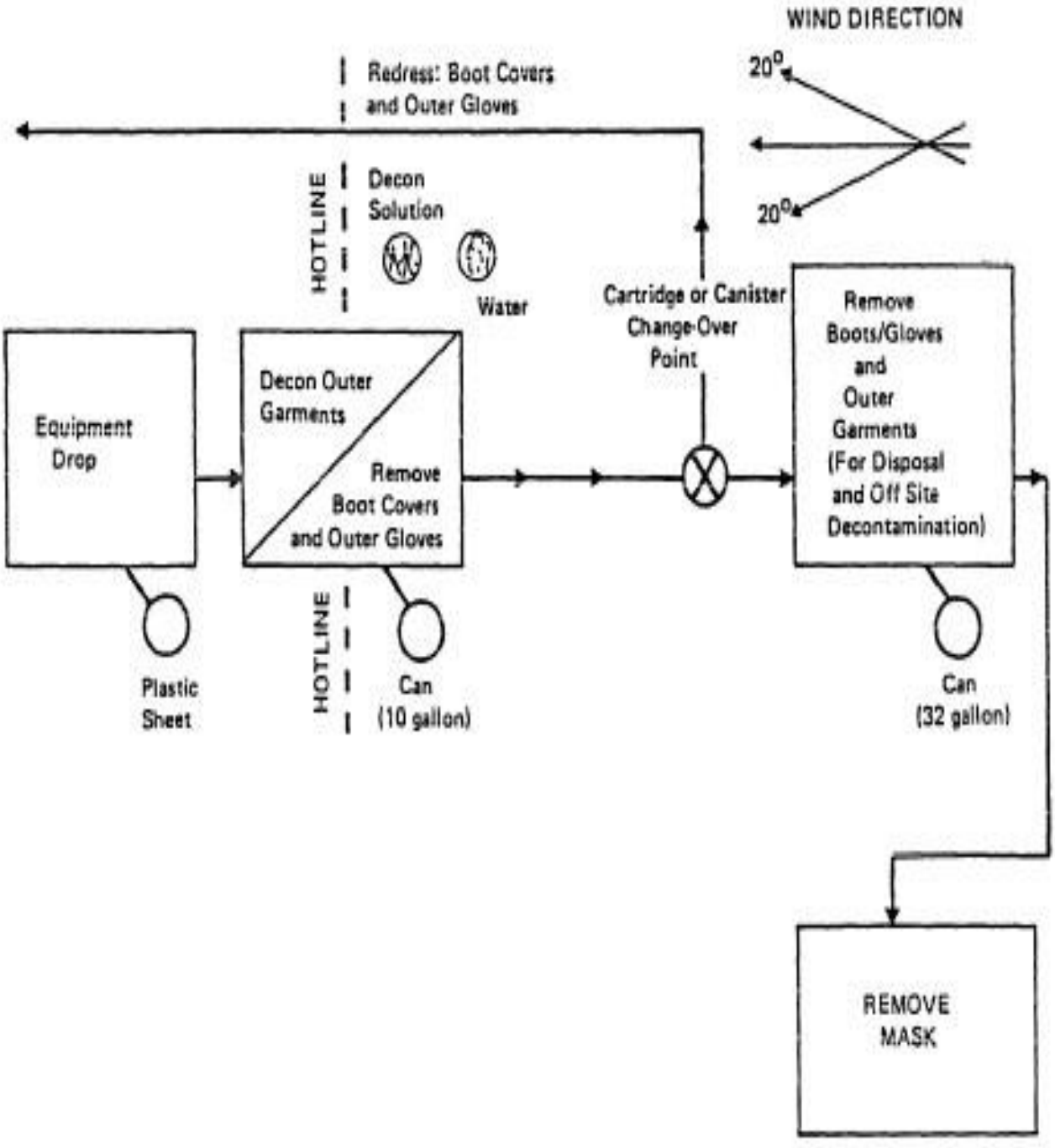
MINIMUM DECONTAMINATION LAYOUT

LEVEL A & B PROTECTION



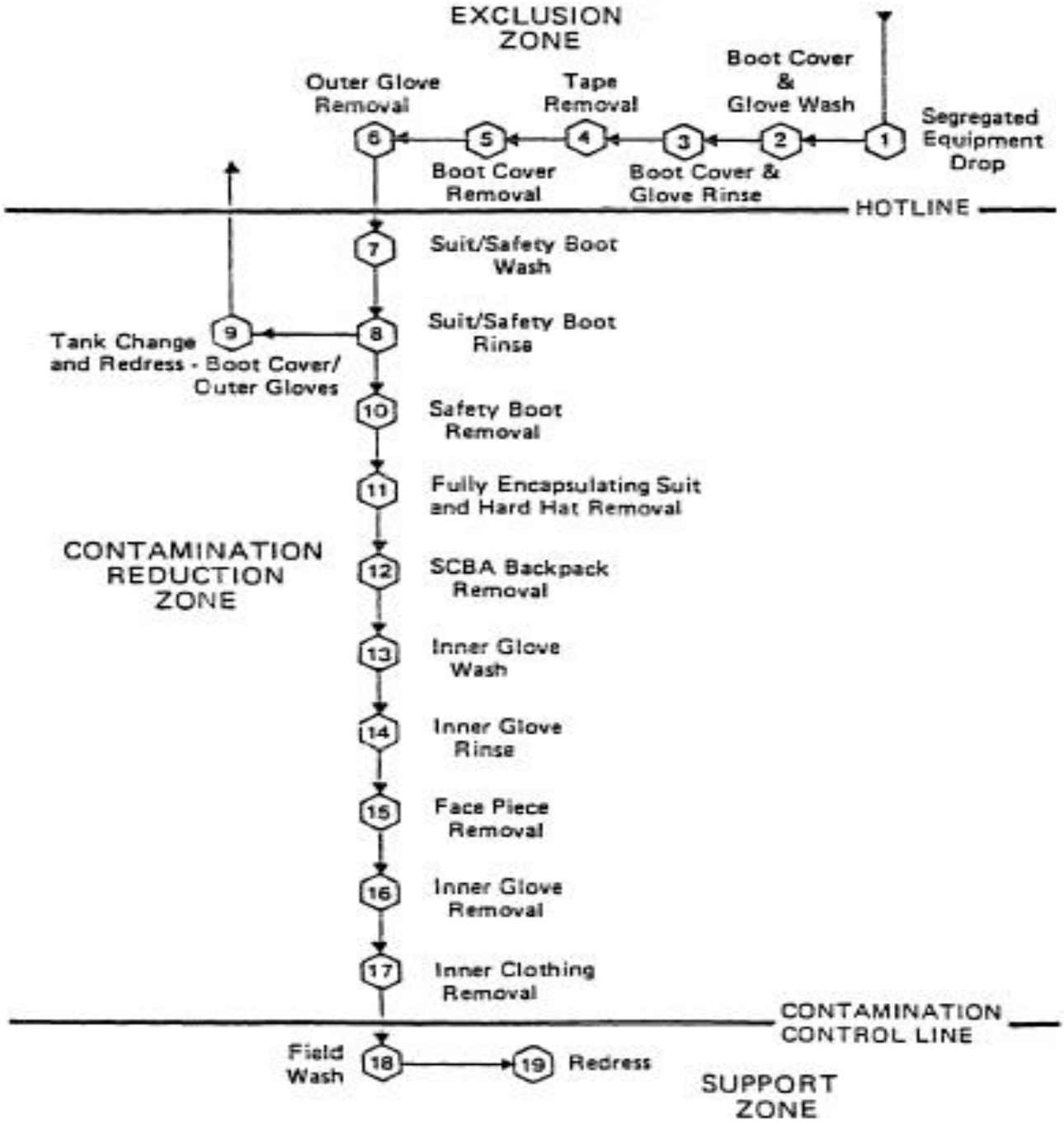
MINIMUM DECONTAMINATION LAYOUT

LEVEL C PROTECTION



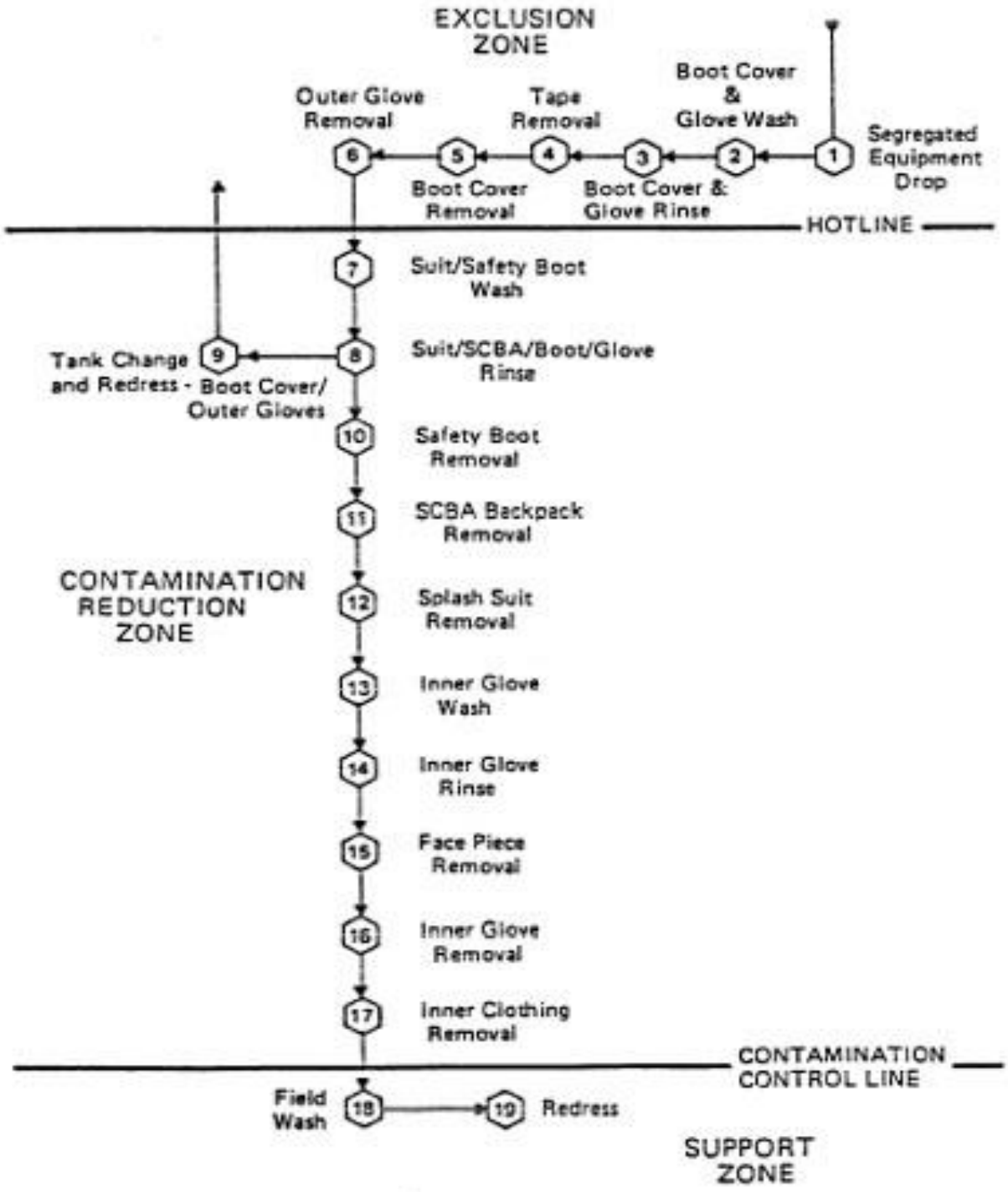
MAXIMUM DECONTAMINATION LAYOUT

LEVEL A PROTECTION



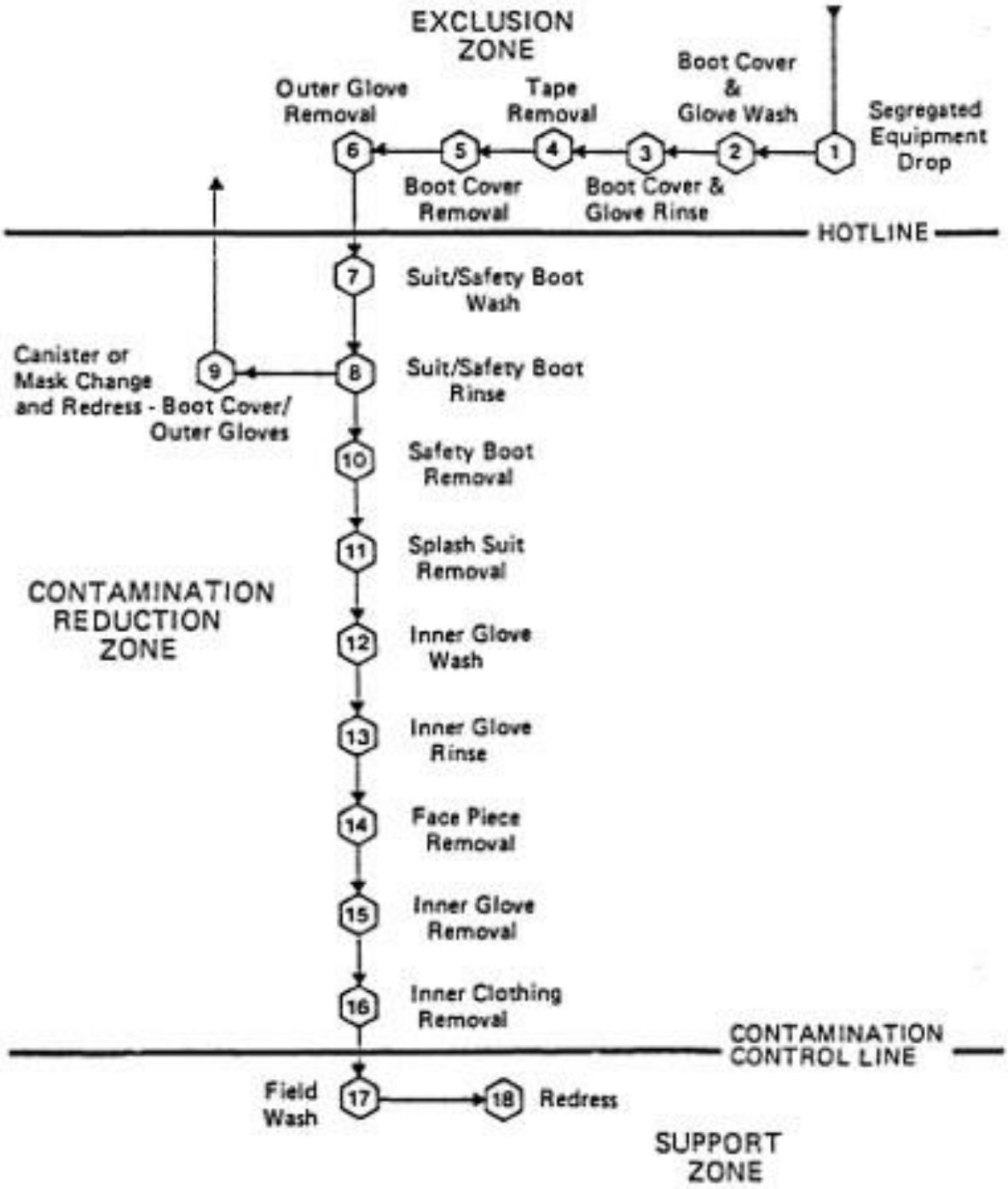
MAXIMUM DECONTAMINATION LAYOUT

LEVEL B PROTECTION



MAXIMUM DECONTAMINATION LAYOUT

LEVEL C PROTECTION



DECONTAMINATION OF VEHICLES AND EQUIPMENT

Decontamination of vehicles and equipment of the various operational services, such as fire departments, police departments, and decontamination teams, will be the responsibility of the various services, aided by radiological defense services. Individuals will be responsible for decontamination of their own vehicles and equipment in accordance with instructions of local government.

The simplest and most obvious method for partial decontamination of vehicles and equipment is by water hosing. Quick car-washing facilities are excellent for more thorough decontamination.

Special precautions should be used when vehicles and equipment are brought in for maintenance. The malfunctioning part of the vehicle or equipment should be checked for excessive contamination.

Hosing should not be used on upholstery or other porous surfaces or the interior of vehicles, as the water would penetrate and carry the contamination deeper into the material.

The interior of vehicles can be decontaminated by brushing or vacuum cleaning. Procedures for decontaminating interiors of vehicles by vacuum cleaning are similar to those used on the interior of structures.

Upon completion of missions in a contaminated area, vehicles and equipment used by decontamination personnel should be monitored, and decontaminated if necessary. Attempts should be made to reduce the hazard to tolerable levels.

A paved area set up for decontamination would be the best place for decontaminating vehicles and equipment, because it could be hosed off after decontamination.

Monitoring should follow each decontamination procedure to determine if further treatment is required.

RADIOLOGICAL PROTECTION FOR THE NUCLEAR ATTACK HAZARD

I. PURPOSE

This appendix covers radiological protection relating to unique demands expected to be generated by a nuclear attack.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. The detonation of a nuclear weapon would cause a radiological hazard that differs markedly from that posed by peacetime hazards in the extent of the area affected and in the intensity of the radiation.

2. It is not possible to predict the size of an attack or the specific areas that would be directly affected. The number of weapons could be one, as in an accidental launch or terrorist incident, or it could be many, as in an all-out attack on military and economic targets.

   Development of a nuclear attack radiological protection system will remain an advisable activity as long as stockpiles of nuclear weapons exist and the number of nations with sufficient technological development to produce nuclear weapons continues to grow.

3. The Governor's Order to evacuate high-risk areas will trigger the release of stored radiological instruments to emergency organizations and public fallout shelters. During a period of heightened tensions the Governor's Order for surge training would also trigger release of instruments. See Tab 1, For Radiological Monitoring Equipment Locations

B. Assumptions

1. Trumbull County can develop a Radiological Protection System, which meets all nuclear attack and peacetime radiological hazard requirements.

III. CONCEPT OF OPERATIONS

A. General

The stages of a Nuclear Defense Emergency are as described in the Direction and Control Annex, Appendix 1. In the pre-emergency phase, an inherently expandable radiological protection system will be maintained. The principal elements of this system are procedures, facilities, equipment, communications, and trained personnel.

B. Nuclear Defense Emergency Phase

The emergency phase of a nuclear defense situation includes an increased readiness period, during which all elements of the radiological protection system will be expanded, training will be conducted, and drills will be carried out to refine the capabilities of the system. A listing of radiation level reporting locations for a nuclear defense emergency is provided in a table in Attachment 2 to this appendix.

If an attack actually occurs, all elements of the emergency organization will be dependent on the radiological protection system for information to determine when emergency actions can be undertaken and to minimize the radiation danger to emergency services personnel.

The radiological protection organization will be integrated across the board with the emergency management organization as a whole (i.e., personnel of all elements will be trained to monitor and interpret radiological data), so that radiological situation information will be available throughout the organization even during periods of seriously degraded communications.

C. Continuity of Government

The Radiological Protection System will be carefully coordinated with continuity of government planning to provide enough information, analysis and decontamination capability to ensure survival of personnel and continuation of essential functions of local government.

D. Shelter System Support

Radiological information may be the key to survival for people in fallout shelters. A listing of instruments and monitors are given in Tab 1 and 2 to the Radiological Protection Annex.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Organization

Not used. See Section III. A. to the Radiological Protection Annex.

B. Assignment of Responsibilities

1. Emergency Management

   Coordinate with the State Emergency Management Agency and with neighboring jurisdictions on development of the RP System.

2. Radiological Officer

   a. Maintains rosters of the RP personnel.

   b. Maintains inventories of RP equipment.

   c. Provides RP training.

   d. Supervises the radiological situation analysis team.

   e. Prepares outgoing reports on the radiological situation.

   f. Receives and analyzes reports and briefs and Direction and Control staff on the radiological situation.

   g. Receives, displays and analyzes weapons effects data from the reporting network.

   h. Prepare weapons effects reports for submission to State/Federal Government.

3. Weapon Effects Reporting (WER) Network

   a. WER Stations (referred as monitoring stations) are established to detect and report weapon effects information. Monitoring Stations report:

      (1) Observation/sightings of nuclear detonations or nuclear burst clouds

      (2) Damage from nuclear detonations

      (3) Radioactive Fallout arrival and intensities

b. Any shelter with radiation detecting equipment has the responsibility to report radiation intensities at its location.

V. DIRECTION AND CONTROL

Information Requirements: All monitoring stations will report the following information to the county EOC. Exact formats and additional detail are specified in CPG 2-10 series. Negative reports are as important as the actual reports below. Negative sighting and damage reports are sent as possible after a weapon detonation. Negative Fallout Reports should be sent 12 hours after a nuclear burst.

A. Sightings of Nuclear Weapons Detonations

B. Damage B any observed damage is classified as only Awindow≅ or as structural damage.

1. Window damage is only broken windows. This defines the outer limit of physical damage.

2. Structural damage is visible damage greater than simply broken windows. This damage defines the area in which more serious damage has occurred. Structural damage includes any fires started, blown in doors, or any greater damage.

C. Fallout B The Fallout Reports are very time critical and provide key information on the travel of the cloud, expected dose rates and health of the populace. Exposure rates should be reported as Aoutside≅ dose rates or if inside then the Transmission Factor must always be determined and reported. All the below numbers are outside dose rates. See RM Manual for details.

1. Fallout is arriving and the exposure rate goes above .5 r/hr (500mr/hr).

2. The exposure rate reaches/rises above 5 r/hr

3. The exposure rate reaches/rises above 50 r/hr

4. The exposure rate has peaked and is declining

5. The exposure rate is declining and goes below 50 r/hr

6. The exposure rate is declining and goes below 5 r/hr

7. The exposure rate is declining and goes below .5 r/hr

8. Selected monitoring stations may be tasked to provide hourly reports

D. County reports to the state EOC: Counties will immediately forward the first report of each type received, the state may request additional data as well the following summary reports:

1. Each locations peak report

2. Any shelter where the total dose is expected to exceed/has exceeded 200 rad. Provide estimated total dose.

VI. CONTINUITY OF GOVERNMENT

Not used. See Section VI. of the Radiological Protection Annex.

VII. ADMINISTRATION AND LOGISTICS

A. Protection of Monitoring Stations. Monitoring Stations will be facilities with a fallout protection factor (FPF) of at least 100 or in a facility upgradeable to that level.

B. Communications. Monitoring stations will have redundant sets in case of EMP damage to the primary transmitter.

See also Section VII. of the Radiological Protection Annex.

VIII. PLAN DEVELOPMENT AND MAINTENANCE

Not used. See Section VIII. of the Radiological Protection Annex.

IX. AUTHORITIES AND REFERENCES

A. **Authorities and References**

Not used. See Section IX. A and B. of the Basic Plan.

X. ADDENDUMS

Appendix 1 Radiological Protection for Nuclear Attack Hazard

Attachment 1 International Nuclear Incident Event Scale

Attachment 2 SALT Mass Casualty Triage Algorithm

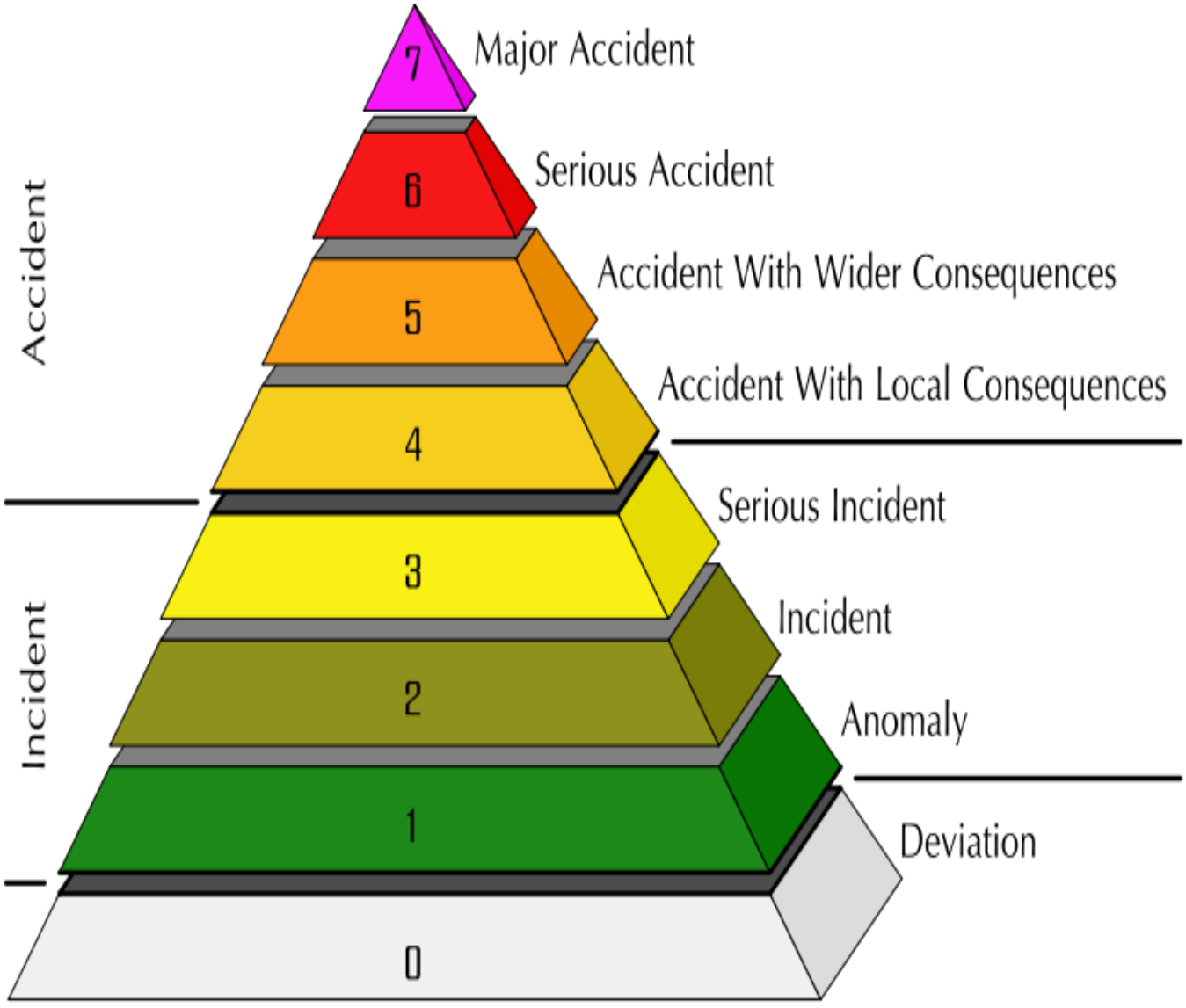
Attachment 3 Simple Triage and Rapid Treatment

Attachment 4 Example Triage Tag

Appendix 2 Managing SURGE Needs

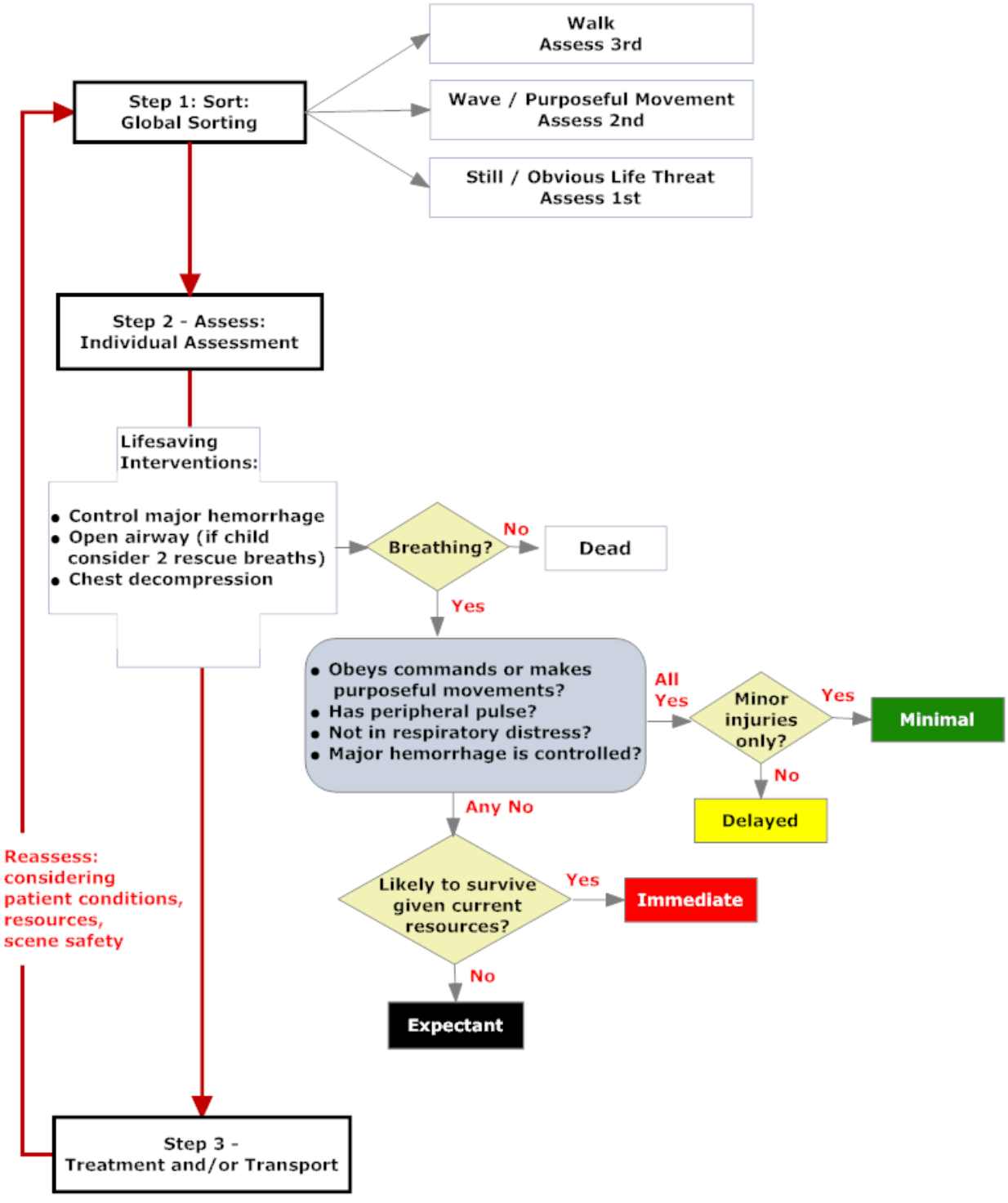
Attachment 1 SURGE checklist

International Nuclear Event Scale

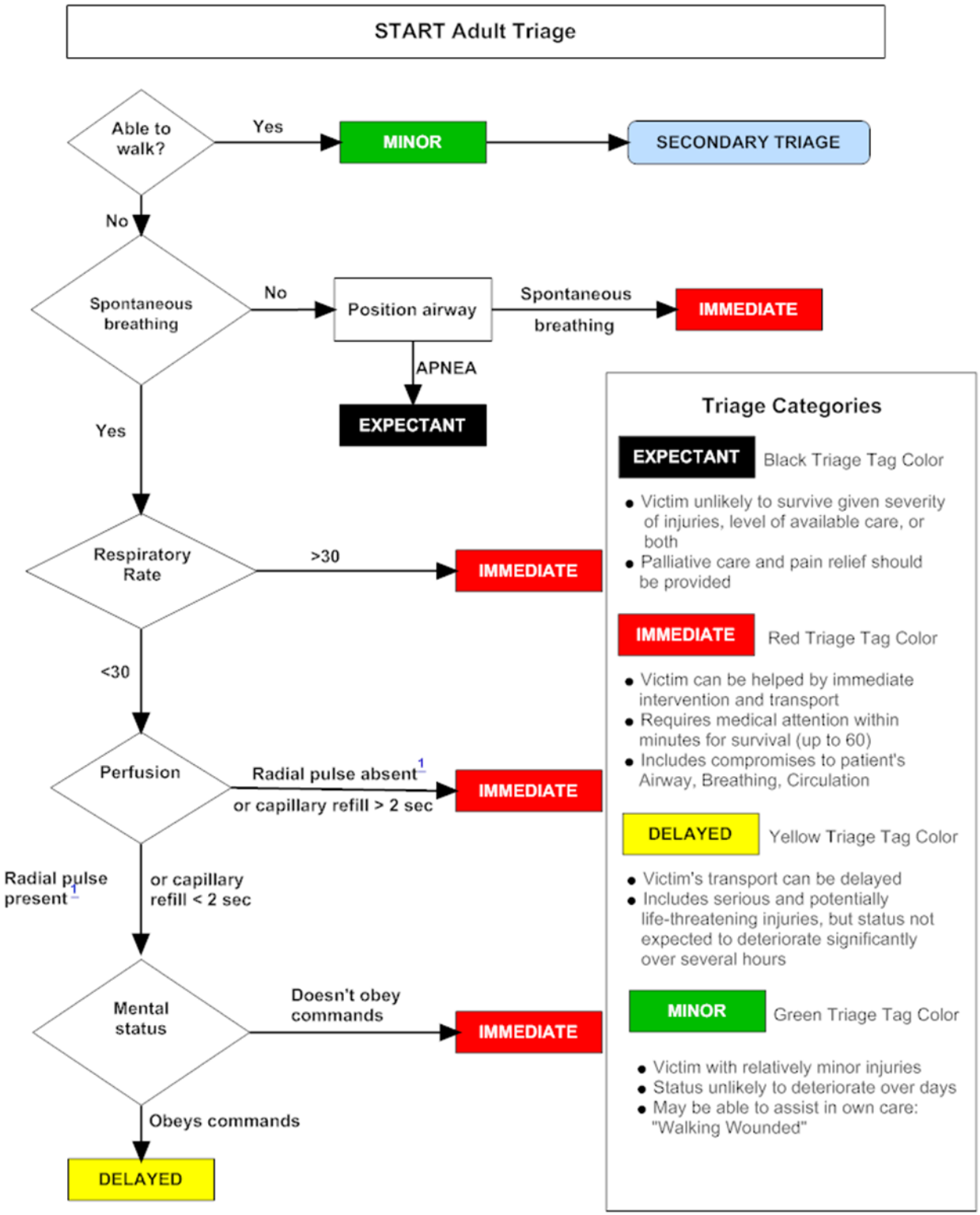


SALT Mass Casualty Triage Algorithm

(Sort, Assess, Lifesaving Interventions, Treatment/Transport)

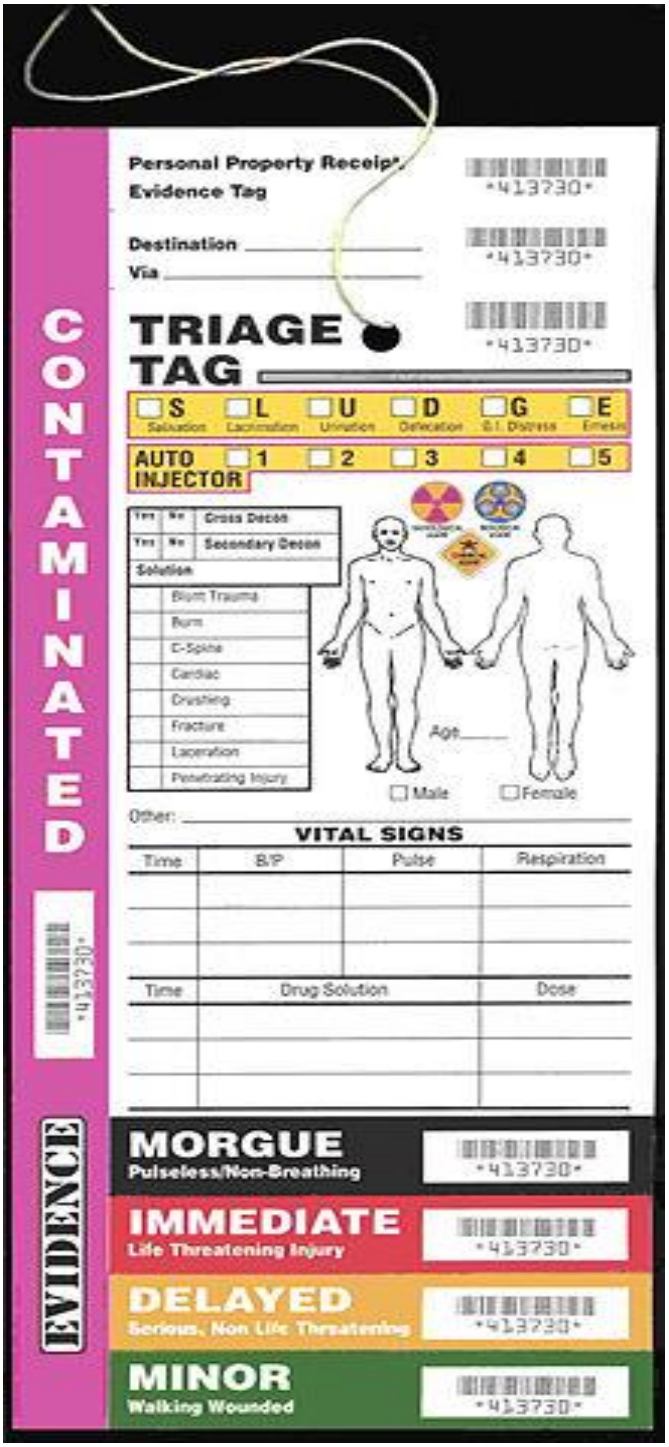


Simple Triage And Rapid Treatment



Example Triage Tag

For Emergency Mass Casualty Decontamination



Managing Surge Needs for Injuries:
Radiology Response

PURPOSE

Within four hours of an explosion, operationalize radiology support for the initial treatment of 300 injured patients and for ongoing care up to 72 hours.

GOAL

To establish policies, procedures, and drills to improve radiological preparedness for treating 300 patients injured from an explosion for up to 72 hours.

Definition of Surge:

As defined by the State in consultation with healthcare providers throughout the state, a working definition is:

A Surge Event is a significant event or circumstances that impact the healthcare delivery system resulting in excess demand over capacity and/or capability in hospitals, community care clinics, public health departments, other primary and secondary care providers, resources, and/or emergency medical services.

This definition does not take into consideration the scope of the event or the time between the onset of surge and a local or statewide proclamation of a disaster and/or issuance of gubernatorial executive orders waiving specific licensing and scope of practice requirements.

RESOURCES REQUIRED

There must be enough radiology personnel (radiologists, technicians, and support staff), equipment, and supplies to care for 300 injured patients. In large mass casualty situations, responding health care entities may need to increase their capacity several fold very quickly in order to serve patients. This is usually called initiating protocols for "surge capacity".

ASSUMPTIONS

1. Radiology services will be a critical component of the hospital response to a bombing.
2. Many patients over a relatively short time period requiring radiology may lead to slow-downs and bottle-necks.

ACTION STEPS

The near-term solutions listed below include estimated number of hours needed to perform each task.

1. Develop a management plan and call list for the radiology department to use during a mass casualty event. Drill the plan, involving radiologists for immediate (“wet”) readings of plain films and special

studies. This will assist in rapid evaluation and treatment of patients. The plan should also optimize and streamline radiology study protocols for use during a mass casualty event.

Enhanced radiology patient throughput will be essential in the initial evaluation and treatment of blast-injuries. Each radiology department must develop a plan to ensure rapid turnaround patient studies and their results.

2. When disaster patients arrive, a radiology ultrasound technician should be available in the emergency department to support the performance of an immediate FAST (Focused Abdominal Sonography for Trauma) exam. If this is not possible, the emergency physicians and trauma surgeons should be trained to conduct one.

3. Conduct an imaging equipment survey; evaluate the status of the equipment for multiple traumas, making sure there are adequate amounts of portable equipment available and update if needed. Radiology equipment is expensive and usually requires planning in advance for acquisition and installation. However, by evaluating how available equipment could be put to maximum use during a mass casualty event can improve patient throughput.

4. Establish a protocol for augmenting patient movement and monitoring in the radiology department. Afterwards, review the availability of patient monitoring personnel and equipment to enhance departmental throughput, especially of studies such as CT scans.

EVALUATION

Where appropriate, evaluation drills have been incorporated into the "Action Steps" listed above. The institutional disaster preparedness plan should be updated based on each drill experience.

SURGE Checklist

This checklist has been organized into five main sections that cover key aspects of a comprehensive surge plan—Command and Management; Creating Surge Capacity; Personnel; Supplies, Pharmaceuticals and Equipment; and, Important Considerations along with a list of resources.

Note the status of plan elements in the "Status" columns (C-Completed, IP-In Progress, NS-Not Started) and the Location (e.g., EOP, Safety Management Plan, Infectious Disease Plan, etc).

1. Command and Management

Status*	Location	Plan Elements
		Plan identifies triggers and decision-making processes for activating the Emergency Operations Plan (EOP) and surge plan in response to a surge event.
		• Initial assessment of the event type, scope and magnitude, estimated influx of patients, real or potential impact on the hospital, and special response needs (e.g., infectious disease, hazardous materials).
		• Activation of the Hospital Incident Command System (HICS) and determination of appropriate positions to be activated. Utilize incident specific HICS Incident Response Guide (IRG) where appropriate.
		• Activation of the Hospital Command Center (HCC).
		• Notification to appropriate local governmental point of contact (e.g., local health department, local emergency medical services agency, Medical and Health Operational Area Coordinator) of the surge status and activation of the EOP and surge plan.[1] The EOP identifies the local government points of contacts and 24/7 contact numbers, alternate contacts and appropriate notification priorities and processes.
		• Internal notification/communications and staff call-back protocols (e.g., call trees, contact information, etc.).
		• Processes, procedures and paperwork for contacting local or regional licensing authority (e.g., California Department of Public Health Licensing and Certification) for potential or actual request for temporary permission to exceed staffing ratios or utilize non-traditional patient care delivery areas (e.g. tents). Include the licensing authority's contact information in the plan, templates and checklists.
		• Memoranda of Understanding (MOU) with local government, area hospitals, long term care facilities and other health providers to accept or receive patients and share resources as appropriate and possible.
		• Establish ongoing communications with local governmental point of contact to report: o Patient census and bed capacity using standardized reporting terminology (e.g., HAvBED or as established by your local government point of contact[1]). o Hospital status, critical issues and resource requests.
		• Activation of resource management system including inventory, tracking, prioritizing, procuring and allocating of resources.

2. Creating Surge Capacity

Status	Location	Immediate Response
		Triage: Plan to activate and operate additional/alternate triage area(s) during a surge event.
		• Activation triggers for establishing alternate/additional triage areas are defined.
		• Set-up checklists and operations plan.
		• Identifies primary and alternate triage areas (e.g., consider external triage areas, event type, and facility damage).
		○ Responsibility and processes for set-up and operation of triage area(s) are defined.
		○ Communications plan for communications between triage areas, Emergency Department, other key departments and the HCC (e.g., landlines, walkie-talkies, radios).
		○ Staffing of the alternate triage sites.
		○ Provision of supplies and equipment for the triage area considering scope and type of event, based on the facility HVA.
		○ Infectious and/or exposed patient triage area(s) and protocols (e.g., standard precautions, staff Personal Protective Equipment, ventilation, infection control protocols for staff and patients).
		○ Flow of patients to and from the triage area(s).
		○ Signage for directing patients to triage area(s).
		○ Communication with the HCC to identify available community resources (e.g., checklist with level of care capability and contact information).
		○ Triage protocols for internal and external patient disposition (e.g., minor care, delayed care, holding, hospital or local government alternate care sites, etc.).
		Decontamination: Plan to activate and perform decontamination, as necessary.
		• Plan for set-up (checklist) and operation of holding and decontamination area(s) (list individuals responsible).
		• Plan for segregation and prioritization of contaminated individuals for decontamination.
		• Methods for directing patients to decontamination area(s) (e.g., signage, stations, cones, etc.).
		○ Primary and alternative decontamination areas (consider external areas, event/agent, and facility damage potential).
		○ Communications protocols within the decontamination area(s) and between other units.
		○ Staffing plan.
		○ Equipment and supplies.
		Holding Areas: Plan for activation and operation of holding areas for patients awaiting triage, decontamination, treatment, admission, discharge or transport to lower levels of care.
		• Responsibility for set-up and operation of holding area(s) (identify by area).
		• Map and signage, using appropriate languages, for directing staff/family and patients to holding area(s).
		• Set-up checklists and operations plan.
		○ Primary and alternate holding area(s) while considering type of event, capacity, level of care, infectious disease, facility status.
		○ Communications between treatment areas, with HCC.
		○ Staffing plan considering scope and type of patient (level of care, infectious disease, etc.).
		○ Equipment and supplies.
		Treatment Areas: Plan for activation and operation of additional treatment areas to include id of sites, signage, capacity, responsibility, communications, staffing, equipment and supplies, patient tracking/medical records, etc., allow the Emergency Department to focus on higher acuity patients.
		• Minor care area(s).
		• Delayed care area(s).
		• Additional immediate care area(s), if available or necessary.

		• Infectious disease care area that is specific to type of contagion.
		Security – Facility Access: Plan(s) for securing and limiting facility access during a surge event.
		• Security assessment with plans to address vulnerabilities.
		• Plan for activating traffic control measures for access to facility (pre-planned traffic control measures, tools, etc.).
		○ Road map outlining ingress, egress and traffic controls during surge event that is coordinated with law enforcement.
		○ Specific staffing assignments and instructions for traffic control that includes who, what, and how during a surge event.
		• Plan for initiating facility lock-down and/or limited access and entry.
		○ Identification/diagram of all access points in facility.
		○ Identification of limited access points for entry and procedures for monitoring/managing staff.
		○ Criteria and protocols for entry and exit to/from facility(ies) --including staff, volunteers, patients, family and other individuals (e.g., who, identification requirements).
		○ Staffing plan for monitoring closed entrances (which will only be locked for external entry).
		○ Communication between security, manned access points and HCC.
		○ Special considerations following a terrorist attack/active shooter event (e.g. creating a secure perimeter, restricting access to adjacent parking areas, increasing surveillance, limiting visitation, etc.).
		• Training for staff who may be utilized in security roles including protocols, handling abusive behavior, etc.
		• Plan and mutual aid agreements for assistance with hospital security (e.g. hospital labor pool, local law enforcement, outside agencies, etc.).
		Direct Patient Care Areas
		Specific protocols for creating surge capacity to care for a significant surge of disaster patients.
		• Plan for immediate cancellation/delay of scheduled/non-emergent admissions, procedures and diagnostic testing.
		○ Inpatient admissions including scheduled surgeries/procedures).
		○ Clinic visits.
		○ Outpatient surgeries and procedures (e.g., GI, Catheterization, Radiologic).
		○ Diagnostic/Ancillary services (e.g., Imaging, Neurology).
		• Protocols for rapid and periodic review of patients for admission, discharge or transfer by teams of physicians, nurses and discharge planners for:
		○ Emergency Department (ED).
		○ Inpatients by unit or service.
		○ Outpatient surgery and procedure areas (e.g., Colonoscopy)
		○ Clinics
		• For potential terrorist or criminal event, chain-of-evidence for law enforcement is addressed.
		• Communication and coordination with HCC regarding activated and available community resources to triage discharge or transfer to. The plan should include checklist with location, level of care and contact information.
		Capacity Plan Contents: Specific protocols for expanding ambulatory and inpatient capacity beyond licensed capacity.
		• Identify how ED, inpatient units, clinics, clinical areas and other hospital areas (e.g., cafeteria, auditorium, conference rooms, surge tents, open spaces, etc.), will be utilized to expand surge capacity. Address all key elements for use including forms and protocols for each area.
		○ Capacity and use, considering cohorting of patients (e.g., inpatient, minor care, holding).

		○ Activation including definition of responsibility and activation process.
		○ Management and operation of the area (describe responsibilities and procedures).
		○ Equipment and supplies (including re-supply).
		○ Staffing (identify requirements and staffing plan).
		○ Management of special needs patients (e.g., mobility impaired, hearing impaired, etc.).
		○ Method of triage to/ discharge from area, including transport method(s).
		○ Work with local fire officials and OSHPD in preplanning and deployment of surge tents.
		Inpatient Capacity: Specific plans for increasing bed capacity to care for surge of inpatients, including expanding beyond licensed capacity on inpatient units and use of alternative care areas (e.g., dialysis, outpatient surgery, recovery, etc.) while maintaining continuity of operations and care for current patients who cannot be discharged or transferred.
		• Trauma (assume all hospitals will receive trauma cases when trauma center capabilities are exceeded)
		• Critical care (expand bed capacity in existing units, use of other areas/units).
		• Burn assumes all hospitals will receive burn patients when burn center capabilities are exceeded.
		• Isolation plan that identifies specific hospital unit(s) or areas for negative pressure or isolation through independent ventilation if event involves contagious/infectious disease.
		• Medical/Surgical acute care
		• Pediatric (assume all hospitals will receive pediatric cases when pediatric center capabilities are exceeded).
		• Neonatal Intensive Care Unit (includes disaster victims and/or continuity of operations).
		• Maternity (assume continuity of operations).
		Ambulatory Care Capacity: Specific plans for expanding capacity to care for surge of emergency/ambulatory patients, including use of ambulatory care centers, and opening Alternative Treatment Areas (e.g., surge tents, clinics, other hospital areas and facilities).[2]
		Ancillary and Support Services
		Ancillary Services: Specific plans have been established for increasing capacity and capability for ancillary/diagnostic services during a surge event.
		• Laboratory services, including communication and reporting to and from county public health.
		• Imaging services (including MRI, CT, Ultrasound, etc.).
		• Other ancillary and diagnostic services.
		Mass Fatality Management: Plans have been established for management and disposition of deceased patients. (See CHA Mass Fatality in resources)
		• Plans are consistent and coordinated with Operational Area Mass Fatality Management Plan such as the Medical Examiner/Coroner Plans.
		• Includes mortality estimates by type of event to anticipate and secure supply needs (e.g., body bags, shroud packs, visquine, twine, etc.).
		• Plan for expanding decedent storage capacity, including alternative hospital areas, that identifies current and prospective capacity.
		• Agreements with external agencies for additional decedent storage capacity, consistent with local plans that include contacts and capacity.
		Medical Waste: Plans have been established for storage and/or disposition of increased medical waste during a surge event.
		• Expansion of storage facilities and/or disposition capabilities.
		• Agreements with vendor(s) to increase medical waste pick-up.

3. Personnel

Status	Location	
		Staffing: Specific plans for staffing during a significant surge event using hospital staff, contracted pools, and mutual aid resources, taking into consideration type and scope of event.
		• Identification of staffing needs by staff type, service area, and status of regulatory waivers regarding staffing ratios, licensure and scope of practice.
		• Contingency staffing plan identifies minimum staffing needs and prioritizes critical and non-essential services.
		• Maintain up to date staff contact information and ensure availability to HCC and individuals responsible/systems used for making staff contacts.
		• Staff disaster response assignments/roles (e.g., labor pool, specific units/areas, etc.) considering type of event.
		• Staff notification and call-back protocols, including responsibilities. Multiple methods identified and automated if possible.
		• Agreements with staffing agencies (assume multiple organizations have agreement with the same agencies).
		• Protocols for requesting and receiving staff resources (e.g., volunteers, special needs/teams, etc.) through HCC to local government point of contact.
		• Cross-training and reassignment of staff to support critical/essential services.
		• Establish Just- in-Time (JIT) training for key areas to allow staff to be assigned where most needed (e.g., Pediatrics, Burn, Respiratory, Security, Critical Care areas).
		• Address shift change, rotation, rest areas and feeding of staff.
		○ Protocols for shift changes and rotation of staff (consider type of event)
		○ Specific areas designated for staff respite and sleeping that (identify areas, responsibilities).
		Volunteers: Plan includes utilization of non-facility volunteers including policies and procedures for accepting, credentialing, orienting, training and using volunteers during a surge event.
		• Volunteer check-in protocols including staffing of check-in location (e.g., single entry).
		• Registration, credentialing and privileging protocols, including use of local Medical Reserve Corps (MRC) and Disaster Healthcare Volunteers (DHV).
		• Systems to collect, track, and maintain volunteer information
		• Issuance of identification badge and other means of identification (e.g., colored/printed armband).
		• Protocols for assignments and roles by type of volunteer (consider buddy systems as appropriate).
		• Just-in-Time (JIT) training as appropriate to volunteer role(s).
		Staff/Family Needs: Specific plans for addressing staff needs, family and domestic concerns during a surge event.
		• Internal or external arrangements for dependent care to include, if necessary, boarding, food and special needs to remove barriers that may prevent staff from coming to work (e.g., encourage staff to have family disaster plan and to pre-arrange, if possible).
		• Internal or external arrangements for pet care and (encourage staff to pre-arrange).
		• Protocols and specific assignment of appropriately trained professionals to monitor and assess staff for both stress-related and physical health concerns.

4. Supplies, Pharmaceuticals and Equipment

Status	Location	
		Plan addresses supplies, pharmaceuticals and equipment (SPE) for patients and staff for a significant surge event. • Essential SPE have been identified and summarized (consider type of event and patient age).
		○ Equipment and furnishings (e.g., beds, cots, ventilators, IV pumps, etc.).
		○ Supplies.
		○ Personal Protective Equipment (e.g., masks, respirators, gowns, gloves, hand hygiene

		products).
		○ Pharmaceuticals (including prophylaxis for inpatients, staff and family members).
		○ Food and water for patients, staff, families and volunteers.
		• Plans to meet SPE needs/requirements have been established including who, how, and where.
		○ Standard hospital resources/supplies.
		○ Hospital caches, including pallets, trailers and methods for transportation/delivery.
		○ Agreements with vendors for surge SPE (list of contacts and deliverables) and list of alternative vendors (assume multiple organizations have agreements with the same vendors).
		○ Agreements with local pharmacies and stores including list of contacts and deliverables.
		○ Community/government caches that includes list of cached items.
		○ Other resources
		○ Security needs during transport, delivery and storage of SPE.
		• Needs and plans have been shared with local government point of contact and planning partners.
		• Describe responsibilities and protocols for providing, requesting, accepting, distributing and tracking mutual aid resources including who, where, and how.
		• Strategies/protocols included for how priorities would be established if there is a need to allocate limited patient equipment, pharmaceuticals and other resources.
		• Identified reporting process on status of SPE resources available and/or needed, and urgency of needs to local government point of contact.

5. Important Considerations

Status	Location	
		Healthcare Coalitions: Hospital participates in local Healthcare Coalitions for surge planning and community risk assessment/needs activities.
		Communication: Plan describes primary and back up internal and external communication systems, assigned frequencies and uses, maintenance and equipment locations (e.g., internet, telephone, cell, internal radios, satellite, HAM radio, ReddiNet, EM System, Command Aware, Live Process, WebEOC, Vocera, CAHAN, etc.).
		Behavioral Health Needs: Plan addresses how behavioral health needs of staff, patients and family members will be met. Have printed and electronic resources available. Identify any community resources that may be available. (See CHA Mental/Behavioral Health in resources)
		Media Communication: Plan includes protocols for communication with the media in coordination with county and other healthcare providers.
		• Protocols for communication with media and identifying media spokesperson(s).
		• Coordination with county Emergency Operations Center/Joint Information Center (JIC) to establish common messaging and information dissemination.
		• Pre-prepared templates for issuing press statements that consider key event types, common statements and facts.
		Documentation – Patient Tracking: Plan includes minimum patient documentation requirements for use during a surge event and protocols for patient tracking (e.g., HICS form 254 – Disaster Victim Patient Tracking Form) and reporting to appropriate agencies (e.g., county, American Red Cross). Identify systems in place that address community wide patient tracking. Consider activation of a hospital based Family Information Center (FIC) to assist in reunification. (See Family Information Center plan in resources)
		Information Sharing: Plan addresses release of patient information to appropriate entities and individuals for patient/family reunification. (See Information Sharing in resources)
		Continuity of Operations: Hospital has Continuity of Operations Plan which identifies and plans for maintaining critical/essential functions and services during a disaster or significant surge event. Manual backup processes and forms are identified. (See CHA Continuity Planning in resources)
		Prioritization of Resources: Hospital has protocols for prioritization of resources during a surge event when demand exceeds available resources.

Status	Location	
		Care Requirements for Services not Normally Provided: Plan addresses protocols and resources for providing services not normally provided by hospital (e.g., infants and children, maternity, burn, trauma).
		• Care area(s) identified.
		• Equipment resources or adaptations identified (inventory lists).
		• Supplies identified with appropriate supply on hand (inventory lists).
		• Protocols (e.g., adapting adult beds to pediatric beds, handling burn cases).
		• Clinical expertise and Just-In-Time resources
		• Protocols for transfer of patient to a facility with appropriate capabilities, when they become available.
		Prophylaxis/Vaccination Plan: Hospital has plan and, as available, pharmaceutical and other resources to prophylax or vaccinate staff, staff family members, volunteers and patients.
		Crisis Standards of Care: Hospitals are encouraged to develop policies and procedures specific to their organization that address allocating scarce resources during mass casualty events. Hospital incorporates state and local level planning efforts into plan. (See IOM guidance in resources)
		Recovery: Utilize HICS Incident Response Guides for recovery activities. Plan refers to EOP recovery activities. (see Recovery in the Resources section)

*** C-Completed IP-In Progress NS- Not Started**