NORTHERN IRELAND FIRE BRIGADE

OPERATIONS POLICY AND PERFORMANCE REVIEW

STANDARD OPERATING PROCEDURE 6A

DECONTAMINATION/WASHDOWN

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DECONTAMINATION/WASHDOWN

1 BACKGROUND

1.1 Decontamination is used to cleanse personnel, equipment or clothing of contaminants caused as a result of exposure to hazardous substances. The process of cleansing should also take account of the potential damaging effects to the environment, therefore, wherever possible, hazardous substances and firewater run-off should be contained on site until specialist advice is available. The attending Hazmat Officer will be responsible for supplying this specialist advice to the Incident Commander.

1.2 The necessity for and the success of decontamination will depend on the quality of the Dynamic Risk Assessment. The safety benefits of minimum exposure of personnel, time of exposure, maximum distance and shielding should be observed. Wherever possible, physical contact with a hazardous substance should be avoided. These procedures should be read in conjunction with the Incident Command Policy and Hazmat Policy documents.

2 INTRODUCTION

2.1 PRIMARY PURPOSE OF DECONTAMINATION

The **primary** purpose of this decontamination procedure is to ensure that contaminated clothing or personal protective equipment can be removed safely from any persons exposed to a contaminant. These procedures are also aimed at minimising the danger of contaminants coming into contact with the person.

2.2 SECONDARY PURPOSE OF DECONTAMINATION

The decontamination of equipment, including Chemical Protective Clothing (CPC) is a secondary consideration and may be carried out elsewhere, although, if decontamination is carried out at the scene, this will help to reduce the opportunities for hazardous materials being transferred outside the Inner Cordon. **Prior** advice will be required from the Environment and Heritage Service (EHS) relating to the effects of decontamination procedures upon the environment. Containment of water run-off will be the normal standard applied until such times as EHS advise otherwise.

3 PRINCIPLES OF DECONTAMINATION

3.1 In the event of chemical or toxic exposure, the duration of the contact between the casualty and the contaminant has a major bearing on the prognosis for recovery, therefore the quicker that decontamination can be completed the greater the likelihood of a successful outcome. Exposure to radioactive materials or biological hazards requires the prompt removal of clothing and the provision of respiratory protection.

3.2 The key issues with regard to Firefighter safety are:

3.2.1 The risk to which personnel are exposed shall be reduced as far as is reasonably practicable.

3.2.2 Personnel should be given the maximum protection available.

3.2.3 Personnel should correctly don Personal Protective Equipment (PPE) and should be properly decontaminated prior to disrobing.

4 OBJECTIVES

4.1 The objectives of the Decontamination Procedure are:

4.1.1 To ensure the health and safety of personnel by assisting them to remove contaminated clothing and Breathing Apparatus, if applicable, without the contamination endangering them by inhalation, ingestion or skin contact.

4.1.2 To prevent the danger of contamination extending beyond the Inner Cordon (hot and warm zones).

4.1.3 To ensure that the necessary decontamination of personnel can be successfully carried out at an incident.

4.2 The Decontamination/Washdown Procedures implemented by the Brigade are designed to allow the necessary decontamination to be successfully carried out at an incident or, in the case of equipment, at a designated Decontamination Centre.

5 METHODOLOGY

5.1 The first objective is to remove the casualty from the area of gross contamination (Hot Zone) and, if possible, to open air. In the case of entrapped causalities it may be necessary to provide them with respiratory protection prior to extrication.

5.2 The careful removal of contaminated clothing will dramatically reduce the level of contamination and, therefore, should be a priority. The removal of clothing should be from head to foot wherever possible, to limit the risk of inhalation of the contaminant. In the case of contamination by biological or radioactive materials, the clothing should be damped down prior to removal in order to reduce the re-suspension of any particles, and if available, a dust/filter mask should be provided in order to reduce the potential for inhalation. All contaminated clothing removed from casualties should be treated as hazardous waste and, as such, be bagged and remain inside the Inner Cordon for specialist disposal at a later stage.

5.3 In some circumstances it may be preferable for those members of the public capable of removing their own clothing and carrying out their own decontamination to do so under the supervision of the Fire Brigade. However, communication between the supervising Firefighters and the public can be problematic due to the muffling effect of the BA set. The Incident Commander should take this into consideration as part of his/her Dynamic Risk Assessment.

5.4 Injured or immobile casualties will also need to be decontaminated. This will normally consist of decontamination of the nose and mouth to facilitate early resuscitation or respiratory protection, followed by disrobing and washing down.

5.5 The recommended method for decontamination as approved by HM Fire Service Inspectorate, is water and detergent for all chemicals, and water and bleach for all biological materials. The recognised method of application for these solutions is the "Rinse/Wipe/Rinse" method described in 5.6. Detergent liberates those chemicals that are not readily miscible in water and household bleach has a neutralising effect on many biological materials.

5.6 RINSE/WIPE/RINSE UTILISING BUCKETS AND SPONGES

5.6.1 This method of decontamination has been determined to be the best practice to remove contamination from personnel (Brigade or otherwise) who have been exposed to Hazmats whilst not wearing adequate protection.

5.6.2 Procedure for Rinse/Wipe/Rinse:

(i) It is essential to remove (or have the individual remove their own) contaminated clothing, leaving underwear in place, prior to decontamination

(ii) The appropriate concentration of decontamination liquid should be mixed into the buckets (See 5.7 for dilution ratios).

(iii) The sponge should be filled with the liquid and the contents of the sponge emptied onto the patient (starting with the face and the mouth). Care must be taken to avoid unnecessary contact between the casualty's eyes/airways/open wounds and that of the liquid.

(iv) The casualty should then be wiped with the dry sponge.

(v) The first sponge should then be refilled from the bucket of solution and the resultant contents emptied over the same area of the casualty.

(vi) Steps (iii) to (v) should then be repeated for the remainder of the exposed area.

(vii) The sponges and the contents of the buckets should be replaced after every third casualty.

5.7 RECOMMENDED DILUTION RATES: BLEACH AND DETERGENT

Industrial Chemicals	0.5% Detergent in water.
Radioactive Material	0.5% Detergent in water.
Biological Material	1% Household bleach in water
Unknown Materials	A mixture of: 0.5% Household bleach and 0.5% Detergent in water.
Soda Ash	1 Cup of soda ash to 10 litres of water.

It should be noted that 50mls of detergent or bleach in a normal bucket of water (10 litres) will result in a 0.5% solution.

6 CONTAMINATION

6.1 HAZARDOUS MATERIALS

Contamination may be solid, liquid or particulate. Types of contaminant include:

6.1.1 Chemicals.

6.1.2 Radioactive materials.

6.1.3 Biologically hazardous materials.

6.1.4 Fibrous materials, eg, Asbestos or Man-Made Mineral Fibres (MMMF)

6.2 Direct body contamination may occur where appropriate PPE is not worn, or if a protective suit has any openings caused by a rip or tear to the suit during operations, or the suit has been incorrectly donned, eg, zips not secured correctly.

6.3 Hazardous substances may contaminate personnel in one of the following circumstances:

6.3.1 PROTECTED

Contamination occurring where personnel have become contaminated whilst wearing adequate protective clothing at a hazardous incident.

6.3.2 UNPROTECTED

(i) Contamination occurring whilst unaware of the presence of a hazardous substance.

(ii) Contamination as a result of breakages and spillage caused by Fire Brigade personnel.

(iii) Contamination due to the protective clothing being worn providing inadequate protection.

6.4 CROSS -CONTAMINATION

Significant hazards are presented to personnel due to the possibilities of cross-contamination at an incident. Cross-contamination of a hazardous substance can occur in the following ways:

6.4.1 Appliance wheels becoming contaminated and then appliances leaving the incident without being decontaminated.

6.4.2 Personnel wearing protective clothing not undergoing decontamination procedures after being exposed/ contaminated.

6.4.3 Personnel in protective suits and breathing apparatus exiting hot zones and disrobing due to insufficient air in their cylinders before Emergency Air Supply Equipment (EASE) equipment can be connected.

6.4.4 Personnel straying into the Hot Zone without protective clothing and becoming contaminated.

6.4.5 Plastic bags used for contaminated clothing, etc, being left open or not properly sealed and then removed from the incident.

6.4.6 Unrestricted access to the triage/first aid areas when contaminated casualties are present.

6.4.7 Insufficient precautions having been taken during emergency decontamination and the medical treatment of casualties.

7 THE DECONTAMINATION PROCESS

7.1 Decontamination procedures will be determined by factors such as the type of PPE worn, the number of personnel requiring decontamination, the nature of the contaminant, and the extent of the contamination.

7.2 Following receipt of Chemdata information the advice of the Hazmat Officer should be sought regarding the decontamination procedures to be adopted for specific contaminants.

7.3 The application of decontamination procedures can be categorised as follows:

7.3.1 Level 1 (Emergency) Decontamination.

7.3.2 Level 2 Decontamination.

7.3.3 Level 3 Decontamination.

7.4 Level 1 Decontamination equipment is carried in Pack A on all front line pumps and details of the contents are listed in Appendix 2

7.5 Level 2 Decontamination equipment is carried in Pack B on all Technical Support Units and Emergency Support Units and details of the contents are attached in Appendix 2.

8 LEVEL 1 - EMERGENCY DECONTAMINATION

8.1 While Level 2 Decontamination should be the normal standard of decontamination, it may be necessary to adopt emergency decontamination procedures, termed Level 1.

8.2 The reasons for determining the need for Level 1 (emergency) decontamination may include the following:

8.2.1 When the level of PPE is not appropriate (i.e. persons have been exposed while wearing normal fire kit only).

8.2.2 Where damage is sustained to CPC (including boots).

8.2.3 Where personnel receive injuries requiring immediate medical treatment.

8.2.4 When as a result of Dynamic Risk Assessment, the Incident Commander believes that personnel may be exposed to undue anxiety caused by further waiting during the time taken to establish Level 2 Decontamination.

8.2.5 Where non-Brigade personnel have been exposed to contamination as a result of inadequate personal protection.

8.2.6 Where a snatch rescue has been performed and it is reasonably foreseeable that personnel and/or casualties will be contaminated and require immediate wash down.

8.3 Personnel requiring Emergency Decontamination should be placed over a drain (where possible) and washed down with a low-pressure hose reel. Every effort should be made to remove the suit whilst ensuring that contamination does not contact the skin of the wearer. A 'peel-back' procedure should be used.

8.4 Persons who have sustained bodily contamination should have contaminated clothing removed and affected skin washed with a detergent/water mixture (see 5.7) Care must be taken not to cause contaminant to be forced into the eyes, face or other exposed areas by careless splashing of water. Casualties should then be removed to hospital, accompanied by details of the extent and type of contamination.

9 LEVEL 2 DECONTAMINATION

9.1 Level 2 Decontamination procedures shall be the normal standard of decontamination and should be adopted at incidents where it is reasonably foreseeable that persons may be exposed to contaminants.

9.2 The following flowchart for Level 2 decontamination should be followed.

9.2.1 STANDARD FIRE KIT

- Wearers enter dam. (see item 'G' diagram 6 Appendix 1)
- Wash off any exposed skin (Rinse/Wipe/Rinse).
- Wash off helmet, BA, boots.
- Step out of dam.
- Remove helmet.
- Release BA harness (keep facemask seal intact as long as possible).
- Remove fire kit and place into a bag.
- Remove facemask.

9.2.2 CHEMICAL PROTECTIVE CLOTHING

- Wearers enter dam (check air supply). – see Diagram 6
- Wearers clean each other or Operators clean Wearers using detergent, brush and low pressure hose reel.
- Contain run-off in dam.
- Step out of dam.
- Remove CPC.
- Rehabilitation prior to redeployment.

9.2.3 DECONTAMINATION WITHOUT OPERATORS

- Check air supply [if reserves are low - wash area around air connection point – attach EASE].
- Wearers enter dam. – See Diagram 6
- Wearers wash off gloves.
- Wearer 1 wets Wearer 2 with hose reel (low pressure).
- Wearer 1 sprays Wearer 2 with cleaning solution.
- Wearer 1 carefully brushes Wearer 2.
- Wearer 1 washes solution off Wearer 2.
- Wearer 2 now repeats process for Wearer 1, carefully avoiding cross contamination.
- Wearers finally wash off boots and step into clean area.
- Wearers remove CPC/GTCPS, bag suits and label.

9.2.4 DECONTAMINATION WITH OPERATORS

- Check air supply [if reserves are low - wash area around air connection point – attach Emergency Air Supply Equipment (EASE)].
- Wearers enter dam.
- Wearers remain in dam and approach Operators.
- Operator 1 (C*lean Operator*) wets Wearers 1 and 2 with hose reel (low pressure).
- Operator 2 (*Dirty Operator*) sprays Wearers 1 and 2 with cleaning solution, whilst they turn 360^{o} .
- Operator 2 brushes Wearers 1 and 2 in turn, carefully avoiding cross-contamination.
- Operator 1 washes solution off Wearers 1 and 2 with hose reel.
- Operator 1 washes off Wearers' 1 and 2 boots as they step into clean area.
- Wearers remove CPC/GTCPS, bag suits, assisted by Operator 1. The bag should be labelled.
- Once the wearers have been decontaminated and removed from the area, the Operators will wash and disrobe one another starting with the Dirty Operator(s).

10 LEVEL 3 DECONTAMINATION

10.1 The Brigade is currently pursuing the provision of specialist Decontamination facilities, which will constitute a Level 3 response. Once operational, a Level 3 response shall be mobilised to all Hazmat incidents. If Level 3 Decontamination facilities are available from the onset of the incident, this should be used in preference to Level 2 Decontamination.

10.2 The attendance of the Hazmat Technical Support Group (TSG) for decontamination purposes shall also constitute a Level 3 response, where the additional expertise will contribute to the decontamination process.

11 OPERATIONAL PROCEDURES

11.1 The Incident Commander of an incident will not necessarily be aware that the contamination of personnel and/or equipment by a hazardous substance has taken place, perhaps until after the event.

11.2 On becoming aware of such contamination the Incident Commander should initiate action to limit the risk of further exposure, decontaminate those who have been exposed and effect close supervision of crews based on the prevailing ICS tactical mode.

11.3 His/her actions should comprise the following:

11.3.1 Request the mobilisation of a Hazmat Officer (if one is not already in attendance or mobilised).

11.3.2 Establish whether any persons have already become contaminated.

11.3.3 Establish the extent of the existing contamination.

11.3.4 Designate a Restricted Area (Hot Zone – see 13.2)

11.3.5 Ensure unprotected personnel do not enter Hot Zone.

11.3.6 Establish nature of contaminant.

11.3.7 Establish the additional personal protection (APP) code and chemical information for the contaminant from Chemdata via Fire Control.

11.3.8 Set up decontamination arrangements.

11.3.9 Ensure that only minimum numbers of personnel required to complete the task are committed to work within the restricted area (Hot Zone).

12 DECONTAMINATION PROCEDURES

12.1 In order to instigate Decontamination Procedures, the Incident Commander must:

12.1.1 Make an assessment of the degree of contamination that has occurred or is likely to occur.

12.1.2 Establish whether contaminated persons have been adequately protected or were unprotected.

12.1.3 Establish if Emergency Decontamination (Level 1) is necessary. If not implement Level 2 decontamination procedures.

12.1.4 Nominate a person to act as a Decontamination Officer who will supervise decontamination procedures. In an emergency the Incident Commander may also be the Decontamination Officer.

12.1.5 Arrange for such further support personnel as may be necessary to act as operatives for the Decontamination Team.

12.1.6 Establish a Decontamination Area and liaise with the Hazmat Officer (see 13.4).

12.2 The Decontamination Area must be clearly defined. The Incident Commander and the Decontamination Officer should consult to determine:

12.2.1 The type of decontamination to be carried out.

12.2.2 The size of the area (this area should be kept as small as practically possible).

12.2.3 Weather conditions.

12.2.4 Wind direction.

12.2.5 Slope of ground.

12.2.6 Location of drains, watercourses, etc.

12.2.7 Equipment and resources required.

12.2.8 Comfort of personnel.

12.2.9 Location of appliances to provide hose reels, lighting, etc.

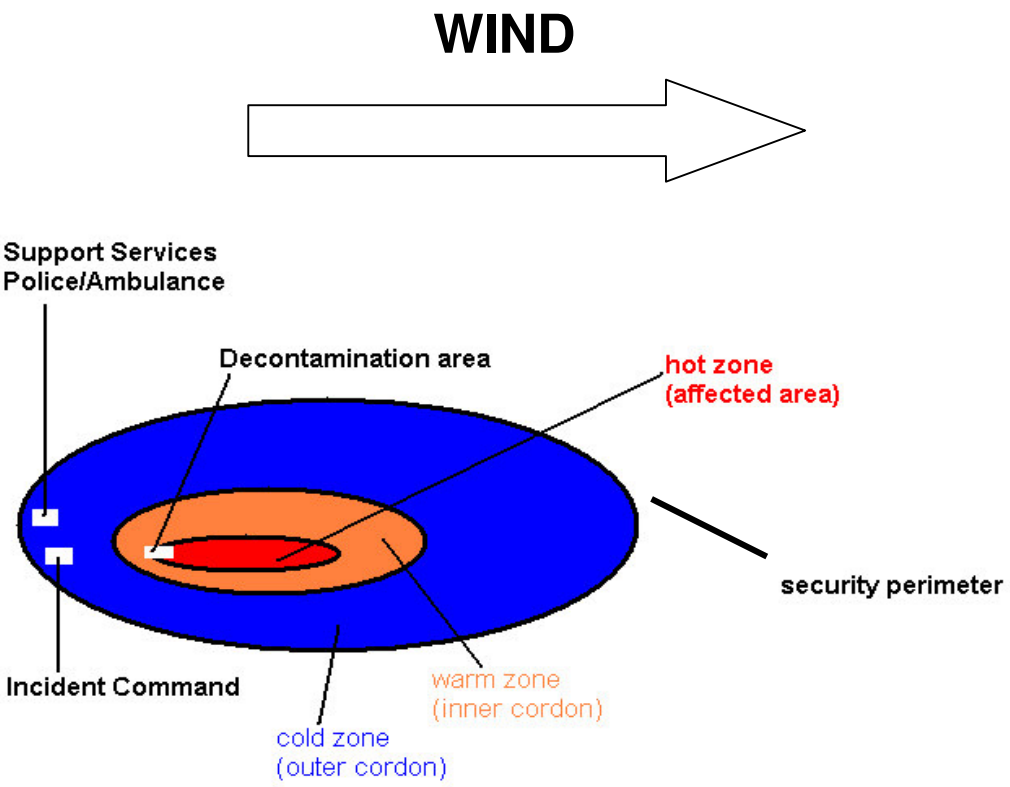
12.2.10 Location of Breathing Apparatus Entry Control for both the incident and for the Decontamination Area.

13 INCIDENT MANAGEMENT

13.1 The following provides a template for the management of all Hazmat incidents.

The incident would be split into 4 distinct areas:

- The Hot Zone.
- The Decontamination/Washdown Area.
- The Warm Zone.
- The Cold Zone.



13.2 THE HOT ZONE (WITHIN THE INNER CORDON)

This area is taped-off and only personnel wearing the appropriate level of PPE will be allowed to enter via the Entry Control Point. It is therefore envisaged that any Brigade personnel entering the Hot Zone should be protected to a minimum level of CPC and BA.

13.3 THE WARM ZONE (WITHIN INNER CORDON)

This zone is located outside the Hot Zone but within the Inner Cordon and persons operating within this zone should be free from the risk of contamination. The movement of personnel, appliances and equipment should be controlled within this zone. The Incident Commander is responsible for the safety of all persons within the inner cordon. Persons operating within the inner cordon should receive a comprehensive briefing to include the hazards to which they may be exposed, consequent PPE requirements and any relevant limitations or restrictions while moving or operating in the Inner Cordon (Hot and Warm Zone).

13.4 THE DECONTAMINATION AREA

13.4.1 This area is to be set up at the edge of the Hot Zone/Warm Zone boundary, and only the operatives of the Decontamination Team are to enter.

13.4.2 All decontamination must take place within the perimeter of the Warm Zone. To limit the spread of contamination, a 'Dirty Path' must also be established from the Hot Zone to the Decontamination Area entry point.

13.4.3 Both the Decontamination Area and the Dirty Path must be marked using Hazmat barrier tape. The size of the area will vary according to the needs of the incident.

13.5 THE COLD ZONE (OUTER CORDON)

This area is the zone within which all the support services relating to the incident can operate without the interference from the media or the public. Security of this cordon will be the responsibility of the Police. The Brigade's Incident Control Point should be located within this zone.

14 DECONTAMINATION TEAM

14.1 A Decontamination Team will normally consist of a number of suitably trained Fire Brigade personnel:

- Hazmat Officer (Technical Advisor).
- Decontamination Officer.
- Assistant Decontamination Officer.
- Decontamination Operators.
- Decontamination BA Control Officer.
- Support Team Members.
- Documentation Officer.

14.2 The success of decontamination depends entirely on the strict observance of disciplined procedures within the defined Decontamination Area. The team should be thoroughly conversant with their duties and responsibilities.

15 DECONTAMINATION TEAM DUTIES

15.1 DECONTAMINATION OFFICER

Initially the Incident Commander may have to carry out the duties of Decontamination Officer. However, at the earliest opportunity another Officer should be allocated responsibility for the task. The Decontamination Officer will:

15.1.1 Wear the relevant ICS tabard for identification and will operate at all times in fire kit, remaining outside and up-wind of the Decontamination Area.

15.1.2 Be responsible for the overall control and supervision of all movements and activities in a correctly sited Decontamination Area and be directly responsible to the Incident Commander.

15.1.3 Ensure close liaison takes place with the Incident Commander and/or the Hazmat Officer regarding the hazardous substances involved, method of cleansing and containment of any run-off.

15.1.4 Procure sufficient resources (personnel and equipment) to effectively decontaminate all contaminated personnel.

15.1.5 Decide on the priority for the treatment or the decontamination of casualties. Consultation with on-site medical staff may well be required to establish priorities, such as immediate medical intervention to save life, and/or emergency decontamination procedures.

15.1.6 Ensure that there is no cross-contamination of personnel and/or equipment.

15.1.7 Seek any necessary specialist advice relating to the need for further decontamination of protective clothing/equipment.

15.2 THE ASSISTANT DECONTAMINATION OFFICER

15.2.1 The Assistant Decontamination Officer shall wear the appropriate ICS tabard and will operate at all times in fire kit and should remain outside and up-wind of the Decontamination Area.

15.2.2 The Assistant Decontamination Officer is responsible for the smooth running of decontamination procedures and for monitoring the progress of personnel from the dirty to the clean side of the Decontamination Area.

15.3 THE DECONTAMINATION AREA OPERATORS

15.3.1 The Decontamination Area Operators will operate at all times in Chemical Protective Clothing with Breathing Apparatus, and should remain inside the Decontamination Area.

15.3.2 The Operators are responsible for providing assistance to anyone having difficulties whilst in the Decontamination Area and for assisting/supervising personnel undergoing decontamination.

15.4 ENTRY CONTROL OFFICER (BA) DECONTAMINATION (BAECO)

15.4.1 The Entry Control Officer (BA) Decontamination will operate at all times in fire kit and should remain outside and up-wind of the Decontamination Area.

15.4.2 The BAECO (Decontamination) will be responsible for the transfer of BA tallies to his/her board from other boards. In order that the BAECO can identify personnel in a hazardous area that may require decontamination, a suitable note detailing this should be recorded on the BAECO Board in the 'comments box'.

15.4.3 When personnel are undergoing decontamination, a diagonal line should be struck across the "*time of whistle*" section on the BAECO (Decontamination) Control Board, denoting that he/she is now undergoing decontamination.

15.5 THE PUMP OPERATOR

15.5.1 The Pump Operator will operate at all times in fire kit and should remain outside and up-wind of the Decontamination Area.

15.5.2 The Pump Operator is responsible for providing water supplies to the Decontamination Area, as required. If at all possible, water from a hydrant supply should be used for decontamination.

16 DOCUMENTATION AND AFTERCARE

16.1 The Documentation Officer will operate at all times in fire kit, should remain outside the Decontamination Area and will wear an ICS tabard for identification. The Documentation Officer is responsible for recording all details of the Decontamination Procedures and for processing individual and Decontamination Team records. When required, the Documentation Officer shall ensure labels are correctly filled in and attached to the decontamination bags, with sufficient information to ensure proper disposal or decontamination of equipment and/or clothing.

16.2 Following liaison with the Incident Commander and/or Hazmat Officer the Documentation Officer shall ensure that personnel who have been decontaminated are sent for medical examination where necessary.

16.3 The Decontamination Officer shall ensure that forms SC27, SC28 and SC29 are completed as required.

17 RE-COMMISSIONING OF PROTECTIVE CLOTHING

17.1 When Chemical Protective Clothing (CPC) is worn, the Incident Commander **must** notify Brigade Control that they are in use.

17.2 Where necessary, at the request of the Incident Commander, Brigade Control will inform/mobilise BA Workshops so that worn suits can be exchanged/returned to BA Workshops.

17.3 The Hazmat Officer in liaison with BA Workshops, will determine if the protective clothing used requires further decontamination.

17.4 Gloves contaminated with Asbestos must be destroyed (yellow bag).

17.5 Decontamination of uniform shall comply with the current procedures as laid down by the Brigade's PPE Committee.

18 ABSORBENT MATERIALS

18.1 Equipment of an absorbent nature, which cannot be decontaminated on site, should be sealed, independently, inside 2 contamination bags. In the case of fire kit, only 1 person's clothing per **'Double Bag'**.

19 RE-COMMISSIONING OF APPLIANCES

19.1 At all incidents involving a hazardous material, the Hazmat Officer will be responsible for providing information to the Decontamination Officer/Incident Commander, regarding cleaning and re-commissioning of appliances and equipment. The Hazmat Officer will liaise with specialist advisors to ensure items are effectively cleaned.

19.2 The Station/Appliance sending items for decontamination/ destruction should keep a record of items sent.

20 CONTAINMENT OF CONTAMINANTS

20.1 The Hazmat Officer, in liaison with the Environment and Heritage Service representative and any other relevant specialist, will determine the disposal method of contained contaminants (including run-off).

21 CONCLUSION

21.1 Application of the detailed procedures for decontamination contained within this SOP shall contribute to a safer operating environment for personnel while enhancing the operational response of the Brigade to hazardous materials incidents. It is essential to the successful application of the procedures contained within this document that such procedures are included in the continuation training programme and are subject to appropriate validation by exercise.

DIVISIONAL OFFICER
(OPERATIONS POLICY)

APPENDIX '1'

DECONTAMINATION AREAS

1. Level 1 - Emergency Decontamination

Details regarding Level 1 have already been described in Section 8 of this document.

2. Level 2 Decontamination Procedure

On occasions it may not be necessary to deploy a full decontamination team and the associated equipment in order to complete Level 2 Decontamination.

Such circumstances may include inter alia:

(i) Where only low hazard materials are confirmed as involved,

and

(ii) Quantities of contaminant involved are minor,

and

(iii) There is a negligible contamination potential,

and

(iv) The incident is not protracted.

However, this list is not exhaustive and Incident Commanders must ensure that such a decision is based on a comprehensive Dynamic Risk Assessment.

3. (i) An example of the **MINIMUM** requirement for Level 2 Decontamination procedures is set out below in diagram 1 and diagram 2

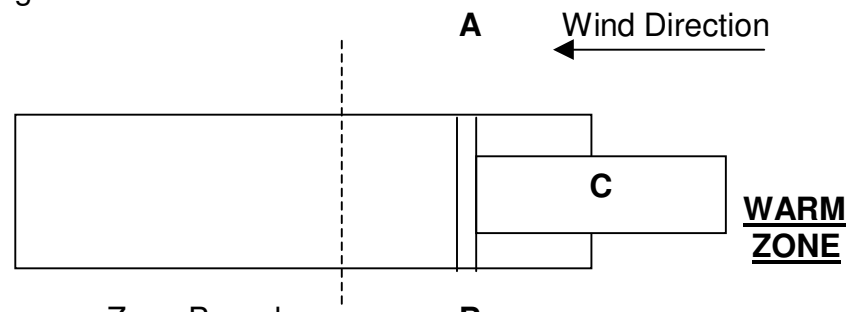


Diagram 1

(ii) A salvage sheet should be laid down on the ground. It may be necessary to secure the salvage sheet to the ground, especially in windy conditions, by laying a charged length of hose down each side.

(iii) A length of suction hose should be placed under the salvage sheet at position A/B to form a barrier. (See diagram 1 and diagram 4).

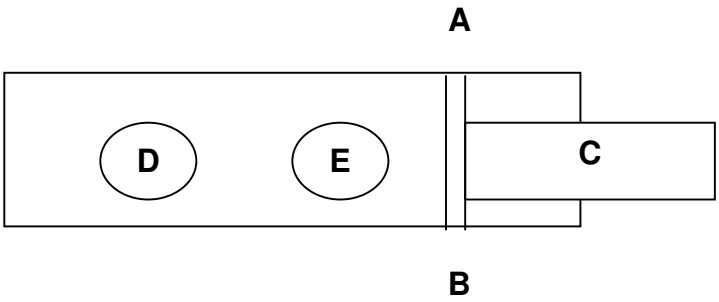


Diagram 2

(iv) Items D and E (diagram 2) are plastic bags found in Pack 'A'.

(v) Item C is a polythene sheet folded to form a clean path out of the zone.

(vi) A contaminated person will be directed to the zone and told to stand in Bag D (the bag will be so arranged as to hold water where used). The contaminated person is then decontaminated using the appropriate method.

(vii) Once the Decontamination Procedure is completed the person will then step into Bag E, where the disrobing process will take place. Finally, he/she will step out over the barrier A/B onto the clean path, C.

NB
Bag E must be positioned close to the barrier A/B to allow decontaminated personnel to step out of their boots onto the designated clean path, C.

4. **However, the normal Level 2 decontamination procedure, will involve the following incremental process:**

(i) Using the equipment from Pack 'B', the decontamination area will take the following form:

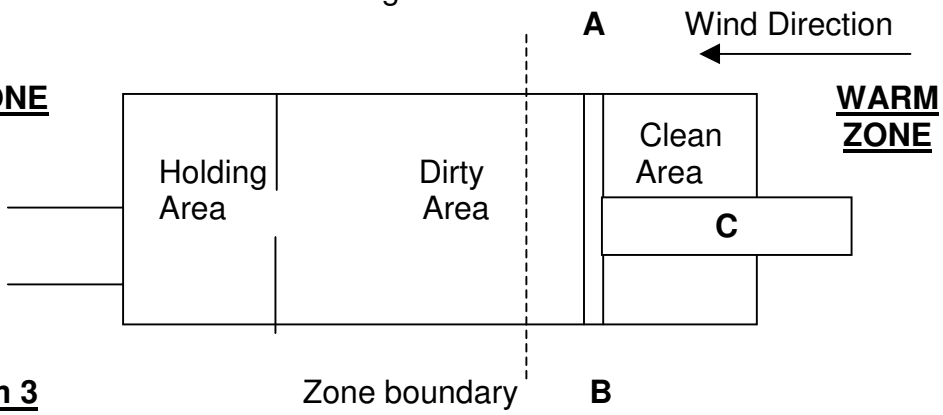


Diagram 3

(ii) The zone can be split into 3 specific areas (holding area, dirty area and clean area) and each area should be clearly defined by using incident tape and cones. A length of suction hose should be placed under the salvage sheet at position A/B to form a barrier.

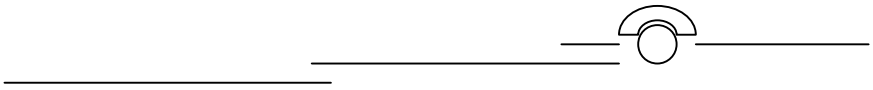


Diagram 4

(iii) As shown in side-on view (diagram 4), three polythene sheets should be laid down and overlapped by at least 450mm taking into account the slope of the ground and wind direction.

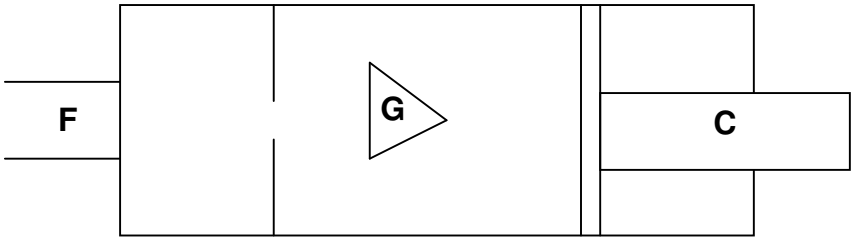


Diagram 5

(iv) Construct a dam in position 'G' (diagram 5) by using a short extension ladder and salvage sheet.

(v) The entrance 'F' into the decontamination zone should also be clearly marked.

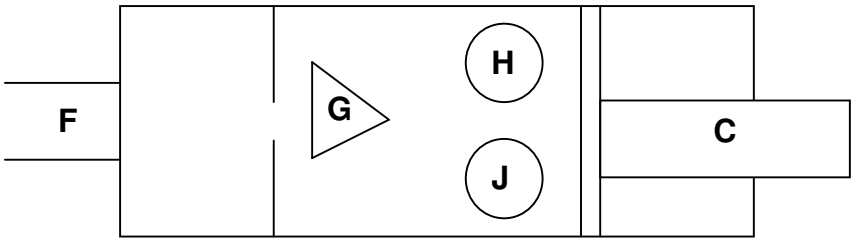


Diagram 6

(vi) Two polythene bags should be positioned at locations 'H' and 'J'. (diagram 6)

(vii) One bag will be for clothing, the other for BA sets or other contaminated equipment, eg, DSU, torch, communications.

(viii) The Decontamination Team will take up positions similar to those below:

Decontamination Officer

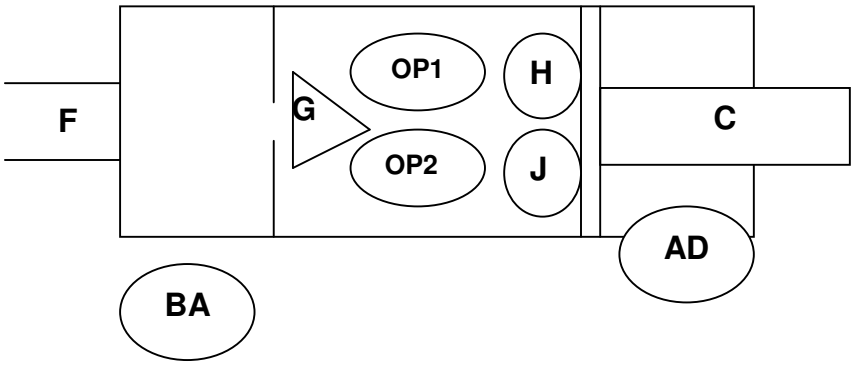


Diagram 7

OP1 Operator – in BA
OP2 Operator – in BA
AD Assistant Decontamination Officer
BA BA Control Officer

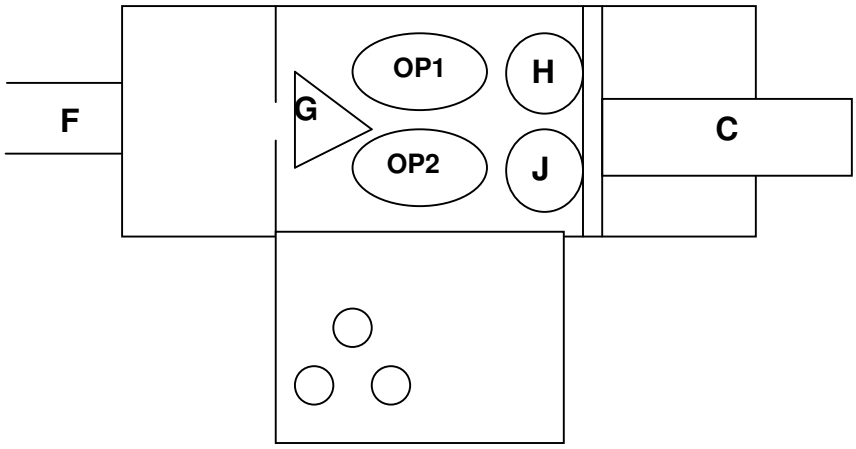


Diagram 8

(ix) The layout in diagram 8 shows the zone extended to accommodate the storage of bags containing contaminated clothing and equipment.

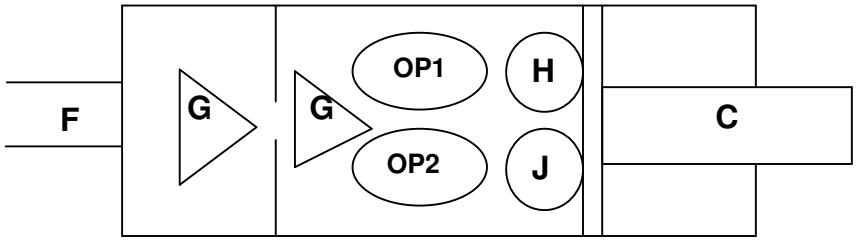


Diagram 9

(x) This example (diagram 9) shows a twin dam configuration and might be necessary where heavy contamination has occurred. (This method will necessitate additional Operators being involved.)

APPENDIX '2'

LIST OF DECONTAMINATION EQUIPMENT

PACK 'A'

CARRIED ON ALL FRONT LINE APPLIANCES

2 X BLANKETS	6 X SC29
1 X 15G COTTON WOOL	2 X CLOSURES (CABLE TIES)
1 X NAIL BRUSH	1 X PEN
1 X TOILET SOAP	2 X DECONTAMINATION BAGS
2 X TOWELS	4 X TALLIES
6 X SC27	2 X DISPOSABLE WIPING CLOTHS
6 X SC28	1 X ROLL TRAFFI TAPE

PACK 'B'

CARRIED ON ALL TSU AND ESU APPLIANCES

2 X 5KG FULLERS EARTH	2 X 10KG FULLERS EARTH (CALCINNED)
12 X BLANKETS – SURVIVAL	6 X TOILET SOAP
12 X PAIRS PLIMSOLS	6 X TOWELS
2 X 5KG SODA ASH	1 X SHELTER COVER
3 X NAIL BRUSHES	2 X REELS – SMALL BORE HOSE
6 X BODY SHEATHS (PLASTIC)	2 X CLEANING BRUSHES
1 X GROUND SHEET	1 PACK OIL – ABSORBENT
20 X DECONTAMINATION BAGS	2 X 5 LT DETERGENT
1 PACK LABELS AND TIES	2 X 5 LT SOLVENT
12 X PAIRS OVERALLS	6 X CHEMICAL PROTECTION SUITS
6 X PAIRS GLOVES	1 X PACK DOCUMENTS (6 X SC27, 24 X SC28, 24 X SC27)
2 X ROLLS TRAFFI TAPE	1 X MEGAPHONE
2 X PORTABLE DAMS	8 X BATTERIES (SPARE)
	2 X GAS-TIGHT CHEMICAL PROTECTION SUITS