
PART FOUR: ATTACHMENTS

Attachment 1	Acronyms
Attachment 2	Glossary of Terms
Attachment 3	Checklists
Attachment 4	Telephone Numbers
Attachment 5	Hazardous Materials Responder <ul style="list-style-type: none">• Levels of Training• Personal Protective Equipment• HazMat Response Teams
Attachment 6	Hazardous Materials Control Zones
Attachment 7	Protective Actions (Evacuation and In-Place Protection)
Attachment 8	Public Information
Attachment 9	Firescope Hazardous Materials Module
Attachment 10	References

ATTACHMENT 1

ACRONYMS: HAZARDOUS MATERIALS

A	AA	Administering Agency
	ABAG	Association of Bay Area Governments
	AG	Attorney General
	AMBAG	Association of Monterey Bay Area Governments
	APCD	Air Pollution Control District
	APCO	Air Pollution Control Officer
	AQMD	Air Quality Management Districts
	ARB	Air Resources Board
	ARC	American Red Cross
	ATSDR	Agency for Toxic Substances and Disease Registry
B	BIA	Bureau of Indian Affairs
	BLM	Bureau of Land Management
	BOM	Bureau of Mines
	BOR	Bureau of Reclamation
	BRC	Below Regulatory Concern
C	CA	California
	CAC	County Agricultural Commissioner
	CAER	Community Awareness and Emergency Response
	CALCORD	CA On-Scene Emergency Coordination Channel
	CALNET	Automatic Telecommunications Switching System
	Cal OSHA	CA Occupational Safety and Health Administration
	CALTRANS	CA Department of Transportation
	CAMEO	Computer Aided Management of Emergency Operations
	CAP	Civil Air Patrol
	CAS	Chemical Abstract Service
	CCC	CA Conservation Corps (or CA Coastal Commission)
	CCR	CA Code of Regulations

CDC	Centers for Disease Control
CDC	CA Department of Corrections
CDF	CA Department of Forestry and Fire Protection
CDFA	CA Department of Food and Agriculture
CEC	CA Energy Commission
CEPRC	Chemical Emergency Planning and Response Commission
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CHLOREP	Chlorine Emergency Program
CHP	CA Highway Patrol
CHMIRS	CA Hazardous Material Incident Reporting System
CLEMARS	CA Law Enforcement Mutual Aid Radio System
CLERS	CA Law Enforcement Radio System
CNG	CA National Guard
COHWMP	County Hazardous Waste Management Plan
COTP	Captain of the Port (USCG)
CPG	Civil Preparedness Guide
CRC	Coastal Resource Coordinator
CESRS	California Emergency Services Radio System
CSTI	CA Specialized Training Institute
CUPA	Certified Unified Program Agency
CVC	CA Vehicle Code
CWA	Clean Water Act

D

DEA	Drug Enforcement Administration
DFG	Department of Fish and Game
DHS	Department of Health Services
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOGGR	Department of Oil, Gas, and Geothermal Resources
DOI	Department of the Interior
DOJ	Department of Justice
DOL	Department of Labor
DOT	Department of Transportation
DP&R	Department of Parks and Recreation
DPR	Department of Pesticide Regulation
DTG	Date/Time Group

	DTSC	Department of Toxic Substances Control
	DWR	Department of Water Resources
E	EERU	Environmental Emergency Response Unit
	EMB	Environmental Management Branch
	EMS	Emergency Medical Services
	EMSA	Emergency Medical Services Authority
	EOC	Emergency Operations Center
	EOD	Explosive Ordinance Disposal
	EPA	Environmental Protection Agency
	EPCRA	Emergency Planning and Community Right-to-Know
	ERCC	Emergency Response Coordinating Committee
	ERG	Emergency Response Guidebook
	ERPG	Emergency Response Planning Guidelines
	ERT	Environmental Response Team
F	FAA	Federal Aviation Administration
	FAX	Facsimile
	FDA	Food and Drug Administration
	FEMA	Federal Emergency Management Agency
	FHA	Federal Highway Administration
	FIRESCOPE	Firefighting Resources of California Organized for Potential Emergencies
	FOSC	Federal On-Scene Coordinator
	FRA	Federal Railroad Administration
	FRERP	Federal Radiological Emergency Response Plan
	FRMAC	Federal Radiological Monitoring and Assessment Center
	FTS	Federal Telephone System
H	HAZMAT	Hazardous Materials
	HAZWOPER	Hazardous Waste Operations and Emergency Response
	HEAR	Hospital Emergency Administrative Radio System
	HHS	Health and Human Services
	HMICP	Hazardous Material Incident Contingency Plan
	HMIS	Hazardous Material Incident Reporting System
	HMIX	Hazardous Material Information Exchange
	HWSF	Hazardous Waste Strike Force
I	IC	Incident Commander
	ICS	Incident Command System

	IDLH	Immediately Dangerous to Life and Health
J	JPA	Joint Powers Agreement
	LEPC	Local Emergency Planning Commission
M	MACS	Multi-Agency Coordination System
	MHFP	Multi-Hazard Functional Plan
	MMS	Minerals Management Service
	MOU	Memorandum of Understanding
	MSO	Marine Safety Office
	MW	Megawatt
N	NBS	National Biological Service
	NCP	National Contingency Plan
	NFPA	National Fire Protection Association
	NMFS	National Marine Fisheries Service
	NOAA	National Oceanic and Atmospheric Administration
	NPAC	National Poison Antidote Center
	NPFC	National Pollution Fund Center
	NPP	Nuclear Power Plant
	NPS	National Park Service
	NRC	National Response Center (or Nuclear Regulatory Commission)
	NRT	National Response Team
	NSF	National Strike Force (or National Science Foundation)
NTSB	National Transportation Safety Board	
O	OASIS	Operational Area Satellite Information System
	OEHHA	Office of Environmental Health Hazard Assessment
	OES	Office of Emergency Services
	OHMT	Office of Hazardous Material Transportation
	OSC	On-Scene Coordinator
	OSHA	Occupational Safety and Health Administration
	OSPR	Office of Spill Prevention and Response
P	PEL	Permissible Exposure Limit
	PIAT	Public Information Assist Team
	PIO	Public Information Officer
	POLREPS	Pollution Reports
	PPE	Personal Protective Equipment

	PST	Pacific Strike Team (USCG)
	PUC	Public Utilities Commission
R	RACES	Radio Amateur Civil Emergency Services
	RAPID	Railroad Accident Prevention and Immediate Deployment
	RCP	Regional Contingency Plan
	RMPP	Risk Management and Prevention Program
	RP	Responsible Party
	RRT	Regional Response Team
	RSPA	Research and Special Programs Administration
	RWQCB	Regional Water Quality Control Board
S	SAC	State Agency Coordinator
	SARA	Superfund Amendments and Reauthorization Act
	SCAG	Southern California Association of Governments
	SCBA	Self-contained Breathing Apparatus
	SEMS	Standardized Emergency Management System
	SERC	State Emergency Response Commission
	SFM	CA State Fire Marshal
	SIC	State Incident Commander
	SIOOSC	State Interagency Oil Spill Committee
	SLC	State lands Commission
	SM	Scene Management
	SOC	State Operation Center
	SOP	Standard Operating Procedures
	SPCC	Spill Prevention Containment and Countermeasures
	SRL	Sanitation and Radiation Laboratory
	SSC	Scientific Support Coordinator
	STEL	Short Term Exposure Limit
	STORMS	Standard Oil Spill Response Management System
	SWRCB	State Water Resources Control Board
T	TAC	Technical Advisory Committee
	TAT	Technical Assistance Team
	TLA	Three Letter Acronym
	TLV	Threshold Limit Value
	TSCP	Toxic Substances Control Program
U	UC	University of California

USCG	United States Coast Guard
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

ACRONYMS: TERRORISM

A	AC	Military designation for blood agent HYDROGEN CYANIDE.
	AMC	(DoD) Army Material Command
	AMS	(DoE) Aerial Measuring System
	ARAC	(DoE) Atmospheric Release Advisory Capability
	ARG	(DoE) Accident Response Group
	ATSDR	(DHHS) Agency for Toxic Substance and Disease Registry
B	BAL	Military designation for Lewisite antidote <i>British Anti-Lewisite</i> .
	BDO	Battle Dress Overgarment; Military term.
	BDRP	(DoD) Biological Defense Research Program
	B.N.I.C.E.	Acronym for Biological, Nuclear, Incendiary, Chemical and Explosive, as used by National Fire Academy instruction.
	BW	Biological Warfare
C	CAM	Chemical Agent Monitor; Electronic detection device specifically for nerve agents.
	C/B	Chemical/Biological Agent; Military abbreviation.
	CBDCOM	(US Army) Chemical-Biological Defense Command.
	CBIRF	(US Marine Corps) Chemical-Biological Incident Response Force
	CBRED	(DoD) Chemical, Biological, Radiological, Environmental Defense Response Team
	C/B-RRT	(DoD) Chemical/Biological Rapid Response Team
	CBW	Chemical and Biological Warfare; Military abbreviation.
	CDC	Chemical Decontamination Center; Military abbreviation; also used for Center for Disease Control (Atlanta, Georgia).
	CDRG	Catastrophic Disaster Response Group
	CG	Military designation for respiratory agent PHOSGENE.
	CIA	Central Intelligence Agency
	CIRG	(FBI) Critical Incident Response Group
	CK	Military designation for blood agent CYANOGEN CHLORIDE.
	CN	Military designation for incapacitating agent MACE (chloroacetophenone), early formulation (pre-1959), commercially available for self-protection devices.
	CPS	Chemical Protective Shelter; Military abbreviation.
	CS	Military designation for incapacitating agent MACE, current formulation (post-1959), favored by law enforcement as it is stronger and faster acting than CS, and is less toxic, formulated by Corson and Stoughton, hence its military designation.
	CSU	(DoD) Chemical Support Unit
	CX	Military designation for vesicant PHOSGENE OXIME.

D	DEA	Drug Enforcement Administration
	DHHS	Department of Health and Human Services (federal)
	DoD	Department of Defense (federal)
	DoE	Department of Energy (federal)
	DHS	Department of Health Services (California))
	DoJ	Department of Justice (federal)
	DoT	Department of Transportation
E	EMS	Emergency Medical Services
	EOC	Emergency Operations Center
	EOD	Explosive Ordnance Disposal (team)
	EPA	Environmental Protection Agency (federal)
	ERAMS	Environmental Radiation Ambient Monitoring System (Federal USEPA)
	ERT	(federal) Emergency Response Team; also used for Environmental Response (EPA), and Evidence Response Team (FBI).
	ERT-A	Emergency Response Team - Advance
	ERT-N	Emergency Response Team - National
	EST	Emergency Support Team
F	FBI	Federal Bureau of Investigation
	FDA	(DHHS) Federal Drug Administration
	FEMA	Federal Emergency Management Agency
	FRERP	Federal Radiological Emergency Response Plan
	FRMAC	(DoE) Federal Radiological Monitoring and Assessment Center
	FRP	Federal Response Plan
G	GA	Military designation for nerve agent TABUN.
	GB	Military designation for nerve agent SARIN.
	GD	Military designation for nerve agent SOMAN.
	GF	Military designation for a nerve agent, no name.
	GSA	General Services Administration (federal)
H	H	Military designation for vesicant SULFUR MUSTARD, containing 30% sulfur as a contaminant.
	HCl	Chemical formula for Hydrogen Chloride
	HCN	Chemical formula for Hydrogen Cyanide
	HD	Military designation for vesicant distilled SULFUR MUSTARD, a distilled mustard which is very pure.
	HMRU	(FBI) Hazardous Materials Response Unit
	HN1	Military designation for vesicant NITROGEN MUSTARD derivative.
	HN2	Military designation for vesicant NITROGEN MUSTARD MUSTARGEN.
HN3	Military designation for vesicant NITROGEN MUSTARD derivative.	
I	IC_{t50}	Incapacitating concentration of a chemical vapor or aerosol by inhalation measured in mg., which is multiplied by the duration of time (t) of the exposure, with a median disabling rate of 50%.
	IIT	Incident Investigation Team
	IRR	Initial Response Resources

J	JTTF	(FBI) Joint Terrorism Task Force
L	L	Military designation for vesicant LEWISITE.
	LC₅₀	Lethal concentration of a chemical vapor agent or aerosol, with a median mortality rate of 50%.
	LCt₅₀	Lethal concentration of a chemical vapor or aerosol by inhalation measured in mg., which is multiplied by the duration of time (t) of the exposure, resulting in a median mortality rate of 50%.
	LD₅₀	Lethal dose of a chemical liquid agent, with a median mortality rate of 50% of a group of exposed, unprotected individuals.
M	MCBAT	Medical Chemical and Biological Advisory Team
	MEDCOM	(US Army) Medical Command
	MMST	Metropolitan Medical Strike Team
N	NBC	Nuclear, Biological, and Chemical (weapons)
	NCP	National Contingency Plans
	NCS	National Communications System
	NEST	(DoE) Nuclear Emergency Search Team
	NMRI	(US Navy) Naval Medical Research Institute
	NMRT	(DHHS) National Medical Readiness Team
	NRC	National Response Center; also used for Nuclear Regulatory Commission
	NSC	National Security Council
O	OP	Military designation for nerve agent ORGANO-PHOSPHATE
	OSHA	Occupational Safety and Health Administration
P	PDD-39	Presidential Decision Directive # 39
	PIO	Public Information Officer
	PPE	Personal Protective Equipment
R	RACES	Radio Amateur Civil Emergency Services
	RAP	(DoE) Radiological Assistance Program
	RERT	(EPA) Radiological Emergency Response Team
	RRIS	(FEMA) Rapid Response Information System
	RTAP	(DoD) Real Time Analytical Platform
	RTF	(DoD) Response Task Force (federal)
S	SA	Military designation for Arsine
	SEB	Staphylococcus Enterotoxin B
	SIOC	Strategic Information and Operations Center
	SAMHSA	(DHHS) Substance Abuse and Mental Health Services Administration (federal)
T	TEU	(DoD) Technical Escort Unit

U	USACE	United States Army Corps of Engineers
	US&R	(FEMA) Urban Search And Rescue (Team)
V	VEE	Venezuelan Equine Encephalitis
	VX	A persistent chemical nerve agent, the United States standard V agent
W	WWI	World War One
	WWII	World War Two
	WMD	Weapons of Mass Destruction, as used by the FBI and Department of Defense.

ATTACHMENT 2

Glossary of Terms: Hazardous Materials

The express purpose of this glossary of standardized terms is to provide common and readily understandable definitions for both hazardous materials emergency response and terrorism in order to facilitate communications and operations among emergency responders when dealing with hazardous materials incidents. **This document is not intended to be a legal or scientific reference.**

Abatement	The actions taken to reduce the amount, degree of the hazard, or intensity of the release or threatened release of a hazardous material.
Absorbent Material	A material designed to pick up and hold liquid hazardous material to prevent contamination spread.
Absorption	1) The process of absorbing or “picking up” a liquid hazardous material to prevent enlargement of the contaminated area. 2) Movement of a toxicant into the circulatory system by oral, dermal, or inhalation exposure.
Acceptable Risk	A risk judged to be outweighed by corresponding benefits or one that is of such a degree that it is considered to pose minimal potential for adverse effects.
Access Control Point	The point of entry and exit which regulates traffic to and from control zones.
ACGIH	See American Conference of Governmental Industrial Hygienists.
Acid	A hydrogen-containing corrosive material that reacts with water to produce hydrogen ions; a proton donor.
Acute Effect	An adverse action on a human or animal, generally after a single significant exposure, which may be mild or severe. (See Chronic Effect.)
Acute Exposure	Exposure that is short in duration.
Acute Release	Release of a hazardous material that is short in duration.

Acute Toxicity	Any harmful effect produced by a single short-term exposure that may result in severe biological harm or death.
Adjuvant	A substance used in pesticide formulation to aid its action. (Also used in the manufacture of drugs.)
Administering Agency (AA)	The designated unit of a county or city tasked to administer the local implementation of the State and Federal hazardous material emergency planning and community right-to-know programs. Programs administered by AAs will be administered by Certified Uniform Program Agencies (CUPAs) beginning in late 1996.
Adsorption	Process of adhering to a surface.
Aerosols	Liquid droplets, or solid particles dispersed in air, that are of fine enough particle size (0.01 to 100 microns) to remain dispersed for a period of time.
After Action Report	A post-incident analysis report generated by a responsible party or responding agency after termination of a hazardous material incident describing actions taken, materials involved, impacts, etc.
Agency Specific Plan	An emergency plan written by and addressing an individual agency's response actions, capabilities and resources.
AIHA	See American Industrial Hygiene Association.
Airborne Pollutants	Contaminants that are carried/released into the atmosphere or air.
Air Modeling	Mathematical models used to predict movement and concentrations of chemicals in the atmosphere.
Air Monitoring	To measure, record, and/or detect pollutants in ambient air.
Air Purifying Respirators (APR)	Personal Protective Equipment; a breathing mask with specific chemical cartridges designed to either filter particulates or absorb contaminants before they enter the worker's breathing zone. They are intended to be used only in atmospheres where the chemical hazards and concentrations are known.
Air Purifying Respirator - powered	An APR with a portable motor to force air through the filtering/purifying cartridges for use only in atmospheres where the chemical hazards and concentrations are known.
Air Quality Management District	A local/regional air pollution agency responsible for regulation and monitoring of air quality.
Alkali	A hydroxide containing (-OH) corrosive material which is soluble in water, neutralizes acids, and is irritating or destructive to tissue.
Ambient Air Quality	Quality of the surrounding atmosphere or circulating air.
American Conference of Governmental Industrial	A professional society of persons responsible for full-time industrial hygiene programs, who are employed by official governmental units. Its primary

Hygienists (ACGIH)	function is to encourage the interchange of experience among governmental industrial hygienists, and to collect and make available information of value to them. ACGIH promotes standards and techniques in industrial hygiene, and coordinates governmental activities with community agencies.
American Industrial Hygiene Association (AIHA)	An organization of professionals trained in the recognition and control of health hazards and the prevention of illness related thereto. It promotes the study and control of environmental factors affecting the health of industrial workers, and provides information and communication services pertaining to industrial hygiene.
American National Standards Institute (ANSI)	The Institute serves as a clearing house for nationally coordinated voluntary safety, engineering and industrial standards developed by industrial firms, trade associations, technical societies, consumer organizations and government agencies.
American Society for Testing and Materials (ASTM)	The Society establishes voluntary consensus standards for materials, products, systems and services. Sponsors research projects, develops standard test methods, specifications and recommended practices now in use.
Anhydrous	Free from water, dry.
Area Plan	A document established to facilitate emergency response to a release or threatened release of a hazardous material within a city or county. (California Health and Safety Code, Section 25503, Chapter 6.95)
Asbestos	A silicate of calcium or magnesium mineral, the friable form occurring in threadlike fibers; noncombustible and a nonconductor of electricity; a known carcinogen.
Asbestosis	A disease of the lungs caused by the inhalation of fine airborne fibers of asbestos.
Asphyxiant	A vapor or gas which can cause unconsciousness or death by suffocation (lack of oxygen).
Assessment	The process of determining the nature and degree of hazard of a hazardous material or hazardous materials incident.
Assisting Agencies	Any agency that assists the agency having jurisdiction at the scene of a hazardous materials incident by providing a service or support not within the immediate responsibility or capability of the agency having jurisdiction. (Sacramento Fire Department HMRT)
Association of American Pesticide Control Officials, Inc.	This association consists of officials charged by law with active execution of the laws regulating the sale of economic poisons, and of deputies designated by these officials employed by State, Territorial, dominion, or Federal agencies.
Association of American Railroads	A central coordinating and research agency of the American railway industry.

(AAR)

Authority Having Jurisdiction	1) Provides for the position of Incident Commander at the scene of a hazardous materials incident occurring within their jurisdictional response boundaries. (Sacramento Fire Department 1990); 2) The organization, office, or individual responsible for approving the equipment, an installation, or a procedure. (NFPA)
Base (Chemical)	A hydroxide containing (-OH) corrosive material that when in a water solution is bitter, more or less irritating, or caustic to the skin.
Base (ICS)	Location at which additional equipment, apparatus, and personnel are assembled for primary support of activities at the incident scene. The command post may be located at the "base". (NIIMS)
Bioassay	Determination of the relative strength and toxicity of a substance (such as a drug) by comparing its effect on a test organism with that of a standard preparation.
Bioaccumulation	Absorption and storage of toxic chemicals from the environment in an organism, usually in body fat.
Biohazard	Infectious agents presenting a risk or potential risk to living organisms, either directly through infection or indirectly through disruption of the environment.
Biohazard Area	Any area in which work has been, or is being performed, with infectious agents or materials.
Biological Agents	Biological materials that are capable of causing acute or long term damage to living organisms. (NFPA 1990, 1-3)
Biological Half-Life	The time required for a living organism to eliminate half of a substance which it takes in.
Biological Treatment	A process by which waste is rendered less hazardous, or is reduced in volume, by relying on the action of microorganisms.
Blasting Agent	A material designed for blasting which has been tested and found to be so insensitive that there is very little probability of accidental initiation to explosion or of transition from deflagration to detonation.
Boiling Liquid Expanding Vapor Explosion (BLEVE)	A container failure with a release of energy, often rapidly and violently, which is accompanied by a release of gas to the atmosphere and propulsion of the container or container pieces due to an overpressure rupture.
Boom	A floating physical barrier serving as a continuous obstruction to the spread of a contaminant.
Bootie	A sock like over-boot protector worn to minimize contamination.
Breakthrough Time	The elapsed time between initial contact of the hazardous chemical with the outside surface of a barrier, such as protective clothing material, and the time

at which the chemical can be detected at the inside surface of the material.

Breathing Zone Air Sample

A sample collected in the breathing area of a worker to assess exposure to airborne contaminants.

Buddy System

A system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. [8 CCR 5192 (a)(3)]

Buffer Zone

The area of land that surrounds a hazardous waste facility on which certain usages and activities are restricted to protect the public health and safety, and the environment from existing or potential hazards caused by the migration of hazardous waste.

Bureau of Alcohol, Tobacco and Firearms (ATF)

The Federal agency that enforces and administers firearms and explosive laws, as well as those covering the production, use and distribution of alcohol and tobacco products.

Business Plan

A written plan and inventory developed by a business for each facility, site, or branch that provides emergency response guidelines for a release of hazardous materials meeting the requirements of Health and Safety Code Section 25504.

California Air Resources Board (CARB)

An agency that enforces and implements the California and Federal air pollution control laws.

California Department of Fish and Game (DFG)

The State agency which enforces provisions of the State Fish and Game Code that prohibits pollution of habitats, waters and ocean waters; and acts as the State Agency Coordinator (SAC) at major off highway hazardous materials incidents.

California Department of Forestry and Fire Protection (CDF)

A State agency that protects rural wild lands and other areas not protected by a fire department and/or a fire protection district.

California Department of Health Services (DHS)

The State agency containing the Radiological Health Branch, Office of Drinking Water and Office of Risk Assessment in addition to medical and health services.

California Department of Toxic Substances Control (DTSC)

The State department responsible for regulation of storage, transport, treatment and disposal of hazardous waste.

California Department of Transportation (Caltrans)

The State agency responsible for planning, designing, constructing, operating, and maintaining the State's highway system. It will ensure, in cooperation with other public and private agencies, the identification and containment of hazardous materials and restoration of orderly traffic flow. It will contract with cleanup companies to assist with cleanup.

California Division of Occupational Safety and Health (Cal-OSHA)	The State agency responsible for enforcement of worker safety laws.
California Environmental Protection Agency (Cal-EPA)	The State agency consisting of the Departments of Toxic Substances Control and Pesticide Regulation, the Office of Environmental Health Hazard Assessment, the Department of Water Resources and Regional Water Quality Control Boards, the Air Resources Board and the Integrated Waste Management Board. Cal-EPA sets the policy and direction that the member organizations pursue.
California Fire Mutual Aid Plan	A pre-plan agreement comprised of all fire jurisdictions in the State of California to respond and assist in the event of any incident which has been determined to be outside the local fire jurisdiction's capabilities.
California Hazardous Materials Incident Reporting System (CHMIRS)	A mandatory post-incident reporting system to collect statistical data on hazardous material incidents in California. This data includes a description of the disaster, the location, the time and date, the state and local agencies responding, the actions taken by the agencies, and the agency which had primary authority for responding to the disaster. (Chapter 6.95 of the Health and Safety Code, Title 19 CCR, and Government Code Section 8574.8 (d))
California Highway Patrol (CHP)	The State agency with primary responsibility for traffic supervision and control on all State highways constructed as freeways, all State-owned vehicular crossings, and on most State and county highways and roadways in unincorporated areas of the State. The department enforces hazardous materials transportation laws and acts as Incident Commander, the State Agency Coordinator, and the Statewide information, assistance, and notification coordinator for all hazardous materials incidents within its jurisdiction.
California Law Enforcement Mutual Aid Plan	Establishes the State policy for law enforcement mutual aid and outlines the procedures for coordination of alerting, dispatching, and utilization of law enforcement personnel and equipment resources.
California Office of Emergency Services (OES)	The State agency responsible for administration of Health and Safety Code Chapter 6.95 and Title 19 CCR, and development of Statewide disaster response plans, and coordination of Statewide mutual aid.
California Specialized Training Institute (CSTI)	The organization within the State Office of Emergency Services with the responsibility to standardize curriculum and certify instructors, students, and classes in the area of hazardous materials emergency response for the public and private sectors.
California State Emergency Plan	The document established pursuant to Section 8568 of the California Government Code that addresses the State's response to extraordinary emergency situations associated with natural disasters, technological incidents, and war emergency operations.
California State Fire Marshal (SFM)	The State agency responsible for the promotion and development of the ways and means of protecting life and property against fire and panic. It develops

fire and life safety standards, codes, regulations, and enforces these regulations in various occupancies. It delivers Statewide standardized fire training and fire safety and prevention information. The State Fire Marshal has primary responsibility for the safety of all interstate and intrastate hazardous liquid pipelines in California.

**Canadian Transport
Emergency Center
(CANUTEC)**

A 24 hour, government sponsored hot line for chemical emergencies. (The Canadian version of CHEMTREC.)

Carboy

A container, usually encased in a protective basket or crate, used to ship hazardous materials, particularly corrosives.

Carcinogen

An agent that produces or is suspected of producing cancer. (FEMA HMCP)

Cascade System

Several air cylinders attached in series to fill Self Contained Breathing Apparatus (SCBA) bottles.

Catastrophic Incident

An event that significantly exceeds the resources of a jurisdiction.

Cease and Desist Order

Legal direction to stop any and all activities.

Celsius (Centigrade) C

The internationally used scale for measuring temperature, in which 100^o is the boiling point of water at sea level (1 atmosphere), and 0^o is the freezing point.

**Center for Disease
Control (CDC)**

The federally funded research organization tasked with disease control and research.

**California
Environmental Quality
Act (CEQA)**

The law that may require Environmental Impact Reports (EIRs) at sites where significant activities occur.

CFR

1) Crash, Fire, Rescue personnel; trained in aircraft fire fighting and rescue;
2) Code of Federal Regulations; enforced by federal and state agencies and contains statutes for the function of federal government.

CGA

See Compressed Gas Association.

**Chemical Abstracts
Service (CAS) Number**

A numbering system assigned by the American Chemical Society often used by local and State hazardous materials compliance legislation for tracking chemicals in the workplace and in the community.

**Chemical Hazards
Response Information
System/Hazard
Assessment Computer
System (CHRIS/HACS)**

Developed by the Coast Guard, HACS is a computerized model of the CHRIS manuals (containing chemical-specific data), and is used by Federal on-scene coordinators during a chemical spill/response.

Chemical Manufacturers Association	The parent organization that operates CHEMTREC.
Chemical Protective Clothing Material	Any material or combination of materials used in an item of clothing for the purpose of isolating parts of the wearer's body from contact with a hazardous chemical. (NFPA 1991,1-3)
Chemical Protective Suit	Single or multi-piece garment constructed of chemical protective clothing materials designed and configured to protect the wearer's torso, head, arms, legs, hands, and feet. (NFPA 1991, 1-3)
Chemical Resistance	The ability to resist chemical attack. The attack is dependent on the method of test and its severity is measured by determining the changes in physical properties. Time, temperature, stress, and reagent may all be factors that affect the chemical resistance of a material.
Chemical Resistant Materials	Materials that are specifically designed to inhibit or resist the passage of chemicals into and through the material by the processes of penetration, permeation or degradation.
Chemical Transportation Emergency Center (CHEMTREC)	The Chemical Transportation Center, operated by the Chemical Manufacturers Association (CMA), can provide information and technical assistance to emergency responders. (Phone number- 1-800-424-9300)
Chemnet	A mutual aid network of chemical shippers and contractors. It is activated when a member shipper cannot respond promptly to an incident involving chemicals. (Contact is made through CHEMTREC.)
Chlorep	The chlorine emergency plan, established by the Chlorine Institute, enables the nearest producer of chlorine to respond to an incident involving chlorine. (Contact is made through CHEMTREC.)
Chlorine Kits	Standardized kits commercially manufactured by contract with the Chlorine Institute to provide equipment to control or stop leaks in chlorine cylinders, tanks, and transportation tank cars.
Chronic Effect	Delayed or slowly developing harm resulting from a chemical exposure which is often hard to recognize.
Clandestine Laboratory	An operation consisting of a sufficient combination of apparatus and chemicals that either have been or could be used in the illegal manufacture/synthesis of controlled substances.
Clean Air Act	A set of national standards for ambient air quality which defines the principal types and levels of pollution that should not be exceeded. This law requires States to develop "State implementation plans" for achieving the ambient air standards in each air quality control region in the State.
Cleanup	Incident scene activities directed toward removing hazardous materials, contamination, debris, damaged containers, tools, dirt, water, and road

surfaces in accordance with proper and legal standards, and returning the site to as near a normal state as existed prior to the incident. (Sacramento Fire Department HMRT)

Cleanup Company (Hazardous Waste)	A commercial business entity available for hire to specifically remove, transport, and/or dispose of hazardous wastes; and when appropriate, must meet California Highway Patrol and Department of Toxic Substances Control requirements.
Cleanup Operation	An operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment. (8 CCR 5192(a)(3))
Clean Water Act (CWA)	Federal legislation to protect the nation's water and set State water quality standards for interstate navigable waters as the basis for pollution control and enforcement. The main objective is to restore and maintain the chemical, physical and biological integrity of the Nation's waters.
Cold Zone	The area outside of the warm zone. Equipment and personnel are not expected to become contaminated in this area. This is the area where resources are assembled to support the hazardous materials operation.
Colorimetric Tubes	Glass tubes containing a chemically treated substrate that reacts with specific airborne chemicals to produce a distinctive color. The tubes are calibrated to indicate approximate concentrations in air.
Combined Liquid Waste Sampler (Coliwassa)	A tool designed to provide stratified sampling of a liquid container.
Combustibility	The ability of a substance to undergo rapid chemical combination with oxygen, with the evolution of heat.
Combustible Liquid	Liquids with a flashpoint above 100 ^o F. (49 CFR 173.120 (b)(2).)
Combustion Product	By-products produced or generated during the burning or oxidation of a fuel.
Command	The act of directing, ordering, and/or controlling resources by virtue of explicit legal, agency, or delegated authority. (NIIMS)
Command Post	The location from which all incident operations are directed and planning functions are performed. The communications center is often incorporated into the command post. (NIIMS)
Community Awareness and Emergency Response (CAER)	A program developed by the Chemical Manufacturers Association (CMA) to provide guidance for chemical plant managers to assist them in taking the initiative in cooperating with local communities developing integrated hazardous materials response plans.
Community Right-to-Know	Legislation requiring business establishments to provide chemical inventory information to local agencies or the public.
Company (Fire Usage)	Any piece of fire response equipment having a full complement of

personnel..(NIIMS)

Compatibility	The matching of protective chemical clothing to the hazardous material involved to provide the best protection for the worker.
Compatibility Charts	Permeation and penetration data supplied by manufacturers of chemical protective clothing to indicate chemical resistance and breakthrough time of various garment materials as tested against a battery of chemicals. This test data should be in accordance with ASTM and NFPA standards.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	Known as CERCLA or SUPERFUND, it addresses hazardous substance releases into the environment and the cleanup of inactive hazardous waste sites. It also requires those who release hazardous substances, as defined by the Environmental Protection Agency (EPA), above certain levels (known as "reportable quantities") to notify the National Response Center.
Compressed Gas	Any material or mixture having an absolute pressure exceeding 40 p.s.i. in the container at 70 ^o F or, regardless of the pressure at 70 ^o F, having an absolute pressure exceeding 104 p.s.i. at 130 ^o F; or any liquid flammable material having a vapor pressure exceeding 40 p.s.i. absolute at 100 ^o F as determined by testing. Also includes cryogenic or "refrigerated liquids" (DOT) with boiling points lower than -130 ^o F at 1 atmosphere.
Compressed Gas Association (CGA)	Firms producing and distributing compressed, liquefied, and cryogenic gases; also manufacturers of related equipment. Submits recommendations to appropriate government agencies to improve safety standards and methods of handling, transporting, and storing gases; acts as advisor to regulatory authorities and other agencies concerned with safe handling of compressed gases; collaborates with national organizations to develop specifications and standards of safety.
Computer Aided Management of Emergency Operations (CAMEO)	A computer data base storage-retrieval system of pre-planning and emergency data for on-scene use at hazardous materials incidents.
Confinement	Procedures taken to keep a material in a defined or localized area.
Consignee	The addressee to whom the item is shipped.
Contact	Being exposed to an undesirable or unknown substance that may pose a threat to health and safety. (Sacramento Fire Department HMRT)
Container	Any device in which a hazardous material is stored, transported, disposed of, or otherwise handled.
Container, Intermodal, ISO	An article of transport equipment that meets the standards of the International Organization for Standardization (ISO) designed to facilitate and optimize the carriage of goods by one or more modes of transportation without intermediate handling of the contents and equipped with features permitting

ready handling and transfer from one mode to another. Containers may be fully enclosed with one or more doors, open top, tank, refrigerated, open rack, gondola, flatrack, and other designs. Included in this definition are modules or arrays that can be coupled to form an intrinsic unit regardless of intention to move single or in multiplex configurations.

Containment	All activities necessary to bring the incident to a point of stabilization and to establish a degree of safety for emergency personnel greater than existed upon arrival.
Contamination	An uncontained substance or process that poses a threat to life, health, or the environment. (NFPA 472, sections 1-3)
Contamination Control Line	The established line around the contamination reduction zone that separates it from the support zone.
Contamination Reduction Zone	Term used by the Coast Guard to identify the area of moderate hazard where threat of contamination spread to the immediate surrounding area is low. It is the area immediately outside of the inner hot zone. (See Warm Zone.)
Contingency Plan	A pre-planned document presenting an organized and coordinated plan of action to limit potential pollution in case of fire, explosion, or discharge of hazardous materials; defines specific responsibilities and tasks.
Control	The procedures, techniques, and methods used in the mitigation of a hazardous materials incident, including containment, extinguishment, and confinement.
Control Zones	The designation of areas at a hazardous materials incident based upon safety and the degree of hazard. (NFPA 472, sections 1-3) (See Support Zone, Warm Zone, Hot Zone, and Decontamination Corridor.)
Coordination	To bring together, in a uniform and controlled manner, the functions of all agencies on scene. (Sacramento Fire Department HMRT)
Corrosive	The ability to cause destruction of living tissue or many solid materials surfaces by chemical action.
Cost Recovery	A procedure that allows for the agency having jurisdiction to pursue reimbursement for all costs associated with a hazardous materials incident. (Sacramento Fire Department HMRT)
Council on Environmental Alternatives (CEA)	Encourages people to conserve, rather than consume, their environment. The Council concentrates on the area of energy, and provides specific recommendations which encourage individuals to recognize and assume responsibility for environmentally sound choices available to them.
Cryogenic	Gases, usually liquefied, that induce freezing temperatures of -150° F and below (liquid oxygen, liquid helium, liquid natural gas, and liquid hydrogen, etc.).

Damage Assessment	Gathering information on the type, extent, and costs of damage after an incident.
Damming	A procedure consisting of constructing a dike or embankment to totally immobilize a flowing waterway contaminated with a liquid or solid hazardous substance. (EPA, 600/2-77-277)
Dangerous When Wet	A label required for water reactive materials (solid) being shipped under U.S. DOT, ICAO, and IMO regulations. A labeled material that is in contact with water or moisture may produce flammable gases. In some cases, these gases are capable of spontaneous combustion. (49 CFR 171.8)
Declared Emergency	An action taken by a jurisdiction according to the California Emergency Services Act and local ordinances in response to the impact of a real or threatened hazard that exceeds local resources.
De-Con	Popular abbreviation referring to the process of decontamination.
Decontamination	The physical and/or chemical process of reducing and preventing the spread of contamination from persons and equipment used at a hazardous materials incident. (Also referred to as “contamination reduction”.) (NFPA 472, 1-3)
Decontamination Corridor	A distinct area within the warm zone that functions as a protective buffer and bridge between the hot zone and the cold zone, where decontamination stations and personnel are located to conduct decontamination procedures. (Sacramento Fire Department HMRT)
Decontamination Officer	A position within the FIREScope ICS HM-120 which has responsibility for identifying the location of the decontamination corridor, assigning stations, managing all decontamination procedures, and identifying the types of decontamination necessary.
Decontamination (Decon) Team	A group of personnel and resources operating within a decontamination corridor.
Degradation	The loss in physical properties of an item of protective clothing due to exposure to chemicals, use, or ambient conditions.
Delayed Toxic Exposure Effect	The condition in which symptoms of an exposure are not present immediately after the exposure, but are delayed for a relatively short period of time (such as pulmonary edema a few hours after an inhalation exposure).
Deleterious Substances	Substances not normally harmful to humans that may be harmful to the environment.
Department of Commerce (DOC)	A Federal agency whose primary mission is to encourage, serve and promote economic development and technological advancement.
Department of Defense (DOD)	The Federal entity that provides the military forces needed to deter war and protect the security of our country.
Department of Energy (DOE)	The Federal agency which provides the framework for a comprehensive and balanced national energy plan through coordination and administration of the

energy functions of the federal government; and to be responsible for long term, high risk research, development and demonstration of energy technology, the marketing of federal power, energy conservation, the nuclear weapons program, regulation of energy production and use, and a central energy data collection and analysis program.

**Department of Justice
(DOJ)**

The Federal department which serves as counsel for the citizens of the Nation; represents them in enforcing the law in the public interest; through its thousands of lawyers, investigators, and agents it plays a key role in protection against criminals and subversion, in insuring healthy competition of business in our free enterprise system, in safeguarding the consumer, and in enforcing drug, immigration, and naturalization laws; plays a significant role in protecting citizens through its efforts for effective law enforcement, crime prevention, crime detection, and prosecution and rehabilitation of offenders; conducts all suits in the Supreme Court in which the United States is concerned; and represents the Government in legal matters.

**Department of Labor
(DOL)**

The purpose of the Department of Labor is to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment.

**Department of State
(DOS)**

This department advises the President in formulation and execution of foreign policy; promotes long-range security and well-being of the United States; determines and analyzes the facts relating to American overseas interest, makes recommendations on policy and future action, and takes the necessary steps to carry out established policy; engages in continuous consultation with the American public, the Congress, other U.S. departments and agencies, and foreign governments.

**Department of
Transportation (DOT)**

This agency assures the coordinated, effective administration of the transportation programs of the Federal government and develops national transportation policies and programs conducive to the provision of fast, safe, efficient and convenient transportation at the lowest possible cost.

Desiccant

A substance, such as silica gel, that removes moisture (water vapor) from the air to maintain a dry atmosphere in containers of food or chemical packaging.

Detectors

- **Combustible Gas Indicator (CGI) detector** Measures the presence of a combustible gas or vapor in air.
- **Corrosivity (pH) detector** A meter or paper that indicates the relative acidity or alkalinity of a substance, generally using an international scale of 0 (acid) through 14 (alkali-caustic). (See pH.)
- **Flame Ionization detector (FID)** A device used to determine the presence of hydrocarbons in air.
- **Gas Chromatograph/Mass** An instrument used for identifying and analyzing organics.

Spectrometer detector (GC/MS)	
<ul style="list-style-type: none"> • Heat detector • Photoionization Detector (PID) • Radiation Beta Survey detector • Radiation Dosimeter detector • Radiation Gamma Survey detector • Temperature detector 	<p>An instrument used to detect heat by sensing infra-red waves.</p> <p>A device used to determine the presence of gases/vapors in low concentrations in air.</p> <p>An instrument used to detect beta radiation.</p> <p>An instrument which measures the amount of radiation to which a person has been exposed.</p> <p>An instrument used for the detection of ionizing radiation, principally gamma radiation, by means of a gas-filled tube.</p> <p>An instrument, either mechanical or electronic, used to determine the temperature of ambient air, liquids, or surfaces.</p>
DHS	See California Department of Health Services.
Dike	An embankment or ridge, natural or man made, used to control the movement of liquids, sludges, solids, or other materials.
Dike Overflow	A dike constructed in a manner that allows uncontaminated water to flow unobstructed over the dike while keeping the contaminant behind the dike.
Dike Underflow	A dike constructed in a manner that allows uncontaminated water to flow unobstructed under the dike while keeping the contaminant behind the dike.
Dispersion	To spread, scatter, or diffuse through air, soil, surface or ground water.
Disposal Drum	A reference to a specially constructed drum used to overpack damaged or leaking containers of hazardous materials for shipment.
Diversion	The intentional, controlled movement of a hazardous material to relocate it into an area where it will pose less harm to the community and the environment. (Sacramento Fire Department HMRT)
Division	That organizational level within the ICS having responsibility for operations within a defined geographic area. The "Division" Officer directs approximately 5 Companies, and answers to the "Operations" Officer. (NIIMS)
Dose	The amount of substance ingested, absorbed, and/or inhaled per exposure period.
Double gloving	A set of gloves worn over those already in place for enhanced protection.
Downwind	In the direction in which the wind blows.
Dust	Solid particles generated by handling, crushing, grinding, rapid impact, detonation, and decrepitation of organic or inorganic materials such as rock, ore, metal, coal, wood, and grain.
Ecology	A branch of science concerned with the interrelationship of organisms and

their environments.

Economic Poison	As defined in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), an economic poison is “any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, or weeds, or any other forms of life declared to be pests . . . any substance intended for use as a plant regulator, defoliant, or desiccant.” As defined, economic poisons are generally known as pesticides.
Ecosystem	A habitat formed by the interaction of a community of organisms with their environment.
Edema	The swelling of body tissues resulting from fluid retention.
Emergency Medical Services (EMS)	Functions as required to provide emergency medical care for ill or injured persons by trained providers.
Emergency Medical Services Agency	Plans and coordinates local public and private emergency medical services systems. Sets the local standards for medical care and transport of victims. California Health and Safety Code Section 1058 vests authority for patient care management in the most qualified medical care provider.
Emergency Medical Services Authority (EMSA)	The State agency responsible for developing general guidelines for triage and handling of contaminated/exposed patients; develops and promotes hazmat training for emergency medical responders in the field and hospital emergency rooms; identifies and coordinates the procurement of medical assistance, supplies, and hospital beds when local and/or regional resources are depleted; and coordinates the evaluation of casualties to other areas of the State.
Emergency Operations Center (EOC)	The secured site where government officials exercise centralized direction and control in an emergency. The EOC serves as a resource center and coordination point for additional field assistance. It also provides executive directives to and liaison for State and federal government representatives, and considers and mandates protective actions.
Emergency Operations Plan	A document that identifies the available personnel, equipment, facilities, supplies, and other resources in the jurisdiction, and states the method or scheme for coordinated actions to be taken by individuals and government services in the event of natural, man-made, and attack related disasters.
Emergency Reserve Account for Hazardous Material Incidents	A fund administered by the California Department of Toxic Substances Control to finance actions only for the purpose of remediation or prevention of threats of fire, explosion or human health hazards resulting from a release or potential release of a hazardous substance. (Health and Safety Code 25354)
Emergency Response	Response to any occurrence which has or could result in a release of a hazardous substance. (8 CCR 5192)
Emergency Response Organization	An organization that utilizes personnel trained in emergency response.

Emergency Response Personnel	Personnel assigned to organizations that have the responsibility for responding to different types of emergency situations. (NFPA 1991, 1-3)
Empty Packaging	Any packaging having a capacity of 110 gallons or less that contains only the residue of a hazardous material in table 2 of 49 CFR 172.504.
Endothermic	A process or chemical reaction which is accompanied by absorption of heat.
Engine (fire usage)	Any emergency response vehicle providing specified levels of pumping, water, hose capacity, and personnel.
Entry Point	A specified and controlled location where access into the hot zone occurs at a hazardous materials incident.
Entry Team Leader	The entry leader is responsible for the overall entry operations of assigned personnel within the hot zone. (FIREScope ICS-HM)
Environmental Protection Agency (EPA)	The purpose of the Environmental Protection Agency (EPA) is to protect and enhance our environment today and for future generations to the fullest extent possible under the laws enacted by Congress. The Agency's mission is to control and abate pollution in the areas of water, air, solid waste, pesticides, noise, and radiation. EPA's mandate is to mount an integrated, coordinated attack on environmental pollution in cooperation with State and local governments.
EOC Liaison	Person designated to establish communications between the incident scene and the EOC.
EPA	See Environmental Protection Agency.
Etiological Agent	A viable microorganism or its toxin, which causes or may cause human disease.
Evacuation	The removal of potentially endangered, but not yet exposed, persons from an area threatened by a hazardous materials incident. (FIREScope ICS-HM)
Explosive Ordnance Disposal (EOD)	Military or civilian bomb squads.
Extremely Hazardous Substances (EHS)	Environmental Protection Agency (EPA) uses this term for chemicals which must be reported pursuant to SARA, Title III. The list of these substances and the threshold planning quantities are identified in 40 CFR 355. Releases of extremely hazardous substances as defined by EPA must be reported to the National Response Center. In California, the term Acutely Hazardous Material (AHM) is used. They are identical to the EHS in 40 CFR.
Extremely Hazardous Waste	Any hazardous waste or mixture of hazardous wastes which, if human exposure should occur, may likely result in death, disabling injury or serious illness caused by the hazardous waste or mixture of hazardous wastes because of its quantity, concentration or chemical characteristics.
Exclusion Zone	See Hot Zone.

Exothermic	A process or chemical reaction which is accompanied by the evolution of heat.
Explosion-proof Equipment	Instruments whose enclosure is designed and constructed to prevent the ignition of an explosive atmosphere. Certification for explosion proof performance is subject to compliance with ASTM standards.
Explosive	Any chemical compound, mixture, or device, of which the primary or common purpose is to function by explosion, i.e., with substantial instantaneous release of gas and heat. (49 CFR 173.50)
Explosive Class A	Any of nine types of explosives as defined in 49 CFR 173.53. A material which, when it detonates, creates a shock wave which travels faster than the speed of sound.
Explosive Class B	Those explosives which generally function by rapid combustion rather than by detonation and include some explosive devices such as special fireworks, flash powders, some pyrotechnic signal devices, and liquid or solid propellant explosives including some smokeless powders. (49 CFR 173.88)
Explosive Class C	Certain types of manufactured articles which contain Class A, or Class B explosives, or both, as components but in restricted quantities, and certain types of fireworks. This includes small arms ammunition. (49 CFR 173.100)
Exposure	The subjection of a person to a toxic substance or harmful physical agent through any route of entry.
Fahrenheit	The scale of temperature in which 212 ^o is the boiling point of water at 760 mm Hg and 32 ^o is the freezing point.
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)	An act that requires pesticides to be registered and labeled, makes it illegal to detach or destroy pesticide labels, and provides for pesticide inspections. An amendment to FIFRA now requires EPA to determine whether a pesticide "will perform its intended function without causing unreasonable adverse effects on the environment" or human health.
Federal Water Pollution Control Act (WPCA)	See Clean Water Act.
Fibrosis	A condition marked by an increase of interstitial fibrous tissue.
Filter Canister	A container filled with sorbents and catalysts which removes gases and vapors from air drawn through the unit. The canister may also contain an aerosol (particulate) filter to remove solid or liquid particles. (Air purifying canister type breathing apparatus are not approved for use during emergencies by the fire service in California.)
First Responder	The first trained person(s) to arrive at the scene of a hazardous materials incident. May be from the public or private sector of emergency services.

First Responder, Awareness Level	Individuals who are likely to witness or discover a hazardous substance release who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release. (8 CCR 5192(q)(6))
First Responder, Operations Level	Individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. (8 CCR 5192(q)(6))
Flammable Liquid	Any liquid having a flash point below 100° F (37.8° C). (49 CFR 173.115(a))
Flammable Range	A mixture of flammable gas, as mixed with air, expressed as a percent. Each gas has a range including a lower limit and upper limit and between these limits the mixture is flammable (explosive).
Flammable Solid	Any solid material, other than one classed as an explosive, which under conditions normally incident to transportation is liable to cause fires through friction, retains heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious transportation hazard. Included in this class are spontaneously combustible and water-reactive materials. (49 CFR 173.150)
Flashpoint	The minimum temperature of a liquid at which it gives off vapors sufficiently fast to form an ignitable mixture with air and will flash when subjected to an external ignition source, but will not continue to burn.
Food and Drug Administration (FDA)	Performs, directs, and coordinates detection and control activities which protect consumers against adulterated, misbranded, or falsely advertised foods, drugs, medical devices, and hazardous products.
Full Protective Clothing	Protective clothing worn primarily by fire fighters which includes helmet, coat, pants, boots, gloves, and self-contained breathing apparatus designed for structural fire fighting. It does not provide specialized chemical protection.
Fully Encapsulating Suits	Chemical protective suits that are designed to offer full body protection, including Self Contained Breathing Apparatus (SCBA), are gas tight, and meet the design criteria as outlined in NFPA Standard 1991.
Fume	Airborne dispersion consisting of minute solid particles arising from the heating of a solid material such as lead, in distinction to a gas or vapor. This physical change is often accompanied by a chemical reaction, such as oxidation. Fumes flocculate and sometimes coalesce. Odorous gases and vapors should not be called fumes.
Gas	A state of matter in which the material has very low density and viscosity; can expand and contract greatly in response to changes in temperature and pressure; easily diffuses into other gases; readily and uniformly distributes

itself throughout any container. A gas can be changed to a liquid or solid state by the combined effect of increased pressure and/or decreased temperature.

Gelling	A process of adding a specific material that is designed to coagulate a liquid facilitating its isolation and removal.
Grounding	Method whereby activities which may generate static electricity will be prevented from discharging a spark and thereby not produce an ignition point.
Group	That organization level within the ICS having responsibility for operations within a specific functional area, i.e. salvage, ventilation, haz-mat. (NIIMS)
Habitat	The native environment of an animal or plant; the natural place for life and growth of an animal or plant.
Halons	Fire suppressing gases that are composed of straight chain carbon atoms with a variety of halogen atoms attached.
Halogens	A chemical family that includes fluorine, chlorine, bromine, and iodine.
Hazard	Any situation that has the potential for causing damage to life, property, and/or the environment.
Hazard Class	The eight classes of hazardous materials as categorized and defined by the Department of Transportation in 49 CFR.
Hazardous Air Pollutant	An airborne pollutant that may cause or contribute to an increase in mortality or serious illness.
Hazardous Chemical	A term used by the United States Occupational Safety and Health Administration (OSHA) to denote any chemical that would be a risk to employees if exposed in the workplace. The list of hazardous chemicals is found in 29 CFR.
Hazardous Material	A substance or combination of substances which, because of quantity, concentration, physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in deaths or serious illness; and/or pose a substantial present or potential hazard to humans or the environment.
Hazardous Material Categorization	A field analysis process to determine basic hazardous materials hazard classification and some chemical and physical properties of unknowns.
Hazardous Material Incident Contingency Plan (HMICP)	The State's hazardous materials emergency plan published by OES pursuant to Government Code §8574.17.
Hazardous Materials Emergency	The release or threatened release of a hazardous material that may impact the public health, safety and/or the environment.
Hazardous Materials Response Team (HMRT)	An organized group of employees, designated by the employer, who are expected to perform work to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach to the substance. A HazMat Team may be a separate component of a fire brigade

or a fire department or other appropriately trained and equipped units from public or private agencies.

**Hazardous Materials
Response Team --
Technician Level**

Shall consist of an organized group of employees, designated by the employer in compliance with 8 CCR 5192(q)(6), trained to function at the hazardous materials incident at the Technician Level in accordance with NFPA 472, Chapter 3 (1990). Additionally, personnel on the team shall be capable of the following:

- The ability to carry out the duties of these positions as identified in FIREScope ICS-HM-120.
 - a. Group Supervisor
 - b. Entry Leader
 - c. Hazardous Material Safety Officer
 - d. Site Access Control Officer
 - e. Decontamination Leader
 - f. Technical Specialist-Hazardous Material Reference

(Multiple positions can be handled by one person dependent upon the complexity and/or severity of the incident.)

- Members shall be assigned positions in accordance with 8 CCR 5192 appropriately trained to include but not be limited to entry with splash protective clothing.
 - a. Entry Team - 2
 - b. Backup Team - 2

**Hazardous Materials
Response Team --
Specialist Level**

Shall consist of an organized group of employees, designated by the employer in compliance with 8 CCR 5192(q)(6), trained to function at the hazardous materials incident at the Specialist Level in accordance with NFPA Standard 472, Chapter 4 (1990). Additionally, personnel on the team shall be capable of the following:

- The ability to carry out the duties of these positions as identified in FIREScope ICS-HM-120.
 - a. Group Leader
 - b. Entry Team Leader
 - c. Hazardous Material Safety Officer
 - d. Site Access Control Officer
 - e. Decontamination Leader
 - f. Technical Specialist-Hazardous Material Reference

(Multiple positions can be handled by one person dependent upon the complexity and/or severity of the incident.)

- Members shall be assigned positions in accordance with 8 CCR 5192 appropriately trained for entry with vapor protective clothing.
 - a. Entry Team - 2
 - b. Backup Team - 2

Hazardous Materials Response Team -- Specialty

Shall consist of an organized group of employees, designated by the employer in compliance with 8 CCR 5192(q)(6), who are trained in the hazards of specific hazardous substances, and/or specific techniques or support services, and/or the provision of specialized technical advice and assistance in compliance with 8 CCR 5192(q)(5). The Team shall be capable, either within their own team or in agreement with a Hazardous Materials Response Team on scene, of the following:

- The ability to carry out the duties of these positions as identified in Firescope ICS-HM-120.
 - a. Group Supervisor
 - b. Entry Team Leader
 - c. Hazardous Material Safety Officer
 - d. Site Access Control Officer
 - e. Decontamination Leader
 - f. Technical Specialist-Hazardous Material Reference

(Multiple positions can be handled by one person dependent upon the complexity and/or severity of the incident.)

- Members shall be assigned positions in accordance with 8 CCR 5192 appropriately trained to include but not be limited to entry with splash protection.
 - a. Entry team - 2
 - b. Backup team - 2

Hazardous Materials Safety Officer/Official

A person at a hazardous materials incident responsible for assuring that all operations performed at a hazardous materials incident, by all members present, are done so with respect to the highest levels of safety. The Hazardous Materials Safety Officer has full authority to alter, suspend, or terminate any activity that may be judged to be unsafe, advises the hazardous materials group supervisor, and reports to the IC through the site safety officer.

Hazardous Substance

Hazardous Substance, as used by the California Department of Toxic Substances Control, encompasses every chemical regulated by both the Department of Transportation (hazardous materials) and the Environmental Protection Agency (hazardous waste), including emergency response (8 CCR 5192).

Hazardous Waste

- 1) Waste materials or mixtures of waste which require special handling and disposal because of their potential to damage health and/or the environment;
- 2) The Environmental Protection Agency uses the term hazardous waste for chemicals that are regulated under the Resource Conservation and Recovery Act and are listed in 40 CFR 261.33 (d). Environmental Protection Agency or California Department of Toxic Substances Control regulated hazardous waste, when in transport, must also meet 49 CFR parts 170 through 179. California's list of hazardous waste is more inclusive than EPA's.
- 3) EPA's.

Hazardous Waste

Any location used for the treatment, transfer, disposal or storage of hazardous waste as permitted and regulated by the California Department of

Facility	Toxic Substances Control.
Hazardous Waste Generation	The act or process of producing hazardous waste.
Hazardous Waste Landfill	An excavated or engineered area on which hazardous waste is deposited and covered. Proper protection of the environment from the materials to be deposited in such a landfill requires careful site selection, good design, proper operation, leachate collection and treatment, and thorough final closure.
Hazardous Waste Leachate	Any liquid that has percolated through or drained from hazardous waste placed in or on the ground.
Hazardous Waste Management	Systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.
Hazardous Waste Manifest, Uniform (EPA Usage)	The shipping document, originated and signed by the waste generator or an authorized representative, that contains the information required by law and must accompany shipments of hazardous waste. (40 CFR 262, Subpart B)
Hazardous Waste Site	A location where hazardous wastes are located.
HAZCAT	See Hazardous Materials Categorization.
HazMat	Acronym used for Hazardous Materials.
Health Hazard, Chemical	Any chemical or chemical mixture, whose physical or chemical properties may cause acute or chronic health effects [8 CCR 5192 (a)(3)].
Heavy Metal	A high density metallic element that may demonstrate health hazards as a result of exposure and may contribute to contamination of the environment. This includes chromium (Cr), beryllium (Be), lead (Pb), mercury (Hg), zinc (Zn), copper (Cu), cadmium (Cd) and others.
Hepatotoxic	A substance that negatively effects the liver.
Herbicide	An agricultural chemical intended for killing plants or interrupting their normal growth. (See Pesticides.)
High Performance Liquid Chromatography (HPLC)	A procedure used in organics analysis to separate chemical mixtures based on differential ionic absorption to various substrates.
HMRT	See Hazardous Materials Response Team.
Hot Tapping	A sophisticated method of welding on and the cutting of holes through liquid, compressed gas vessels, and piping for the purpose of relieving pressure and/or removing product.
Hot Zone	An area immediately surrounding a hazardous materials incident, which extends far enough to prevent adverse effects from hazardous materials

releases to personnel outside the zone. This zone is also referred to as the “exclusion zone”, the “red zone”, and the “restricted zone” in other documents. (NFPA 472, 1-3)

Hygroscopic	A substance that has the property of absorbing moisture from the air, such as silica gel.
Hypergolic	Two chemical substances that spontaneously ignite upon mixing.
Ignitable Material	Any material having, as a liquid, a flash point less than 140° F or, if not a liquid, is capable of causing fire through friction, absorption of moisture or spontaneous chemical changes.
Ignition Temperature	The minimum temperature at which a material will initiate or maintain combustion.
Immediately Dangerous to Life or Health (IDLH)	An atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual’s ability to escape from a dangerous atmosphere. (8 CCR 5192(a)3)
Incident	An event involving a hazardous material or a release or potential release of a hazardous material.
Incident Action Plan	A plan which is initially prepared at the first meeting of emergency personnel who have responded to an incident. The Incident Action Plan contains general control objectives reflecting overall incident strategy and specific action plans.
Incident Command	A disciplined method of management established for the specific purpose of control and direction of resources and personnel.
Incident Commander (IC)	The person responsible for all decisions relating to the management of the incident.
Incident Command Post	See Command Post.
Incident Command System (ICS)	An organized system of roles, responsibilities, and standard operating procedures used to manage and direct emergency operations.
Incompatible Waste	Waste unsuitable for commingling with another waste or material.
Industrial Wastes	Unwanted materials produced in or eliminated from an industrial operation.
Infectious Waste	Waste containing pathogens; may consist of tissues, organs, body parts, blood, and body fluids.
Ingestion	The process of taking substances such as food, drink, and medicine into the body through the mouth.
Inhibitor	A chemical added to another substance to prevent or slow down an unwanted or sudden occurrence of chemical change.

Inorganic Compounds	Chemical compounds that do not contain the element carbon with the exception of carbon oxides and carbon sulfides.
Insecticide	A chemical product used to kill and control insects. (See Pesticides.)
International Air Transport Association (IATA)	An association of air carriers which develop guidelines for transportation of cargo.
International Civil Aviation Organization (ICAO)	An organization which develops the principles and techniques of international air navigation and fosters the planning and development of international air transport so as to insure safe and orderly growth.
Investigate	To systematically search or inquire into the particulars of an incident, and collect the necessary evidence to seek criminal and/or civil prosecution.
Irritant	A material that has an anesthetic, irritating, noxious, toxic, or other similar property which can cause extreme annoyance or discomfort. (49 CFR)
Isolating the Scene	Preventing persons and equipment from becoming exposed to a release or threatened release of a hazardous material by the establishment of site control zones.
Jurisdiction Specific Plan	A plan that details emergency activities, capabilities, responsibilities and resources within an area, agency, facility or political subdivision.
Labpack	Putting multiple small containers of chemicals with compatible chemical characteristics in a disposal drum with absorbent material.
Lacrimation	Tearing produced by eye irritation.
LC₅₀ (lethal concentration, 50%)	The amount of a toxicant in air which is deadly to 50% of the exposed lab animal population within a specified time.
LD₅₀ (lethal dose, 50%)	The amount of a toxicant administered by other than inhalation which is deadly to 50% of the exposed lab animal population within a specified time.
Leak	The uncontrolled release of a hazardous material which could pose a threat to health, safety, and/or the environment.
Leak Control Compounds	Substances used for the plugging and patching of leaks in non-pressure containers.
Leak Control Devices	Tools and equipment used for the plugging and patching of leaks in non-pressure and some low-pressure containers, pipes, and tanks.
Level of Protection	In addition to appropriate respiratory protection, designations of types of personal protective equipment to be worn based on NFPA standards. <i>Level A-</i> Vapor protective suit for hazardous chemical emergencies. <i>Level B-</i> Liquid splash protective suit for hazardous chemical emergencies. <i>Level C-</i> Limited use protective suit for hazardous chemical emergencies.

Level One Incident	Hazardous materials incidents which can be correctly contained, extinguished, and/or abated utilizing equipment, supplies, and resources immediately available to first responders having jurisdiction, and whose qualifications are limited to and do not exceed the scope of training as explained in 8 CCR 5192, or California Government Code (CGC), Chapter 1503, with reference to “First Responder, Operational Level”.
Level Two Incident	Hazardous materials incidents which can only be identified, tested, sampled, contained, extinguished, and/or abated utilizing the resources of a Hazardous Materials Response Team, which requires the use of specialized chemical protective clothing, and whose qualifications are explained in 8 CCR 5192, or California Government Code (CGC), Chapter 1503, with reference to “Hazardous Materials Technician Level”.
Level Three Incident	A hazardous materials incident which is beyond the controlling capabilities of a Hazardous Materials Response Team (Technician or Specialist Level) whose qualifications are explained in 8 CCR 5192, or California Government Code, Chapter 1503; and/or requires the use of two or more Hazardous Materials Response Teams; and/or must be additionally assisted by qualified specialty teams or individuals.
Local Disaster Plan	A plan developed and used by local government for extraordinary events.
Local Emergency Planning Committee (LEPC)	A committee appointed by a State emergency response commission, as required by SARA Title III, to formulate a comprehensive emergency plan for its corresponding Office of Emergency Services mutual aid region.
Local Government	A political subdivision within a State.
Localized Exposure	Contact with a limited area, usually an external body surface.
Logistics Chief	That organizational position within the ICS having responsibility for summoning and managing support, apparatus, equipment and personnel.
Lower Explosive Limit (LEL)	The lowest concentration of the material in air that can be detonated by spark, shock, or fire, etc.
Macroencapsulation	The isolation of a waste by embedding it in, or surrounding it with, a material that acts as a barrier to water or air (e.g., clay and plastic liners).
Manifest, Uniform Hazardous Waste	A document required by 40 CFR 262 to accompany any shipment of hazardous waste from the point of generation to the point of final disposal/destruction. (See Shipping Papers and Hazardous Waste Manifest, Uniform (EPA Usage).)
Marking	The required descriptive name, instructions, cautions, weight, or specifications or combination thereof on containers of hazardous materials/hazardous waste.
Material Safety Data Sheet (MSDS)	A document which contains information regarding the specific identity of hazardous chemicals, including information on health effects, first aid,

chemical and physical properties, and emergency phone numbers.

Melting Point	The temperature at which a material changes from a solid to a liquid.
Microorganism	A living organism not discretely visible to the unaided eye.
Midnight Dumping	Illegal disposal of hazardous materials.
Mist	Suspended liquid droplets generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state, such as by splashing, foaming, or atomizing. A mist is formed when a finely divided liquid is suspended in air.
Mitigation	Any action employed to contain, reduce, or eliminate the harmful effects of a spill or release of a hazardous material.
Monitoring	The act of systematically checking to determine contaminant levels and atmospheric conditions.
Monitoring Environmental Contamination	Use of instruments and other techniques to determine the presence or levels of hazardous materials.
Monitoring Equipment	Instruments and devices used to identify, qualify, and/or quantify contaminants.
MSDS	See Material Safety Data Sheet.
Multi-Hazard Functional Planning	The California format used for developing disaster and emergency plans.
Mutagen	A substance capable of causing genetic damage.
Mutual Aid	An agreement to supply specifically agreed upon aid or support in an emergency situation between two or more agencies, jurisdictions, or political sub-divisions.
Narcosis	Stupor or unconsciousness produced by chemical substances.
National Contingency Plan (NCP)	Created by CERCLA to define the federal response authority and responsibility for oil and hazardous material spills.
National Fire Protection Association (NFPA)	An international voluntary membership organization to promote improved fire protection and prevention, establish safeguards against loss of life and property by fire, and writes and publishes the American National Standards.
National Interagency Incident Management System (NIIMS)	A standardized systems approach to incident management that consists of five major sub-divisions collectively providing a total systems approach to all-risk incident management.
National Institute for Occupational Safety	A Federal agency which, among other activities, tests and certifies respiratory protective devices, air sampling detector tubes, and recommends

and Health (NIOSH)	occupational exposure limits for various substances.
National Oceanic and Atmospheric Administration (NOAA)	The agency responsible to serve as scientific support coordinator for a federal on scene coordinator. Assists in oil spill and air toxics modeling and meteorological monitoring and oceanic research.
National Pesticide Telecommunications Network (NPTN)	The 24-hour national hotline (1-800/858-PEST) operated by the Texas Tech University School of Medicine providing toll-free information about pesticide safety, application, chemistry and toxicology to callers in the U.S., Puerto Rico and the Virgin Islands. Questions are answered directly or via next day mail.
National Response Center (NRC)	A communications center operated by the United States Coast Guard headquarters located in Washington, DC. They provide information on suggested technical emergency actions, and must be notified by the spiller within 24 hours of any spill of a reportable quantity of a hazardous substance.
Necrosis	Death in a particular part of a living tissue.
Nephrotoxic	A substance that negatively affects the kidneys.
Neurotoxic	A substance that negatively affects the nervous system.
Neutralization	The process by which acid or alkaline properties of a solution are altered by addition of certain reagents to bring the hydrogen and hydroxide concentrations to equal value (pH 7 is neutral).
Non-flammable Gas	Any material or mixture, in a cylinder or tank, other than poison or flammable gas, having an absolute pressure in the container exceeding 40 psi at 70 ^o F, or having an absolute pressure exceeding 104 psi at 130 ^o F. (49 CFR)
North American (NA) Number	A four-digit number used in the United States and Canada to identify a hazardous material or group of hazardous materials in transportation.
Not Otherwise Specified (NOS or n.o.s.)	In shipping regulations, the term is used for classes of substances to which restrictions apply, but for which the individual members of the class are not listed in the regulations.
Occupational Safety and Health Administration (OSHA)	Component of the United States Department of Labor; an agency with safety and health regulatory and enforcement authorities for most United States industries, businesses and States.
Odor Threshold	The lowest concentration in the atmosphere which can be detected by the human sense of smell. Often a poor indicator of toxicity risk.
Office of Hazardous Materials Safety (OHMS)	A Federal agency tasked with the research and recommended revisions to 49 CFR.
Oil	Any of numerous mineral, vegetable, and synthetic substances and vegetable and animal fats that are generally slippery, combustible, viscous, liquid or liquefiable at room temperature.
Oil Spill Clean-up Agent	Any material used in removing oil from the environment, including inert

sorbent materials, approved chemical dispersants, surface collecting agents, sinking agents, and biological additives.

Olfactory	Pertaining to the sense of smell.
On-Scene Coordinator (FOSC)	As explained in the National Contingency Plan, it is the pre-designated Federal official who coordinates Federal activities at a hazardous material incident, and monitors the incident for compliance with Federal pollution laws.
Operations	That organizational level within the ICS immediately subordinate to the Incident Commander. When established, this position is responsible for the direct management of all incident tactical activities. (NIIMS)
Oral Toxicity	Adverse effects resulting from taking a substance into the body through the mouth.
Organic Peroxide	Strong oxidizers, often chemically unstable, containing the -o-o structure. They react readily with solvents or fuels resulting in an explosion or fire.
Other Regulated Materials A - ORM A	A material which has an anesthetic, irritating, noxious, toxic, or other similar property and which can cause extreme annoyance or discomfort to passengers and crew in the event of leakage during transportation. (49 CFR 173.500(b)(1))
Other Regulated Materials B - ORM B	A material (including a solid when wet with water) capable of causing significant damage to a transport vehicle from leakage during transportation. (49 CFR 173.500(b)(2))
Other Regulated Materials C - ORM C	A material which has other inherent characteristics not described as an ORM A or ORM B but which make it unsuitable for shipment, unless properly identified and prepared for transportation. (49 CFR 173.500(b)(4))
Other Regulated Materials D - ORM D	A material, such as a consumer commodity, which presents a limited hazard during transportation due to its form, quantity and packaging. (49 CFR 173.500(b)(4))
Other Regulated Materials E - ORM E	A material that is not included in any other hazard class, but is subject to the requirements of 49 CFR 173.500. This includes hazardous waste.
Overpack	An enclosure used to consolidate two or more packages of hazardous material. "Overpack" does not include a freight container.
Oxidizer	A chemical, other than a blasting agent or explosive, that initiates or promotes combustion in other materials thereby causing fire either of itself or through the release of oxygen or other gases. (49 CFR 173.151)
Oxygen Deficiency	A concentration of oxygen insufficient to support life.
Oxygen Deficient Atmosphere	An atmosphere which contains an oxygen content less than 19.5 % by volume at sea level.

Pacific Strike Team	The National Strike Force pollution control team equipped and trained to assist in responses to oil or chemical incidents occurring in the western United States and administered by the United States Coast Guard.
Pallets	A low portable platform constructed of wood, metal, plastic, or fiberboard, built to specified dimensions, on which supplies are loaded, transported, or stored in units.
Parts Per Billion (ppb)	A unit for measuring the concentration of a particular substance equal to one (1) unit combined with 999,999,999 other units.
Parts Per Million (ppm)	A unit for measuring the concentration of a particular substance equal to one (1) unit combined with 999,999 other units.
Pathogen	Any disease producing organism including viruses.
PCB Contaminated Electrical Equipment	Any electrical equipment, including transformers, that contains at least 50 ppm but less than 500 ppm of PCBs. (40 CFR 761.3)
PCB Item	An item containing PCBs at a concentration of 5 ppm or greater. (40 CFR 761.3)
PCB Transformer	Any transformer that contains 500 ppm of PCBs or greater. (40 CFR 761.3)
Penetration	The movement of liquid molecules through a chemical protective clothing, suit, garment or material.
Permeation	The movement of vapor or gas molecules through a chemical protective garment material.
Permeation Kits	Kits assembled for the purpose of testing on-site an unknown liquid substance for permeability of chemical protective clothing.
Permissible Exposure Limit (PEL)	The employees' permitted exposure limit to any material listed in Table Z-1, Z-2, or Z-3 of OSHA regulations, section 1910.1000, Air Contaminants.
Persistent Toxic Substance	A material or waste that resists natural degradation or detoxification and may present long term health and environmental hazards.
Personal Protective Equipment (PPE)	Equipment provided to shield or isolate a person from the chemical, physical, and thermal hazards that may be encountered at a hazardous materials incident. Adequate personal protective equipment should protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing. Personal protective equipment includes- personal protective clothing, self contained positive pressure breathing apparatus, and air purifying respirators. (NFPA 472, 1-3)
Pesticides	A chemical or mixture of chemicals used to destroy, prevent, or control any living organism considered to be a pest.
pH	A numerical designation of the negative logarithm of hydrogen ion concentration. A pH of 7.0 is neutrality; higher values indicate alkalinity and

lower values indicate acidity.

Plugging and Patching Kits	Kits commercially available or privately assembled for the purpose of providing capabilities for emergency plugging and patching of leaking containers, pipes, and tanks.
Plume	A vapor, liquid, dust or gaseous cloud formation which has shape and buoyancy.
Pneumonitis	Inflammation of the lungs characterized by an outpouring of fluid in the lungs.
Poison Class A	Poisonous gases or liquids of such a nature that a very small amount of the gas, or vapor of the liquid, mixed with air and is dangerous to life (49 CFR 173.326).
Poison Class B	Substances, liquids, or solids other than Poison Class A or irritating materials, which are known to be so toxic to man as to afford a hazard to health. (49 CFR 173.343)
Poison Control Centers (PCC)	California is served by seven certified and designated regional poison control centers. Each PCC is available 24 hours a day and can provide immediate health effects, scene management, victim decontamination, and other emergency medical treatment advice for hazardous materials emergencies. A physician specializing in medical toxicology is available for back-up consultation.
Pollution	Contamination of air, water, land, or other natural resources that will or is likely to create a public nuisance and cause health and environmental harm.
Polychlorinated Biphenyl (PCB)	One of several aromatic compounds containing two benzene nuclei with two or more chlorine atoms.
Polymerization	A chemical reaction, usually carried out with a catalyst, heat, or light, and often under high pressure, which generates high temperature and when uncontrolled may be violent.
Post Emergency Response	That portion of an emergency response performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the site has begun.
Post-Incident Analysis	The termination phase of an incident that includes completion of the required forms and documentation for conducting a critique.
Pre-incident Planning	The process associated with preparing for the response to a hazard by developing plans, identifying resources, conducting exercises, and other techniques to improve an agency's or organization's response capabilities.
Prevention Plan	See Risk Management Prevention Program.
Product Substitution	Replacing a hazardous substance in a process with a less hazardous substance.
Proper Shipping Name	The DOT designated name for a commodity or material. (49 CFR 172.101)

Proposition 65	California Safe Drinking Water Act of 1986.
Protective Clothing	See Personal Protective Equipment (PPE).
Public Information Officer (PIO)	The individual assigned to act as the liaison between the Incident Commander and the news media.
Pulmonary	Pertaining to the lungs.
Pyrophoric	A substance that ignites spontaneously in dry or moist air at or below 130° F. (49 CFR 173.115(c))
Qualitative Fit Test	A physical testing of a breathing apparatus face piece to the wearer, performed in an atmosphere of amyl acetate or irritant smoke to evaluate whether the wearer can detect the contaminant, indicating mask leakage and improper fit.
Radiation Absorbed Dose (RAD)	A basic unit of absorbed dose of ionizing radiation.
Radioactive	The spontaneous disintegration of unstable nuclei accompanied by emission of nuclear radiation.
Radioactive Material (RAM)	Any material, or combination of materials, that spontaneously emits ionizing radiation and has a specific activity greater than 0.002 microcuries per gram. (49 CFR 173.389)
Recorder	See Technical Specialist - Hazardous Materials Reference.
Recovery Drum	See Disposal Drum.
Reference Library	A selection of chemical text books, reference books, microfiche, and computer data programs typically carried by a hazardous materials response team.
Regional Plan	A hazardous material plan developed pursuant to SARA Title III.
Regional Response Team	Composed of representatives of the Federal agencies and a representative from each State in the ten Federal EPA regions as specified in the NCP.
Regional Water Quality Control Board (RWQCB)	The agency charged with managing Statewide water quality.
Release, Threatened Release	The actual or potential spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles of any hazardous material.
Remedial Action	Actions taken to mitigate the effects of a release or threatened release of a

hazardous material to protect health or the environment.

Removal Action	See Mitigation.
Reportable Incident	Any incident that has or may impact the public health, safety or the environment, or is otherwise required by law to be reported.
Reportable Quantity (RQ)	The designated amount of a specific material that if spilled or released requires immediate notification to the National Response Center (NRC). (49 CFR 172.101, 40 CFR 117.3, 173. and 302.6)
Rescue	The removal of victims from an area determined to be contaminated or otherwise hazardous by appropriately trained and equipped personnel.
Residue	A material remaining in a package after its contents have been emptied and before the packaging is refilled, or cleaned and purged of vapor to remove any potential hazard.
Resource Conservation and Recovery Act (RCRA)	The Federal framework for the proper management and disposal of hazardous wastes. This program is administered by EPA and may be delegated to the States.
Respiratory Protective Equipment	See SCBA and Air Purifying Respirators.
Response	That portion of incident management where personnel are involved in controlling a hazardous material incident. (NFPA 472, 1-3)
Responsible Party (RP)	A legally recognized entity (person, corporation, business, or partnership, etc.) that has a legally recognized status of financial accountability and liability for action necessary to abate and mitigate adverse environmental and human health and safety impacts resulting from a non-permitted release or discharge of hazardous material; the person or agency found legally accountable for the cleanup of the incident.
Risk Analysis	A process to analyze the probability that harm may occur to life, property, and the environment and to note the risks to be taken to identify the incident objectives.
Risk Management	Decision-making process which involves such considerations as risk assessment, technological feasibility, economic information about costs and benefits, statutory requirements, public concerns, and other factors.
Risk Management Prevention Plan (RMPP)	Statutory requirements in California Health and Safety Code, Section 25534, subsection (1). A plan which encompasses, among other appropriate elements: <ol style="list-style-type: none">1. A structured assessment of hazards.2. A formal personnel training program for the prevention of, and response to, emergencies.3. Procedures for periodic safety reviews of operating equipment and procedures.4. Schedules for regular testing of the program.5. Procedures for the purpose of reducing the probability of

accidents.

Roentgen	A measure of the charge produced in air created by ionizing radiation, usually in reference to gamma radiation.
Roentgen Equivalent Man (REM)	The unit of dose equivalent; takes into account the effectiveness of different types of radiation.
Rupture	The physical failure of a container or mechanical device, releasing or threatening to release a hazardous material. (Sacramento Fire Department HMRT)
Safety Officer	Selected by the Incident Commander, a person at an emergency incident responsible for assuring that all overall operations performed at the incident by all agencies present are done so with respect to the highest levels of safety and health. The Safety Officer shall report directly to the Incident Commander.
Salvage Drum	See Recovery Drum.
Sample	To take a representative portion of the material for evidence or analytical purposes.
SARA Title III Regional Plan	See Regional and Local Plan.
SCBA	See Self Contained Breathing Apparatus.
Scenario	An outline of a natural or expected course of events.
Scene	The location impacted or potentially impacted by a hazard.
Secondary Materials	Spent materials, sludges, by-products, scrap metal and commercial chemical products recycled in ways that differ from their normal use.
Selective Toxicity	The capacity of a chemical to injure one kind of living matter without harming another, even though the two may be in intimate contact.
Self Contained Breathing Apparatus (SCBA)	A positive pressure, self-contained breathing apparatus (SCBA) or combination SCBA/supplied air breathing apparatus certified by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA), or the appropriate approval agency for use in atmospheres that are immediately dangerous to life or health (IDLH). (NFPA 1991, 1-3)
Sensitizer	A substance which on first exposure causes little or no reaction in humans or test animals, but which on repeated exposure may cause a marked response not necessarily limited to the contact site.

Sheltering In Place/In Place Protection	To direct people to quickly go inside a building and remain inside until the danger passes.
Shipping Papers	Generic term used to refer to documents that must accompany all shipments of goods for transportation. These include Hazardous Waste Manifests, Bills of Lading, Consists, etc. Shipping papers are intended to describe what hazardous materials are contained within the shipment, if any.
Short Term Exposure Limit (STEL)	A 15-minute time-weighted coverage exposure which should not be exceeded at any time during a work day, nor repeated more than 4 times per day, even if the 8-hour time-weighted average is within the Threshold Limit Value (TLV).
Site	Any facility or location within the scope of 8 CCR 5192(a)(3).
Skimmer	Physical systems whereby a liquid phase is recovered from another liquid phase due to polarity differences and stored or transferred for further processing. Typical use is to remove petroleum products floating on a water body.
Sludge	Accumulated solids, semisolids, or liquid waste generated from wastewaters, drilling operations, or other fluids.
Smoke	An air suspension (aerosol) of particles, often originating from combustion or sublimation.
Solidification	Process whereby a contaminant is permanently immobilized in a substrate to prevent future migration away from the container.
Solubility	The ability or tendency of one substance to blend uniformly with another.
Solvents	A liquid substance capable of dissolving or dispersing one or more other substances to form a uniformly dispersed mixture.
Spill	The release of a liquid, powder, or solid hazardous material in a manner that poses a threat to air, water, ground, and to the environment. (See Incident.)
Spiller	See Responsible Party.
Spontaneously Combustible	See Pyrophoric.
Stabilization	The period of an incident where the adverse behavior of the hazardous material is controlled. (NFPA 472, 1-3)
Staging Area	The safe area established for temporary location of available resources closer to the incident site to reduce response time.
State Agency Coordinator (SAC)	Terminology used in the 1991 California Hazardous Materials Incident Contingency Plan as the representative of the State agency (usually either the California Highway Patrol or the Department of Fish and Game) that has jurisdictional responsibility for coordinating state assistance to an incident commander and maintains liaison with the federal on-scene coordinator.

The SAC designation is out-dated and **not** consistent with present SEMS and ICS terminology. The more appropriate term used for this designation now would be the **Liaison Officer**, since the duties and responsibilities are consistent with such.

Storage	Containment of hazardous materials on a temporary basis in such a manner as to not constitute disposal of such materials.
Strict Liability -	The responsible party is liable even though they have exercised reasonable care.
Superfund Amendments & Reauthorization Act (SARA)	Created for the purpose of establishing Federal statutes for right-to-know standards, emergency response to hazardous materials incidents, re-authorized the Federal superfund, and mandated States to implement equivalent regulations/requirements.
Support Zone	See Cold Zone.
Surface Impoundment	A natural depression, human made excavation or diked area designed to hold an accumulation of liquid wastes or waste containing free liquids.
Synergistic Effect	The combined effect of two chemicals which is greater than the sum of the effect of each agent alone.
Systemic	Pertaining to the internal organs and structures of the body.
Systemic Toxic Exposure	Toxic effects to the body as a whole spreading via the bloodstream and often displaying delayed symptoms.
Team Leader	See Entry Team Leader.
Technical Specialist -- Hazardous Materials Reference	Person assigned to document activities of the Hazardous Material Team and gather information relevant to the chemicals involved and their hazards.
Teratogen	A substance or agent which can result in malformations of a fetus.
Teratogenicity	Ability to produce birth defects.
Termination	That portion of incident management where personnel are involved in documenting safety procedures, site operations, hazards faced, and lessons learned from the incident. Termination is divided into three phases- Debriefing, Post-Incident analysis, and Critique. (NFPA 472, 1-3) (See Post-Incident Analysis.)
Thieving Rod	A glass rod used like a coliwassa, except the liquid is contained in the tube by a vacuum pressure.
Threshold	The point where a physiological or toxicological effect begins to be produced by the smallest degree of stimulation.

Threshold Limit Value (TLV)	The value for an airborne toxic material which is to be used as a guide in the control of health hazards and represents the concentration to which nearly all workers may be exposed 8 hours per day over extended periods of time without adverse effects.
Threshold Limit Value - Ceiling (TLV-C)	The concentration that should not be exceeded during any part of the working exposure.
Threshold Limit Value - Time Weighted Average (TLV-TWA)	An exposure level under which most people can work consistently for 8 hours a day, day after day, with no harmful effects.
Threshold Planning Quantity (TPQ)	The quantity designated for each extremely hazardous substance that triggers a required notification by facilities to the State emergency response commission that such facilities are subject to reporting under SARA Title III.
Totally Encapsulated Suits	Special protective suits made of materials that prevent toxic or corrosive substances or vapors from coming in contact with the body (see Fully Encapsulated Suit.)
Toxic	Poisonous; relating to or caused by a toxin; able to cause injury by contact or systemic action to plants, animals or people.
Toxic Chemicals	EPA uses this term for chemicals whose total emissions and releases must be reported annually by owners and operators of certain facilities that manufacture, process or otherwise use a listed toxic chemical as identified in SARA Title III.
Toxicity	A relative property of a chemical agent that refers to its harmful effect on some biological mechanism and the conditions under which this effect occurs.
Traffic Control/Crowd Control	Action(s) by law enforcement to secure and/or minimize exposure of the public to unsafe conditions resulting from emergency incidents, impediments and congestion.
Treatment	Any method, technique, or process which changes the physical, chemical, or biological character or composition of any hazardous waste, or removes or reduces its harmful properties or characteristics for any purpose.
United Nations Identification Number (UN)	When UN precedes a four-digit number, it indicates that this identification number is used internationally to identify a hazardous material.
Upper Explosive Limit (UEL)	The highest concentration of the material in air that can be detonated.
Upwind	In or toward the direction from which the wind blows.
Vapor	An air dispersion of molecules of a substance that is normally a liquid or solid

at standard temperature and pressure.

Vapor Dispersion

The movement of vapor clouds in air due to turbulence, gravity, spreading, and mixing.

Vapor Protective Suit

See Levels of Protection.

Vulnerability

The susceptibility of life, the environment, and/or property, to damage by a hazard.

Warm Zone

The area where personnel and equipment decontamination and hot zone support takes place. It includes control points for the access corridor and thus assists in reducing the spread of contamination. This is also referred to as the “decontamination”, “contamination reduction”, “yellow zone”, “support zone”, or “limited access zone” in other documents. (NFPA 472, 1-3)

Water Reactive

Having properties of, when contacted by water, reacting violently, generating extreme heat, burning, exploding, or rapidly reacting to produce an ignitable, toxic, or corrosive mist, vapor, or gas.

Glossary of Terms: Terrorism

Acetylcholine	A chemical neurotransmitter produced by nerve cells acting as a chemical “messenger” to stimulate the heart, skeletal muscles, and numerous secretory glands.
Acetylcholinesterase	An enzyme that normally hydrolyzes the neurotransmitter acetylcholine, thereby stopping its activity, but can be inhibited by organophosphates, carbamates and certain other “nerve agents”.
Aerobic	Capable of living and growing only in the presence of free oxygen.
Anthrax	A rod shaped aerobic bacteria <i>Bacillus Anthracis</i> which is spore producing and exists in three forms; The pulmonary form is usually 100 % lethal.
Antibiotic	A substance that inhibits the growth of or kills micro-organisms.
Antipersonnel	Biological agents that are effective directly against humans.
Antitoxin	A substance found or introduced into the blood serum or other body fluid which is specifically antagonistic to a toxin.
Aseptic	Free from infection.
Atropine	Therapeutic drug used as an antidote for nerve agents, is very effective in blocking the effects of excess acetylcholine.
Bacillus	A rod-shaped bacterium.
Bacteria	Single celled living microscopic organism varying in size from 0.5µm to 5 µm with a nucleus, intracellular structure, and a cell wall capable of duplicating itself through cell division. Some types of bacteria can transform into spores which may last for years or decades. Some types of bacteria can produce highly lethal toxins (Botullinum).
Bacterial Agent	A pathogenic substance that can cause disease in humans and animals by means of two mechanisms; By invading living tissue or by producing poisonous toxins, or both.
Biological Agent	Usually refers to all agents that may cause disease or death including bacteria, virus, and toxins.
Biological Toxin	A chemical substance produced by a living organism, such as bacteria, plant, animal or insect, that by itself can be highly lethal, such as botulinum or ricin.
Biological Warfare	The intentional use of biological agents as weapons to kill or injure humans,

	animals, or plants, or to damage equipment.
Biological Warfare Agent	Military use of living organisms or their toxins with the intent to cause death, disability, or damage to humans.
Blister Agent	Substances that cause blistering and destruction of the skin through liquid or aerosol contact.
Blood Agent	An antiquated military term implying that the site of action of cyanides is in the blood, but more accurately is described as an oxygen blocker for every cell in the body, beginning with the blood.
Botulism	Poisoning by botulinum toxin which is produced by the bacillus <i>Clostridium Botulinum</i> . is anaerobic, and is usually 65% lethal.
British Anti-Lewisite	Therapeutic drug used as an antidote for Lewisite, is a heavy metal chelator, not often used, results are not guaranteed.
Cardiac	Pertaining to the heart.
Carrier	An individual who harbors specific disease organisms without showing symptoms, thus serving as a means of conveying infection.
Cell	A small mass of protoplasm, generally including a nucleus, surrounded by a semipermeable membrane.
Chemical Agent	A chemical substance that is intended for use in military operations to kill, seriously injure, or incapacitate people through its physiological effects; See also <i>Chemical Warfare Agent</i> .
Chemical Warfare Agents	A chemical substance that is intended for use in military operations to kill, seriously injure or incapacitate, and are usually divided into 5 groups: Nerve, blood, respiratory (choking), Incapacitating and blister (vesicants).
Chemotherapy	The treatment of disease by chemicals that affect the causative organism unfavorably without seriously reacting on the patient.
Choking Agents	Substances that irritate, inflame or cause physical injury to the tissues of the respiratory system, throat, nose and mouth.
Cholera	An acute infectious gastrointestinal disease with a mortality rate as high as 30%.
Communicable	Capable of being transmitted from one individual to another.
Contagious	Transmissible from one individual to another.
Cutaneous	Pertaining to the skin.
Cyanogen Chloride (CK)	A <i>blood agent</i> chemical warfare agent, causing almost immediate respiratory and cardiac failure within minutes of inhalation; Not as lethal as hydrogen cyanide.

Cytotoxin	A toxin that causes cellular destruction or interfere with metabolic processes, particularly with the respiratory and circulatory systems.
Diarrhea	Abnormal frequency and liquidity of intestinal discharges.
Diazepam	Therapeutic drug used as an antidote for nerve agents, is very effective as an anti-convulsant and to reduce brain damage.
Disease	Illness or sickness.
Disinfectant	An agent, usually chemical, that destroys infective agents.
Distilled Mustard (HD)	A <i>vesicant</i> chemical warfare agent used in WWI this sulfur mustard causes severe dermal and eye destruction and burns; is an oily liquid with a garlic odor.
Encephalitis	Inflammation of the brain.
Edema	Excessive accumulation of fluid in body tissue or body cavities.
Endemic	Native to or prevalent in a particular district or region; Having a low incidence but is constantly present in a given community or environment.
Endotoxin	A toxin that is produced within a micro-organism and retained within the cell until it disintegrates.
Epidemic	An outbreak of disease which spreads rapidly and attacks many individuals in the same region at the same time.
Erythema	Reddening of skin resembling a good case of sunburn; Typical of moderate exposure to <i>Mustard Substances</i> and <i>Lewisite</i> .
Exotoxin	A toxin excreted by a living organism.
H	Refers to a Levinstein mustard, a series of persistent blister agents that include distilled mustard (HD), and the nitrogen mustards (HN-1, HN-2, and HN-3).
Hydrocyanic Acid (AC)	A <i>blood agent</i> chemical warfare agent causing almost immediate respiratory and cardiac failure within minutes of inhalation; Most lethal of the cyanides; Also known as hydrogen cyanide.
Incapacitating Agents	A group of chemical warfare agents intended to incapacitate rather than injure or kill, by causing severe eye and nasal distress and irritation; Popular with law enforcement for riot control; Examples are Mace and Pepper Spray.
Infection	Invasion of body tissues by organisms, usually pathogenic, which multiply and cause disease.
Infectious Disease	One which is caused by a living agent, such as bacteria, protozoa, virus, or fungi, and may or may not be contagious.

Invasiveness	The ability of a micro-organism to enter the body and spread throughout the tissues.
Intoxication	Poisoning.
Intravenous	Within the vein.
Lacrimator	A compound that causes a large flow of tears and irritates the skin; A Tearing Agent.
Lethal Agents	Biological or chemical agents that could cause significant human mortality.
Lewisite (L)	A <i>vesicant</i> chemical warfare agent used in WWI as a gas or aerosol, causes moderate to severe dermal and eye destruction and burns, heavily used but not totally successful, was considered a minor military threat.
Malaise	A feeling of bodily discomfort.
MARK I	Military kit containing antidotes Atropine and Prolidoxime Chloride.
MACE® (CN)	An <i>incapacitating</i> agent “chloroacetophenone” popular with law enforcement and military to render recipient temporarily incapable of resistance or flight. Less popular than stronger military formulation CS.
Malaise	A vague feeling of bodily discomfort.
Micro-organism	Any organism, such as bacteria, viruses, and some fungi, that can be seen only with a microscope.
Miosis	Excessive contraction of the pupil.
Mustard (H)	A <i>vesicant</i> chemical warfare agent used in WWI as a gas or aerosol, causes severe dermal and eye destruction and burns. The term “mustard” usually refers to “sulfur mustard”; the more pure distilled mustard is referred to as “distilled mustard”.
Mustargen	A <i>vesicant</i> chemical warfare agent used in WWI as a gas or aerosol, is HN2 derivative of nitrogen mustard and the most popular during WWI.
Mycotoxin	A toxin produced by fungi.
Nausea	Tendency to vomit; sickness of the stomach.
Necrosis	Death of a cell or group of cells in contact with living tissue.
Neural	Relating or pertaining to the nerves.
Neurotoxin	A substance that is poisonous or destructive to nerve tissue.
Nerve Agent	Substances that interfere with the central nervous system primarily through liquid contact (skin) and lesser so through aerosol (lungs).
Neurotoxins	Toxins that interfere with nerve impulses and may affect the central nervous

system; Tend to act rapidly.

Nitrogen Mustard (HN)	A <i>vesicant</i> chemical warfare agent synthesized during WWI, there are three derivatives, HN1, HN2, and HN3.
Nonpersistent Agent	An agent that upon release loses its ability to cause casualties after 10 to 15 minutes, typical of most incapacitating agents.
Nucleous	A body within a cell which is the center of reproductive activities of the cell.
Organo-phosphate	A phosphate containing organic compound that inhibit cholinesterase enzymes.
2-PAM Chloride	Used in treatment of nerve agent poisoning.
Pathogenic	Causing disease.
Pathogen	Any disease producing micro-organism or material which includes virus, bacteria, rickettsia, fungi and mycoplasma.
Percutaneous Agent	Able to be absorbed by the body through the skin.
Persistent Agent	An agent that upon release retains its casualty producing effects for an extended period of time, usually from 30 minutes to several days; A substance usually having a low evaporation rate and its vapor is heavier than air.
Phosgene	A <i>respiratory agent</i> chemical warfare agent used in WWI as a gas, causes severe upper respiratory distress and edema as it hydrolyses to hydrochloric acid.
Phosgene Oxime	A <i>vesicant</i> chemical warfare agent, not popular, little used, was a minor military threat, is highly corrosive and a urticant.
Phytotoxin	A toxin derived from a plant, such as ricin.
Plague	Or "Black Death", is an aerobic bacterium <i>Yersinia Pestis</i> and occurs in three clinical forms; Pneumonic which can be 90 % lethal, Septicemic, and Bubonic, which is the most common and may be 30% lethal; Pneumonic is highly contagious.
Respiratory Agent	Also referred to as pulmonary agents, a reference to chemical agents that attack the mucous membranes of the respiratory tract causing severe pain and edema; Chlorine, phosgene and oxides of nitrogen are examples.
Ricin	A poisonous toxin distilled from the seed of the castor oil plant.
Riot Control Agent	An incapacitating agent intended to temporarily render a person inoperative by causing extreme distress and pain, but is not lethal; Examples are CN (MACE) and CS.

Sarin (GB)	A nerve agent developed by the Germans during WWII that has an LC ₅₀ skin dose of 100-200 mg.
Septic	Produced by or due to putrefaction or morbid germs.
Soman (GD)	A nerve agent developed by the Germans during WWII that has an LC ₅₀ skin dose of 50-70 mg.
Spores	A bacteria cell with a hardened shell and is more resistant to cold, heat, drying, chemicals and radiation than the bacterium itself, and may lie dormant for decades; They germinate when conditions are favorable and transform into bacteria cells.
Sulfur Mustard (H)	A <i>vesicant</i> chemical warfare agent synthesized during WWI, there are two derivatives H, and HD. See also "Mustard".
Symptoms	Functional evidence of disease or of conditions, or a change in conditions which indicate a mental or bodily state.
Tabun (GA)	A nerve agent developed by the Germans during WWII that has an LC ₅₀ skin dose of 200-400 mg.
Tear Agent	An incapacitating agent that produces irritating or disabling effects that rapidly disappear within minutes after exposure; A Lacrimator.
Terrorism	The unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives.
Toxic	Poisonous and perhaps deadly depending on the dose and resistance of the individual.
Toxicity	The quality of being poisonous depending on the potency of the toxin.
Toxin	A chemical substance that is a product of a living organism, - plant, animal or bacteria, - which produce adverse or lethal effects on humans and animals; True toxins are protein like, more or less unstable particularly on contact with air, and require a short incubation or latent period to produce symptoms.
Transmissible Agent	Pathogens that can spread disease from person to person.
V Agents	Persistent, highly toxic nerve agents developed in mid 1950's and absorbed primarily through the skin; An example is VX with a skin LC ₅₀ dose of 10-50 mg.
Vaccine	A preparation of killed or attenuated infective toxic agent used as an inoculation to produce active artificial immunity.
Vesicant	A vapor or liquid chemical threat to dermal and eyes intended to cause severe burns and blistering with delayed effects appearing hours after contact. Prolong exposure causes bone marrow damage. There are no

acceptable and reliable antidotes.

Viable

Capable of living.

Viral Agent

A virus organism that brings about changes in a healthy host cell such that the host cell usually dies.

Virulence

Refers to the relative infectiousness of an organism or its ability to overcome the defenses of the host.

Virus

Extremely small submicroscopic agents from 0.02 μ m to 0.2 μ m with a nucleocapsid protein coat or lipid/glycoprotein coat, containing genetic RNA or DNA material, but not having a nucleus and incapable of duplicating itself through cell division; Invades a host cell and takes over the nucleus in order to replicate.

Vomiting Agent

An incapacitating agent that encourages uncontrolled vomiting, nausea, coughing, sneezing, tearing, and pain to the affected areas, but rarely causes death.

CHEMICAL WARFARE AGENTS: DETECTION, ANTIDOTES, SYMPTOMS, AND DECONTAMINATION

CHEMICAL WARFARE AGENT		Military Design.	Chem Name	Detection Strip	Detection Instrument	Antidotes	Supportive	Symptoms	DeCon
THREAT	SUBSTANCE								
CYANIDES:	Hydrogen Cyanide	AC	Hydrogen Cyanide	M256A1	CAM	Intravenous Sodium Nitrate and Sodium Thiosulfate.	Oxygen; Blood pH.	Seizures; Loss of Consciousness; Respiratory and Cardiac arrest.	Remove clothing; flush with water
		Cyanogen Chloride	CK	Cyanogen Chloride	M256A1		CAM		
NERVE AGENTS	Sarin	GB		M8; M9; M256A1	CAM; M8A1 alarm; M8 alarm	Atropine and Pralidoxime Chloride	Ventilation; Oxygen; Remove clothing; Stabilize blood pressure;	Pinpoint pupils, dimness of vision, difficult breathing, gasping, Miosis, difficulty breathing, vomiting, loss of consciousness, convulsions, excretions, twitching in area of skin contact.	Remove clothing; M298; M258A1; Hypochlorite solution (Bleach); Plenty of water;
		Soman	GD			Atropine and Pralidoxime Chloride			
		Tabun	GA			Atropine and Pralidoxime Chloride			
			GF			Atropine and Pralidoxime Chloride			
			VX			Atropine and Pralidoxime Chloride			
VESICANTS	Nitrogen Mustards	HN		M8; M9; M256A1	CAM; M8 Alarm - (NOT The M8A1)	None	Decontamination is urgent; Remove clothing; Maintain airway; Manage Lesions	Irritation; Reddening of skin, blisters after 30 minutes; Eye conjunctivitis, corneal opacity; Airway damage; Escalating pain.	Remove clothing; M298; M258A1; M291; Hypochlorite solution (Bleach); Plenty of water
		Mustargen	HN2			None			
		Sulfur Mustard	H			None			
		Distilled Sulfur Mustard	HD			None			
		Lewisite	L			None			
		Phosgene Oxime	CX		M256A1 only	M8 alarm only (Not the CAM)	None	Decontamination is urgent	Remove clothing; Water is large amounts.
RESPIRATORY	Chlorine			pH paper, moist	Drager Tubes	None	Ventilation; Oxygen; Rest; Resuscitation	Eye and airway distress; Dyspnea; Pulmonary edema	Flush with water.
		Phosgene	CG			None			
INCAPACITATING	Mace, Early Formulation	CN	Chloroacetophenone	None		None	Remove clothing; Administer oxygen; Ventilation.	Eyes:- Immediate burning, tearing, pain; Nostrils:- Severe burning distress	Flush with water; Use mild soap as surfactant; Irrigate eyes with saline solution.
		Mace, Military/Law	CS	O-chlorobenzylidene malononitrile		None			
		Pepper Spray (CYAN Pepper)				None			

BIOLOGICAL WARFARE AGENTS:

BIOLOGICAL AGENT		CLINICAL NAME	VACCINE PROTOCOL	THERAPEUTIC DRUGS	CHEMOTHERAPEUTIC and SUPPORTIVE THERAPY		IMMEDIATE SYMPTOMS	DELAYED SYMPTOMS (Incubation Period)	MORTALITY	CONTAGIOUS
THREAT	SUBSTANCE:									
BACTERIAL	Anthrax	Bacillus Anthrax	Michigan Dept of Health	Ciprofloxacin,		400 mg i.v. q 8-12 hours	None	2-6 days; Fever, malaise, fatigue, cough, chest discomfort, then severe respiratory distress, dyspnea, stridor, cyanosis	Skin - 20% Respiratory - 100%	YES, Highly Resists sunlight for days, may last years in water or decades in soil
				Penicillin		2 million units i.v. q 2 hrs.				
				Doxycycline		200 mg, then 100 mg @12 hours				
	Cholera	Vibrio cholerae	Wyeth-Ayerst	Tetracycline,	Fluids (water); Electrolyte replacement	500 mg q 6 hrs x 3 days	None	12 - 72 hours; Sudden onset with vomiting, headache, cramping, diarrhea, severe dehydration, shock		YES, surviving 24 hours in sewage but dies in water
				Ciprofloxacin		500 mg q 12 hrs x 3 days				
				Doxycycline		500 mg q 12 hrs x 3 days				
	Plague, Pneumonic	Yersinia pestis	Greer Laboratory Vaccine	Streptomycin	Early administration of antibiotics	30 mg/kg/d i.m. in divided doses x 10 d.	None	2-3 days; High fever, chills, headache, hemoptysis, cyanosis, respiratory failure, circulatory collapse.		MODERATE; Isolate patient; Heat and sunlight kills
				Doxycycline		200 mg i.v. then 100 mg q 12 hrs x 10-14 days				
				Chloramphenicol		1 gm i.v. q 6 hrs				
	Plague, Bubonic	Yersinia pestis		Streptomycin	Early administration of antibiotics	30 mg/kg/d i.m. in divided doses x 10 d.	None	2-10 days; High fever, malaise, tender lymph nodes, bleeding in lungs.	Bubonic - 50% Pneumonic - 100%	YES; High with secretions and lesions
				Doxycycline		200 mg i.v. then 100 mg q 12 hrs x 10-14 days				
				Chloramphenicol		1 gm i.v. q 6 hrs				
Tularemia	Francisella tularensis	LVS	Streptomycin	Early administration of antibiotics is very effective	1 gm i.m. q 12 hrs x 10-14 days	None	2-10 days; Fever, chills, headache, malaise, weight loss.		LOW; Isolation of victim not required; Destroy secretions	
			Gentamicin		3-5 mg/kg/day x 10-14 days					
			Doxycycline							
Q Fever	Coxiella burnetii	IND 610	Tetracycline		500 mg oral q 6 hours x 7 days	None	10 days; Fever, cough, pleuritic chest pain; May resemble viral pneumonia	< Than 1%	LOW; Can be highly infections by aerosol	
			Doxycycline		100 mg oral q 12 hours x 7					

BIOLOGICAL AGENT		CLINICAL NAME	VACCINE PROTOCOL	THERAPEUTIC DRUGS	CHEMOTHERAPEUTIC and SUPPORTIVE THERAPY	IMMEDIATE SYMPTOMS	DELAYED SYMPTOMS (Incubation Period)	MORTALITY	CONTAGIOUS	
THREAT	SUBSTANCE:									
						days				
VIRAL	Smallpox	Variola Virus	Wyeth Vaccine	Vaccinia-immune globuline within first week.		No effective chemotherapy	None	12 days; Then by 2nd day rigors, vomiting, headache, backache, maculae, papules, pustular vesicles.	30%	YES; Strict quarantine 16 days; Highly infectious
	Venezuelan Equine Encephalitis	VEE virus	TC-83	No specific anti-viral	Analgesics, anticonvulsants, supportive only	None	None	1-5 days; Then sudden general malaise, fever, rigors, headache, photophobia, mausea, vomiting, sore throat, diarrhea.	< Than 1 %	LOW
	Hemorrhagic Fever Family	Numerous, see below	Yellow Fever Vac.	None	Antiviral therapy; convalescent plasma	None	None	Easy bleeding, hypotension, edema, malaise, headache, vomiting, diarrhea, shock	90%	YES; Quarantine; Infectious by aerosol Cleans with hypochlorite
	Ebola	Filoviridae	None	None	Supportive therapy	None	None		90%	
	Lassa Fever	Arenaviridae	Yellow Fever Vac.		Supportive therapy	None	None		90%	
	Hantavirus	Bunyaviridae	Yellow Fever Vac.		Supportive therapy	None	None			
TOXIN	Ricin	Ricinus communis	None	None	Ventilatory support	None	8 hours - Weakness, fever, cough, pulmonary edema	36 hours - respiratory failure	80% within 72 hours	NO
	Botulinum	Bacillus Clostridium Botulinum	Botulinum antitoxin	Heptavalent anti-toxin (A-F)	Intubation, ventilation	1 vial (10cc).i.v. q 20 min	12 hours - General weakness, dizziness, blurred vision	36 hours - Paralysis, respiratory failure	60%	LOW; .5% hypochlorite solution
	Staphylococcal Enterotoxin B	Staphylococcus aureus	None	None	Ventilatory support	None	3 hours - Sudden fever, chills, headache, cough, shortness of breath	2 days - Chest pains, nausea, vomiting, diarrhea, septic shock, death	< Than 1 %	LOW; .5% hypochlorite solution
	T-2 Mycotoxins	Fusarium and Myrotecium molds	None	None		None	Minutes - Fever, cough, dyspnea, nausea, vomiting, diarrhea, skin pain.	Hours - prostration, collapse, shock, death		LOW; Wash dermal with soap and water Destroy clothing

ATTACHMENT 3

On-Scene Checklist



IF THERE IS A HAZARDOUS MATERIAL EMERGENCY, THIS CHECKLIST CAN BE USED AS A GENERAL **GUIDELINE** FOR ON-SCENE RESPONSE ACTIONS.



THE FOLLOWING TASKS ARE INCIDENT-SPECIFIC AND THE ORDER OF COMPLETION SHOULD BE BASED ON THE PRIORITIES OF PROTECTING PUBLIC HEALTH, THE ENVIRONMENT, AND PROPERTY:

DISCOVERY AND NOTIFICATION

- Insure safety of life and health.
 - If necessary, rescue victims - **ONLY** if rescue can be done safely.
 - Provide emergency medical care, including decontamination of exposed persons.
 - Determine need for protective actions (e.g., evacuation or sheltering in place).
- Isolate the area and deny entry.
- Stay upwind and upgrade
- Eliminate any ignition sources, and avoid contact with the spilled substance.
- Identify the spilled substance(s), and the potential hazards.
- Notify the appropriate agencies
 - *(without impeding immediate control of the release or medical measures)* ⚡
- Request appropriate response resources and assistance (contractors, agencies).
- Activate Incident Command System (ICS).
- Assign ICS roles and responsibilities.
- Establish Incident Command Post.
- Prepare Site Safety Plan.
- Initiate Investigation.
- Liaison with government agencies (local, state, federal) that have jurisdiction.

PRELIMINARY ASSESSMENT AND INITIAL ACTION

- Control the source (stop the discharge).
- Minimize the spread.
- Assess the situation.
 - Determine extent of spill
 - Determine objectives and strategies
 - Establish immediate priorities
 - Prepare Incident Action Plan (IAP)
- Implement IAP.
- Protect sensitive habitats and species.
- Initiate Natural Resources Damage Assessment (NRDA).

CONTAINMENT, RECOVERY, CLEANUP, & WASTE MANAGEMENT

- Contain the spread.
- Recover spilled product.
- Mitigate impacted areas.
- Collect and share pertinent information.
- Continually reassess situation; adjust IAP as needed.
- Manage and coordinate response actions and operations.
- Ensure proper disposition of recovered product and contaminated materials.
- Demobilize response equipment and personnel.

Documentation, Cost Recovery, and Closure

- Compile response documentation.
- Recover response costs.
- Develop plan for site rehabilitation and/or restoration.
- Rehabilitate and/or restore natural resources and property; monitor recovery.
- Recover damages to natural resources and property.
- Close incident; release Responsible Party from further cleanup action.

ATTACHMENT 4



IMPORTANT TELEPHONE NUMBERS



FOR **IMMEDIATE** NOTIFICATION PURPOSES,
THE FOLLOWING AGENCIES MUST BE CALLED ACCORDINGLY:

- **Local Government** **911** (or appropriate local number)
- **State Government (OES Warning Center)** **(800) 852-7550** or **(916) 262-1621**
- **On Highway Spills (Call CHP)** **911** (or appropriate local number)
- **Federal Government (National Response Center)** **(800) 424-8802** or **(202) 426-2675**

If the call to 911 does NOT contact the Certified Unified Program Agency/Administering Agency (CUPA/AA), then the CUPA/AA must also be notified.

OTHER TELEPHONE NUMBERS: State Agencies

AGENCY	PHONE NUMBER	AGENCY ROLE
Air Resources Board (ARB)	<u>VIA THE OES WARNING CENTER:</u> (800) 852-7550	Protects and enhances the ambient air quality of the state, through local and regional air pollution authorities.
San Francisco Bay Conservation & Development Commission (BCDC)	(415) 253-1393 (24-hour) <u>FAX:</u> (415) 557-3767	Responsible for planning, permitting and enforcement of development within San Francisco, San Pablo & Suisun Bays and within a 100-foot band of surrounding shoreline; issues emergency permits to expedite response activities and provides technical advice during an oil/hazmat spill.
California Coastal Commission (CCC)	(415) 904-5200 <u>PAGER:</u> (415) 201-5792	Responsible for planning, permitting and enforcement of development of California's coastline; issues emergency permits to expedite response activities and provides technical advice during an oil/hazmat spill.

California Integrated Waste Management Board (CIWMB)	(916) 255-4071 Voice Mail: (916) 854-1022	Oversees household hazardous waste (HHW) programs within California; coordinates with counties requesting HHW assistance.
Department of Fish & Game, Office of Spill Prevention & Response (OSPR)	<u>OSPR COMMUNICATION CENTER:</u> (916) 445-0045	Natural Resource Trustee for the state of California; ensures that fish, wildlife and their habitats are protected & any issues are addressed by the IC/UC during response and cleanup phases; ensures that cleanup, remediation and restoration are done appropriately.
Division of oil, Gas, & Geothermal Resources (DOGGR)	<ul style="list-style-type: none"> • District #1 (Cypress): (714) 816-6847 • District #2 (Ventura): (805) 654-4761 • District #3 (Santa Maria): (805) 937-7248 • District #4 (Bakersfield): (805) 322-4031 • District #5 (Coalinga): (209) 935-2341 • District #6 (Sacramento): (916) 322-1110 	Responsible for preventing damage to life, health, property, and the environment resulting from oil, gas and geothermal drilling, production, or plugging and abandonment operations.
Department of Health Services (DHS)	(916) 323-9869	Ensures the safety and reliability of the public water supplies; ensures the safety of interim/emergency water supplies; interfaces with local governments for safe drinking water, food, medical.
Department of Toxic Substances Control (DTSC)	(916) 323-3600	Protects human health and the environment; provides local assistance from requests via the Hazardous Waste Account; regulatory authority for emergency removals; coordinates the RAPID Force.
	<u>TOXICS HOTLINE:</u> (800) 258-6942	To report violations of hazardous waste laws.

 **NOTE:** STATE agencies can also be accessed via the OES Warning Center at (800) 852-7550

OTHER TELEPHONE NUMBERS: Federal Agencies

U.S. Environmental Protection Agency, Region IX (USEPA)	(415) 744-2000	FOSC for inland hazmat and oil spills; ensures that response actions are taken to control and remove discharges of oil and hazardous materials into the inland zone. Under CERCLA/OPA '90, provides limited, pre-declaration assistance for hazardous materials release assessment and clean-up.
	<u>EPA SPILL PHONE:</u> (415) 744-2000	For spills of oil or hazardous materials.
	<u>PCRA TITLE III HOTLINE:</u> (800) 535-0202	For questions on the federal Emergency Planning and Community Right-to-Know Act.
U.S. Coast Guard (USCG)	<u>MARINE SAFETY OFFICES:</u>	FOSC for marine hazmat and oil spills; ensures that response actions are taken to control and remove discharges of oil and hazardous material releases into the coastal zone; access to OPA '90 (oil) and CERCLA (hazmat) funding; control of navigable waterways.
	<ul style="list-style-type: none"> • MSO San Francisco: (510) 683-6470 • MSO Los Angeles/ Long Beach: (562) 980-4444 • MSO San Diego: (619) 683-6470 	
Federal Emergency Management Agency, Region IX (FEMA)	(415) 923-7189	Administers the Federal Disaster Assistance Program; supports state and local response efforts upon request after declaration of an emergency; provides federal funding for hazmat response & clean-up efforts (ESF #10).

 **NOTE:** FEDERAL agencies can also be accessed via the National Response Center at (800) 424-8802

Poison Control Centers	(800) 876-4766	Provides: regional hospital capabilities for hazmat victims; poison/exposure information to hospital staff, emergency response personnel, and the general public; assist with drug identification for law enforcement agencies.
CHEMTREC	(800) 424-9300	Provides: emergency information for chemical releases & fire control measures; precautionary information; assist with chemical identification if unknown; notification of manufacturer and/or shipper.



IMPORTANT TELEPHONE NUMBERS








for EMERGENCY FUNDING



When accessing emergency funding The Responsible Party (RP) is liable for the costs associated with the abatement and mitigation of a hazardous material spill. If the RP is unknown, unwilling or unable to provide a safe and adequate response, government may have to ensure the protection of the public health and safety, and the environment by providing abatement and mitigation of the spill. The following telephone numbers are provided to assist responding agencies.

Remember: Use the responsible party and local resources first, before calling on state and federal resources!


State:

<u>IMPACT</u>	<u>AGENCY AND FUND NAME</u>	<u>TELEPHONE NUMBER</u>
 Human Health and Environment	Department of Toxic Substances Control ➤ Emergency Reserve Account	(916) 323-3600 or (800) 260-3972 ... ask for the DTSC Duty Officer
 Illegal Drug Labs	Department of Toxic Substances Control ➤ Illegal Drug Lab Clean-up Account	(916) 323-3600 or (800) 260-3972 ... ask for the DTSC Duty Officer
 Fish, Wildlife, and/or Habitat	Department of Fish and Game ➤ Fish and Wildlife Pollution Account	(916) 445-0045 OSPR Communication Center
 Marine Oil Spill	Office of Spill Prevention and Response ➤ Oil Spill Response Trust Fund	(916) 445-0045 OSPR Communication Center
 Surface and Groundwater	State Water Resources Control Board ➤ Water Pollution Cleanup and Abatement Account	(916)327-4428

 **NOTE:** STATE agencies can be accessed via the OES Warning Center after business hours.

Federal:

<u>IMPACT</u>	<u>AGENCY AND FUND NAME</u>	<u>TELEPHONE NUMBER</u>
• Oil Spill	Oil Spill Liability Trust Fund	Accessed by the FOSC (USEPA or USCG)
• Hazardous Materials	Superfund (CERCLA)	Accessed by the FOSC (USEPA or USCG)



 **NOTE:** FEDERAL agencies can be accessed via the National Response Center.

ATTACHMENT 5

Hazardous Materials Responder

Levels of Training

Introduction

According to federal (29 CFR 1910.120) and state (8 CCR 5192) regulations, there are five levels of “employees who participate, or are expected to participate, in emergency response....”. These are minimum levels of training and should be considered the basis for all responders. Training should be based on the hazards that are expected to be encountered, and higher degrees of initial and continuing training are recommended.

FIRST RESPONDER AWARENESS LEVEL

First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the authorities of the release. First responders at the awareness level shall have sufficient training or shall have had sufficient experience to objectively demonstrate competency in the following areas:

- An understanding of what hazardous materials are and the risks associated with them in an incident;
- An understanding of the potential outcomes associated with an emergency created when hazardous materials are present;
- The ability to recognize the presence of hazardous materials in an emergency;
- The ability to identify the hazardous materials, if possible;
- An understanding of the role of the first responder awareness level individual in the employer’s emergency response plan, including site security and control, and the U.S. Department of Transportation’s Emergency Response Guidebook; and
- The ability to realize the need for additional resources, and to make appropriate notifications to the communication center.

FIRST RESPONDER OPERATIONS LEVEL

First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. First responders at the operational level shall have received at least eight hours of training or have had sufficient experience to objectively demonstrate competency in the following areas, in addition to those listed for the awareness level, and the employer shall so certify:

- A knowledge of the basic hazard and risk assessment techniques;
- A knowledge of how to select and use proper personal protective equipment provided to the first responder operational level;
- An understanding of basic hazardous materials terms;
- A knowledge of how to perform basic control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available within their unit;
- A knowledge of how to implement basic decontamination procedures; and
- An understanding of the relevant standard operating procedures and termination procedures.

HAZARDOUS MATERIALS TECHNICIAN

Hazardous materials technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release to plug, patch, or otherwise stop the release of a hazardous substance. Hazardous materials technicians shall have received at least 24 hours of training equal to the first responder operations level and, in addition, have competency in the following areas, and the employer shall so certify:

- A knowledge of how to implement the employer's emergency response plan;
- A knowledge of the classification, identification, and verification of known and unknown materials by using field survey instruments and equipment;
- An ability to function within an assigned role in ICS;
- A knowledge of how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician;
- An understanding of hazard and risk assessment techniques;
- An ability to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with the unit;
- An understanding and the ability to implement decontamination procedures;
- An understanding of termination procedures; and
- An understanding of basic chemical and toxicological terminology and behavior.

HAZARDOUS MATERIALS SPECIALIST

Hazardous materials specialists are individuals who respond with, and provide support to, hazardous materials technicians. Their duties parallel those of the hazardous materials technician. However, their duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist would also act as the site liaison with federal, state, local, and other government authorities in regard to site activities. Hazardous materials specialists shall have received at least 24 hours of training equal to the technician level and, in addition, have competency in the following areas, and the employer shall so certify:

- A knowledge of how to implement the local emergency response plan;
- An understanding of the classification, identification, and verification of known and unknown materials by using advanced survey instruments and equipment;
- A knowledge of the State Emergency Plan;
- An ability to select and use proper specialized chemical personal protective equipment provided to the hazardous materials specialist;
- An understanding of in-depth hazard and risk techniques;
- An ability to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available;
- An ability to determine and implement decontamination procedures;
- An ability to develop a site safety and control plan; and
- An understanding of chemical, radiological, and toxicological terminology and behavior.

INCIDENT COMMANDER

Incident Commanders who will assume control of the incident scene beyond the first responder awareness level will receive at least 24 hours of training equal to the first responder operations level and, in addition, have competency in the following areas (and the employer will so certify):

- Know and be able to implement the employer's ICS;
- Know how to implement the employer's emergency response plan;
- Know of the state emergency response plan and of the Federal Regional Response Team;
- Know how to implement the local emergency response plan;
- Know and understand the hazards and risks associated with employees working in chemical protective clothing; and
- Know and understand the importance of decontamination procedures.

These categories of responders are similar to those who are likely to be encountered in the field. All public agency employees that have the potential of being involved in a hazardous material incident should have, at the minimum, first responder awareness level training. Do not make assumptions on the level of training that the responders might have.

Personal Protective Equipment

Introduction

Personal Protective Equipment (PPE) is required to shield or isolate the person from chemical, biological, radiological, and physical hazards that may be encountered at a hazardous materials incident. Adequate personal protective equipment should protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing. Personal protective equipment includes both personal protective clothing and respiratory protection. PPE is divided into **four** categories based on the degree of protection needed. The following descriptions are not definitive. Refer to appropriate documents for a complete description (e.g.; Federal OSHA regulations 29 CFR 1910.120, NIOSH, ACGIH, and NFPA standards address PPE selection in greater detail for response to different types of hazardous materials).

An unidentified product with unknown properties should be approached only in Level A or B protection. Never use personal protection equipment unless you are properly trained and feel comfortable with its use. PPE does not protect against fire or explosion unless additional types of protection are used.

Level A is to be selected when the greatest level of skin, respiratory, and eye protection is required. Level A protection should be used when:

- The hazardous substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on either the measured (or potential for) high concentration of atmospheric vapors, gases, or particulates; or the site operations and work functions involve a high potential for splash, immersions, or exposure to unexpected vapors, gases, or particulates that are harmful to the skin or are capable of being absorbed through the skin;
- Substances with a high degree of hazard to the skin are known or suspected to be present and skin contact is possible; and
- Operations are being conducted in confined, poorly ventilated areas, and the absence of conditions requiring Level A protection have not yet been determined.

Primary required equipment are:

- Positive pressure, full face-piece, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA; and
- Totally-encapsulating chemical-protective suit.

Other required equipment are:

- Inner and outer chemical resistant gloves, and chemical resistant boots with steel toe and shank.

Optional equipment are:

- Long underwear, hard hat, disposable suit, gloves, boots, and coveralls.

Level B is to be selected when the highest level of respiratory protection is necessary, but a lesser level of skin protection is needed. Level B should be used when:

- The type and atmospheric concentration of substances have been identified and

- require a high level of respiratory protection, but less skin protection;
- The atmosphere contains less than 19.5 percent oxygen; or
 - The presence of incompletely identified vapors or gases is indicated by a direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to the skin or capable of being absorbed through the skin. Note: This involves atmospheres with immediately dangerous to life and health (IDLH) concentrations of specific substances that present severe inhalation hazards and that do not represent severe skin hazards; or that do not meet the criteria for use of air-purifying respirators.

Primary required equipment are:

- Positive pressure, full face-piece, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA;
- Hooded chemical-resistant clothing (overalls and long-sleeved jacket, coveralls, one or two piece chemical-splash suit, and disposable chemical-resistant overalls).

Other required equipment are:

- Inner and outer chemical resistant gloves, and chemical resistant boots with steel toe and shank

Optional equipment are:

- Coveralls, hard hat, boot covers, and face shield.

Level C is to be selected when respiratory protection can be provided with respirators and skin contact with the material will not cause an adverse effect or be absorbed through any exposed skin. Level C protection should be used when:

- The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin;
- The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove the contaminants; and
- All criteria for the use of air-purifying respirators are met.

Primary required equipment are:

- Full-face or half-mask, air purifying respirators; and
- Hooded chemical-resistant clothing (overalls and long sleeved jacket, coveralls, one or two piece chemical-splash suit, and disposal chemical-resistant overalls).

Other required equipment are:

- Inner and outer chemical resistant gloves.

Optional equipment are:

- Coveralls, chemical resistant boots with steel toe and shank, boot covers, hard hat, escape mask, and face shield.

Level D is a work uniform affording minimal protection, used for nuisance

contamination only. Level D protection should be used when:

- The atmosphere contains no known hazard; and
- Work conditions preclude splashes, immersion, or the potential for unexpected inhalation of, or contact with, hazardous levels of any chemicals.


Primary required equipment are:

- Coveralls, chemical resistant boots/shoes with steel toe and shank.

Optional equipment are:

- Gloves, outer boots, safety glasses or chemical resistant goggles, hard hat, escape mask, and face shield.

An unidentified product with unknown properties should be approached only in Level A (vapor protective suit) or B (liquid splash protective suit) positive pressure protection with self-contained breathing apparatus (SCBA). Never use personal protection equipment unless you are properly trained and feel comfortable with its use. Hazardous materials PPE does not protect against fire or explosion unless additional types of protection are used.

 **NOTE:** Combinations of personal protective equipment, other than those described for Levels A, B, C, and D protection, may be more appropriate and may be used to provide the proper level of protection.

Specialized Equipment

Hazardous material incidents often require specialized equipment to accomplish the task of abatement of the release or threatened release. Some of the resources needed are readily available to emergency responders such as sand, water and foam from a fire engine, or the DOT Emergency Response Guidebook. Other forms of equipment are highly specialized and not widely distributed. Examples include sophisticated monitoring and sampling devices and totally encapsulating suits.

The space constraints of this Plan do not permit a thorough discussion of specific equipment used in hazardous material incidents. Equipment use and familiarity should be addressed during responder training. All agencies are encouraged to ascertain what equipment is available for hazardous material response, both within their organization or otherwise acquirable.

Hazardous Materials Response Teams

Introduction

Within California there are numerous agencies and firms that provide personnel and equipment for the purpose of providing emergency response to hazardous materials incidents. Jurisdictions, agencies, and private firms have different levels of capability, distinguishable by the level of personal protective equipment used.

A hazardous materials team member, generally, will not:

- Be the Incident Commander;
- Make a commitment for, or authorize, clean-up (mitigation) services;
- Make a news release or provide information to news media except through the Incident Commander or designated Public Information Officer.

The following is a brief discussion of hazardous materials response teams that may be encountered in the field.

Levels C and D

Those agencies that have response teams with **Level D** capability do not enter potentially hazardous atmospheres since they do not use respiratory protection. **Level C** will involve use of respirators only for respiratory protection. Their capabilities are limited to initial evaluation of the hazards, activities that can be accomplished outside the exclusion zone, or when the material involved has been determined to be acceptable to Levels C or D Personal Protective Equipment. Examples include a CalTrans Spill Control Team and a local environmental health team that provides analyses of samples (but does not do the actual sampling).

Levels A and B

Those agencies with **Level A** and **Level B** capabilities can enter potentially hazardous atmospheres, operate in the exclusion zone, obtain and analyze samples, provide rescue, and take measures to stop or lessen the release or threat of release. Fire departments, private cleanup firms, and some environmental health agencies may have the personnel to perform Levels A and B activities. Public agencies that have a hazardous materials team with Levels A or B capabilities will generally provide the following activities:

- Assistance in identification and control (abatement) of the hazardous material.
- Make appropriate recommendations to the Incident Commander, including evacuation of the area and safety to scene personnel.
- Upon request of the Incident Commander, obtain samples and place in container when possible and when needed. Responsibility for identification of samples beyond the capability of the hazardous materials team and for transportation of samples rests with the requesting agency.

When responding to a hazmat incident, be sure to keep accurate accounting of any expendable materials used at the scene.

Levels of Response

Incident Classifications

Levels of response may vary due to differing perceptions of the incident by response personnel, based on their experience, training, capability, and the local response policy. In addition, the characteristics of the material, the nature of its release, and the vulnerability of the receptors (i.e., populations, ecosystems) may also influence the level of response. As an example:

- Response to an uncontained release of a smaller amount of an extremely hazardous substance may require a higher level of response than a response to a contained release of a greater amount of a hazardous material that is less hazardous.
- A spill in an area that is more sensitive (environmentally, culturally, or economically) may increase the level of response, as determined by the Incident Commander or the Unified Command.

The following **Incident Classifications** can be used as a general guideline in determining the appropriate levels of response (oil spill quantities are given in parentheses):

- **Minor** - An incident that can be handled easily using local resources. Significant human health and safety and/or environmental issues do not arise (Oil spills: inland < 1,000 gallons; coastal < 10,000 gallons)
 - **Moderate** - An incident that may require the use of routine mutual aid, either for operational assistance or logistical support. Human health and safety and/or the environment may be affected (Oil spills: inland 1,000 to 10,000 gallons; coastal 10,000 to 100,000 gallons).
 - **Major** - An incident that is beyond the capabilities of a local jurisdiction. Human health and safety and/or the environment are affected. A declaration of a local emergency may be issued, a Governor's Proclamation may be issued and the local Emergency Operations Center (EOC) may be partially or fully activated (Oil spills: inland > 10,000 gallons; coastal > 100,000 gallons).
 - **Catastrophic** - An incident that significantly exceeds local capabilities. Considerable environmental and/or public health impacts have occurred or are expected. A local emergency is usually declared, a Governor's Proclamation may be issued, along with a request for a Presidential Declaration, and the local EOC and the State Operations Center (SOC) are fully activated.
-

ATTACHMENT 6

Hazardous Materials Control Zones

Introduction

Control zones are the geographical areas within the control lines set up at a hazardous material incident. The size and configuration of the zones are not static and should be constantly re-evaluated based on factors such as wind direction, release rate, etc.


Control Zones

The three most commonly used terms for the control zones areas follows:

Exclusion Zone - that area immediately around the spill where contamination occurs or could occur. The innermost of the three zones at a site. Special protection is required for all personnel while in this zone (formerly referred to as the Hot Zone).

Contamination Reduction Zone - that area between the Exclusion Zone and the Support Zone. This zone contains the personnel decontamination station and may require a lesser degree of personnel protection than the Exclusion Zone. This area separates the contaminated area from the Support Zone and acts as a buffer to reduce contamination of the Support Zone (formerly referred to as the Warm Zone).

Support Zone - the clean area outside of the Decontamination Control line where equipment or personnel are not expected to become contaminated and where special protective clothing is not required. This is where resources immediately supporting the hazardous material operation are located. The Command Post and media briefing site are located within the support zone (formerly referred to as the Cold Zone).

 **SPECIAL NOTE ON THE USE OF EXPOSURE VALUES:** The effect of a hazardous substance is based on a reaction of exposed/unprotected organisms or ecosystems to exposure/contamination. Various criteria are used to establish exposure limits to chemicals, such as the threshold limit value (TLV), short term exposure limit (STEL), immediately dangerous to life and health (IDLH), permissible exposure limits (PEL), emergency response planning guidelines (ERPG), etc. Recommended protection may vary widely based on the methodology used to determine these values. Care should be taken in using exposure values as the primary determinant of zone locations and protective action decisions. Victims can be allergic (hypersensitive), old,

young, or infirm, and thus be more at risk from exposure.

Activities within the Control Zones

Within the **exclusion zone**, responsibilities would include, but not be limited to:

- identifying the material(s) involved or threatened to be released;
- conducting rescue, if appropriate; and
- containing and abating the release or threatened release.

Within the **contamination reduction zone**, responsibilities would include, but not be limited to:

- decontamination of victims and emergency personnel; and
- establishing a safe refuge area.

Within the **support zone**, responsibilities would include, but not be limited to:

- providing for emergency medical care;
- providing an area for resources and staging;
- controlling access to all zones; and
- maintaining contact with the Incident Commander at the Incident Command Post.

Outside of the control zones, responsibilities would include, but not be limited to:

- providing evacuation of endangered persons.
-

Decontamination

Decontamination (or *contamination reduction*) is the physical and/or chemical process of reducing and preventing the spread of contamination from persons and equipment used at a hazardous material incident.

At every incident involving hazardous materials there is a possibility that response personnel and their equipment will become contaminated. The contaminant poses a threat, not only to the persons contaminated, but to other personnel who may subsequently have contact with them or the equipment.

Incident responders should have an established procedure to minimize contamination or contact, to limit migration of contaminants, and to properly dispose of contaminated materials. Decontamination procedures should be established upon arrival at the scene, should provide for an adequate number of decontamination personnel, and should continue until the incident commander determines that decontamination procedures are no longer required. Decontamination of victims may be required.

Decontamination consists of removing the contaminants by chemical or physical processes. The conservative action is always to assume contamination has occurred and to implement a thorough, technically sound decontamination procedure until it is determined or judged to be unnecessary.

Procedures for all phases of decontamination must be developed to reduce the possibility of spreading contamination to personnel and equipment. If protective equipment is grossly contaminated, use appropriate decontamination methods for

the chemicals encountered. Initial procedures should be upgraded or downgraded as additional information is obtained concerning the type of hazardous materials involved, the degree of hazard, and the probability of exposure of response personnel and equipment. (Adapted from NFPA 471.)

ATTACHMENT 7

Protective Actions

Introduction

When a circumstance exists where a hazardous atmosphere may place the public in danger, there are **two** main options available to emergency responders:

1. **Evacuation**; or
2. **Sheltering-in-place** (also known as in-place protection).

The Incident Commander may have to decide whether an evacuation of an area or a sheltering in-place is warranted. The need to take some form of protective action is a decision that must be determined quickly and often with a lack of definitive data to assist the decision-makers.

Evacuations have the benefit of removing impacted individuals from the area, but may result in a greater exposure than by allowing the individuals to remain in a protected area within the exposure zone.

Sheltering-in-place activities operate on the theory that toxic vapors pass over structures without moving inside them. Research and accident investigations indicate that staying indoors may provide safe haven during toxic cloud releases; however, sustained continuous releases may eventually filter into a structure and endanger the occupants.

Selection

To select either **evacuation** or **sheltering in-place**, the following information should be obtained:

- The hazardous material(s) involved, its (their) characteristics, amount, condition, configuration location, level of certainty of information, and other relevant data;
- The effect of present and predicted meteorological conditions on the control and movement of hazardous materials and feasibility of protective actions;
- The capability to communicate with both the population at risk and emergency response personnel during and after the emergency;

- The capabilities and resources of the response organizations to implement, control, monitor, and terminate the protective action;
- The population at risk and its capability and resources to implement the recommended protective action; and
- The time factors involved in the emergency and their effect on the selected protective action.

Authority

In California, the authority to close an area is generally vested in persons with **peace officer** powers or the **local health officer**, by authority of Section 409.5 (a) and (c) of the California Penal Code.

Public highways may be closed for the protection of the public by the department of Public Works, the California Highway Patrol, the county board of supervisors, police departments, or the sheriff's office by authority of various sections of the California Vehicle and Streets and Highways Codes.

In situations where the Governor has declared a State of Emergency or local government has declared a local emergency, the appropriate official may authorize an evacuation as according to provisions of the California Government Code.

In some instances, specific state or local agencies, in conjunction with a court order, may be empowered to close or isolate an area.

The question of who has the authority to order an evacuation will have to be decided on a case-by-case basis. Issues to be considered are the ownership of the property; the level, type, and impact of the problem; operating agreements or plans; applicable court orders; statutory authorities; and any overlapping responsibilities. It is quite likely that concurrent, and perhaps even conflicting, responsibilities exist and should be worked out by mutual agreement.

Termination

Similarly, the power to terminate an evacuation may be concurrent with several entities and it would be possible for those entities to have differing opinions and considerations as to when and where an area needs to be closed or to remain closed. Theoretically, one entity might terminate the closure and another re-institute it because of its particular concerns. This would be possible whenever concurrent powers are involved and where no operating agreement or plan defining those types or command decisions has been adopted by all of the concerned parties.

ATTACHMENT 8

Public Information

The following are examples of public information material to assist the Public Information Officer:

Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross



Media right to access

In exercising their First Amendment rights, duly authorized representatives of the media (any news service, newspaper, or radio or television station or network) are allowed to enter a closed area, according to the California Penal Code §409.5 (d).

All reasonable efforts should be made to accommodate members of the media in their collection of the news; however, “upon determination by police personnel that unrestricted access of press representatives to a disaster site will interfere with emergency operations, restrictions on media access may be imposed for only so long and only to such extent as is necessary to prevent actual interference, and members of the press must be accommodated with whatever limited access to site may be afforded without interference [Leiserson v. City of San Diego (Appellate.4 Dist.1986)].”

Further, “a sheriff has a statutory duty to enforce the laws of the state and maintain public order and safety, and such duty implicitly carries authority to limit public access to certain events, including discretion to permit or not permit press and reporters to cross police lines [Los Angeles Free Press, Inc. v. City of Los Angeles (1970)].” Members of the media should be aware that any personnel and/or equipment exiting the Exclusion Zone (Hot Zone) may be subject to decontamination. Access may also be restricted if a site is determined to be a crime scene.

Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross / Hazardous Materials DO NOT Cross

Emergency Public Information Checklist

The following Emergency Public Information (EPI) Checklist is specific to hazardous material incidents and should be considered in addition to the basic EPI Checklist within a jurisdiction's emergency plan. EPI actions will initially be taken by the on scene PIO Team, using personnel assigned by the primary responding agency (additional EPI Staff may be requested from the jurisdiction). The EPI staff at the Emergency Operating Center (EOC) will be mobilized depending on the extent of the hazard. Media should be briefed periodically throughout the year on hazardous material incident response procedures and related EPI procedures.



NOTE: All press releases **must** be cleared through the Incident Commander/Unified Command on-scene, or the Emergency Manager at the EOC.



Unidentified Material

- If the incident is in a heavy traffic area and alternate routes are available, notify media (radio) and request frequent announcements of instructions to avoid the area (coordinate announcements with responding law agency).
- Notify media with full explanation as soon as material has been identified (clear with Incident Commander and technical adviser to avoid unduly alarming or confusing the public).
- If traffic will not impede response efforts, simply respond to media inquiry as necessary.

Low Hazard/Confined Incident (No General Evacuation)

- If appropriate, notify media (primarily radio) that incident has occurred. Indicate alternate routes for traffic and request frequent announcements of instructions to avoid the area.
- Indicate nature of incident and precautions for the public.
- Release hotline number for public inquiries (if available and staffed).
- Indicate response agencies involved (coordinate with response agency PIOs), clean-up efforts underway, and time frame for resumption of normal traffic patterns, if known.

High Hazard Incident (General Evacuation Requested/Mandatory)

- Release all of the above information.

- Release evacuation instructions to media (radio). Use established **Emergency Broadcast System (EBS)** procedures as appropriate.
- Release mass care information when known (coordinate with American Red Cross).
- Have medical/technical spokesperson(s) available to describe the nature of the toxic substance, possible symptoms, and precautions for the public to take.
- Hold media briefing(s) at scene where Incident Commander and medical/technical spokesperson can answer media questions. Arrange for Emergency Manager to hold similar media briefings at the EOC if needed. Spokespersons should be prepared to answer questions similar to those listed below. Suggested responses or cautions are given in quotations:
 - How many deaths/injuries were there? Any property damage?
 - What response agencies were involved?
 - Why was evacuation ordered? Why wasn't evacuation ordered? Number of persons evacuated.
 - What are the long-term effects on people and the environment? Note: Long-term studies have not been done on most chemicals. Be careful not to speculate.
 - What chemicals are involved? How toxic are they? What symptoms are produced? What are their normal uses? What precautions should residents take?
 - What company/agency was involved? Is legal action being considered? Unless a definite Yes or No answer is known, do not speculate. Indicate "I don't know at this time," or "That would be the responsibility of the _____ and I can't answer for them."
 - Has the company been involved in any other incidents recently?
 - Does this jurisdiction have a plan for response to such incidents? If not, why? If so, how did it work? Answer honestly. If there are areas of improvement needed, or if more time is required to fully evaluate response procedures used, so indicate.
 - What hazardous material incident training is required for your response personnel? How can such incidents be avoided in the future? Do not speculate. "This is a subject all the agencies involved, including the _____ company, will be delving into during the next few months. We all want to avoid incidents of this type if at all possible."



Sample News Releases



Sample Media Message #1: Unidentified Spill/Release in Heavy Traffic Area

This is _____ at the _____. An unidentified substance which may be hazardous has been spilled/released at _____ (specific location). Please avoid the area, if possible, while crews are responding. The best alternate routes are _____. If you are already in the area, please be patient and follow the directions of emergency response personnel. The substance will be evaluated by specially trained personnel, and further information will be released as soon as possible.

Thank you for your cooperation.

Sample Media Message #2: Low Hazard/Confined Incident (No General Evacuation)

This is _____ at the _____. A small amount of _____, a hazardous substance, has been spilled/released at _____. Streets are blocked, traffic is restricted, and authorities have asked residents in the immediate _____ block area to evacuate. Please avoid the area. The material is slightly/highly toxic to humans and can cause the following symptoms (list): _____. If you think you may have come in contact with this material, you should (give health instructions and hotline number, if available). For your safety, please avoid the area if at all possible. Alternate routes are _____ and traffic is being diverted. If you are now near the spill/release area, please follow the directions of emergency response personnel. Cleanup crews are on the scene.

Thank you for your cooperation.

- Suggest: EBS use; request repeated broadcast.
- Optional: Close windows and vents. Do not use heaters or air conditioners and other in place protection information.

Sample Media Message #3: High Hazard (General Evacuation Requested/Mandatory)

This is _____ at the _____. A large/small amount of _____, a highly hazardous substance, has been spilled/released at _____. Because of the potential health hazard, authorities are requesting/requiring all residents within _____ blocks/miles of the area to evacuate. If you are (give evacuation zone boundaries), you and your family should/must leave as soon as possible/now. Go immediately to the home of a friend or relative outside the evacuation area or to _____. If you can drive a neighbor who has no transportation or notify friends or neighbors with hearing impairments, please do so. If you need transportation, call _____. Children attending the following schools (list): _____ will be evacuated to _____.

Do not drive to your child's school! Pick your child up from school authorities at the evacuation center. Listen to this station for further instructions.

- *Suggest:* EBS use; request repeated broadcast
- *Optional:* The material is highly toxic to humans and can cause the following symptoms: _____. If you are experiencing any of these symptoms, seek help at a hospital outside the evacuation area, or at the evacuation center at _____. To repeat, if you are in the area of _____, you should/must leave, for your own safety. Do not use your telephone unless you need emergency assistance.

Summary Statement for Media: Hazardous Material Incident

At approximately _____ a.m./p.m. today, a spill/release of a potentially hazardous substance was reported to this office by (a private citizen, city employee, etc.). (Police/fire) units were immediately dispatched to cordon off the area and direct traffic. The material was later determined to be (describe), a (hazardous/harmless) (chemical/substance/material/gas) which, upon contact, may produce symptoms of _____. Precautionary evacuation of the (immediate/X-block) area surrounding the spill was (requested/required) by (agency). Approximately (number) persons were evacuated. Clean-up crews from (agency/company) were dispatched to the scene, and normal traffic had resumed by (time), at which time residents were allowed to return to their homes. There were no injuries reported/or _____ persons, including (fire, police) personnel, were treated at area hospitals for _____ and (all, number) were later released. Those remaining in the hospital are in _____ condition. The response agencies involved were _____.

 *To be Adapted According to the Situation.*

ATTACHMENT 9

FIRESCOPE Hazardous Materials Module to the Incident Command System

Introduction

The Hazardous Materials organizational module is designed to provide an organizational structure that will provide necessary supervision and control for the essential functions required at virtually all hazardous materials incidents. This is based on the premise that controlling the tactical operations of companies and movement of personnel and equipment will provide a greater degree of safety and also reduce the probability of spreading of contaminants. The primary functions will be directed by the Hazardous Materials Group Supervisor, and all resources that have a direct involvement with the hazardous materials incident will be supervised by one of the functional leaders or the Hazardous Materials Group Supervisor

Position Checklists

Hazardous Materials Group Supervisor (ICS-HM-222-1)

The Hazardous Materials Group Supervisor reports to the Operations Section Chief. The Hazardous Materials Group Supervisor is responsible for the implementation of the phases of the Incident Action Plan dealing with the Hazardous Materials Group operations. The Hazardous Materials Group Supervisor is responsible for the assignment of resources within the Hazardous Materials Group, reporting on the progress of control operations and the status of resources within the Group. The Hazardous Materials Group Supervisor directs the overall operations of the Hazardous Materials Group.

- Review common responsibilities.
- Ensure the development of Control Zones and Access Control Points and the placement of appropriate control lines.
- Evaluate and recommend public protection action options to the Operations Chief or Branch director (activated).
- Ensure that current weather data and future weather predictions are obtained.
- Establish environmental monitoring of the hazard site for contaminants.
- Ensure that a Site Safety Plan is developed and implemented.
- Conduct safety meetings with the Hazardous Materials Group.
- Participate, when requested, in the development of the Incident Action Plan.
- Ensure that recommended safe operational procedures are followed.
- Ensure that the proper Personal Protective Equipment is selected and used.
- Ensure that the appropriate agencies are notified through the Incident Commander.
- Maintain Unit/Activity Log (ICS Form 214).

Entry Leader
(ICS-HM-222-2)

Reports to the Hazardous Materials Group supervisor. The Entry Leader is responsible for the overall entry operations of assigned personnel within the Exclusion Zone.

- Review Common Responsibilities.
- Supervise entry operations.
- Recommend actions to mitigate the situations within the Exclusion Zone.
- Carry out actions, as directed by the Hazardous Materials Group Supervisor, to mitigate the hazardous materials release or threatened release.
- Maintain communications and coordinate operations with the Decontamination Leader.
- Maintain communications and coordinate operations with the Side Access Control Leader and the Safe Refuge Area Manager (if activated).
- Maintain communications and coordinate operations with Technical Specialist-Hazardous Materials Reference.
- Maintain control of the movement of people and equipment within the Exclusion zone, including contaminated victims.
- Direct rescue operations, as needed, in the Exclusion Zone.
- Maintain Unit/Activity Log (ICS Form 214).

Decontamination Leader
(ICS-HM-222-3)

Reports to the Hazardous Materials Group Supervisor. The Decontamination Leader is responsible for the operations of the decontamination element, providing decontamination as required by the Incident Action Plan.

- Review Common Responsibilities.
- Establish the Contamination Reduction Corridor(s).
- Identify contaminated people and equipment.
- Supervise the operations of the decontamination element in the process of decontaminating people and equipment.
- Maintain control of movement of people and equipment within the Contamination Reduction Zone.
- Maintain communications and coordinate operations with the Entry Leader.
- Maintain communications and coordinate operations with the Site Access Control Leader and the Safe Refuge Area Manager (if activated).
- Coordinate the transfer of contaminated patients requiring medical attention (after decontamination) to the Medical Group.
- Coordinate handling, storage, and transfer of contaminants within the Contamination Reduction Zone.
- Maintain Unit/Activity Log (ICS Form 214).

Site Access Control Leader
(ICS-HM-222-4)

Reports to the Hazardous Materials Group supervisor. The site Access Control Leader is responsible for the control of the movement of all people and equipment through appropriate access routes at the hazard site and ensure that contaminants are controlled and records are maintained.

- Review Common Responsibilities.

- Organize and supervise assigned personnel to control access to the hazard site.
- Oversee the placement of the Exclusion Control Line and the Contamination Control line.
- Ensure that appropriate action is taken to prevent the spread of contamination.
- Establish the Safe Refuge Area within the Contamination Reduction Zone and appoint a Safe Refuge Area Manager (as needed).
- Ensure that injured or exposed individuals are decontaminated prior to departure from the hazard site.
- Track the movement of persons passing through the Contamination Control Line to ensure that long term observations are provided.
- Coordinate with the Medical Group for proper separation and tracking of potentially contaminated individuals needing medical attention.
- Maintain observations of any changes in climatic conditions or other circumstances external to the hazard site.
- Maintain communications and coordinate operations with the Entry Leader.
- Maintain communications and coordinate operations with the Decontamination Leader.
- Maintain Unit/Activity Log (ICS Form 214).

Assistant Safety Officer - Hazardous Materials
(ICS-HM-222-5)

Reports to the Incident Safety Officer as an Assistant Safety Officer and coordinates with the Hazardous Materials Group supervisor (or Hazardous Materials Branch Director, if activated). The Assistant Safety Officer-Hazardous Materials coordinates safety related activities directly relating to the Hazardous Materials Group operations as mandated by 29 CFR, Part 1910.120 and applicable state and local laws. This position advises the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director) on all aspects of health and safety and has the authority to stop or prevent unsafe acts. It is mandatory that an Assistant Safety Officer-Hazardous Materials be appointed at all hazardous materials incidents. In a multi-activity incident, the Assistant Safety Officer-Hazardous Materials does not act as the Safety Officer for the overall incident.

- Review Common Responsibilities.
- Obtain briefing from the Hazardous Materials Group Supervisor.
- Participate in the preparations of, and implement the Site Safety Plan.
- Advise the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director) of deviations from the Site Safety Plan or any dangerous situations.
- Has authority to alter, suspend, or terminate any activity that may be judged to be unsafe.
- Ensure the protection of the Hazardous Materials Group personnel from physical, environmental, and chemical hazardous/exposures.
- Ensure the provision of required emergency medical services for assigned personnel and coordinate with the Medical Unit Leader.
- Ensure that medical related records for the Hazardous Materials Group personnel are maintained.
- Maintain Unit/Activity Log (ICS Form 214).

**Technical Specialist
- Hazardous
Materials Reference
(ICS-HM-222-6)**

Reports to the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director if activated). This position provides technical information and assistance to the Hazardous Materials Group using various reference sources such as computer data bases, technical journals, CHEMTREC, and phone contact with facility representatives. The Technical Specialist-Hazardous Materials Reference may provide product identification using hazardous categorization tests and/or any other means of identifying unknown materials.

- Review Common Responsibilities.
 - Obtain briefing from the Planning Section Chief.
 - Provide technical support to the Hazardous Materials Group Supervisor.
 - Maintain communications and coordinate operations with the Entry Leader.
 - Provide and interpret environmental monitoring information.
 - Provide analysis of hazardous material sample.
 - Determine personal protective equipment compatibility to hazardous material.
 - Provide technical information of the incident for documentation.
 - Provide technical information management with public and private agencies, i.e., Poison Control Center, Tox Center, CHEMTREC, State Department of Food and Agriculture, National Response Team.
 - Assist Planning Section with projecting the potential environmental effects of the release.
 - Maintain Unit/Activity Log (ICS Form 214).
-

**Safe Refuge Area
Manager
(ICS-HM-222-7)**

The Safe Refuge Area Manager reports to the Site Access Control Leader and coordinates with the Decontamination Leader and the Entry Leader. The Safe Refuge Area Manager is responsible for evaluating and prioritizing victims for treatment, collecting information from the victims, and preventing the spread of contamination by these victims. If there is a need for the Safe Refuge Area Manager to enter the Contamination Reduction Zone to fulfill assigned responsibilities, then the appropriate Personal Protective Equipment shall be worn.

- Review Common Responsibilities.
- Establish the Safe Refuge Area within the Contamination Reduction Zone adjacent to the Contamination Reduction Corridor and the Exclusion Control Line.
- Monitor the hazardous materials release to ensure that the Safe Refuge Area is not subject to exposure.
- Assist the Site Access Control Leader by ensuring the victims are evaluated for contamination.
- Manage the Safe Refuge Area for the holding and evaluation of victims who may have information about the incident, or if suspected of having contamination.
- Maintain communications with the entry Leader to coordinate the movement of victims from the Refuge Area(s) in the Exclusion Zone to the Safe Refuge Area.
- Maintain communications with the Decontamination Leader to coordinate the movement of victims from the Safe Refuge Area into the Unit/Activity Log (ICS Form 214).

Assisting Agencies

Law Enforcement

Depending on incident factors, law enforcement may be an Incident Commander, part of the Unified Command, or may participate as an assisting agency. Some functional responsibilities that may be handled by law enforcement are:

- Isolate the incident area;
 - Manage crowd control;
 - Manage traffic control;
 - Manage public protective action;
 - Provide scene management for on-highway incidents; and
 - Manage criminal investigations, and the contamination reduction corridor, if needed.
 - Maintain criminal investigations.
-

Environmental Health Agencies

In most cases the local or state environmental health agency will be at the scene as the Incident Commander, part of the Unified Command, or may participate as an assisting agency. Some functional responsibilities that may be handled by environmental health agencies are:

- Determine the identity and nature of the Hazardous Materials;
 - Establish the criteria for clean-up and disposal of the Hazardous Materials;
 - Declare the site safe for re-entry by the public;
 - Provide the medical history of exposed individuals;
 - Monitor the environment;
 - Supervise the clean-up of the site;
 - Enforce various laws and acts;
 - Determine legal responsibility;
 - Provide technical advice; and
 - Approve funding for the clean-up.
-

RAPID Force

Cal/EPA's Railroad Accident Prevention and Immediate Deployment (RAPID) Force provides on-site technical assistance at large-scale hazardous material releases resulting from surface transportation accidents. While organized for a state response, RAPID Force membership can involve representation from state and local government, as determined by expertise and incident needs. Once fully integrated into the ICS, RAPID Force members will organize into the Technical Specialist Unit under the Planning Section. Depending on the incident, the Technical Specialist Unit may be comprised of Technical Specialists from the RAPID Force specializing in fields such as Waste Management, Human Health Effects, Environmental Fate, Air Monitoring, Laboratory Services, and Clean-up Technology. Requests for RAPID Force assistance will occur through the normal pre-established channels for requesting assistance (i.e.; Master Mutual Aid,

SEMS). Components of this Technical Specialist Unit will provide recommendations to assist the hazardous material incident response in addressing:

- acute and chronic public health threats;
 - environment risks;
 - sampling and analysis protocols;
 - waste management; and
 - monitoring short-term cleanup as well as long-term site mitigation.
-

ATTACHMENT 10

REFERENCES

Federal Law

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288 as amended
- Superfund Amendments and Reauthorization Act of 1986 (SARA)
- Resource Conservation and Recovery Act of 1976 (RCRA)
- Hazardous Materials Transportation Law (HMTL), 49 USC 5101 *et seq.*
- Occupational Safety and Health Act (OSHA)
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Federal Food, Drug and Cosmetic Act (FFDCA)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Federal Water Pollution Control Act (FWPCA), as amended by Clean Water Act (CWA) and Oil Pollution Act of 1990 (OPA 90)
- Safe Drinking Water Act (SDWA)
- Coastal Zone Management Act (CZMA) of 1972
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA), Title 42 USC, §9601
- Emergency Planning and Community Right-to-Know Act, 1986 (also known as SARA Title III), 42 USC 11001.
- Federal Water Pollution Control Act (FWPCA), 33 USC §1251
- National Historic Preservation Act (NHPA), 1966
- Endangered Species Act (ESA), 1973
- National Environmental Policy Act (NEPA)
- Oil Prevention Act of 1990 (OPA 90)
- Pollution Prevention Act of 1990
- Atomic Energy Act
- Solid Waste Disposal Act

Federal Regulations

- CFR Farmers Home Administration (FmHA) recovery, land use policy, soil conservation service, disaster losses
- 10 CFR Department of Defense (DOD) relates to Defense Production Act, priority supply of crude oil and petroleum products
- 24 CFR Housing and Urban Development , Disaster Assistance Act of 1974
- 29 CFR Hazardous Waste Operation and Emergency Response (HAZWOPER), §1910.120

- 32 CFR Department of Defense (DOD), national defense, military resources in support of civil authorities
- 40 CFR Environmental Protection Agency (EPA) hazardous waste treatment, storage, and disposal facilities.
- 49 CFR, Parts 171-180, Hazardous Materials Regulations
- 44 CFR Federal Emergency Management Agency (FEMA) federal disaster assistance programs, emergency and major disaster declarations, disaster field offices, State and federal coordinating officers
- 45 CFR Public Welfare, Health and Human Services, emergency energy conservation program.

State Law

- Civil Code
 - Environmental Responsibility Acceptance Act, Division 2
- Fish and Game Code
- Food and Agricultural Code
- California Government Code
 - Emergency Services Act, §8550, *et seq.*
 - Oil Refinery and Chemical Plant Safety Preparedness Act §51020 *et seq.*
 - Oil Spill Prevention and Response Act, §8674.1, *et seq.*
 - Planning and Zoning Law, §65000, *et seq.*
- Harbors and Navigation Code
- Health and Safety Code
 - Aboveground Storage of Petroleum, Chapter 6.67
 - Air Pollution, §42320, *et seq.*
 - Air Toxics Hot Spots, §44300, *et seq.*
 - Business & Area Plans, §25500, *et seq.*
 - Department of Toxic Substances Control, Division 38
 - FIRESCOPE Act, §13070, *et seq.*
 - Hazardous Substances Account, Chapter 6.8
 - Hazardous Materials Release Response Plans & Inventory, Chapter 6.95
 - Hazardous Waste Control, Chapter 6.5
 - Local Agency Acutely Hazardous Materials Regulation, Chapter 6.12
 - Petroleum Underground Storage Tank Cleanup, Chapter 6.75
 - Radiation Protection Act, §114650, *et seq.*
 - Redevelopment: hazardous Substance Release Cleanup, Division 24
 - Safe Drinking Water and Toxic Enforcement Act of 1986, Chapter 6.6
 - Underground Storage of Petroleum, Chapter 6.7
 - Unified Hazardous Waste & Hazardous materials Management Regulatory Program, Chapter 6.11
- Labor Code
 - Employees Safety Act, §2801, *et seq.*
- Penal Code
- Public Resources Code
 - Integrated Waste Management Act, §40050, *et seq.*
- Public Utilities Code
- Vehicle Code
 - Hazardous Substances Highway Spill Containment and Abatement Act, §2450, *et seq.*
- Water Code

-
- Title 8, Industrial Relations

California Code of Regulations

-
- Title 14, California Code of Regulations, Natural Resources
 - Division 1, Department of Fish and Game
 - Subdivision 4, Office of Oil Spill Prevention and Response
 - Division 2, Department of Forestry
 - Division 3, Department of Conservation
 - Division 4, Department of Parks and Recreation
 - Division 5, Department of Boating and Waterways
 - Division 5.5, California Coastal Commission, San Francisco Bay Conservation and Development Commission, State Coastal Conservancy, Santa Monica Mountains Conservancy
 - Division 6, California Waste Management Board
 - Division 7, Environmental Affairs Agency
 - Title 19, Public Safety, Division 1, State Fire Marshal
 - Title 19, Public Safety, Division 2, Office of Emergency Services
 - Chapter 1, Standardized Emergency Management System
 - Subchapter 2, Hazardous Substances Emergency Response Training
 - Chapter 4, Hazardous Material Release Reporting, Inventory, and Response Plans,
 - Chapter 4.5, California Accidental Release Prevention (CalARP)
 - Title 22, Social Security
 - Division 4, Environmental Health
 - Division 4.5, Environmental Health Standards for the Management of Hazardous Waste
 - Title 26, Toxics (ties together all other regulations pertaining to toxics under one Title)
-

Mutual Aid Plans

- Emergency Managers Mutual Aid Plan, OES 1997
 - Fire and Rescue Mutual Aid Plan, OES 1988
 - Law Enforcement Mutual Aid Plan, OES 1994
 - Law Enforcement Mutual Aid Plan (SAR) Annex, OES, 1995
 - Medical/Health Mutual Aid Plan (under development)
 - City and County Emergency Plans
 - Local Marine Oil Spill Contingency Plans (see DFG/OSPR for details)
-

State Agency Emergency Plans and Procedures

- Air Pollution Emergency Plan, State Implementation Plan (Chapter 21), ARB, Revised 1990
- California Emergency Resources Management Plan, OES 1968
- California Energy Shortage Contingency Plan, CEC, 1996
- California Fire and Rescue Emergency Plan, OES, 1993
- California Utilities Emergency Plan, OES, 1990
- Hazardous Material Incident Contingency Plan, OES, 1991
- Marine Oil Spill Contingency Plan, DFG, (Working Draft)
- Nuclear Emergency/Terrorism Response Plan, OES, 1991
- Nuclear Power Plant Emergency Response Plan, OES, 1993
- Oil Spill Contingency Plan, DFG, 1983
- Post Disaster Safety Assessment Plan, 1992
- Radiological Intelligence Plan, 1979
- Railroad Accident Prevention and Immediate Deployment (RAPID) Plan,

**Federal Agency
Emergency Plans and
Procedures**

- Federal Response Plan
 - Federal Radiological Emergency Response Plan (FRERP) Advance Copy, April 1996
 - National Interagency Incident Management System (NIIMS), Complete Set of Qualification Documents, National Wildfire Coordinating Group, National Interagency Fire Center
 - National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300)
-

Technical Documents

- To obtain a list of technical publications, call USEPA at **(513) 569-7562**
 - “*Title III On Indian Lands: A Guide to the Emergency Planning and Community Right-to-Know Act*” (USEPA. Technical Assistance Bulletin Volume 10, Number 2)
 - *Tribal Environmental & Natural Resource Assistance Handbook* (USEPA, March 1999)
 - *America Indians and Alaska Native Policy* (FEMA)
 - Title III List of Lists
 - SEMS Documents:
 - SEMS Guidelines
 - SEMS Approved Course of Instruction (ACI)
 - SEMS Bulletins
 - RIMS Manual
 - Regional Emergency Operations Center (REOC) Standard Operating Procedures, OES, 1996
 - Emergency Planning Guidance for Local Government, OES, January 1998
 - Subgrantee Disaster Assistance Resource Manual, Disaster Assistance Division/OES
 - Disaster Recovery Public Assistance Applicant Packet - For State Agencies, Local Government, Special Districts and Private Nonprofit Organizations
 - Guidelines for Documenting Disaster-Related Response and Recovery
 - Costs for Federal (FEMA) and State (NDAA) Public Assistance Programs, California State Controller's Office, 1995
 - State Agency Disaster Response Planning Guideline, OES, 1991
-

Internet URL Addresses **STATE**

California legislation: <http://www.leginfo.ca.gov/>

California Code of Regulations: <http://www.calregs.com>

California law: <http://www.leginfo.ca.gov/calaw.html>

State agency information & web locator:

<http://www.nasire.org/stateSearch/>

California Homepage (locate state & county agencies):

<http://www.ca.gov/s/>

OES Homepage: <http://www.oes.gov>

FEDERAL

Federal agency information & web locator:

<http://www.law.vill.edu/Fed-Agency/fedwebloc.html>

U.S. Coast Guard Marine Safety Office Homepage:

<http://www.uscg.mil/hq/g-m/gmhome.htm>

USCG/MSO SF: <http://www.tcpet.uscg.mil/msosf/htm>

USCG/MSO LA/LB: <http://www.cglalb.com/index.htm>

USCG/MSO SD: <http://www.uscgd1@earthlink.net>

USCG Response Information:

<http://www.dot.gov/dotinfo/uscg/hq/g-m/nmc/response/Default.htm>

USCG/ICS Field Operations Guide:

<http://www.dot.gov/dotinfo/uscg/hq/g-m/nmc/response/ICS.htm>

USCG/ICS Forms:

<http://www.dot.gov/dotinfo/uscg/hq/g-m/nmc/response/forms/Default.htm>

USCG Publications, Reports, Studies & Forms:

<http://www.dot.gov/dotinfo/uscg/hq/g-m/nmc/genpub.htm>

National Response Center:

<http://www.dot.gov/dotinfo/uscg/hq/nrc/>

EPA's American Indian Environmental Office:

<http://www.epa.gov/indian>
