Appendix A. List of Abbreviations and Acronyms

List of Abbreviations

cm^3	cubic centimeter
CO2	carbon dioxide
dBA	Decibels on A-weighted scale
ft	foot
g	gram
g-mole	gram-mole
hr	hour
l	liter
lb	pound
m^3	cubic meter
mg	milligram
ml	milliliter
mrem	milliroentgen equivalent in man
O_2	oxygen
psi	pounds per square inch
ppb	parts per billion
ppm	parts per million
ta	ambient air temperature
ta adj	adjusted ambient air temperature

List of Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
CAA	Clean Air Act
CBC	Complete blood count
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also called Superfund)
CFR	Code of Federal Regulations
CGI	combustible gas indicator
CNS	central nervous system
CPR	cardiopulmonary resuscitation
CRC	Contamination Reduction Corridor
CRZ	Contamination Reduction Zone
EPA	U.S. Environmental Protection Agency
ESLI	end-of-service-life indicator
FEF	forced expiratory flow
FID	flamed ionization detector
FRC	functional residual capacity
GC	gas chromatography
IDLH	immediately dangerous to life or health
IR	infrared
LEL	lower explosive limit
LFL	lower flammable limit
MEFR	maximal expiratory flow rate
MSHA	Mine Safety and Health Administration
MVV	maximal voluntary ventilation
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OVA	organic vapor analyzer
PAPR	powered air-purifying respirator
PCB	polychlorinated byphenyl
PDS	personnel decontamination station
PEL	permissible exposure limit
PID	photoionization detector
PPE	personal protective clothing and equipment
PVC	polyvinyl chloride
RBC	red blood count
REL	recommended exposure limit
RV	residual volume
SAR	supplied-air respirator
SCBA	self-contained breathing apparatus
SOP	Standard Operating Procedure
TLC	total lung capacity
TLV	threshold limit value
TLV-C	threshold limit value – ceiling
TLV-STEL	threshold limit value – short-term exposure limit
TWA	time-weighted average
UEL	upper explosive limit
UFL	upper flammable limit
USCG	U.S. Coast Guard
UV	ultraviolet

Appendix B. Generic Site Safety Plan

This appendix provides a generic plan based on a plan developed by the U.S. Coast Guard for responding to hazardous chemical releases.[1] This generic plan can be adapted for designing a Site Safety Plan for hazardous waste site cleanup operations, It is not all inclusive and should only be used as a guide, not a standard.

A. SITE DESCRIPTION

Date_____ Location_____
Hazards_____
Area affected_____
_____
Surrounding population_____
Topography_____
Weather conditions_____
_____
_____
Additional information_____
_____
_____
_____
_____

B. ENTRY OBJECTIVES - The objective of the initial entry to the contaminated area is to (describes actions, tasks to be accomplished; i.e., identify contaminated soil; monitor conditions, etc.)_____
_____
_____
_____

C. ONSITE ORGANIZATION AND COORDINATION - The following personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)

PROJECT TEAM LEADER_____
SCIENTIFIC ADVISOR_____
SITE SAFETY OFFICER_____
PUBLIC INFORMATION OFFICER_____
SECURITY OFFICER_____
RECORDKEEPER_____
FINANCIAL OFFICER_____
FIELD TEAM LEADER_____
FIELD TEAM MEMBERS_____
_____
_____
_____
FEDERAL AGENCY REPS (i.e., EPA, NIOSH)_____
_____
_____
_____

[1] U.S. Coast Guard. Policy Guidance for Response to Hazardous Chemical Releases, USCG Pollution Response COMDTINST-MI6465.30.

STATE AGENCY REPS _____

LOCAL AGENCY REPS _____

CONTRACTOR(S) _____

All personnel arriving or departing the site should log in and out with the Record-keeper. All activities on site must be cleared through the Project Team Leader.

D. ONSITE CONTROL

(Name of individual or agency ____ has been designated to coordinate access control and security on site. A safe perimeter has been established at (distance or description of controlled area) _____

No unauthorized person should be within this area.

The onsite Command Post and staging area have been established at _____

The prevailing wind conditions are _____. This location is upwind from the Exclusion Zone.

Control boundaries have been established, and the Exclusion Zone (the contaminated area), hotline, Contamination Reduction Zone, and Support zone (clean area) have been identified and designated as follows: (describe boundaries and/or attach map of controlled area) _____

These boundaries are identified by: (marking of zones, i.e., red boundary tape - hotline; traffic cones - Support Zone; etc*) _____

E. HAZARD EVALUATION

The following substances) are known or suspected to be on site. The primary hazards of each are identified.

Substances Involved	**Concentrations (If Known)**	**Primary Hazards**
(chemical name)		(e.g., toxic on nhalation)

The following additional hazards are expected on site: (i.e., slippery ground, uneven terrain, etc.) _____

Hazardous substance information form(s) for the involved substances) have been completed and are attached.

F. PERSONAL PROTECTIVE EQUIPMENT

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	Job Function	Level of Protection
Exclusion zone	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
Contamination Reduction zone	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other

Specific protective equipment for each level of protection is as follows:

Level A Fully-encapsulating suit SCBA (disposable coveralls)

Level B Splash gear (type SCBA

Level C Splash gear (type) Full-face canister resp.

Level D _____

Other _____

The following protective clothing materials are required for the involved substances:

Substance (chemical name)	**Material** (material name, e.g., Viton)
_____	_____
_____	_____
_____	_____
_____	_____

If air-purifying respirators are authorized, (filtering medium) . is the appropriate canister for use with the involved substances and concentrations. A competent individual has determined that all criteria for using this type of respiratory protection have been met.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE PROJECT TEAM LEADER.

G. ONSITE WORK PLANS

Work party(s) consisting of ____ persons will perform the following tasks:

Project Team Leader _____(name)_____ _____(function)_____

Work Party #1 _____

Work Party #2 _____

Rescue Team (required for entries to IDLH environments) _____

Decontamination Team _____

The work party(s) were briefed on the contents of this plan at_____

H. COMMUNICATION PROCEDURES

Channel _____has been designated as the radio frequency for personnel in the Exclusion Zone. All other onsite communications will use channel_____.

Personnel in the Exclusion zone should remain in constant radio communication or within sight of the Project Team Leader. Any failure of radio communication requires an evaluation of whether personnel should leave the Exclusion zone.

(Horn blast, siren, etc.)_____ is the emergency signal to indicate that all personnel should leave the Exclusion zone. In addition, a loud hailer is available if required.

The following standard hand signals will be used in case of failure of radio communications:

Hand gripping throat ---------- Out of air, can't breathe
Grip partner's wrist or both hands around waist ---------- Leave area immediately
Hands on top of head ---------- Need assistance
Thumbs up ---------- OK, I am all right, I understand
Thumbs down ---------- No, negative

Telephone communication to the Command Post should be established as soon as practicable. The phone number is _____.

I. DECONTAMINATION PROCEDURES

Personnel and equipment leaving the Exclusion zone shall be thoroughly decontaminated. The standard level decontamination protocol shall be used with the following decontamination stations: (1)_____ _____(2)_____(3)_____(4)_____(5)_____(6)_____ _____(7)_____(8)_____(9)_____(10)_____ _____Other_____

Emergency decontamination will include the following stations:

_____
_____
_____

The following decontamination equipment is required:

_____
_____
_____

(Normally detergent and water) will be used as the decontamination solution.

J. SITE SAFETY AND HEALTH PLAN

1. _____(name)_____ is the designated Site Safety Officer and is directly responsible to the Project Team Leader for safety recommendations on site.

2. Emergency Medical Care

(names of qualified personnel)_____ are the qualified EMTS on site. (medical facility names) at (address), phone is located minutes from this location (name of person) was contacted at (time) and briefed on the situation, the potential hazards, and the substances involved. A map of alternative routes to this facility is available at (normally Command Post).

Local ambulance service is available from _____at phone_____.
Their response time is _____minutes. Whenever possible arrangements should be made for onsite standby.

First-aid equipment is available on site at the following locations:

First-aid kit_____
Emergency eye wash_____
Emergency shower_____
(other)_____

Emergency medical information for substances present:

Substance	Exposure Symptoms	First-Aid Instructions

List of emergency phone numbers:

Agency/Facility	Phone	Contact
Police		
Fire		
Hospital		
Airport		
Public Health Advisor		

3. Environmental Monitoring

The following environmental monitoring instruments shall be used on site (cross out if not applicable) at the specified intervals.

Combustible Gas Indicator	-continuous/hourly/daily/other_____
0_2 Monitor	-continuous/hourly/daily/other_____
Colorimetric Tubes-	-continuous/hourly/daily/other_____
(type)_____	_____
_____	_____
_____	_____
HNU/OVA	-continuous/hourly/daily/other_____
Other_____	-continuous/hourly/daily/other_____
_____	-continuous/hourly/daily/other_____

4. Emergency Procedures (should be modified as required for incident)
The following standard emergency procedures will be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury in the Exclusion Zone: Upon notification of an injury in the Exclusion Zone, the designated emergency signal _____shall be sounded. All site personnel shall assemble at the decontamination line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline. The Site Safety Officer and Project Team Leade4r should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

Personnel Injury in the Support Zone: Upon notification of an injury in the Support Zone, the Project Team Leader and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the onsite EMT initiating the appropriate increases the risk to others, the designated emergency signal _____ shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on site, the designated emergency signal _____ shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure: If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on site fails to operate properly, the Project Team Leader and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site, If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

The following emergency escape routes are designated for use in those situations where egress from the Exclusion Zone cannot occur through the decontamination line: (describe alternate routes to leave area in emergencies)____

_____
_____
_____
_____

In all situations, when an onsite emergency results in evacuation of the Exclusion Zone, personnel shall not reenter until:

1. The conditions resulting in the emergency have been corrected.
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed
4. Site personnel have been briefed on any changes in the Site Safety Plan.

5. Personal Monitoring

The following personal monitoring will be in effect on site:

Personal exposure sampling: (describe any personal sampling programs being carried out on site personnel. This would include use of sampling pumps, air monitors, etc.)

Medical monitoring: The expected air temperature will be ___(°F) . If it is determined that heat stress monitoring is required (mandatory if over 70°F) the following procedures shall be followed:

(describe procedures in effect, i.e., monitoring body temperature, body weight, pulse rate)

_____

_____

_____

_____

All site personnel have read the above plan and are familiar with its provisions.

	(name)	(signature)
Site Safety Officer		
Project Team Leader		
Other Site Personnel		

Appendix C. Sample Hazardous Substance Information Form

COMMON NAME:_____ **CHEMICAL NAME:**_____

I. PHYSICAL/CHEMICAL PROPERTIES

		Source
Natural physical state: **Gas**_____ **Liquid**_____ **Solid**_____		_____
(at ambient temps of 20°C-25°C)		
Molecular weight	_____ g/g-mole	_____
Density[a]	_____°F/°C	_____
Specific gravity[a]	_____@_____ °F/°C	_____
Solubility: water	_____@_____ °F/°C	_____
Solubility[b]: _____	_____@_____ °F/°C	_____
Melting point	_____°F/°C	_____
Vapor pressure	_____mmHg @_____°F/°C	_____
Vapor density	_____@_____ °F/°C	_____
Flash point	_____°F/°C	_____
(open cup_____; closed cup_____)		
Other: _____	_____	_____

II. HAZARDOUS CHARACTERISTICS

A. TOXICOLOGICAL HAZARD	HAZARD?	CONCENTRATIONS (PEL, TLV, other)	SOURCE
Ihalation	Yes No	_____	_____
Ingestion	Yes No	_____	_____
Skin/eye absorption	Yes No	_____	_____
Skin/eye contact	Yes No	_____	_____
Carcinogenic	Yes No	_____	_____
Teratogenic	Yes No	_____	_____
Mutagenic	Yes No	_____	_____
Aquatic	Yes No	_____	_____
Other: _____	Yes No	_____	_____

B. TOXICOLOGICAL HAZARD	HAZARD?	CONCENTRATIONS (PEL, TLV, other)	SOURCE
Combustibility	Yes No	_____	_____
Toxic byproduct (s):	Yes No	_____	_____
_____		_____	_____
_____		_____	_____
Flammability	Yes No		
LFL		_____	_____
UFL		_____	_____
Explosivity	Yes No		
LFL		_____	_____
UFL		_____	_____

_____

[a]Only one is necessary.
[b]For organic compounds, recovery of spilled material by solvent extration may require solubility data.

C. REACTIVITY HAZARD	HAZARD? Yes	No	CONCENTRATIONS	SOURCE
Reactivities:				
_____			_____	_____
_____			_____	_____

D. CORROSIVITY HAZARD	HAZARD? Yes	No	CONCENTRATIONS	SOURCE
Ph _____				
Neutralizing agent:				
_____			_____	_____
_____			_____	_____

E. RADIOACTIVE HAZARD	HAZARD? Yes	No	CONCENTRATIONS	SOURCE
Background	Yes	No	_____	_____
Alpha particles	Yes	No	_____	_____
Beta particles	Yes	No	_____	_____
Gamma radiation	Yes	No	_____	_____

III. DESCRIPTION OF INCIDENT:

Quantity involved _____
Release information _____
_____
Monitoring/sampling recommended _____
_____

IV. RECOMMENDED PROTECTION:

Worker _____
_____
Public _____
_____

V. RECOMMENDED SITE CONTROL:

Hotline _____
_____
Decontamination line _____
_____
Command Post location _____
_____

VI. REFERENCES FOR SOURCES:

_____
_____
_____
_____
_____
_____
_____
_____
_____

SAMPLE HAZARDOUS SUBSTANCE INFORMATION FORM FILLED OUT FOR VINYL CHLORIDE

COMMON NAME: Vinyl Chloride CHEMICAL NAME: Chloroethene

I. PHYSICAL/CHEMICAL PROPERTIES

			SOURCE
Natural physical state: Gas ✓ Liquid ___ Solid ___ (at ambient temps of 20°C-25°C)			CHRIS
Molecular weight	62.5	g/g-mole	CHRIS
Density[a]		g/ml	
Specific gravity[a]	0.9121 @ 20	°F/(°C)	CHEM DIC
Solubility: water	slightly @ —	°F/°C	CHEM DIC
Solubility[b]: alcohol	soluble @	°F/°C	CHEM DIC
Boiling point	7.2	(°F) °C	CHRIS
Melting point	-244.8	(°F) °C	CHRIS
Vapor pressure	2,300 mmHg @ 20	°F/(°C)	CHEM DIC
Vapor density	2.2 @ —	°F/°C	NFPA
Flash point (open cup ✓; closed cup ___)	-110	°F/(°C)	CHRIS
Other: Polymerizes readily in air and water			OHMTADS

II. HAZARDOUS CHARACTERISTICS

A. TOXICOLOGICAL HAZARD	HAZARD?	CONCENTRATIONS (PEL, TLV, other)	SOURCE
Inhalation	(Yes) No	PEL-TWA 1 ppm/TLV-TWA 5ppm	OSHA/ACGIH
Ingestion	Yes No		
Skin/eye absorption	(Yes) No		SITTIG
Skin/eye contact	(Yes) No	Skin burn from contact	OHMTADS
Carcinogenic	(Yes) No	TLV 5ppm/PEL 1ppm	ACGIH/OSHA
Teratogenic	Yes No		
Mutagenic	Yes No		
Aquatic	Yes No		
Other: ___	Yes No		

B. TOXICOLOGICAL HAZARD	HAZARD?	CONCENTRATIONS	SOURCE
Combustibility	(Yes) No		
Toxic byproduct(s): Hydrogen chloride Phosgene, carbon monoxide	(Yes) No		
Flammability	(Yes) No		
LFL		3.6	OHMTADS
UFL		33	OHMTADS
Explosivity	Yes No		
LEL			
UEL			

[a]Only one is necessary.

[b]For organic compounds, recovery of spilled material by solvent extraction may require solubility data.

C. REACTIVITY HAZARD	HAZARD? (Yes) No	CONCENTRATIONS	SOURCE
Reactivities: Polymerizes in air, sunlight or heat			CHRIS

D. CORROSIVITY HAZARD	HAZARD? Yes (No)	CONCENTRATIONS	SOURCE
ph _____ Neutralizing agent:			

E. RADIOACTIVE HAZARD	HAZARD?	EXPOSURE RATE	SOURCE
Background	Yes (No)		
Alpha particles	Yes (No)		
Beta particles	Yes (No)		
Gamma radiation	Yes (No)		

III. DESCRIPTION OF INCIDENT:

Quantity involved 1,000 lbs

Release information Suspected Leaking Cylinder

Monitoring/sampling recommended

IV. RECOMMENDED PROTECTION:

Worker Level B protection. Protective clothing materials recommended: CPE or Viton

Public

V. RECOMMENDED SITE CONTROL:

Hotline

Decontamination line

Command Post location

VI. REFERENCES FOR SOURCES:

CHRIS – Chemical Hazards Response Information System Manual II

ACGIH – TLVs – Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment 1984-85

CHEMDIC – Condensed Chemical Dictionary, Tenth Edition, 1981

NFPA – Fire Protection Guide on Hazardous Materials, Seventh Ed., 1978

OHMTADS – Oil and Hazardous Materials Technical Assistance Data System, EPA 1984

SITTIG – Handbook of Toxic and Hazardous Chemicals, Marshall Sittig, 1981

OSHA – 29 CFR Part 1910.1017

Appendix D. Sample Decontamination Procedures for Three Typical Levels of Protection[a]

F.S.O.P. No. 7

Process: DECONTAMINATION PROCEDURES

INTRODUCTION

1.1 The objective of these procedures is to minimize the risk of exposure to hazardous substances. These procedures were derived from the U.S. Environmental Protection Agency, Office of Emergency and Remedial Response's (OERR), 'Interim Standard Operating Safety Guides (revised Sep. 82)". This version of the guides is in a format that is more appropriate for use in the field.

1.2 Protective equipment must be worn by personnel when response activities involve known or suspected hazardous substances. The procedures for decontaminating personnel upon leaving the contaminated area are addressed for each of the EPA, OERR designated levels of protection. The procedures given are for the maximum and minimum amount of decontamination used for each level of protection.

1.3 The maximum decontamination procedures for all levels of protection consist of specific activities at nineteen stations. Each station emphasizes an important aspect of decontamination. When establishing a decontamination line, each aspect should be incorporated separately or combined with other aspects into a procedure with fewer steps (such as the Minimum Decontamination Procedures).

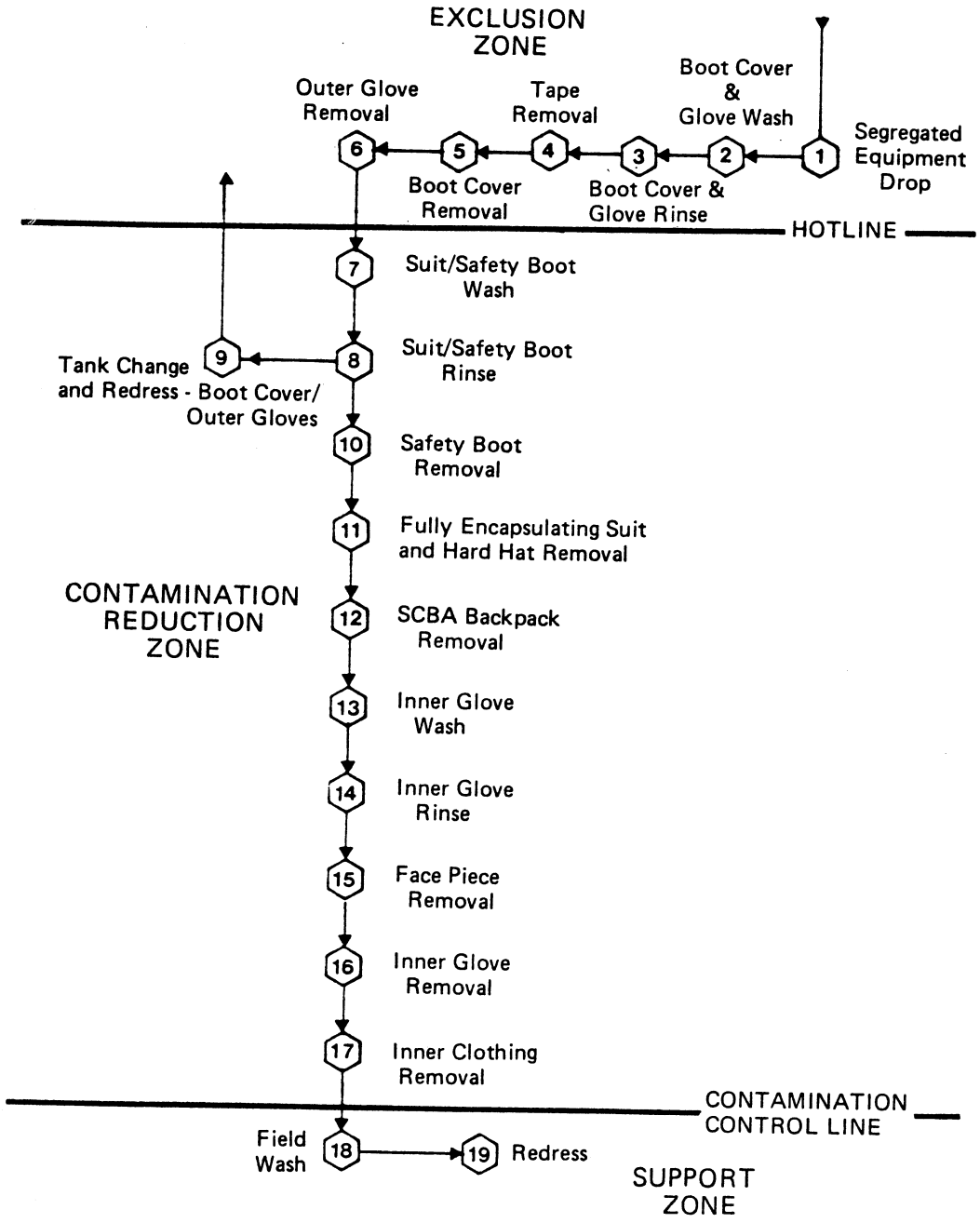
1.4 Decontamination lines are site specific since they are dependent upon the types of contamination and the type of work activities on site, A cooling station is sometimes necessary within the decontamination line during hot weather. It is usually a location in a shaded area in which the wind can help to cool personnel. In addition, site conditions may permit the use of cooling devices such as cool water hose, ice packs, cool towels, etc, When the decontamination line is no longer required, contaminated wash and rinse solutions and contaminated articles must be contained and disposed of as hazardous wastes in compliance with state and federal regulations.

[a] Source: Excerpted from Field Standard Operating Procedures for the Decontamination of Response Personnel (FSOP 7). EPA Office of Emergency and Remedial Response, Hazardous Response Support Division, Washington, DC. January 1985.

PROCESS DECON PROCEDURES

MAXIMUM DECONTAMINATION LAYOUT

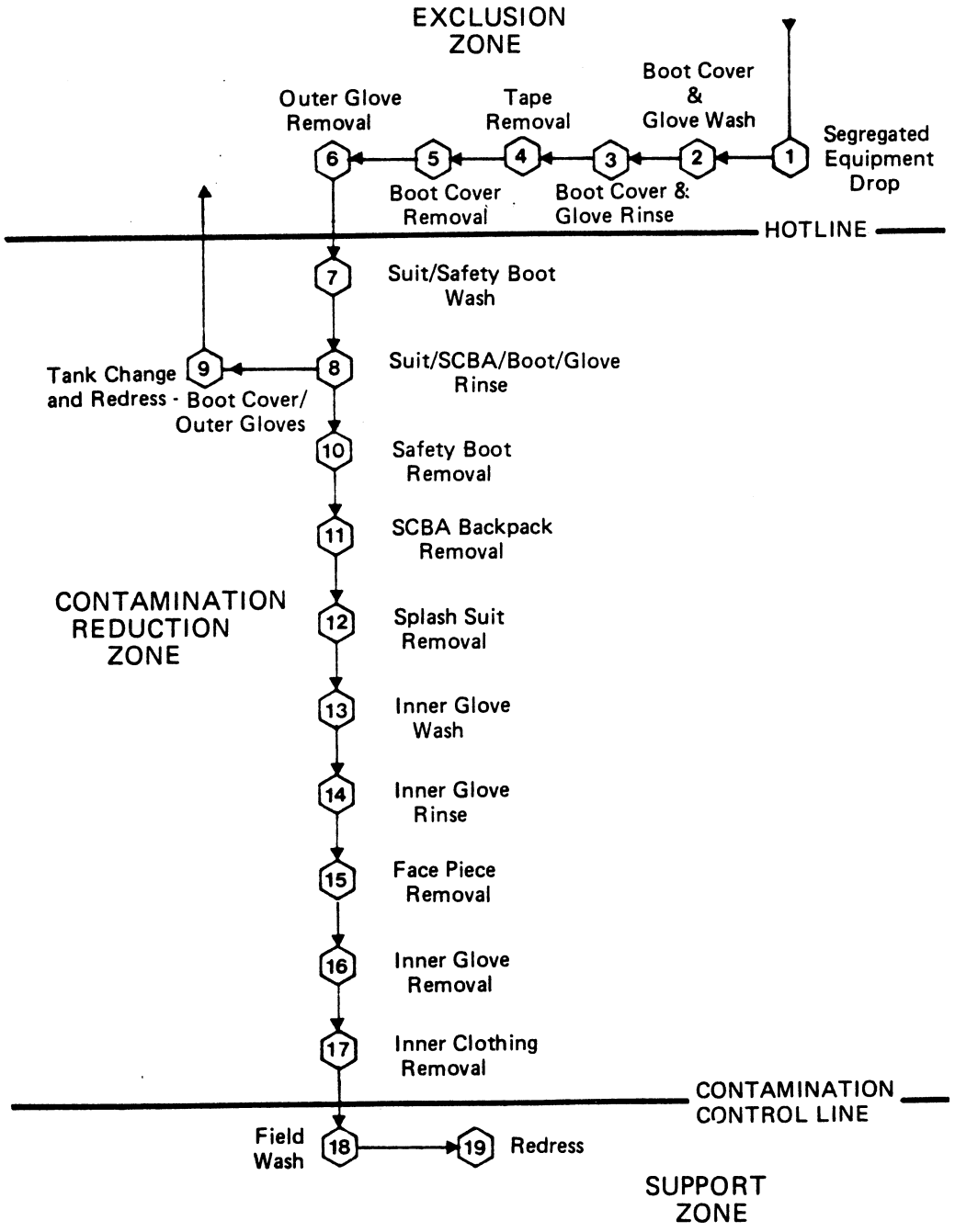
LEVEL A PROTECTION



PROCESS DECON PROCEDURES

MAXIMUM DECONTAMINATION LAYOUT

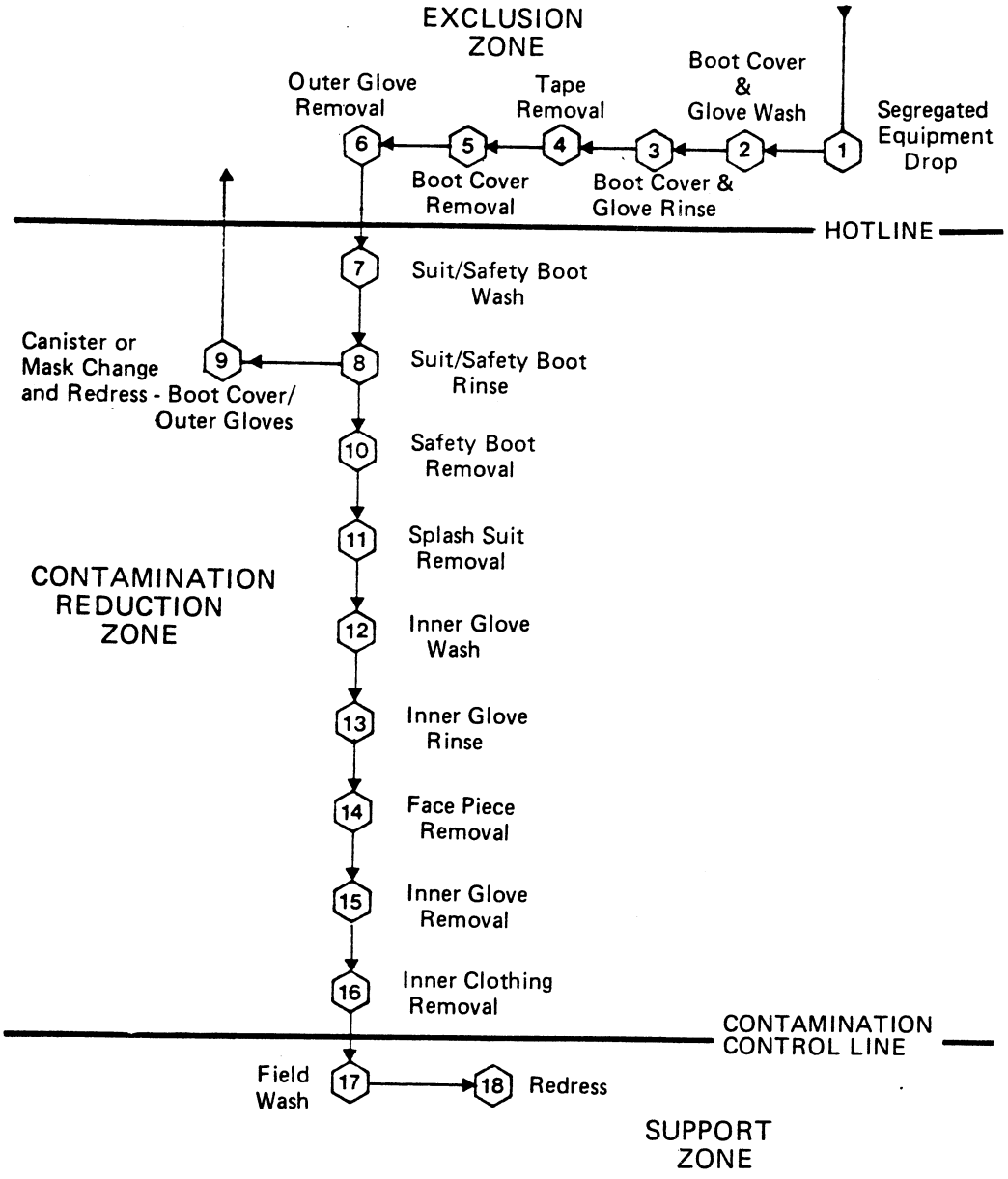
LEVEL B PROTECTION



PROCESS DECON PROCEDURES

MAXIMUM DECONTAMINATION LAYOUT

LEVEL C PROTECTION

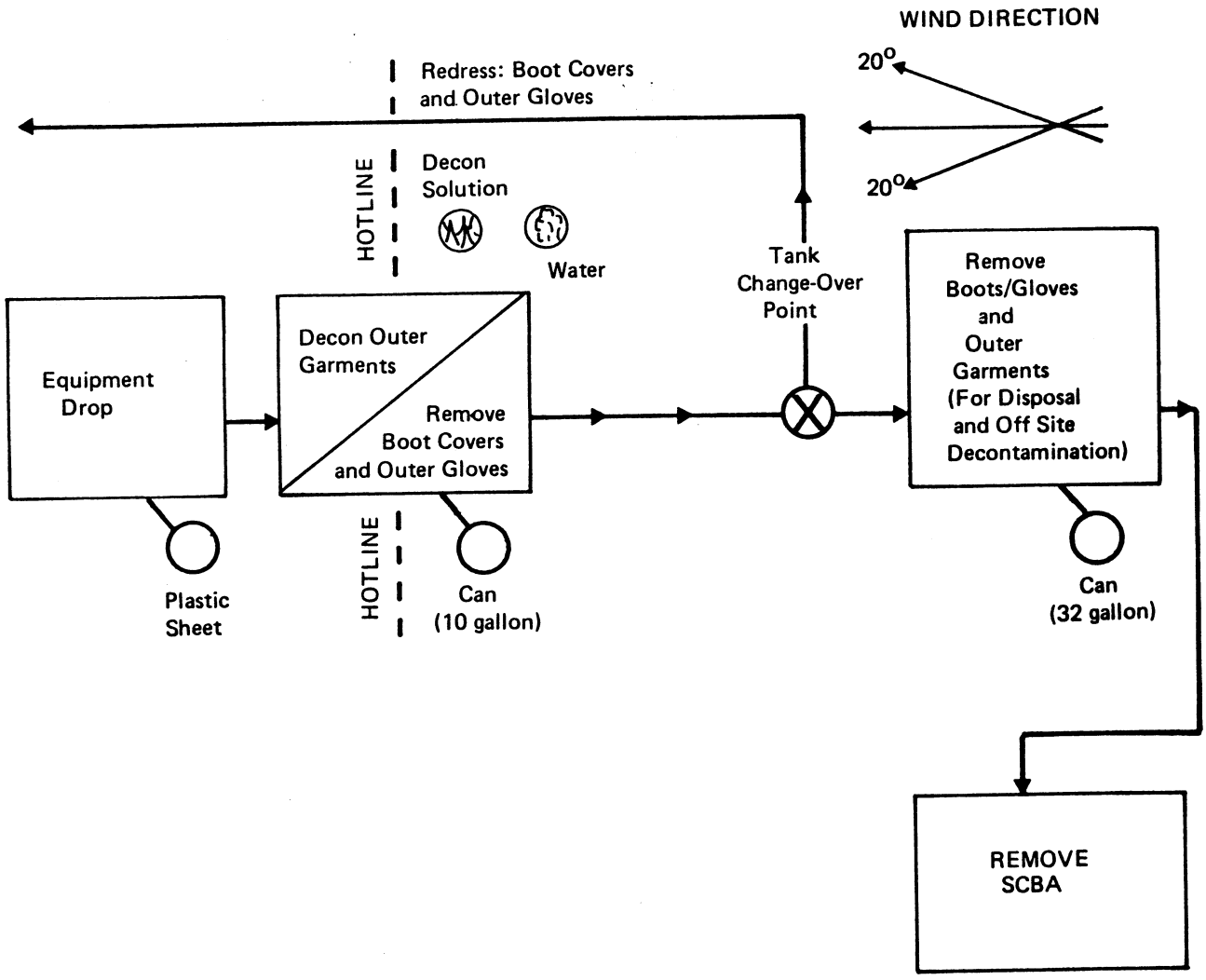


F.S.O.P. No. 7

PROCESS DECON PROCEDURES

MINIMUM DECONTAMINATION LAYOUT

LEVELS A & B PROTECTION

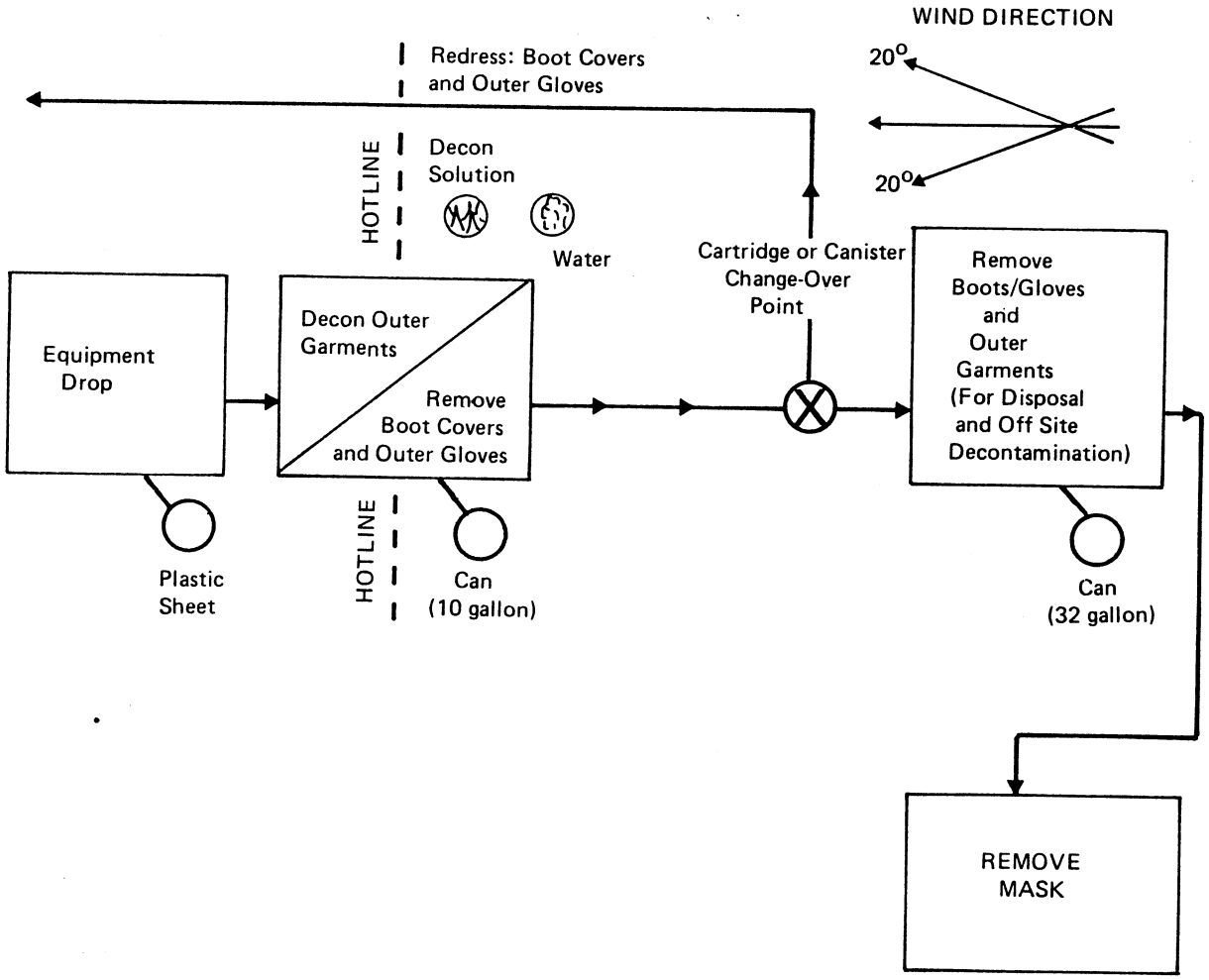


F.S.O.P. No. 7

PROCESS DECON PROCEDURES

MINIMUM DECONTAMINATION LAYOUT

LEVEL C PROTECTION



EQUIPMENT NEEDED TO PERFORM MAXIMUM DECONTAMINATION MEASURES FOR LEVELS A. B. AND C

Station 1:
a. Various Size
b. Plastic Liners
c. Plastic Drop Cloths

Station 2:
a. Containers (20-30 Gallons)
b. Decon Solution or Detergent Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 3:
a. Containers (20-30 Gallons) OR High-Pressure Spray Unit
b. Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 4:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 5:
a. Containers (20-30 Gallons)
b. Plastic, Liners
c. Bench or Stools

Station 6:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 7:
a. Containers (20-30 Gallons)
b. Decon Solution or Detergent Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 8:
a. Containers (20-30 Gallons) OR High-pressure Spray Unit
b. Water
c. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 9:
a. Air Tanks or Face Masks and Cartridge Depending on Level
b. Tape
c. Boot Covers
d. Gloves

Station 10:
a. Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools
d. Boot Jack

Station 11:
a. Rack
b. Drop Cloths
c. Bench or Stools

Station 12:
a. Table

Station 13:
a. Basin or Bucket
b. Decon Solution
c. Small Table

Station 14:
a. Water
b. Basin or Bucket
c. Small Table

Station 15:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 16:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 17:
a. Containers (20-30 Gallons)
b. Plastic Liners

Station 18:
a. Water
b. Soap
c. Small Table
d. Basin or Bucket
e. Field Showers
f. Towels

Station 19:
a. Dressing Trailer is Needed in Inclement Weather
b. Tables
c. Chairs
d. Lockers
e. Cloths

QEQUIPMENT NEEDED TO PERFORM MINIMUM DECONTAMINATION MEASURES FOR LEVELS A, B, AND C

Station I:
a. Various Size Containers
b. Plastic Liners
c. Plastic Drop Cloths

Station 2:
a. Containers (20-30 Gallons)
b. Decon Solution
c. Rinse Water
d. 2-3 Long-Handled, Soft-Bristled Scrub Brushes

Station 3:
a. Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools

Station 4:
Air Tanks or Masks and Cartridges Depending Upon Level
b. Tape
c. Boot Covers
d. Gloves

Station 5:
a. Containers (20-30 Gallons)
b. Plastic Liners
c. Bench or Stools

Station 6:
a. Plastic Sheets
b. Basin or Bucket
c. Soap and Towels
d. Bench or Stools

Station 7:
a. Water
b. Soap
c. Tables
d. Wash Basin or Bucket

FSOP 7: MAXIMUM MEASURES FOR LEVEL A DECONTAMINATION

Station 1:	Segregated Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. During hot weather operations, a cool down station may be set up within this area.
Station 2:	Boot Cover and Glove Wash	2. Scrub outer boot covers and gloves with decon solution or detergent/water.
Station 3:	Boot Cover and Glove Rinse	3. Rinse off decon solution from station 2 using copious amounts of water.
Station 4:	Tape Removal	4. Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5:	Boot Cover Removal	5. Remove boot covers and deposit in container with plastic liner.
Station 6:	Outer Glove Removal	6. Remove outer gloves and deposit in container with plastic liner.
Station 7:	Suit and Boot Wash	7. Wash encapsulating suit and boots using scrub brush and decon solution or detergent/water. Repeat as many times as necessary.
Station 8:	Suit and Boot	8. Rinse off decon solution using water, Repeat as many times as necessary.
Station 9:	Tank Change	9. If an air tank change is desired, this is the last step in the decontamination procedure, Air tank is exchanged, new outer gloves and boot covers donned, and Joints taped. Worker returns to duty.
Station 10:	Safety Boot Removal	10. Remove safety boots and deposit in container with plastic liner.
Station 11:	Fully Encapsulating Suit and Hard Hat Removal	11. Fully encapsulated suit is removed with assistance of a helper and laid out on a drop cloth or hung up. Hard hat is removed. Hot weather rest station maybe set up within this area for personnel returning to site.
Station 12:	SCBA Backpack Removal	12. While still wearing facepiece, remove backpack and place on table. Disconnect hose from regulator valve and proceed to next station.
Station 13:	Inner Glove Wash	13. Wash with decon solution that will not ham the skin, Repeat as often as necessary.
Station 14:	Inner Glove Rinse	14. Rinse with water, Repeat as many times as necessary.
Station 15:	Face Piece Removal	15. Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 16:	Inner Glove Removal	16. Remove inner gloves and deposit in container with liner.
Station 17:	Inner Clothing Removal	17. Remove clothing and place in lined container. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulating suit.
Station 18:	Field Wash	18. Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 19:	Redress	19. Put on clean clothes.

FSOP 7: MINIMUM MEASURES FOR LEVEL A DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations maybe set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and fully- encapsulating suit with decon solution or detergent and water, Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves, Deposit in container with plastic liner.
Station 4:	Tank Change	4. If worker leaves Exclusion Zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers' donned, joints taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	5. Boots, fully-encapsulating suit, inner gloves andremoved and deposited in separate containers lined with plastic.
Station 6:	SCBA Removal	6. SCBA backpack and facepiece is removed (avoid touching face with fingers), SCBA deposited on plastic sheets.
Station 7:	Field Wash	7. Hands and face are thoroughly washed, Shower as soon as possible.

FSOP 7: MAXIMUM MEASURES FOR LEVEL B DECONTAMINATION

Station 1:	Segregated Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc ,) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination, During hot weather operations, cool down stations may be set up within this area.
Station 2:	Boot Cover and Glove Wash	2. Scrub outer boot covers and gloves with decon solution or detergent and water.
Station 3:	Boot Cover and Glove Rinse	3. Rinse off decon solution from station 2 using copious amounts of water.
Station 4:	Tape Removal	4. Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5:	Boot Cover Removal	5. Remove boot covers and deposit in container with plastic liner.
Station 6:	Outer Glove Removal	6. Remove outer gloves and deposit in container with plastic liner.
Station 7:	Suit and Safety Boot Wash	7. Wash chemical-resistant splash suit, SCBA, gloves and safety boots. Scrub with long-handle scrub brush and decon solution, Wrap SCBA regulator (if belt mounted type) with plastic to keep out water. Wash backpack assembly with sponges or cloths.
Station 8:	Suit, SCBA, Boot, and Glove Rinse	8. Rinse off decon solution using copious amounts of water.
Station 9:	Tank Change	9. If worker leaves exclusion zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned, and joints taped. Worker returns to duty.
Station 10:	Safety Boot Removal	10. Remove safety boots and deposit in container with plastic liner.
Station 11:	SCBA Backpack Removal	11. While still wearing facepiece, remove back-pack and place on table. Disconnect hose from regulator valve.
Station 12:	Splash Suit Removal	12. With assistance of helper, remove splash suit..Deposit in container with plastic liner.
Station 13:	Inner Glove Wash	13. Wash inner gloves with decon solution.
Station 14:	Inner Glove Rinse	14. Rinse inner gloves with water.
Station 15:	Face Piece Removal	15. Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 16:	Inner Glove Removal	16. Remove inner gloves and deposit in container with liner.
Station 17:	Inner Clothing Removal	17. Remove inner clothing. Place in container with liner. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulating suit.
Station 18:	Field Wash	18. Shower if highly toxic, skin-corrosive or skin- absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 19:	Redress	19. Put on clean clothes.

FSOP 7: MINIMUM MEASURES FOR LEVEL B DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down station may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical- resistant splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Tank Change	4. If worker leaves exclusive zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned, Joints taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 6:	SCBA Removal	6. SCBA backpack and facepiece is removed. Avoid touching face with finger, SCBA deposited on plastic sheets.
Station 7:	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

FSOP 7: MAXIMUM MEASURES FOR LEVEL C DECONTAMINATION

Station 1:	Segrated Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
Station 2:	Boot Cover and Glove Wash	2. Scrub outer boot covers and gloves with decon solution or detergent and water.
Station 3:	Boot Cover and Glove Rinse	3. Rinse off decon solution from station 2 using copious amounts of water.
Station 4:	Tape Removal	4. Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5:	Boot Cover Removal	5. Remove boot covers and deposit in containers with plastic liner.
Station 6:	Outer Glove Removal	6. Remove outer gloves and deposit in container with plastic liner.
Station 7:	Suit and Boot Wash	7. Wash splash suit, gloves, and safety boots. Scrub with long-handle scrub brush and decon solution.
Station 8:	Suit and Boot, and Glove Rinse	8. Rinse off decon solution using water. Repeat as many times as necessary.
Station 9:	Canister or Mask Change	9. If worker leaves exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, and joints taped worker returns to duty.
Station 10:	Safety Boot Removal	10. Remove safety boots and deposit in container with plastic liner.
Station 11:	Splash Suit Removal	11. With assistance of helper, remove splash suit. Deposit in container with plastic liner.
Station 12:	Inner Glove Rinse	12. Wash inner gloves with decon solution.
Station 13:	Inner Glove Wash	13. Rinse inner gloves with water.
Station 14:	Face Piece Removal	14. Remote face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 15:	Inner Glove Removal	15. Remove inner gloves and deposit in lined container.
Station 16:	Inner Clothing Removal	16. Remove clothing soaked with perspiration and place in lined container. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulating suit.
Station 17:	Field Wash	17. Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 18:	Redress	18. Put on clean clothes.

FSOP 7: MINIMUM MEASURES FOR LEVEL C DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Canister or Mask Change	4. If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, Joints taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 6:	Face Piece Removal	6. Facepiece is removed. Avoid touching face with fingers, Facepiece deposited on plastic sheet.
Station 7:	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

Appendix E. NIOSH, OSHA, and EPA Regional Offices and USCG District Offices

NIOSH Regional Offices

HHS Region I
Government Center
(JFK Federal Building)
Boston, MA 02203
Telephone: (617) 223-3848

HHS Region II
26 Federal Plaza, Room 3337
New York, NY 10278
Telephone: (212) 264-5747

HHS Region III
521-35 Market Street
P.O. Box 13716
Philadelphia, PA 19101

HHS Region IV
101 Marietta Tower, Suite 1007
Atlanta, GA 30323
Telephone: (404) 221-2396

HHS Region V
300 South Wacker Drive, 33rd Floor
Chicago, IL 60606
Telephone: (312) 886-3881

HHS Region VI
1200 Main Tower Building
Room 1835
Dallas, TX 75202
Telephone: (214) 767-3916

HHS Region VII
601 East 12th Street
Kansas City, MO 64106
Telephone: (816) 3743491

HHS Region VIII
1185 Federal Building
1961 Stout Street
Denver, CO 80294
Telephone: (303) 844-6163 x17

HHS Region IX
50 United Nations Plaza
San Francisco, CA 94102
Telephone: (415) 556-3782

HHS Region X
2901 Third Avenue, M.S.402
Seattle, WA 98121
Telephone: (206) 442-0530

OSHA Regional Offices

OSHA Region I
16-18 North Street
1 Dock Square Building, 4th Floor
Boston, MA 02109
Telephone: (617) 223-6710

OSHA Region II
One Astor Plaza, Room 3445
1515 Broadway
New York, NY 10036
Telephone: (212) 944-3432

OSHA Region III
Gateway Building, Suite 2100
3535 Market Street
Philadelphia, PA 19104
Telephone: (215) 596-1201

OSHA Region IV
1375 Peachtree Street, N.E.,
Suite 587
Atlanta, GA 30367
Telephone: (404) 881-3573

OSHA Region V
230 South Dearborn Street
32nd Floor, Room 3244
Chicago, IL 60604
Telephone (312) 353-2220

OSHA Region VI
525 Griffin Square, Room 602
Dallas, TX 75202
Telephone: (214) 767-4731

OSHA Region VII
911 Walnut Street, Room 406
Kansas City, MO 64106
Telephone: (816) 374-5861

OSHA Region VII
Federal Building, Room 1554
1961 Stout Street
Denver, CO 80294
Telephone: (303) 837-3061

OSHA Region IX
450 Golden Gate Avenue
Box 36017
San Francisco, CA 944102
Telephone: (415) 556-7260

OSHA Region X
Federal Office Building,
Room 6003
909 First Avenue
Seattle, WA 98174
Telephone: (206) 442-59930

EPA Regional Offices

EPA Region 1
JFK Federal Building
Boston, MA 02203
Telephone: (617) 223-7210

EPA Region II
26 Federal Plaza
Room 900
New York, NY 10218

EPA Region III
841 Chestnut, Street
Philadelphia, PA 199107
Telephone: (215) 597-9800

EPA Region IV
345 Cortland Street, N.E.
Atlanta, GA 303365
Telephone: (404) 881-4727

EPA Region V
230 S. Dearborne Street
Chicago, IL 60604
Telephone: (312) 353-2000

EPA Region VI
First International Building
1201 Elm Street
Dallas, TX 75270
Telephone: (214) 767-2600

EPA Region VII
One Denver Place
999 18th Street, Suite 1300
Denver, CO 80202-2413
Telephone: (303) 293-1603

EPA Region IX
215 Fremont Street
San Francisco, CA 94105
Telephone: (415) 974-8153

EPA Region X
1200 6th Avenue
Seattle, WA 988101
Telephone: (206) 442-5810

USCG District Offices

Commander (mep)
First Coast Guard District
150 Causeway Street
Boston, MA 02114
Telephone: (617) 223-6915

Commander (meps)
Second Coast Guard District
1430 Olive Street
St. Louis, MO 63103
Telephone: (314) 425-4655

Commander (mer)
Third Coast Guard District
Governors Island
New York, NY 10004
Telephone: (212) 668-7152

Commander (mep)
Fifth Coast Guard District
Federal Building
431 Crawfort Street
Portsmouth, VA 23705
Telephone: (804) 398-6383

Commander (mep)
Seventh Coast Guard District
Federal Building
51 S.W. 1st Avenue
Miami, FL 33130
Telephone: (305) 350-5276

Commander (mep)
Eighth Coast Guard District
Hale Boggs Federal Building
500 Camp Street
New Orleans. LA 70130
Telephone: (504) 589-6296

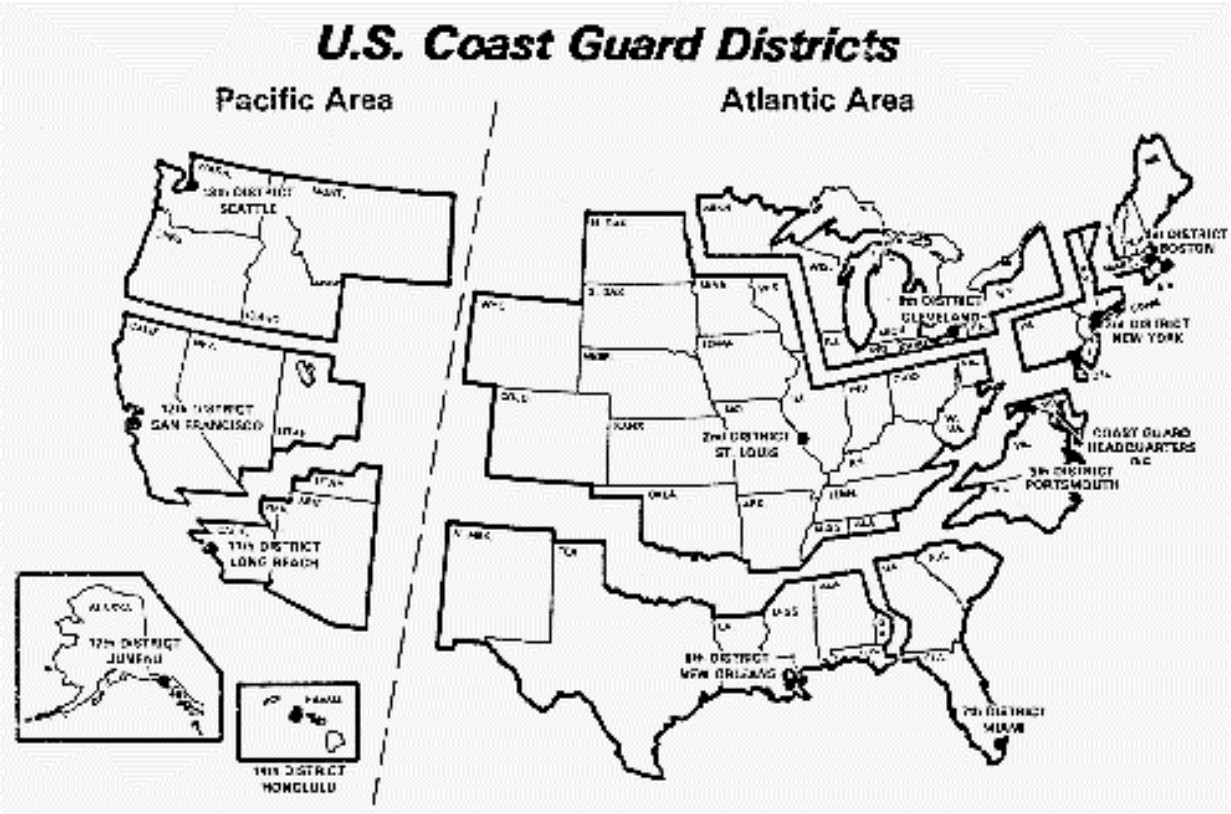
Commander (mep)
Ninth Coast Guard District
1240 East 9th Street
Cleveland, Ohio 44199
Telephone: (216) 522-3918

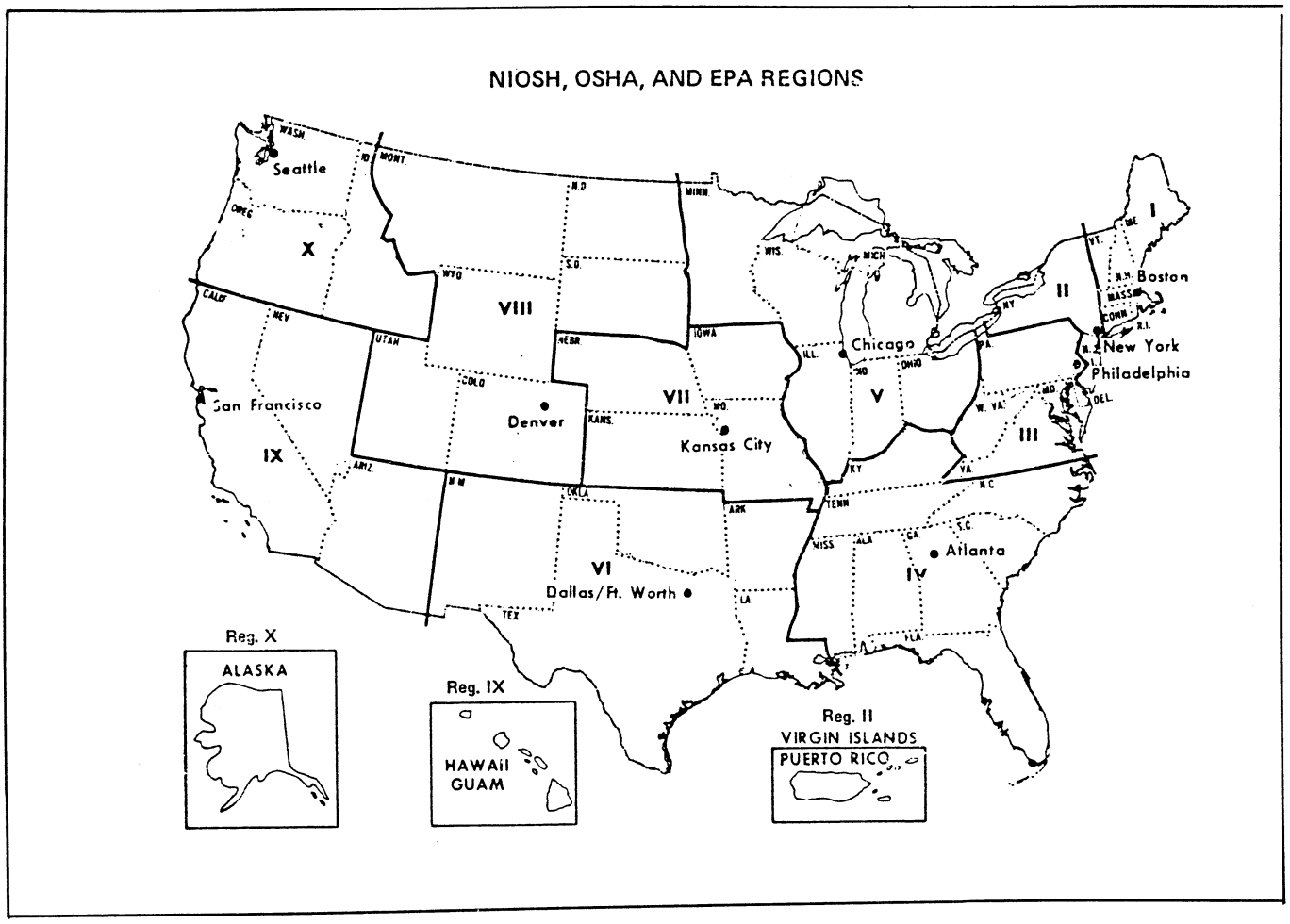
Commander (mep)
Eleventh Coast Guard District
Union Band Building
400 Oceangate
Long Beach, CA 90822
Telephone: (213) 590-2301

Commander (mepps)
Twelfth Coast Guard District
Building 51
Government Island
Alameda, CA 94501
Telephone: (415) 437-3465

Commander (mep)
Thirteenth Coast Guard District
Federal Building
915 Second Avenue
Seattle, WA 98174
Telephone: (206) 442-5850

Commander (mep)
Fourteenth Coast Guard District
Prince Kalanianaole Federal Building
300 Ala Moana Boulevard, 9th





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