

GOVT. OF MAHARASHTRA

Off Site Disaster Management Plan for Aurangabad District

**Office of Joint Director, Industrial Safety & Health,
Aurangabad.**



June 2016

PREFACE

The Industries in the District of Aurangabad are well spread out in 8 different pockets. These pockets are defined as various Industrial zones in this Disaster Control Plan.

In the recent past, we have experienced Industrial Disasters of serious nature. One of which is Bopal tragedy, one cannot forget. The outcome of such disasters resulted in tremendous increase in awareness of people all over the world. Governments of various countries world-wide have taken prompt action in preventing such Disasters & formalising mitigation activities in case of eventualities. Various groups, institutions, authorities are constantly working / updating such action plans.

Under the leadership of District Collector Miss.Nidhi Pandey & Technical guidance of Mr. A.B.Kamble Jt. Director DISH, this Disaster Control plan is prepared.

The objective of this plan is to increase awareness of Industry Management & different government departments in view of mitigating the eventualities & to provide them necessary information with regard to resources available in the District. This plan deals with Industrial Disasters only.

There are 24 MAH units identified by DISH & all of them have prepared their “On-site” Emergency Plan to mitigate emergencies within factory limits.

In the year 1989, Central Govt. enacted the rules under “Environment Protection Act” known as Manufacture, Storage & Import of Hazardous Chemicals Rules 1989. Under the said rules statutory provisions were laid down for preparation of On-site Emergency Management Plan by the occupiers of the Major Accident Hazard factories & Off-site Disaster Control Plan by the District Collector / District Emergency Authority designated by State Govt.

The Central Govt. subsequently gazetted additional rules in August 1996 making additional provisions with regard to Emergency Planning Preparedness & Response for chemical accidents. These rules are known as “Chemical Accidents” (Emergency Planning, Preparedness & Response) Rules 1996. Under these rules Central / State / District / Local crises groups are required to be constituted. The District crises group has to assist in the preparation of the District Off- Site Disaster Control Plan. This off-site Disaster Control Plan is prepared taking into consideration aforesaid legal requirement.

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A.1 ABBREVIATIONS

ACP	:	Assistant Commissioner of Police
BLEVE	:	Boiling Liquid Expanding Vapour Explosion
CPCB	:	Central Pollution Control Board
CCE	:	Chief Controller of Explosive
CCG	:	Central Crisis Group
CETP	:	Common Effluent Treatment Plan
CIDCO	:	City & Industrial Development Corporation
CFO	:	Chief Fire Officer
CMG	:	Crisis Management Group
CMO	:	Chief Medical Officer
DCG	:	District Crisis Group
DCP	:	Deputy Commissioner Of Police
DIO	:	District Information Officer
DISH	:	Directorate of Industrial Safety & Health
DGFASLI	:	Director General of Factory Advice Service & Labour Institute
DGP	:	Director General of Police
DIGP	:	Deputy Inspector General of Police
EP Act	:	Environment Protection Act
ER	:	Emergency Response
EPPR	:	Emergency Preparedness & Planning Rules
ECC	:	Emergency Control Centre
EOC	:	Emergency Operating Centre
F & ERS	:	Fire & Emergency Response Station
FDA	:	Food & Drug Administration
HSD	:	High Speed Diesel
HAZMAT	:	Hazardous Material
IDLH	:	Immediate Danger Life & Health
IC	:	Incident Commander IC is responsible for Incident Activities including development and implementation of strategic decisions and for approving ordering and releasing of resources
ICS	:	Incident Commander System
KG	:	Kilogram
LPG	:	Liquefied Petroleum Gas
LCG	:	Local Crisis Group
LC50	:	Level of Concern 50
MAH	:	Major Accident Hazard
MARG	:	Mutual Aid & Response Group
MIDC	:	Maharashtra Industrial Development Corporation
MPCB	:	Maharashtra Pollution Control Board
MSEB	:	Maharashtra State Electricity Board
MSDS	:	Material Safety Data Sheet

MTNL	:	Mahanagar Telephone Nigam Limited
MV Act	:	Motor Vehicle Act
MCL Scenario	:	Maximum Credible Loss Scenario
MIA	:	Marathwada Industries Association
NGO	:	Non Governmental Organisation
AMC	:	Aurangabad Municipal Corporation
NCMP	:	National Crisis Management Plan
ORG	:	Operation Response Group
PWD	:	Public Works Department
PRO	:	Public Relation Officer
PPE	:	Personal Protective Equipments
PHC	:	Primary Health Centre
RTO	:	Regional Transport Officer
SSI	:	Small Scale Industries
SCMP	:	State Crisis Management Plan
SMPV Rules	:	Static & Mobile Pressure Vessels Rules
SCG	:	State Crisis Group
TREMCARD	:	Transport Emergency Management Card
VCE	:	Vapour Cloud Explosion

A.2 MOEF Guidelines

SR. NO	ELEMENT	MOEF Guideline Section
1	Incident Information Summary	1.0
2	Promulgation Document	2.0
3	Legal Authority & Responsibility For Response	3.0
4	Table of Contents	4.0
5	Abbreviations & Definitions	5.0
6	Planning Factors, Methodology of Identifying the Hazards	6.1-6.6,6.9
7	Impact Analysis	6.6.2-6.6.3,6.8
8	Concept Of Operation	7.1-7.3
9	Co-ordination Of Plan	7.4
10	Integration of Plan	7.6-7.7,7.9-7.12
11	Mutual Aid	7.8
12	Purpose of the Plan	8.1
13	Distribution List	8.2
14	Amendments Record	9.1
15	Emergency Notification Procedures	10.1-10.8
16	Notification to Response	11.0
17	Directions & Control to Response	12.0-12.5
18	Classification Of Incident Severity Levels	12.8-12.9
19	Communication among Responders	13.0
20	Responsibilities in Public Notification	14.2
21	Public Information & Community Relations	15.0
22	Resource Management	16.1-16.6
23	Co-ordinations Of Resources Available	16.7-16.9
24	Health & Medical	17.0
25	Safety Of Response Persons	18.0
26	Personal Protections Of Citizens	19.0
27	Evacuation Procedures	20.0
28	Fire & Rescue	21.0
29	Law Enforcement	22.0
30	On-going Incident Assessment	23.0
31	Human Services	24.0
32	Public Works	25.0
33	Spill Containment & Clean-up	26.0
34	Documentation & Investigation Follow up	27.0
35	Procedures For Testing and Updating the Plan	28.0
36	Training	29.0

A.3 INTRODUCTION

Hazardous Materials - The Need for Emergency Planning :

Major disasters like that in Bhopal, India, in December 1984, which resulted in more than 2,000 deaths and over 200,000 injuries are rare. Reports of hazardous materials spills and releases, however, are increasing in common place. Thousands of new chemicals are developed each year. Citizens and Officials are concerned about accidents. (e.g. highway incidents, warehouse fires, train derailments, industrial incidents) happening in their communities. Recent evidence shows that Hazardous materials incidents are considered by many to be the most significant threat facing local jurisdictions. Communities need to prepare themselves to prevent such incidents and to respond to the accidents that occur.

A.4 Purpose of This Plan

The purpose of this plan is to assist public in planning for hazardous materials incidents. The Objectives of this plan are to :

- ❖ Focus public activity on emergency preparedness and response;
- ❖ Provide public with information useful in organising the planning task;
- ❖ Furnish criteria to determine risk and to help public decide whether they need to plan for hazardous materials incidents.
- ❖ Help public conduct planning that is consistent with their needs and capabilities; and
- ❖ Provide a method for continually updating a public's emergency plan..

This plan will not :

- ❖ Give a simple “ fill-in-the-blanks” model plan (because each public needs an emergency plan suited to its own unique circumstances);
- ❖ Provide details on response techniques; or
- ❖ Train personnel to respond to incidents.

Public planners will need to consult other resources in addition to this plan.

ANNEXURE -1 INCIDENT INFORMATION SUMMARY

A. 5

PLAN DISTRIBUTION

1. Chairman - District Collector
2. Chairman LCG - Sub-Divisional Magistrate
3. Member Secretary DCG / Joint Director DISH, Aurangabad
4. Member Secretary LCG / Deputy Director DISH, Aurangabad
5. Chief Medical Officer AMC
6. Police Commissioner, Aurangabad
7. Superintendent of Police, Aurangabad
8. Chief Fire Officer AMC, Aurangabad
9. RTO, Aurangabad
10. Joint Chief Control of Explosive, CGO Complex, CBD Belapur, Navi Mumbai.
11. District Information Officer, Aurangabad
12. District Agricultural Officer, Aurangabad
13. RDC/ Tahsildar, Aurangabad
14. District Supply Officer, Aurangabad
15. Civil Surgeon, Aurangabad
16. Medical Superintendent Medical Hospital, Aurangabad
17. District Health Officer, Aurangabad
18. Regional Officer MPCB, Aurangabad
19. President, Marathawada Industries, Association
20. Certifying Surgeon, Aurangabad
21. Executive Engineer MIDC, Aurangabad
22. Executive Engineer PWD, Aurangabad
23. Experts
 - 1) Mr. Devidas Dethekar
 - 2) Mr. Anil Nalawde
 - 3) Mr. Milind Sangvikar
 - 4) Mr. Amit Dagde.
 - 5) Mr. Rajan Koranne
24. All MAH Factories in Aurangabad District
25. Co-ordinator MARG Aurangabad district
26. NGO

A.6 RECORD OF AMENDMENT

This document shall be reviewed and updated once in year to assure consistency with evolving capabilities and Procedures, the District Collector Aurangabad is expected to be responsible for maintaining this document and assuring that all personnel involved in emergency response are familiar with the procedures described herein, The present document is edition No.2.

Edition	Date of change	Recording Signature	Page No. of change made.	Remark
Revision –1	May 2000			Draft
Revision – 2	Sept. 2007			Draft
Revision – 3	Oct. 2012			Draft
Revision – 4	Jan. 2015			Draft
Revision -5	June.2016			Draft

A.7.1 BRIEF DESCRIPTION OF AURANGABAD DISTRICT INDUSTRIAL AREA :

The Aurangabad District Industrial Area which has a concentration of various kinds of industries is situated in whole district. There are many types of industries in this area including chemical industries like petroleum, Dyes and intermediate, pesticide and insecticide, Heavy organic and inorganic, pharmaceutical, Sugar and engineering etc. These industries are engaged in handling storage and transportation of hazardous chemicals. The sizes of the industries also vary greatly, from small scale industries (SSI) to large units. Even industries which are not in the strict sense chemical industries also store a large number of chemicals in various quantities, like LPG and can prove to be dangerous to the surroundings if released i.e. off-site emergency.

Besides the off-site emergencies which are caused by on-site incidents and emergencies, there is another hazard in the area for which there is a need to provide Emergency Control mechanism in off-site plan. There include transportation emergencies.

Other significant location from where the emergency situation can arise is the ware housing installations including LPG local depot Aurangabad. The effective means to identify and control the hazards emanating from stored materials in warehouses and to rain control on any emergency situation must be found out.

A.7.2 TYPES OF EMERGENCIES

The Off - Site Disaster Control Plan envisages the following types of emergencies

- TOXIC RELEASE OF CHEMICAL SUSTANCES / GASES
- FIRE / EXPLOSION / BLEVE / VCE
- TRANSPORATION EMERGENCIES.
- SPILLAGE (CORROSIVE CHEMICAL) ON SITE EMERGENCIES ONLY

A.8. PROMULGATION DOCUMENT

STATEMENT OF PLAN AUTHORITY

For the effectiveness of this Off - Site Plan, the AGENCIES listed below are committed to implement the provisions of this plan.

Name and designation

1. Chairman - District Collector
2. Chairman LCG - Sub-Divisional Magistrate
3. Member Secretary DCG, Aurangabad
4. Member Secretary LCG / Deputy Director DISH, Aurangabad
5. Chief Medical Officer AMC
6. Police Commissioner, Aurangabad
7. Superintendent of Police, Aurangabad
8. Chief Fire Officer AMC, Aurangabad
9. RTO, Aurangabad
10. Joint Chief Control of Explosive, CGO Complex, CBD Belapur, Navi Mumbai.
11. District Information Officer, Aurangabad
12. District Agricultural Officer, Aurangabad
13. RDC/ Tahsildar, Aurangabad
14. District Supply Officer, Aurangabad
15. Civil Surgeon, Aurangabad
16. Medical Superintendent Medical Hospital, Aurangabad
17. District Health Officer, Aurangabad
18. Regional Officer MPCB, Aurangabad
19. President, Marathawada Industries, Association
20. Certifying Surgeon, Aurangabad
21. Executive Engineer MIDC, Aurangabad
22. Executive Engineer PWD, Aurangabad
23. Experts
 1. Mr. Devidas Dethekar
 2. Mr. Anil Nalawde
 3. Mr. Milind Sangvikar
 4. Mr. Amit Dagde
24. All MAH Factories in Aurangabad District
25. Co-ordinator MARG Aurangabad district
26. NGO

A.9 LEGAL AUTHORITY AND RESPONSIBILITY FOR RESPONSE

As per Chemical Accidents Emergency Planning Preparedness & Response Rules 1996 prescribed under Environment (Protection) Act, 1986, the 4 crisis groups are formed. Authorised legislation and regulations are as follows :

Central Crisis Group

Authority	Responsibility
1. Secretary Govt. of India, Ministry of Environment & Forest	E P Act & Rules
2. Joint Secretary/ Adviser (MOEF)	-do-
3. Joint Secretary Labour	Factories Act, 1948.
3. Joint secretary /Adviser (Chemical & Petrochemicals)	Petroleum Act
4. Director – General, Civil Defence	Relief & Rescue
5. Fire Adviser, Directorate General Civil Defence	Fire & Rescue
6. Chief Controller Of Explosives	Indian Explosives Act
7. Joint Secretary (Health)	Health & Medical
8. Director – General ICMR	Health & Medical
9. Chairman CPCB	E P Act & Rules
10. Director – General ICAR	Insecticides Act
11. Director – General CSIR	Technical Advise
12. Joint Secretary (Fertilisers)	Insecticides Act
13. Director – General (Telecom.)	Telecom Act
14. Joint Secretary (Surface Transport)	MV Act & Merchant Shipping Act
15. General Manager (Rail Safety)	Railway Act
16. Adviser, Centre For Environment and Explosive Safety	EP Act & Indian Explosives Act
17. Controller of Mines	Mines Act-1952
18. Chief Inspector Dock Safety	Dock Workers (Safety, Health & Welfare) Act
19. Chairman AERB	Atomic Energy Act 1972

State Crisis Group

Authority	Responsibility
1. Chief Secretary	Overall Incharge Of the State
2. Secretary (Labour)	Factories Act 1948
3. Secretary, Environment	EP Act & Rules
4. Secretary, Health	Health & Medical
5. Secretary, Industries	Containment & Clean up
6. Secretary, Public Health Engg	Containment & Clean up
7. Chairman, MPCB	EP Act & Rules
8. Commissioner Transport	MV Act & Rules
9. Director, Industrial Safety & Health	Factories Act 1948
10. Chief Fire Officer AMC	Fire & Rescue
11. Director General Of Police	Law & Order

District Crisis Group

Authority	Responsibility
1. District Collector Aurangabad	Overall Incharge
2. Joint Director DISH Aurangabad	Factories Act 1948
3. District Emergency Officer	Same as Chairman LCG
4. Chief Fire Officer Aurangabad	Fire & Rescue
5. District Information Officer	Public Information
6. Joint Chief Controller Of Explosives	Indian Explosives Act
7. Chief, Civil Defence	Relief & Rescue
8. One representative of trade Unions	Information & help
9. Commissioner Of Police	Law & Order
10. District Health Officer/Chief Medical Officer	Health & Medical
11. Commissioner of AMC	Health & Medical
12. Dept of Public Health Engineering	Public Works
13. RO MPCB	EP Act & Rules
14. District Agriculture Officer	Insecticides Act
15. 4 persons nominated by District Collector (DC)	Public Communication
16. RTO Aurangabad	MV Act
17. One representative of industry nominated by DC	Resource
18. Chairman LCG & District Collector	Prepare & Implement Offsite Plan

Local Crisis Group

Authority	Responsibility
1. Sub Divisional Magistrate	Overall In charge
2. Deputy Director DISH Aurangabad	Factories Act 1948
3. Industries in the area	Resource
4. Transporters of Hazardous Chemicals	Resource & Information
5. Fire Officer, AMC	Fire & Rescue
6. ACP Aurangabad	Law & Order, Rescue & Relief
7. Block Development officer	Communication
8. Primary Health Officer	Health & Medical
9. Editor of Local News Paper	Media
10. Community Leader nominated by Chair person	Public Awareness
11. Representative of non Govt. Organisation nominated by Chair person	Information
12. Doctors nominated by Chair person	Medical assistance
13. Social workers nominated by Chair person	Rehabilitation

A.10 List of MAH units/Chemical units & Inventory

In the following table information regarding chemicals, quantity stored / used likely accident scenarios are compiled as ready recknor.

a) MAH Unit :-

Sr. No.	Name and Address of MAH unit	Hazardous material	Max. inventory (MT)	Accident Scenarios
1	2	3	4	5
1.	Bajaj Auto Ltd., Bajajnagar, Waluj, Aurangabad	L.P.G.	280 MT.	Fire & VCE
2.	Birla Precision Technologies Ltd., (Foundry Division) B-15/3/2, MIDC Waluj, Aurangabad	L.P.G.	18.7 T	Fire & VCE
3.	Can Pack India Pvt. Ltd., (Glass Bottles Plant) H-14/1, MIDC Waluj, Aurangabad	L.P.G.	120 T	Fire
4.	Ipca Laboratories Ltd., H-4, MIDC, Waluj, Aurangabad	Chlorine	10 MT.	Toxic Gas Release
5.	Kabsons Industries LTD. (LPG Bottling Plant) B-3 MIDC Waluj Aurangabad	L.P.G.	18.75 T	Fire & VCE
6.	Metalman Auto Pvt. Ltd., B-12, MIDC Waluj, Aurangabad	L.P.G.	16 MT.	Fire & VCE
7.	Midas Care Pharmaceuticals Pvt.Ltd., B-16, MIDC, Waluj, Aurangabad	L.P.G.	16 MT.	Fire & VCE
8.	Morganite Crucible (India) Ltd. B-11/12, MIDC Waluj, Aurangabad	L.P.G.	32 MT.	Fire & VCE
9.	N.R.B. Bearing Ltd., E-72/1, MIDC, Waluj, Aurangabad	L.P.G.	16.5 MT	Fire & VCE
10.	Sterlite Technologies Ltd., E-1, 2, 3, MIDC Aurangabad	Chlorine	40 T	Toxic Gas Release
11.	Can Pack India (P) Ltd. L-18/25-28 Waluj MIDC A'bad	L.P.G.	100 MT	Fire & VCE
12.	Endurance Technologies P. Ltd., L-6/3, MIDC Waluj, Aurangabad	L.P.G.	16.8 MT	Fire & VCE
13.	Rubicon Formulations Pvt. Ltd., M-162/163, MIDC Waluj, A'bad	L.P.G.	20 MT	Fire & VCE
14.	Sanjeev Auto Parts Manufacturing Pvt. Ltd. C-4, MIDC Waluj, Aurangabad	L.P.G.	16.6 MT	Fire & VCE
15.	Varroc Engineering Pvt. Ltd. (Unit-V) L-6/2, MIDC Waluj, Aurangabad	L.P.G.	20 T	Fire & VCE
16.	Varroc Engineering Pvt. Ltd. M-191/3, MIDC Waluj, Aurangabad	L.P.G.	20 T	Fire & VCE
17.	Wipro Ltd. (Lighting Division) L-8, MIDC, Waluj, Aurangabad	L.P.G.	25 MT.	Fire & VCE

18.	Allied Blenders & Distillaries Pvt. Ltd Plot No-6 MIDC Chikalhana Aurangabad.	Alcohol / Sprit	2576 T	Fire
19.	Hindustan Petroleum Crop. Ltd., (L.P.G. Bottling Plant) M.I.D.C., Chikalhana, Aurangabad	L.P.G.	850 MT.	Fire & VCE
20.	United Spirits Ltd., MIDC, Chikalhana, Aurangabad	Ethyl Alcohol	4800 MT.	Fire
21.	Hindalco Almex aerospace LTD. AL-1 MIDC Area shendra, Aurangabad.	Propane	50 MT	Fire & VCE
22.	Radico NV Distilleries , Maharashtra LTD. Plot no D-192-195 MIDC Shendra Aurangabad.	Alcohol	1000 KL	Fire
23.	Linde India Ltd., Gut No. 14, Villae Kamlapur, Tq. Gangapur, Dist. Aurangabad	L.P.G.	40 T	Fire
24.	Siddheshwar Sah. Sakhar Karkhana Ltd. (Distillery Division) Sillod, Tq. Sillod, Dist. Aurangabad	Ethyle Alcohol	Factory Close	Fire

Other Chemical Factories :-

Sr.No	Name of Factories	Address	Chemical
1	AEGIS GLASS CONTAINERS PVT. LTD.	C-84, MIDC, WALUJ	LPG
2	AEGIS GLASS AMPPULES PVT. LTD.	C-88, MIDC, WALUJ	LPG
3	AJANTA PHARMA LTD.	B-5/6/4, MIDC, PAITHAN	IPA, METHANOL
4	AJANTA PHARMA LTD.	O-31, MIDC, CHIKALTHANA	IPA
5	AMARANT DYCHEM	A-88, MIDC, PAITHAN	AMMONIA
6	AMRI INDIA PVT. LTD.	G-1/1, MIDC, WALUJ	TOLUENE, IPA
7	AURANGABAD ELECTRICALS LTD. (PLANT-IX)	GUT NO. 104, PHAROLA, PAITHAN, A'BAD	METHANOL, LPG
8	AURANGABAD BREWERIES LTD.	H-9 TO 11, MIDC, WALUJ	AMMONIA
9	ATRA PHARACUTICALS LTD.	H-19, MIDC, WALUJ	IPA

10	AD PHARMA PVT. LTD.	G-39/8, MIDC, WALUJ	BROMINE, IPA
11	B. B. CHEMICALS	B-53, MIDC, PAITHAN	AMMONIA, HCL
12	BIRLA KENNAMETAL LTD.	B-15/4, MIDC, WALUJ	METHANOL
13	BALKRISHNA INDUSTRIES LTD.	B-66, MIDC, WALUJ	NAPHTHA
14	B. K. ENTERPRISES	H- , MIDC, CHIKALTHANA	TOLUENE
15	BIOSTDT INDIA LTD.	B-33, MIDC,	PESTICIDES

		CHIKALTHANA	
16	CENTRON RAZOR BLADE CO.	MIDC, CHIKALTHANA	AMMONIA
17	CONCEPT LABORATORIES,	GUT NO. 218, CHITEGAON,	METHANOL, ACETONE
18	CONCEPT PHARMA LTD.	A-28, MIDC, CHIKALTHANA	METHANOL, IPA, XYLENE
19	CRYSTAL SURFACTANTS & CHEMICALS	B-21, MIDC, PAITHAN	AMMONIA INTERMEDIATES
20	EXEDY INDIA. LTD.	L-4, MIDC CHIKALTHANA	LPG
21	DHUD SHITALIKARN KENDRA	PATHRI, TQ. PAITHAN DIST. AURANGABAD	AMMONIA
22	DHUD SHITALIKARN KENDRA	GANDHELI, TQ. PAITHAN DIST. AURANGABAD	AMMONIA
23	ELLORA GASES PVT. LTD.	F-97, MIDC, WALUJ	ACETYLENE
24	ENCORE HEALTH CARE P LTD	MIDC TAL. PAITHAN,	IPA, METHANOL
25	ENDURANCE TECHNOLOGIES PVT.LTD.	K-226/2, MIDC, WALUJ	LPG
26	ENDURANCE TECHNOLOGIES PVT.LTD.	K-227, MIDC, WALUJ	SKO, LDO
27	ENDURANCE TRANSMISSION SYSTEMS P LTD.	K-226/1, MIDC, WALUJ	AMMONIA, LPG
28	FINE PACKAGING PVT. LTD.	K-64, MIDC, WALUJ	TOLUENE
29	FINEKEM LABORATORIES PVT. LTD.	G-39/5, MIDC, WALUJ	IPA, METHANOL
30	FDC LTD.	B-8, MIDC, WALUJ	IPA
31	JHAVERI FLEXO INDIA LTD.	GUT NO. 74, VILLAGE FAROLA, PAITHAN	IPA, XYLENE
32	FORTUNE PHARMA PVT.LTD,	B-6, MIDC SHENDRA, AURANGABAD	IPA, METHANOL, TOLUENE
33	FOSTERS INDIA LTD.	M-59, MIDC, WALUJ	AMMONIA
34	FRIGORIFICOALLANA LTD.,	VILLEGGE GEVRAI, TQ. PAITHAN, A'BAD	AMMONIA
35	GOVT. MILK SCHEME	JALNA ROAD, A'BAD	AMMONIA
36	GALAXY LABORATORIES PVT.LTD.	E-22, MIDC RAL. STATION, A'BAD	AMMONIA, HYDROGEN, IPA

37	GARWARE CHEMICALS LTD. (DMT PLANT)	PUNE ROAD, WALUJ	METHANOL, XYLENE, TOLUENE
38	GARWARE INDUSTRIES LTD.	PUNE ROAD, WALUJ	METHANOL, XYLENE, TOLUENE
39	GARWARE INDUSTRIES	K-121, MIDC, WALUJ	METHANOL, XYLENE,

			TOLUENE
40	GARWARE POLYSTER LTD. -POLY CHIP	A'BAD-PUNE ROAD WALUJ	METHANOL, XYLENE, TOLUENE
41	GLOBE TROTTERS PVT.LTD	GUT NO. 218, CHITEGAON TQ. PAITHAN	METHANOL, ACETONE
42	HARMAN FINOCHEM PVT. LTD.	MIDC, CHIKALTHANA	METHANOL, ACETONE
43	HARMAN FINOCHEM PVT.LTD.	A-100, MIDC, SHENDRA	METHANOL, ACETONE
44	HIFIELD AG CHEM INDIA PVT. LTD.	G-39/26, MIDC, WALUJ	PESTICIDES
45	HIMALAYA ICE FACTORY	W-48, MIDC, WALUJ	AMMONIA
46	HINDUSTAN COMPOSITES LTD.	D-2/1, MIDC, PAITHAN	METHANOL, ASBESTOS
47	INDO EUROPIAN BREWARIES LTD.	B-74/2, MIDC, WALUJ	AMMONIA, CO2
48	J. K. ANSELL LTD.	G-35, MIDC, WALUJ	AMMONIA
49	SURUCHI MAHILA GRUH UDYOG	H-5/30, MIDC,CHIKALTHANA	AMMONIA
50	JONSON & JONSION LTD.	B-15/1, MIDC, WALUJ	ETHYLENE OXIDE
51	KOKAN AGRO MARINE INDUSTRIES PVT.LTD.	S.NO. 48, BABARGAON, TQ. GANGAPUR	ETHYL ALCOHOL
52	LAXMI ICE FACTORY	GANGAPUR ROAD WALUJ, A'BAD	AMMONIA
53	LAXMI METAL PRESSING PVT.LTD.	E-77, MIDC, WALUJ	LPG
54	LAXMI NARAYAN MARKETING	GUT NO. 56, ZALTA, AURANGABAD	AMMONIA
55	LUPIN LTD.	A-28/1, MIDC, CHIKALTHANA	IPA
56	LILASONS INDUSTRIES LTD.	H-5-7, MIDC, WALUJ	AMMONIA
57	AJANTA PHARMA LTD.	GUT NO. 14, CHITEGAON PAITHAN ROAD	METHANOL
58	SAB MILLER BREWERIES LTD.	L-10, MIDC, WALUJ	AMMONIA
59	MILK CHILLING CENTER	KANNAD	AMMONIA

60	MARATHAWADA CHEMICAL PVT. LTD.	SATARA ROAD, NEAR RAIL. MIDC, A'BAD	BETA NAPHTHANILE, H2SO4
61	NAVKETAN RESEARCH & LAB. PVT LTD.	F-107/108, MIDC, WALUJ	METHANOL, M.C.
62	NAYANTARA CHEMICALS PVT.LTD.	GUT NO. 46/48, CHITEGAON, PAITHAN	IPA, HCL
63	NRB BEARING PVT. LTD.	E-40, MIDC	LPG

		CHIKALTHANA	
66	HOSPIRA HEALTHCARE INDIA PVT. LTD.	L-8, MIDC, WALUJ	METHANOL, IPA, ACETONE, H2
65	HOSPIRA HEALTHCARE INDIA PVT. LTD.	L-9, MIDC, WALUJ	METHANOL, IPA, ACETONE, H2
66	PARAMOUNT INDUSTRIES	K-12, MIDC, WALUJ	LPG
67	IPCA LABORITRIES LTD.	G-6, MIDC, WALUJ	METHANOL, IPA, ACETONE, MDC
68	PEPSICO INDIA HOLDING PVT .LTD.	D-7, MIDC, PAITHAN	AMMONIA, CO2
69	PREMIUM ENERGY TRANSMISSION LTD.	P-31, MIDC, CHIKALTHANA	METHANOL
70	OM SAI ENTERPRISES	A-101, MIDC, SHENDRA	AMMONIA
71	AMRI INDIA PVT. LTD.	K-26, MIDC, WALUJ	METHANOL, IPA, ACETONE
72	RADIANT AGRO-CHEM PVT. LTD.	F-15, MIDC, CHIKALTHANA	NITRIC ACID
73	ROHIT EXHAUST P LTD.	K-245, MIDC, WALUJ	LPG
74	S. N. METALURGICAL SERVICES	B-70, MIDC, WALUJ	METHANOL, MDI
75	SARK ALLUM LTD.,	MALIWADA, A'BAD	H2SO4
76	SKOL BREWERIES LTD.	L-5, MIDC, WALUJ	AMMONIA
77	SATELLITE PHARMACEUTICALS P.LTD.	B-40, TQ. PAITHAN	H2SO4 , HNO3
78	SUNRISE INDUSTRIES	H- , MIDC, CHIKALTHANA	TOLUENE
79	SUDRASHAN SAUR PVT. LTD.	K-241, MIDC, WALUJ	FDI
80	STERLITE INDUSTRIES (I) LTD.	MIDC, WALUJ	HYDROGEN
81	MYLAN LABORATORIES LTD.	H-39/40, MIDC, WALUJ	LPG
81	SPA PHARMACEUTICALS LTD.	B-20, MIDC, WALUJ	IPA
82	SHREYA LIFE SCIENCES PVT. LTD.	B-9/2, MIDC, WALUJ	IPA
83	SHRI GENESH PRESS-N-COAT INDUSTRIES PVT. LTD.	M-152/151, MIDC, WALUJ	LPG
84	SIMLA ICE FACTORY	G-40, MIDC, CHIKALTHANA	AMMONIA
85	GOOD YEAR SOUTH ASIA TYRES LTD.	H-18, MIDC, WALUJ	NAPHTHA
86	TAIYO LUCID PVT. LTD.	M-101, MIDC, WALUJ	HCL
87	TOPCEL TAPES PVT.LTD.	W-11, MIDC, CHIKALTHANA	TOLUENE
88	TWIN RESERVIOUR	MIDC, CHIKALTHANA	CHOLRINE
89	VARROC ENGG. PVT. LTD.PLANT- III	M-165/167, MIDC, WALUJ	MDI

90	VALUE INDUSTREIS LTD. (REFE & AIR COND.)	CHITEGAON, PAITHAN DIST. AURANGABAD	MDI, L.P.G.
91	VALUE INDUSTREIS LTD. (WMR & AC DIV.)	CHITEGAON, PAITHAN DIST. AURANGABAD	MDI
92	WATER TREATMENT PLANT	CHITEGAON, PAITHAN DIST. AURANGABAD	CHOLRINE
93	WATER TREATMENT PLANT	MIDC, WALUJ	CHOLRINE
94	WOCKHARDT LTD. (BIOTECH PARK)	H-14/2, MIDC, WALUJ	IPA, HCL, ACN, LIQ. AMMONIA TOLUNE
95	WOCKHARDT LTD. (CEPNALOSPARIN DIV)	H-15/2, MIDC, WALUJ	IPA, HCL, TOLUNE
96	WOCKHARDT LTD. (EOU TAB)	H-14/2, MIDC, WALUJ	IPA, HCL, TOLUNE
97	WOCKHARDT LTD.	MIDC, CHIKALTHANA	IPA, HCL, TOLUNE
98	YASHANAND FILAMETS PVT.LTD.	F-63, MIDC, WALUJ	MDI
99	MOTI INDUSTRIES (ICE FACTORY)	E-76/8, MIDC, WALUJ	AMMONIA
100	GARWARE POLYSTER LTD. (FILM PLANT)	L-5, MIDC, CHIKALTHANA	TOLUNE, E.A.

N.B. All the chemicals mentioned above are transported by road.

A.11.1 PLANNING FACTORS

In Aurangabad District there are 25 MAH & 104 Other Factories which has a large potential for Fire, Toxic release etc. The hazard analysis of these Industries has been done scientifically the detailed report of which is attached with this document. The first response capability is with the Industries concerned. The On- Site Emergency plans have been prepared by the industries. The timely information to ECC & agencies concerned is considered as the most important parameter while formulating this plan. Timely alerting the people of the neighbouring area & mobilisation of resource from MAH Units & the corporation & with the District Authority are other factories taken in the account.

The following parameters have kept in view in the formulation of this plan

- A) Control & direction over all the eight zones & crisis management of Aurangabad District.
- B) Decentralisation of operational control to each zone to be exercise by the respective operational response group.
- C) Each to be self sufficient in first response capability within a specified time in emergency service.
- D) All the zones should have very close linkage to ensure integrated approach to emergency.
- E) All MAH industries in a zones to have a formalised mutual aid agreement covering fire fighting & Medical service.
- F) Instant alarm system to alert the people in danger zone.
- G) Quick response by radio communication network & Mobiles Phones bases on data processing Computer output.
- H) Identification of routes for transport of Hazardous Chemicals should be excluded, as there are no dedicated routes for this purpose. So only existing routes to be included.

A.11.2 PLANNING DATA

The total resident population of District is over 10 Lakhs living mainly around industrial area. In the event of disaster depending upon area, various population could be at risk. In case of chlorine leakage during day everyone within 0.35 km to 4.3 km.

Downwind of the release would be affected. And due to this people living nearby industrial area could be at risk. Similarly if a flammable chemical like LPG were to catch fire or explode this will be affect the near by population.

The flora and fauna in & nearby industrial area are vulnerable to chemical release. In transportation disaster of tanker truck causing a flammable were to catch fire and /or explode vulnerable would be of radius 1.8 KM so it is imperative to have better road condition, skilled trained drivers and traffic management.

The List of the vulnerable zones for above scenario is attached in **Annexure 3**.

A.12 CONCEPT OF OPERATIONS OF OFF - SITE CONTROL PLAN / CRISIS

It is generally accepted that the “WORST CASE “scenario has the remotest of occurrence. Therefore, we need to direct resource towards the control of incidents, which could realistically occur. According, MCL scenarios have been worked out indicating magnitude of probable effect of hazards. An action plan capable MCL scenarios can effectively manage lesser hazardous incidents.

As soon as there is fire, explosion or toxic gas release, the incident will be handled by the industrial unit concerned in accordance with the “ On - Site Plan”. In the escalation into a major incident extending beyond the unit premises, the corporation crisis management group would step in.

A.12.1 PHASES OF EMERGENCY MANAGEMENT.

Before the emergency: Preparatory actions which include identification of specific Hazards and area of vulnerability, adoption of mitigatory steps, setting up of response facilities education of Communities, conducting of simulated training exercise etc.

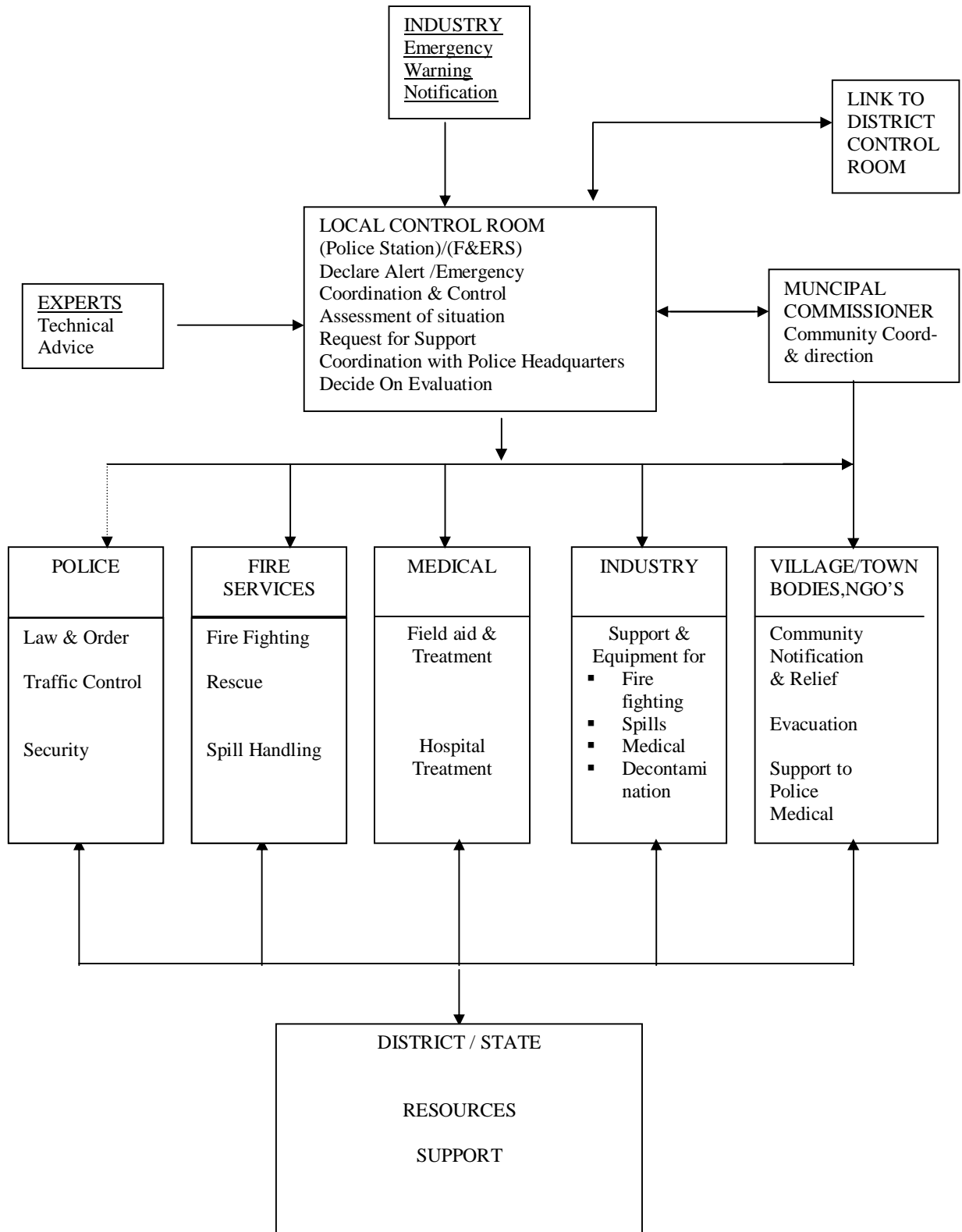
During the emergency: It is the implementation of the operational plan corporation as a “ reflex response ‘ to reduce casualties and damage to property.

After emergency : It is phase that involve restoring normalcy and assessing the damage.
It is also necessary to carry out a critique of the causes of the accident to avoid repetition of similar occurrences.

A 12.2 MATERIAL SAFETY DATA SHEET

Computerised ECC of Fire & Emergency Response Station of District & Police Control Room should have MSDS of all the Hazardous Chemicals in the District. Also All Emergency Response team leaders should have access to MSDS. Annexure:-20

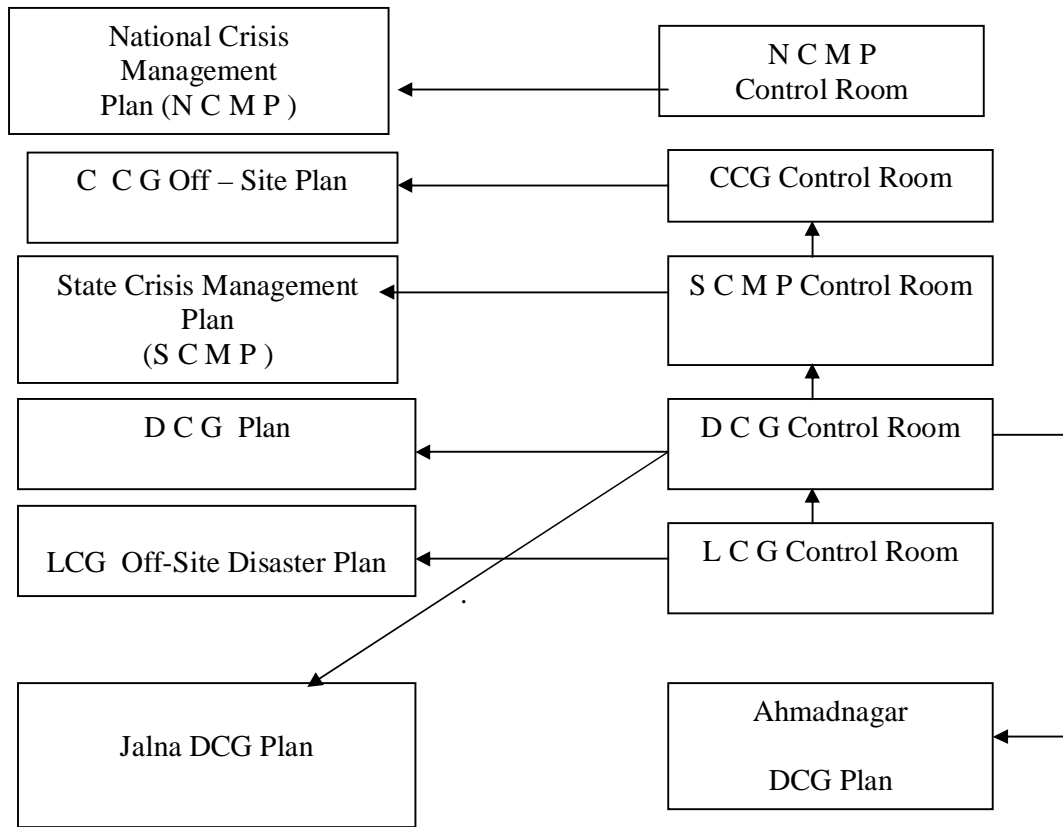
A.12.3 COMMAND STRUCTURE OF LCG



Off-Site Emergency Response Structure (Local Level)

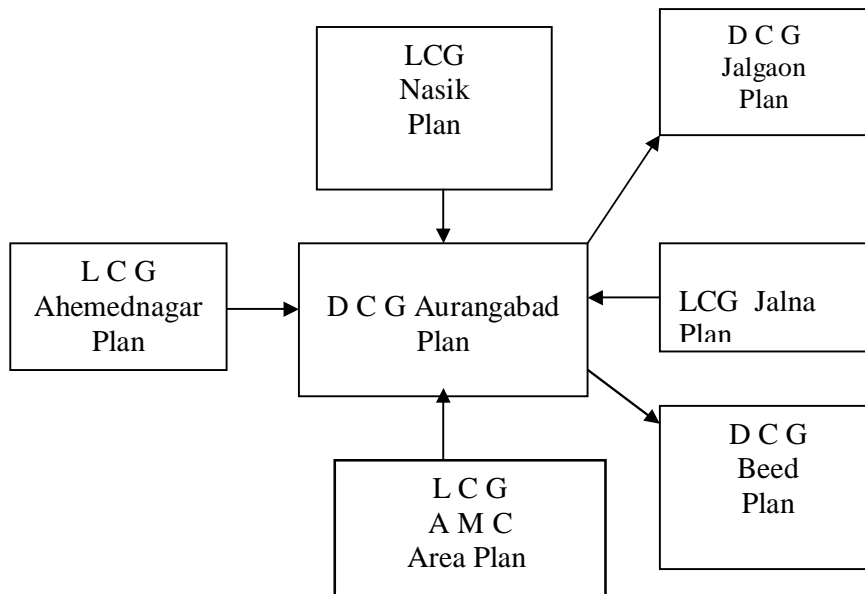
A.13 COORDINATION OF PLAN

RELATIONSHIP TO OTHER PLANS.



A.14

INTEGRATION OF PLANS



A.15 INSTRUCTION ON PLAN USE

A.15.1 Who should read this plan.?

This plan is developed basically for the agencies under the State Govt. in understanding their roles in case of on emergency. Also the LCG and the Industries are expected to be clear in their roles and relationship concerning Disaster.

A.15.2 When this plan be used ?

This plan should be used for pre-incident planning and disaster. It should be used for guidance and clarification, where particular agency has a responsibility. For the catastrophic emergency this plan shall be used in conjunction with Aurangabad City & Aurangabad District Area Plan.

B : EMERGENCY ASSISTANCE TELEPHONE ROSTER

See Annexure 19

C : RESPONSE FUNCTIONS

C. 1. INITIAL NOTIFICATION OF RESPONSE AGENCIES.

	Name of Agencies	Telephone No.
i.	24 Hours LCG Control Room	100/ 2240500
ii.	AMC to Notify Area Public Official and other response personnel	2331194, 2331309
iii.	DCG Control Room	0240-2331077
iv.	SCG control Room	022-22027990
v.	CCG Control Room	
vi.	Other Agencies in community service in Telephone Roster. (Fire Brigade, AMC)	101, 2334000, 2331444

Any industry, personnel Contractors and visitors shall follow the procedures as below after discovering or witnessing an accident that involves:

- ❖ Fire and / or explosion
- ❖ Personal injury
- ❖ Release of hazardous material and / or waste
- ❖ Any emergency situation that could impact human and safety and / or the environment.
- ❖ Substantial property loss.

Incident Discovery

- i. In case of emergency :
- ii. Dial **100/ 2331077, 2331200, 2240500** immediately
- iii Give your name, location, and a concise description of the emergency (e.g. fire, Personal injury, toxic gas release etc.)
- iv. Notify / alert the personnel in the immediate area of danger.
- v. If personal Safety and health is not assured, do not attempt to enter the site
- vi. By this time the emergency response team will reach the site.

Notification :

During an emergency, the command post or the first responder at site shall notify the emergency control centre about severity of incident. Accordingly the ECC shall deploy resource to manage the incident. After that ECC shall issue all the internal and external notification to various agencies and shall send the call out that are contingent on the nature of the incident.

C.2 DIRECTION AND CONTROL

C.2.1 ORGANISATION ROLES & RESPONSIBILITIES (CRISIS MANAGEMENT GROUP - CMG)

This is the apex body for crisis management and is headed by the Hon'ble District Collector. The District Collector is assisted by member as under.

Commissioner of Police,
Superintendent of Police
Commissioner of AMC
Dean Govt. Medical College / Civil Surgeon at Civil Hospital.
Joint Director, Industrial Safety & Health, Aurangabad.
Chief Fire Officer, AMC.
Deputy Controller, Civil Defence.
Commandant Home Guards
District Information Officer
Regional Officer, Pollution Control Board.
Representative of the Industries
District Health Officer
Co-ordinator Mutual Aid & Response Group, Aurangabad District.
RTO Aurangabad.
Experts in Industrial Safety & Health
Chair Person, LCG

The chairman may co-opt any other officer depending upon the situation, For each member of the CMG there is an alternate member. The telephone number and address and of each member are given in list.

The tasks of the CMG are as under:

1. To exercise board control over emergency operations.
2. To give guidance on matter of basic policy.
3. To provide official information and instruction to the public.
4. During normal times review the operational preparedness and take appropriate measures to rectify the defects.
5. To co-ordinate inter zone emergency response.

The duties of the CMG members are given as below:

1. District Collector

- i. As Chairman of CMG implement plan
- ii. Exercise board control on emergency operations.
- iii. Give guidance / decision on matters of basic policy
- iv. Review operational preparedness of Corporation emergency machinery.
- v. Hold periodic mock drills / training exercise to ensure optimum operational preparedness. If necessary, invoke help from the Army, the Air Force, the Government and any private industries in the area of District.
- vi. Develop Off-Site scenarios based on On-Site Plans of the industries.
- vii. Relief Operation

2. Commissioner of Police / Superintendent of Police

1. Maintain law and order
2. Regulate traffic
3. Control entry to the emergency area
4. Security arrangements at each industrial unit.
5. Protect vital installations.
6. Assist in warning public about the emergency
7. Assist in evacuating and sheltering.
8. Protect evacuated area.
9. Assist emergency services in the performance of their duties.

3. Dean Govt. Medical College / Civil Surgeon / District Health Officer

1. First aid arrangement and availability of On-Site requirements of industries.
2. set up mobile First Aid Posts at Assembly Points
3. Mobilisation of emergency medical and health service at Causality Clearance Centres and Base Hospitals.
4. Public Health Service at Reception Centres
5. Medical supply of antidotes, special medicines and life saving drugs.
6. Corpse disposal service.
7. Co-opt voluntary organisation like Rotary Clubs & Lions Clubs.
8. Prepare Plan for Health & Medical
9. Training to Medical team & Hospital staff for emergency response.

4. Joint Director Industrial Safety & Health, Aurangabad

1. Ensure On-Site Plans of Industries are vetted and approved as per Act.
2. Visit industries to see that safety norms are being followed.
3. Ensure development of On-Site Plans, Examination of risk evaluation study and Safety Audit
4. Ensure frequency of Safety Audit, Fire Drills & Mock Drills.
5. Assist the Municipal Commissioner in developing off- Sites Scenarios
6. Ensure Safety Education, Safety awareness, Discussion along with MARG
7. Pre-emergency & Post emergency Task.
8. Member Secretary of the DCG Aurangabad.

5. Chief Fire Officer, Aurangabad

1. Mobilisation of all fire fighting units from various sources.
2. Training of fire service personnel in chemical disaster operations
3. Stocking of special fire fighting agents and equipment for chemical emergencies
4. Adequacy of fire fighting / control measure at each industrial location.
5. Work out Mutual Aid Arrangement in the cluster.
6. Prepare Plan for Human Service required for the emergency response
7. Formulate Chain of Command among the Fire Fighters.
8. Prepare Plan for Response Personal safety.
9. Prepare Plan for Fire & Rescue.
10. List out Tasks of the Fire Fighters.

6. District Information Officer:

The information officer, a member of the command staff is responsible for the formulation and release of information about the incident to the news media and other appropriate agencies and organisations.

- Obtain briefing from incident commander.
- Contact the jurisdiction agency to co-ordinate public information activities.
- Establish single incident information center whenever possible.
- Arrange for necessary work space, materials, telephones, and staffing.
- Prepare initial information summary as soon as possible after arrival.
- Observe constraints on the release of information imposed by incident commander.
- Obtain approval for release from incident commander.
- Release news to news media and post information in command post and other appropriate locations.
- Attend meetings to update information releases.
- Arrange for meetings between media and incident personnel.
- Provide escort service to the media and VIP's.
- Provide fire retardant clothing for media and VIP's
- Respond to special requests for information.
- Maintain and Submit all records and logs.

7. Regional Officer, Maharashtra Pollution Control Board.

1. Monitor extent and quantum of pollution during the crisis
2. Declare hazardous area safe for re-occupation by population.
3. Prepare Plan for the Containment & Clean-up
4. Prepare Plan for On-going incident assessment.

8. Regional Transport Officer, Aurangabad.

1. Ensure strict enforcement of regulations laid down improve safety in transportation of hazardous substances.
2. Organise transportation arrangement for evacuation.
3. Ensure TREMCARD is available in the Tankers transporting Hazardous Chemicals.
4. Divert Tankers transporting Hazardous Chemicals in association with Traffic Police in case of Disaster, Ganesh Chhaturthi/Chhaturdashi, any other festivals or Mass gathering to safer transport Route.
5. Train Tanker drivers in respect of the Hazards during the Chemicals transportation in consultation with MARG.

9. INCIDENT COMMANDER

The Incident Commander is responsible for incident activities including the development and implementation of strategic decisions and for approving the ordering and releasing of resources.

- Obtain incident briefing from prior incident commander
- Assess incident situation.
- Conduct initial briefing
- Activate elements of the incident command system
- Brief command staff and section chiefs.
- Ensure planning meetings are conducted.
- Approve & authorize implementation of incident action plan.
- Determine information needs and inform command personnel of needs.
- Coordinate staff activity
- Manage incident operations
- Approve requests for additional resources and requests for release of resources.
- Approve the use of trainees on the incident
- Authorise release of information to new media.
Ensure incident Status Summary is completed and forwarded to Emergency Control Center (ECC) and dispatch Center(s)
- Approve Plan for demobilisation.

10. Local Crises Group Chair person / Member Secretary

- Act as a Alternate Leader, Licence Officer, Agency Chief, in disaster.
- Check in at the incident command post. Ensure that all agency resources have completed check-in.
- Obtain briefing from Licence officer or incident commander.
- Establish working location. Advise agency personnel on the incident that the agency representative position has been filled.
- Attend planning meetings as required.

- Provide input on use of agency resources if no resource use advisors are assigned.
- Co-operate fully with incident commander and general staff on agency's involvement at the incident.
- Oversee the well being and Safety of agency personnel assigned to incident.
- Advise Licence officer of any special agency needs or requirements.
- Determine, if any special reports or documents are required.
- Report to agency dispatch or headquarters on prearranged schedule.
- Ensure that all agency personnel and/or equipment is properly accounted for and released prior to your departure.
- Ensure that all required agency forms, reports, and documents are completed prior to your departure from the incident.
- Have debriefing session with Licence officer incident commander prior to departure.

11. GENERAL MANAGER TELECOM :

The Communication unit officer under the direction of the Chief Fire Officer Aurangabad is responsible for developing plans for the effective use of incident communications equipment and facilities, installing & testing of communication and equipment, supervision of the Incident communications Centre, distribution of communication equipment to incident personnel, and the maintenance and repair of communications equipment.

- Obtain briefing from Chief Fire Officer, Aurangabad.
- Determine unit personnel needs.
- Advise on communication capabilities and / or limitations.
- Prepare and implement the Incident Radio Communications Plan.
- Ensure the Incident Communications Center and Message Center are established.
- Set up the telephone and public address systems.
- Establish appropriate communication distribution and/or maintenance locations within the base and/or map.
- Ensure Communications systems are installed and tested.
- Ensure an equipment accountability system is established.
- Ensure personal portable radio equipment from cache is distributed per radio plan.
- Provide technical information as required on :
 - Adequacy of communication system currently in operation.
 - Geographic limitation on communications systems
 - Equipment capabilities.
 - Amount and types of equipments available
 - Anticipated problems in the use of communication's equipment.

12. STATION MASTER SOUTH CENTRAL RAILWAY AURNAGABAD

- Ensure availability of local trains in case of evacuations

13. DEPOT MANAGER MSRTC AURANGABAD

- Ensure availability of Buses in case of evacuations.

14. EXECUTIVE ENGINEER MSEB Aurnagabad

- Ensure electricity supply to all MAH units, streets, Police stations, Fire brigades, Emergency Control Center & Other Offices of emergency Response Personnel.

15. DISTRICT SUPPLY OFFICER Aurangabad

He is responsible for determining feeding requirements at all incident facilities, menu planning, determining cooking facilities required and general maintenance of the food service areas.

16. EXECUTIVE ENGINEER MIDC, Aurangabad

- Report to and obtain briefing and special instructions from Municipal Commissioner AMC.
- Participate in the development of the Incident Action Plan, and review general control objectives including alternative strategies presently in effect.
- Collect and validate water resource information's within the incident actions.
- Prepare information's on available water resources.
- Establish water requirements needed to support fire suppression actions.
- Compare incident control objectives as stated in the plan with available water resources and report inadequacies or problems to Municipal Commissioner AMC.
- Participate in the preparation of Incident Action Plan when requested.
- Respond to requests for water Information's.
- Collect and transmit records and logs to documentation unit at the end of each operational period.
- Maintain and Submit all records and logs.

C-3 COMBATING DISASTER

C 3.1. FIRST RESPONDER ON SCENE

The first senior official responding to an Emergency is the incident Commander and begins implementing the incident command system. All emergency responders and their communications are co-ordinated and controlled through the incident commander. As more senior official arrive the position of incident commander is passed up a previously established line of authority. **See Annexure 11** for incident commander and On-scene commander.

The first responder at the scene of a hazardous materials emergency should complete the task necessary to protect public health and responder safety, the environment, and the property. The order in which the following tasks are completed is incident priorities.

- * Evaluate potential hazards to determine if the release or threaten release is an emergency.
- * Isolate the Scene and deny entry.
- * Establish control zones.
- * Identify spilled material or threatened release without subjecting responders to contamination.
- * Look for any casualties and identify other essential site conditions.
- * Implement Incident Command System, establish a command post, and identify a staging area for incoming resources.
- * Identify additional resources for operations beyond the capability of on-scene units.
- * Notify appropriate response and reporting agencies.
- * Designate a knowledgeable safety officer prior to engaging in operational activities.
- * Rescue victims from the hot zone using appropriate personal protective equipment.
- * Provide emergency decontamination to victims exposed to material having the potential for secondary contamination of emergency medical personnel.
- * Determine necessary public protection action (evacuation or sheltering in place).
- * Initiate control and containment within capabilities of available resources and equipment.

C 3.2 WARNING SYSTEM

A good warning system is one of the most important pre-requisite of the emergency management system to save lives, prevent injuries and mitigate losses. As soon as incident commander determines that it is necessary to warn people of a threat to public safety, a strategy appropriate to the situation will be developed and immediately implemented to ensure coverage of the affected area. The dissemination of warning shall be effected by the MAH Factories.

Types of Warning :

Warning signal will be given as under :

- **DISASTER WARNING** : Maximum credible loss scenario from the industry or transportation. The warning signal shall be high pitched long wailing siren followed by short wailing siren.
- **ALL CLEAR** : Long continuous note

Dissemination of warning by the Factories

Depending on the nature of the hazard, the size of the population of the area threatened and the time available to react, one or more of the following methods would be used to warn the public.

- Outdoor warning siren
- Public addressed system (Vehicle mounted) with the police
- Remote public address system
- Siren
- Mass media i.e. Radio and Television
- Door-to-door visits by Civil defence personnel using mask and relaying pre-recorded cassette messages.
- Telephone calls to sensitive locations like schools, organizations and institutions having a large number of employees.

In case of an toxic gas emanating from present area on to the neighbouring area due to prevailing wind direction, the information will be relayed to the district Collectorate for warning the likely affected population under their jurisdiction .

C .3 .3 EMERGENCY PROCEDURE

In a chemical hazards disaster management because of varying wind direction and speed throughout the year, it is imperative to work out the emergency procedures in advance for each probable scenario of each industry for different months of the year to reduce the response time to the barest minimum.

A sample outline for one of the disaster scenario is given in the following section :

(ACTION DESIRED : A similar emergency procedures for all maximum probable disaster scenario for different months of the year should be developed by the responsible authority.)

Emergency Procedure for Scenario no. 1

Scenario

Toxic gas release of Chlorine from M/s. Inotech Pharma Ltd. in the month of February with the most likely wind direction at 270⁰ morning as MCL Scenario.

Assumption

Release of 900 KG Chlorine due to total failure of one toner. The danger zone as given in MCL Scenario no.1 is 3.08 Km downwind. effects of release.

Chlorine requires careful handling due to its chemical and toxic properties. It is extremely irritating to mucous membrane / eye and respiratory tracks. Results in chronic pulmonary oedema. Concentrations of 50 ppm are dangerous for even short exposures. Administer Oxygen as first aid and hospitalise. At the point of release, toxic exposure will be fatal.

Within a radius of 3.08 Km all vulnerable resources shall be subjected to a exposure to a concentration of 293 ppm and may result in Systematic damage or serious / leather health effects.

Area / Population affected.

The area that will be covered under the toxic limit of LC50 is shown in appendix 21 for scenario no.1 with the centreline as the 270⁰ wind direction. The approximate population covered under this area which requires evacuation shall be approximately 10000. The neighbouring industries also shall be affected. The danger zone cuts rail link from Lasur Station to Aurangabad, Annexure 3.

Emergency Response :

- The ECR will sound the disaster warning signal to the likely affected population through Siren System.
- On-Site powerful deluge system / water curtain to prevent spread of toxic could will be supplemented by fire services in Aurangabad.
- No medical resource shall be affected by the danger zone.
- The flow of casualties shall be as under :
 - ◆ Northward to Govt Medical Hospital
 - ◆ Eastward to ESIS Hospital Aurangabad.
- As the danger zone cuts across Internal MIDC Road and Aurangabad -Nasik Road, the security personnel will need to man check points to block movements on these roads.

The traffic will need to be diverted along by pass road.

- The security personnel doing above jobs would need the personal protection equipment.
- In view of short notice, warning and lethality of exposure to toxic fumes, the people must leave their houses, on hearing the warning siren at right angles to the wind direction.
- Evacuation commander will organise Assembly Points which also acts as reception centers.

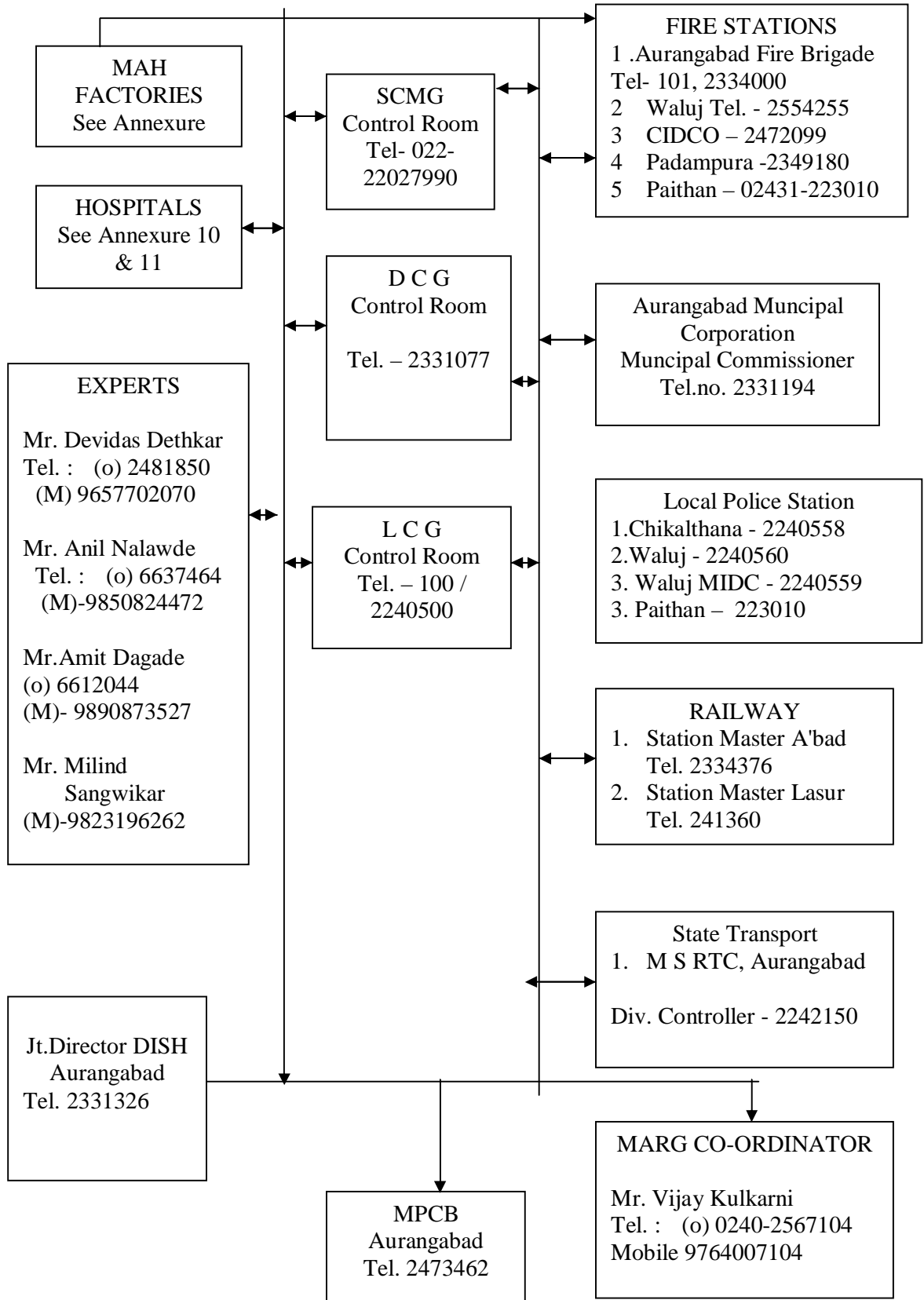
Evacuation Commander shall also arrange for water and first aid for temporarily displaced persons.

- All police personnel entering danger zone must wear personal protective equipment. In addition they must undergo training on preventive measures, in order to offer advice to the population.
- Traffic on Lasur - Aurangabad Rail link to be suspended, till the danger zone is declared clear of toxic effects.

CAUTION

This emergency procedures is very brief and would require modifications based on actual meteorological data, the amount of chlorine gas vaporized and other conditions at the time of toxic gas release.

C.3.4 COMMUNICATION AMONG RESPONDERS AREA COMMUNICATION CHART



C.3.5 PERSONAL PROTECTION OF CITIZENS

- As Chairman of CMG & LCG District Collector shall depute one Deputy Collector as alternate leader.

PLANNING TEAM

- ❖ Deputy Collector - In charge
- ❖ DCP Aurangabad
- ❖ Civil Surgeon, Civil Hospital, Aurangabad
- ❖ District Health Officer, Aurangabad
- ❖ Executive Engineer MIDC/PWD
- ❖ RTO Aurangabad
- ❖ District Information Officer, Aurangabad
- ❖ Deputy Director, Industrial Safety & Health, Aurangabad
- ❖ Depot Manager MSRTC Aurangabad

These team members shall prepare detailed contingency plan considering the following factors as a base:

- a) Vulnerable zones where Evacuation could be necessary and method for notifying these places
- b) Provisions for precautionary Evacuation
- c) Methods for controlling traffic flow and providing alternate traffic routes.
- d) Shelter location and other provisions for evacuations.
- e) Agreements with near by jurisdictions to receive evacuees.
- f) Agreements with Hospitals outside the local jurisdictions.
- g) Protective shelter for relocated populations.
- h) Reception and care of evacuates.
- i) Re-entry procedures.
- j) A system of working and advising the public protection and on expedient means to reduce ventilator.
- k) Relocation
- l) Water supply protection- to avoid contamination
- m) Sewage system protection : to avoid public Health threat Environment problems.

1. EVACUATION PLAN

In a disaster situation, evacuation from hazardous areas may be the most effective way to obviate casualties. It is a complex exercise requiring multi-disciplinary inputs. A comprehensive and co-ordinating preplanning is necessary to implement orderly evacuation of population. The weather conditions obtained through the meteorological department would dictate to a large extent the area to be evacuated.

On hearing the disaster warning the population should quickly move to the assembly area as announced on the public address system and should wait for the transportation facility. If assembly area is not announced than they should move out of the threatened area at the right angle to the prevailing wind away from the industrial area. Those personnel who can move out of their homes are advised to stay indoors and cover their noses with the wet cloth.

Following steps would be taken before the crisis by the District Collector :

- Public information and education on measures for chemical hazards.
- Installations of siren or Remote public address system in likely affected area.
- Formulations of detailed contingency plan of evacuation.
- Working out evacuation plan of sensitive areas like Jail prisoners, Mental/other hospitals etc.

Limitations

While in many cases evacuation is a needed life saving measure, it is not always necessary or practical. Lack of time is often the single most important limitation on the effectiveness. Large evacuation takes very long time to execute even if they are well planned in advance. The toxic cloud may pass through an area before everybody can get out when people are outside their homes, attempting to evacuate.

Keeping the area situation into account, it may be possible to stress more on the In Place Protection and attempting to reduce the air flow into their shelter. Public education on the protection provided by a structure should be a part of preparedness activities.

N.B. Municipal Commissioner AMC shall ensure that all the Emergency response Agencies knows address & locations of All MAH units.

See Annexure 16 for General Guidelines in Disaster

C.3.6 EMERGENCY PREPAREDNESS

1. Introduction :

The purpose of this is to document the ongoing planning and maintenance components of the emergency plan. In particular following areas are addressed.

- Emergency Response Team Organisation
- Training
- Personal Protective Equipment
- Medical Surveillance
- Equipment Maintenance
- Mock Drills and Emergency Simulation Operation
- Record Keeping

It is the policy of the AMC to maintain the response capabilities sufficient to mitigate the incidents involving fire, toxic gas release, medical and rescue emergencies and/or situations beyond the scope of normal operations. This volume is to be reviewed and updated on a regular basis to assure consistency with assignments and procedures. The District Collector is responsible to maintain this volume and assure that all personnel involved in emergency response are familiar with and trained as per the requirement and procedures described. This volume is intended to be a planning document that summarizes important administrative elements of previous sections.

C.3.7. EMERGENCY RESPONSE TEAM ORGANIZATION

AMC & ORG would have established an emergency response team that is organised trained and capable of responding to fire, hazardous materials, and other emergency in the area. The attached structure presents response team, and corresponding training level. The District Collector will ensure that emergency response programme is implemented before, during and after emergencies. The organisational structure provides the following management and operational functions.

- Implementation of emergency response training program.
- Established management roles within the team that directly relate to ICS functions that are activated during an emergency; and
- Designation of emergency response functions and levels of responsibility that are the basis for establishing training requirements.

C.4 TRAINING (Recommendations)

EMERGENCY RESPONSE TEAM		TRAINING LEVEL
Fire and Safety Supervisor	Emergency Response Supervisor	8
Fire and Safety Asst. Supervisor	Emergency Response Training Supervisor	8
Emergency Operations Center Manager		7
Emergency Response Chiefs / Specialists Primary Response Medical Rescue		6
Specialists Fire and safety Fire Hazmat		5
Emergency Response Crew		4
Assistants		3
Maintenance Personnel		2
Administrative Staff & Contractors		1

Emergency Response Team Functions

The following table summarizes the responsibilities of emergency team members.

Emergency Response Team Function	ICS Roles	ER Training level
ER Supervisor	Incident Commander Field IC	8
Supervisor, ER training	IC, Field IC Fire Officer	8
Fire & safety Supervisor	Safety officer	8
Fire & safety shift Supervisor	Asst. Officer	8
ECC Managers	Command staff, Planning / Finance Chief	7
ER Chiefs	Operation Chief	6
ER Specialists	Branch Officers	5
ER Crew	Asst. under Branch officers	4

Training Requirements

The training program shall be established so as to provide emergency response team members with training that is commensurable with their assigned duties. The training programme shall be comprised of eight training levels; Level 1 to Level 8. The levels correspond with increasing technical and supervisory responsibilities. The next describes the programme in detail.

DRILLS AND SIMULATION EXERCISES

The regular drills and simulation exercises is a progressive commitment to ensuring that the personnel, organisational structure, and resources identified in the area plan can function to achieve the most favourable outcome in the event of real accident.

3. TRAINING PROGRAMME

The specific objective of the training programme shall be as under :

- Define levels of training required for all personnel within the ICS including awareness training for citizens
- Designate the duration and frequency of all training courses.
- Assure attendance and proficiency of personnel
- Design and schedule tabletop exercises and drills to assess response capabilities to a variety of potential incidents.
- Maintain compliance status of all personnel with designated training level requirements develop a computerised training record keeping system to achieve this objective.

Training Levels

The wide variety of the jobs within ICS requires a range of awareness and expertise to cope with potential emergencies. Training levels have therefore designed to provide a tailored curriculum for defined levels of response capabilities, which are designed for each individual depending on his or her specific job description and stated emergency role.

A brief description of each training and its applicability to a defined emergency response role is provided below.

LEVEL .1 AWARENESS.

A fundamental level of emergency information and / or training addressing site-specific evacuation procedure, general safety considerations, and other basic information for personnel for who would not be likely to encounter or be actively involved in an emergency situation.

LEVEL 2 MAINTENANCE STAFF.

Designed for personnel who are likely to be exposed to an emergency situation; personnel at this level would not be actively engaged in offensive mitigation activities. In addition to maintenance staff, engineering personnel and long term contractors are included in this training level

LEVEL 3 OPERATIONAL SUPPORT STAFF

Designed for personnel who may provide operational support during an emergency. This training level provides the advanced level of awareness in fire control and provides for basic training for both fire and hazardous materials emergency response activities. Personnel trained at this level, however are not considered to be certified to conduct work that requires fully encapsulated protective clothing.

Emergency Response Team.

The Emergency Response Team is responsible for handling all types of emergencies including fire, hazardous materials, and medical / rescue incidents. All Personnel are issued clearly identifiable response clothing and equipment to distinguish them from other personnel during emergency activities. The various training levels are discussed below.

LEVEL 4 Emergency Response Crew

The basic level of training required for the Emergency Response Team which emphasize fire and hazardous materials response capabilities.

LEVEL 5 Specialists

Due to the technical nature of emergencies which may occur following specialists training is developed to provide training over above that is included in level 4

- Health and safety issues
- Fire apparatus, aerial operations
- General Hazmat training plus specific training for the toxic gases being handled in the area

LEVEL 6 Supervisors

The Personnel at this level are trained for advanced ICS training, Emergency medical training for basic life support, rescue training in addition to level 5 training.

LEVEL 7 ECC Managers

Training focuses on the managing an emergency using the ICS, documentation and notification procedures, and communicating effectively with outside and corporate resources, the media and the public.

LEVEL 8 Instructors

Individuals at this training level are the most highly proficient managers like senior Fire and safety Personnel who would receive additional training to improve their effectiveness as instructors.

C.5 PERSONAL PROTECTIVE EQUIPMENTS / CLOTHING.

C.5.1

It is the policy of the management to ensure the personnel safety and limit the exposures of hazardous materials during the emergency response. The PPE programme for emergency response encompasses the selection, use and maintenance of the PPE before, during and after an emergency response.

Scope

The major components of the proposed PPE programme for emergency response shall include routine care, use during a disaster, and post - disaster procedures.

- The ongoing activities provide a solid foundation for effective emergency preparedness and for ensuring that personnel are properly trained and equipment for response. These activities shall include.
 - ◆ Inventory control
 - ◆ Calibration
 - ◆ Maintenance
 - ◆ Fit Testing
 - ◆ Training
 - ◆ Record keeping.
- The activities during Response shall be proper selection and use of equipment through training and guidance from the Incident Safety Officer. This shall include.
 - ◆ Assessment of Ambient conditions.
 - ◆ Selection of PPE
 - ◆ Operation of PPE
- The activities after Response provides for decontamination in accordance with standard procedures. The activities shall include.
 - ◆ Decontamination
 - ◆ Disposal of Cartridges
 - ◆ Maintenance and repair.

Responsibility and Implementation

The fire and safety officer shall be responsible for implementing the PPE programme for emergency response and co-ordinating the activities of various departments in administrating the programme. The ultimate effectiveness of this programme lies with each responder understanding, recognising, and controlling hazards. Implementation of programme includes following responsibilities.

- Review and prepare the written procedures.
- Conduct and document audits as deemed necessary to determine compliance.
- Maintain written records for program evaluation.
- Assist in determining conditions requiring respiratory equipment.
- Select proper respiratory equipment.
- Assure that response personnel are properly fit tested for respirators.
- Assist in training of personnel in use of respiratory protective equipment.

C.5.2 EQUIPMENT MAINTENANCE

ER equipment shall be maintained to ensure that they are effective and field ready. All the record shall be kept for their fitness.

The table showing the frequency of maintenance the equipment should be kept ready.

C.5.3 RECORD KEEPING

Record keeping plays an integral role in the administration of the emergency preparedness plan. Record are maintained to document the status of the various points of this section..

C . 6 LEVEL OF RESPONSE BASED ON INCIDENT SEVERITY

The following chart summarizes who and what are involved in three typical emergency conditions. Information about the three response levels should be provided to special facilities (e.g. school district, private schools, day care centers, hospital, nursing homes, industries detention centres)

Response Level	Description	Contact.
A. Potential Emergency Condition	An incident of threat of a release which can be controlled by the first response agencies and does not require evacuation of other than the involved structure or the immediate out door area. The incident is confined to a small area and does not pose an immediate threat to life or property.	Fire Department Emergency Medical Services Police Department Central Municipal Commissioner LCG,DCG,RTO District Collector
II. Limited Emergency Condition	An incident involving a Greater hazard or larger area which poses a potential threat to life of property and which may require a limited evacuation of the Surrounding area.	All Agencies in Level I HAZMAT team EOC Staff Public Works Department Health Department Red Cross Rotary Club SCG Control Room State Police, Public Utilities
III. Full Emergency Condition	An incident involving a severe hazard or a large area which poses an extreme threat to Life and property and will probably require a large scale evacuation or an incident requiring the expertise or resource of country, State Central, or private agencies Organisations.	All Level I and II Agencies plus the following as needed Mutual Aid Fire, Police. Emergency Medical Services SCG & CCG Control Room Maharashtra Agency Director Health Service MPCB

See Annexure 4 for NFPA Levels of Hazardous Chemicals

C-7. PUBLIC INFORMATION / COMMUNITY RELATIONS.

Planning Team

- ❖ Public Relation Officer District Collector Office
- ❖ District Information Officer
- ❖ Representative Of TV & Radio
- ❖ Editor, Lokmat, Samna, Sakal & Times of India

Factors

- Method to educate the public in possible emergencies.
- Method for keeping the public informed.
- List of radio and T. V. contacts.

Comment : District Collector office should develop a public information programme to educate citizens about safety procedures during an incident. This programme could include pamphlets; newspaper stories; Short video clips; periodic radio and television announcements and programme for schools, hospitals, and homes for the aged.

It is important to provide accurate information to the public in order to prevent panic. Some citizens simply want to know what is happening. Other citizens may need to be prepared for possible evacuation or they may need to know what they can do immediately to protect themselves. Because information will be needed quickly, radio and television are much more important than newspapers in most hazardous materials release. In less urgent cases, newspaper articles can provide detailed information to enhance public understanding of accidental spills and procedures for containment and cleanup. One person should be identified to serve as spokesperson. It is strongly recommended that the individual identified have training and experience in public information, community relations, and / or media relations. The spokesperson can identify for the individuals who have specialised knowledge about the event. The chain of command should include this spokesperson. Other members of the response team should be trained to direct all communications and public relations to this one person.

C-8. RESOURCE MANAGEMENT.

The primary responsibilities for addressing emergencies originated from any place within the jurisdiction lies with the Incident Commander with support available through a mutual aid from neighbouring areas if required and with other companies in the area. This section provides a summary of resources available to support emergency responses within the area, and outlines procedures for accessing personnel and equipment.

C.8.1MANPOWER

The emergency response organisation for the area include fire and safety staff, management, and operating and maintenance personnel and other necessary staff. The emergency response team will be trained and are available at any time to support emergency response activities. Primary response, positions and responsibilities are described in this manual as above. The availability of emergency response support personnel is dependent is on the time of a day that an emergency occurs. During regular day shifts, sufficient manpower support is available.

Planning Team

- ❖ Chief Fire Officer AMC
- ❖ Fire Officer Garware / Bajaj
- ❖ RTO Aurangabad
- ❖ Executive Engineer PWD
- ❖ District Health Officer / Civil Surgeon, Aurangabad
- ❖ Deputy Controller of Civil Defence Aurangabad
- ❖ ACP Aurangabad
- ❖ Experts
- ❖ Depot Manager MSRTC

These team shall prepare the document needed for Resource Management. The Following **Factors** should be considered for the Planning.

- ◆ List Of Personnel needed for Emergency response
- ◆ Training programs including schedules for training for LCG Emergency response and Medical personnel.
- ◆ List of Vehicles needed for Emergency response.
- ◆ List of Equipment (heavy & PPE).
- ◆ Fund arrangement for response Equipment & personnel.

C.8.2 FIRE & RESCUE

Planning Team

- ❖ Chief Fire Officer AMC
- ❖ Fire Officer Garware Polyester Ltd. / Orchid Pharm. Ltd. / Ipca Lab. Ltd.
- ❖ Co-ordinator MARG

Factors for Planning

- ❖ Chain Of Command among Fire Fighters.
- ❖ List of available Support System.
- ❖ List of all Task for Fire Fighters
- ❖ Training to Fire Fighters in safety procedures when to approach the incident.
- ❖ Availability of MSDS of Hazardous Chemicals
- ❖ Communications to E.C.C.

The following fire stations are available for the area. All the fire stations are primarily for the District area but they do attend to the calls from the industrial unit.

- Fire & Emergency Response Station (Padampura), Aurangabad
- CIDCO Fire Station.
- Waluj Fire Station.
- Paithan Fire Station

Following industries also possess their own fire station which can be available on request.

- M/s. Garware Polyester Ltd.
- M/s. Bajaj Auto Ltd.
- M/s. Videocon Appliances Ltd.

See Annexure 6 (Equipment List)

(Action Desired : The hazard analysis section and various tables in the annexure 6 clearly indicate the strengthening of fire fighting services. A more detailed report on immediate requirement and future requirement need to be prepared to tackle the fires / toxic gas release that may originate from Ammonia / LPG / Chlorine etc.)

HAZMAT RESPONSE VAN (Proposed)

Keeping in view of the major accident prone areas in the jurisdiction namely Aurangabad district, a specialised HAZMAT team and van for road accidents shall be located at strategic point like District Collector office to respond to transportation emergencies as well as assistance to industries with limited resource. Equipment stored in HAZMAT van are special and specifically tailored to the road accidents hazards. HAZMAT team members from part of van equipment as one entry. Details of HAZMAT van equipment and HAZMAT kit are in **Annexure 7.**

The HAZMAT van will be driven to the scene of the accident by the incident commander or Field Incident Commander.

During a minor emergency, the command post will serve as the primary point of control for management, communication and implementation of counter measures. During a moderate, major or catastrophic emergency, the command post will be supplemented by Emergency Control center described in the next section.

For all types of emergency, the HAZMAT team will maintain following resources in the HAZMAT van to support emergency command post duties in addition to items as mentioned in appendix

- A functioning radio
- Copies of this document ; MSDS sheets of all the chemicals used in the area; and other references as needed ; and
- A response folder containing copies of checklists and work sheets to assure compliance with applicable procedures and to facilitate incident documentation.

The command post shall be located upwind to assure a working environment safe from the effects of the incident. However the command post shall be close enough to the incident to permit observations and control of the site and ongoing operations. The command post serves as the point of perimeter control for the emergency. All access to and from the site is coordinated through the command post.

MUTUAL AID

The mutual aid among the Neighbouring areas shall be formally agreed so as to access resources such as fire suppression equipment, PPE, and foam through mutual aid network. In addition, District Collector office may be called to provide support for other mutual aid members. (ACTION DESIRED: The list of all incident Commander of the Neighbouring areas with their addresses and telephone number to be kept ready)

At present informal USERS GROUP exist in the area for mutual aid but formal mutual aid in the area exists only among the MAH industries (ACTION DESIRES : It is desired to have an mutual aid among all the major industries, at least as per the list provided in this plan)

C.8.3 HEALTH & MEDICAL

C.8.3.1 Planning Team

- ❖ Chief Medical Officer AMC Incharge
- ❖ Civil Surgeon, Aurangabad
- ❖ Superintendent, Government Medical College Hospital, Aurangabad
- ❖ District Health Officer, Aurangabad
- ❖ Medical Superintendent Mental Hospital Aurangabad
- ❖ Certifying Surgeon Aurangabad
- ❖ Doctors in the Area

The Following **factors** should be considered for Planning.

- ❖ Provisions for Ambulance Support.
- ❖ Provisions for Hospital Support & Treatment
- ❖ Summoning procedures of Medical Personnel
- ❖ Training to Medical Team & Hospital Personnel regards to Health Hazards of the Chemical & their Anti-dotes.
- ❖ Continuity in supply of Anti-dotes & Drugs
- ❖ List of the Hospitals /Chemist Shops
- ❖ Training for Decontamination & treating persons exposed to hazardous Chemicals.
- ❖ Protective actions recommendations for sanitation, water supply, recovery & re-entry.

AMBULANCE SUPPORT

In the area there are many ambulance services available with private hospitals, political parties, local clubs, industries etc. The list of all the ambulance available with their phone numbers and addresses is included in **annexure 8**.

(ACTION DESIRED : It is desired that one Ambulance Control Room like fire brigade be opened up with a three digit phone number for ambulance services, which in turn will contact the relevant ambulance service with respect to equipments and distance from the site)

HOSPITAL SUPPORT

In the area there exists PHC, government hospitals and private hospitals. The list of hospital support is as shown in appendix. There are more than 35 hospitals existing in the area with few of them having the bed capacity of 200.

In a major accident there would be many cases of toxicity, heat radiation and third degree burns, but the hospitals in the area are not having requisite facilities to treat such cases. See **Annexure 9** and **see Annexure 13** for Anti-dotes.

N.B. All the MAH industries shall give list of Antidotes to Chief Medical Officer AMC available with them.

C.8.4 HUMAN SERVICE

Planning Team

- ❖ Municipal Commissioner- Incharge
- ❖ Chief Medical Officer AMC- Continuity of Medical Care
- ❖ District Health Officer, Aurangabad
- ❖ Civil Surgeon, Aurangabad
- ❖ District Supply Officer - Food & Milk Supply
- ❖ NGO
- ❖ President Marathwada Small Industries Associations- Clothing from Garment Factories
- ❖ Executive Engineer PWD

Following **Factors** should be considered for the Planning

- ❖ List of Agencies providing Human service
- ❖ List of Human service Tasks

The Municipality Administration uses a wide variety of contractors to support routine operations and maintenance activities. Virtually any contractor service is also available to support emergency responses, especially during restoration and recovery operations. All contractor personnel will be briefed at the site prior to participation in an emergency response. The briefing will address PPE, the Chemicals involved and duties to be performed. All appropriate health and safety precautions provided to emergency responding staff shall apply to Contractor personnel.

Access to contractor support is obtained through the Public Works Department. The technical service group is also available to provide contractor engineering and testing support as needed. Zonal Leader of MARG will be able to give list of contractors.

TRANSPORT SUPPORT

The Aurangabad district and the MSRTC are having well organised network of the public transport. In case of emergency it is possible to obtain the services of Thane State Transport and Best within shortest possible time. Many buses are also available from major industries, contractors etc.

[ACTION DESIRED : The transport officer to find out the availability of maximum no. of transport vehicles (buses, Trucks etc.) within 30 minutes of notice]

See Annexure 10 for crane service

C.8.5 Public Works

Planning Team

- ❖ City Engineer AMC – Incharge
- ❖ Executive Engineer PWD
- ❖ Executive Engineer MIDC
- ❖ Regional Officer MPCB

Factors for Planning

- ❖ Describe Chain Of Command for the permanence of Public Work action in an Emergency.
- ❖ List of Task during Disaster to help containment & Clean-up

N. B. The resources under public works are requisitioned by Chairman of DCG.

C.8.6 OTHERS

C.8.6.1 EMERGENCY CONTROL CENTER (In future LCG CONTROL ROOM)

An emergency control centre is the place from where the operations for handling and controlling the emergencies are directed and co-ordinated. It is manned by the Incident Commander and assisted by other key persons. It is equipped with adequate means of communication to areas inside and outside the factory.

The emergency control centre is identified as the District Collector's office. An alternate emergency control centre in case of main emergency control centre affected by the MIA office located within the industrial area.

The ECC shall maintain continuous contact with the command post through out the duration of the incident, and will serve as the focal point of all external communications with mutual aid, regulatory agencies, the public and the media. During the moderate to catastrophic incident all planning, technical and administrative support will be provided to the IC through District Collectorate office.

The main emergency control centre shall be equipped with following resources:

1. Internal & External telephones.
2. Radio communication.
3. Public Address System.
4. Personal protective equipment.
5. Reference material including all the On-Site plan and related procedures.
6. Off-Site emergency control manuals.
7. General layout plan.
8. Material Safety Data Sheets.
9. TREMCARD booklet in English / Local language.
10. Standard instructions to Drivers for handling transport emergencies.
11. Map of surrounding area.
12. General office support including computer capabilities, telefax and copy machines.
13. List of equipment as per annexure to handle initial alarm by first response team.

C.8.6.2 COMMUNICATION

The key to the management of disaster lies in an efficient reliable communications system. The effectiveness of responses to the On-Site and Off-site emergency plans, requires an efficient communications system to alert.

- People inside the factory.
- Key factory personnel outside normal working hours.
- Off-site emergency Authorities and Services.
- Neighbouring industries in the area as well as public in the likely danger zone.

The communication system for On-Site emergency response would be handled by the respective industry. However, the Off-Site communication network would be co-ordinated by ECC. The emergency operations would follow the principles of communication control given below.

- Communication to respond to chain of command and control in handling emergency.
- Communications to be reliable and full proof by building redundancy .
- Communications to ensure quick passage of information, as well as uninterrupted flow of orders / instructions.
- All LCG Members shall be provided with Cellular (Mobile) Phones.

INTERNAL & CORPORATE COMMUNICATION

The communications of declaration of a major hazard situation is by siren or by Public Address System.

Simultaneously the announcement to be made on Public Address System explaining the nature of hazard its location, location of Emergency control center & actions required to be taken.

Communications between IC, SIC & other personnel should be through radio / telephones or through personal talks or through the services of messengers with written & signed messages.

(ACTION DESIRED : It is described that the three digit telephone number to be allotted to Emergency Control Center and hotlines exists between two neighbouring industries for quick mutual aid.)

C.8.6.3 MARG

The Mutual Aid and Response Group (MARG) has been formed in co-ordination with MAH units & other Chemical Industries in Waluj Chikalthana, Shendra & Paithan MIDC. The guidance of Directorate of Industries Safety and Health (DISH) in this respect is commendable and is a very unique effort in the Indian context.

The main objectives of MARG are :

1. Mutual help from member-industries.
2. To create community awareness and confidence among the people living authorities.
3. To provide training to the employees of the MARG members and concerned authorities.
4. To co-ordinated with the authorities for getting better infra-structural facilities in District area.

MAH & other factories are divided into eight zones. The group leaders and alternative group leaders are identified in each zone. The common hazardous chemicals handled in District area are listed. A comprehensive list of equipment to be spared in an emergency, volunteered by the members is documented in the manual. The document on medical treatment dealing with antidotes / symptomatic treatment for common chemicals handled, has been also prepared. An ER Station is being developed in this area to assist the industries as first responder in an emergency. It will be equipped with all the infrastructure required to tackle an emergency.

See Annexure 11

C.8.6.4 MEDIA

Media Personnel : All media personnel present at the site shall be specifically authorised by IC or his design. Under no circumstances shall media personnel; be permitted at the Command post or within the operating area of the response without an escort.

News Release : If the emergency attracts the interest of the media, or if notification of the citizen through the media is warranted, the Management Policy Group shall approve any and all statements prepared for release to the public, and information officer will issue the statement.

Public Agencies : Public Agencies shall be notified as required. The liasion officer and Information officer assigned to ECC will co-ordinate all contacts with public agencies.

C.8.6.5 CRISIS GROUP under Chemical Accident (EPPR) 1996

As per this Rules Central, State, District & Local Crisis Groups are formed. These groups will be main resources in future. The functions of these groups mentioned as below:

1. Functions of the Central Crisis Group
 - i). The Central Crisis Group shall be the apex body to deal with major chemical accidents and to provide expert guidance for handling major chemical accidents.
 - ii) Without prejudice to the functions specified under sub-rule (1), the Central Crisis Group shall
 - a) Continuously monitor the post accident situation arising out of a major chemical accident and suggest measures for prevention and to check recurrence of such accidents.
 - b) Conduct post accident analysis of such major chemical accidents and evaluate responses.
 - c) Review district Off-Site emergency plans with a view to examine its adequacy in accordance with the Manufacture Storage and Import of Hazardous Chemical Rules and suggest measures to reduce risks in the Industrial pockets.
 - d) Review the progress report submitted by the State Crisis Group.
 - e) Respond to queries addressed to it by the State Crisis Group and the District Crisis Group.
 - f) Publish a State-wise list of experts and officials who are concerned with the handling of chemical accidents.
 - g) Render in the case of a chemical accident in a State all financial and infra-structural help as may be necessary.
2. Functions of State Crisis Group
 - i) The State Crisis Group shall be the apex body in the State to deal with major chemical accident and to provide expert guidance for handling major chemical accidents.
 - ii) Without prejudice to the functions specified under sub-rule (1), State Crisis Group shall, -
 - a) Review all district Off-Site emergency plans in the State with a view to examine its adequacy in accordance with the Manufacture, Storage and Import of Hazardous Chemicals, Rules and forward a report to the Central Crisis Group once in 3 months.
 - b) Assist the State Government in managing chemical accidents at a site.

- c) Assist the State Government in the planning preparedness and mitigation of major chemical accidents at a site in the State.
- d) Continuously monitor the post accident situation arising out of a major chemical accident in the State and forwards a report to the Central Crisis Group.
- e) Review the progress report submitted by the District Crisis Groups.
- f) Respond to queries addressed to it by the District Crisis Groups.
- g) Publish a list of exports and officials in the State who are concerned with the management of chemical accidents.

3. Functions of District Crisis Group

- 1. The District Crisis Group shall be the apex body in the District to deal with major chemical accidents and to provide expert guidance for handling major chemical accidents.
- 2. Without prejudice to the functions specified under sub-rule (1), District Crisis Group shall, -
 - (a) Assist in the preparation of the district off-site emergency plan.
 - (b) Review all the on-site emergency plans prepared by the occupier of Major Accident Hazards installation for the preparation of the district off-site emergency plan.
 - (c) Assist the district administration in the management of chemical accident at a site lying within the district.
 - (d) Continuously monitor every chemical accident.
 - (e) Ensure continuously information flow from the district to the Centre and State Group regarding accident situation and mitigation efforts.
 - (f) Forward a report of the chemical accident within fifteen days to the State Crisis Group.
 - (g) Conduct at least one full scale mock-drill of a chemical accident at a site each year and forward a report of the strength and the weakness of the plan to the State Crisis Group.

4. Functions of the Local Crisis Group :

- 1. The Local Crisis Group shall be body in the industrial pocket to deal with chemical pocked to deal with chemical accident and co-ordinate efforts in planning preparedness and mitigation of a chemical accident.
- 2. Without prejudice to the functions specific under sub-rule (1) the Local Crisis Group shall
 - (a) Prepare local emergency plan for the industrial pocket;
 - (b) Ensure dovetailing of the local emergency plan with the district off-site emergency plan
 - (c) Train personnel involved in chemical accident management.
 - (d) Educate the population, likely to be affected in a chemical accident about the member and existing preparedness in the area.
 - (e) Conduct at least one full scale mock-drill of a chemical accident at a site every six month and forward are port to the District Crisis Group.
 - (f) Respond to all public injuries on the subject.

See Annexure 14- List of DCG & LCG Members

C - 9 RESPONSE PERSONNEL SAFETY

Planning Team

- ❖ Chief Fire Officer AMC - Incharge
- ❖ Fire Officer, Garware
- ❖ Fire Officer, Bajaj
- ❖ Deputy Controller Civil Defence Aurangabad
- ❖ ACP Aurangabad

These Members should prepare Plan for Response Personal Safety considering the following

Factors

- Standard operating procedure for entering and leaving sites as per On-Site plan shall be adopted.
- Accountability for personnel entering and leaving the sites shall be done by concerned officials.
- Decontamination procedures : Shall be developed as per On-Site Plan & Hazards posed.
- Recommended safety and health equipment - List attached in Annexure 7
- Personal safety precautions.
- List the Equipment appropriate to various degrees of Hazards
- Training to the Emergency Responders in use of Safety equipment.
- Immediate Long Term Health Hazards to Emergency Responders.
- Insurance coverage of Emergency Responders
- Medical Surveillance

All the first responders including Key personnel and operators shall be subjected annual medical checking for their fitness to act during emergency as per their responsibility.

Similar all the responders who has taken part in combating the disaster shall be sent for complete medical check up for assessing the effects of inhalation of toxic gases or other effects.

See Annexure 17 for Safety Precautions & Annexure 18 Water reactive Chemicals

C.10 ONGOING INCIDENT ASSESSMENT

Planning Team

- ❖ Regional Officer MPCB Aurangabad – Incharge
- ❖ Pollution Control Department of AMC
- ❖ District Weather Monitoring Chief
- ❖ Executive engineer MIDC
- ❖ NGO Environment Protection
- ❖ Food Inspector

These team shall prepare a Plan to Monitor the release considering the following factors

FACTORS

Action

- Field monitoring teams
- Provision for environment assessment, biological monitoring and contamination surveys.
- Food / water controls.

Responsibility

AMC, MPCB, MARG
AMC, MPCB.
MIDC / AMC.

Comment : After the notification that a release has occurred, it is crucial to monitor the release and assess its impact, both on and off site. A detailed log of all sampling results should be maintained. Health officials should be kept informed of the situation. Often the facility at which the release has occurred will have the best equipment for this purpose.

District Collector / LCG should describe who is responsible to monitor the size, concentration and movement of leaks, spills and releases and how they will do their work. Decisions about response personnel safety, citizen protection (whether indoor or through evacuation) and the use of food and water in the area will depend upon on accurate assessment of spill or plume movement and concentration. Similarly, decisions about containment and cleanup depend upon monitoring data.

C.11 LAW ENFORCEMENT

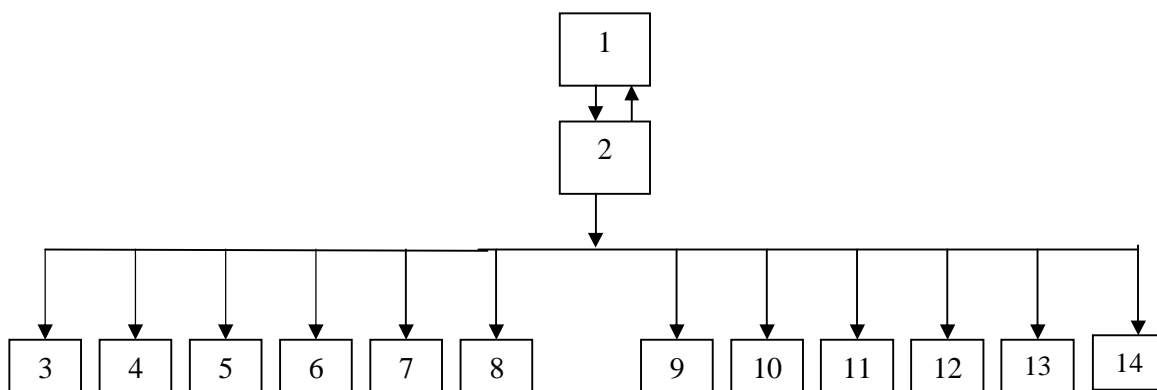
Planning Team

- ❖ District Collector, District Collector Aurangabad & Chairman District Crisis Group – Incharge
- ❖ Municipal Commissioner AMC & Chairman LCG
- ❖ Joint Director DISH, Aurangabad & Member Secretary DCG
- ❖ Deputy Director DISH, Aurangabad & Member Secretary LCG
- ❖ Commissioner Of Police, Aurangabad
- ❖ Regional Officer MPCB Aurangabad
- ❖ Civil Surgeon, Aurangabad
- ❖ Chief Fire Officer, Aurangabad

Factors for Planning

- ❖ Chain Of Command for Law Enforcement Officials
- ❖ List of all Tasks for Law Enforcement Personnel

CHAIN OF COMMAND



SR.NO.	AUTHORITY	FUNCTION
1	District Collector, Aurangabad	Overall I/C of District
2	Municipal Commissioner, AMC	Overall I/C of AMC Area
3	Police Commissioner / Supdt. Police, A'bad	Rescue, Transport & Relief
4	Additional Collector	Alternate Leader & I/C Evacuation
5	District Information Officer	Public Information
6	Chief Fire Officer, AMC	Manpower, Fire & Rescue & Response Personal Safety
7	District Health Officer / Civil Surgeon	Health & Medical
8	City Engineer, AMC	Public Works
9	Regional Officer MPCB, Aurangabad	On-going Incident Assessment & Containment/Clean-up
10	General Manager, Telecom Aurangabad	Communication
11	Commandant Home Guards	Rescue
12	Deputy Controller Civil Defence	Rescue
13	RTO, Aurangabad	Transport Routes
14	Dy. Director, DISH Aurangabad	Updating & Testing of the Plan

D CONTAINMENT AND CLEANUP

Planning Team

- ❖ Regional Officer MPCB – Incharge
- ❖ C M O AMC
- ❖ Executive Engineer MIDC/PWD
- ❖ Chairman of MASIA
- ❖ Chief Fire Officer AMC
- ❖ RTO Aurangabad
- ❖ District Agriculture Officer
- ❖ Chairman MARG
- ❖ Expert From MAH Industries
- ❖ NGO
- ❖ D .C. P / S. P. Aurangabad
- ❖ Representative of Transport Contractors.

D.1 TECHNIQUES FOR SPILL CONTAINMENT AND CLEANUP

FACTORS

Actions

- Containment and mitigation actions
- Cleanup methods.
- Restoration of the surrounding environment.

Responsibility

AMC, LCG.
DISH, MPCB, CCE, RTO.
AMC.

Comment : District Collector office / LCG will typically emphasize the containment and stabilisation of an incident; State regularity agencies can focus on cleanup details. CCG can provide assistance during the cleanup process. It is the releaser's legal and financial responsibility to clean up and minimise the risk to the health of the general public and workers that are involved. CCG & MOEF other government officials should monitor the responsible party cleanup activities.

A clear and succinct list of containment and cleanup countermeasures should be prepared for each hazardous material present in the community in significant quantities. This section should co-ordinated with the section on "Response Personnel Safety" So that response teams are subject to minimal danger. Planners should concentrate on the techniques that are applicable to the hazardous material and terrain area. It may be helpful to include sketches and details on how cleanup should occur for certain area where spill are more likely.

N.B. Deciding the location of Hazardous Waste Disposal Site is duty of the Govt.

See Annexure 18 for Water Reactive Chemicals

It is important to determine whether a fire should be extinguished or allowed to burn. Water used in fire fighting could become contaminated and then would need to be contained or possibly treated. In addition, some material may be water- reactive and pose a greater hazard when in contact with water. Some vapours may condense into pools of liquid that must be contained and removed. Accumulated pools may be recovered with appropriate pumps, hoses, and storage containers. Various foams may be used to reduce vapour generation rates. Water sprays for fog may be applied at down wind points away from “cold” pools to absorb vapours and / or accelerate their dispersal in the atmosphere (Sprays and for might not reduce an explosive atmosphere). Volatile liquids might be diluted or neutralised.

If a toxic vapour comes to the ground on crops, on playgrounds, in drinking water or other places where humans are likely to be affected by it, the area should be tested for contamination. Appropriate steps must be taken if animals (including fish and birds) that may become part of the human food chain are in contact with a hazardous material. It is important to identify in advance what instruments and methods can be used to detect the materials in question.

Restoration of the area is a long-range project, but general restoration steps should appear in the plan. Specific consideration should be given to the mitigation of damages to the environment.

D.2 RESOURCES FOR CLEANUP AND DISPOSAL

FACTORS

<u>Action</u>	<u>Responsibility</u>
• Cleanup / disposal contractors and services provided.	AMC, PWD, MIDC.
• Cleanup material and equipment.	--Do--
• Communication equipment.	--Do--
• Provision for long-term site control during extended Cleanups.	--Do--
• Emergency transportation (e.g. aircraft, vehicles, boats)	--Do--
• Cleanup personnel.	AMC, PWD, MIDC.
• Personal protective equipment.	AMC, MARG, LCG.
• Approved disposal sites.	AMC, MIDC.

Comment : This section is similar to the yellow pages of the telephone book. It provides plan users with the following important information :

- ◆ What types of resources are available (public, and privates);
- ◆ How much is stockpiled;
- ◆ Where it is located (address and telephone number); and
- ◆ What steps are necessary to obtain the resources.

Organisations that may have resources for use during a hazardous materials incident include:

- ◆ Public agencies (e.g. fire, police, public works, public health, agriculture, fish and game);

- ◆ Industry (e.g. chemical producers, transporters, stores, associations, spill cleanup contractors, construction companies);
- ◆ Spill / equipment co-operatives; and
- ◆ Volunteer groups (ham radio operators, vehicles clubs).

Resource availability will change with time, so keep this section of the plan up-to-date.

Hazardous materials disposal may exceed the capabilities of smaller cities and towns; in such cases, the plan should indicate the appropriate State and / Govt. of India Agency that is responsible for making decisions regarding disposal.

Disposal of hazardous materials or wastes is controlled by a number of Central and State laws and regulations. MPCBI regulate waste disposal and it is important that this section reflect the requirements of these regulations for On-Site disposal, transportation and Off-Site disposal. The plan should include an updated list of Hazardous waste disposal facilities for possible use during an incident.

E DOCUMENTATION AND INVESTIGATIVE FOLLOW-UP

FACTORS

- List of required reports.
- Reasons for requiring the reports.
- Format for reports.
- Methods for determining whether the response mechanism worked properly.
- Provision for cost recovery.
- Follow up action to avoid similar disaster in future.

Comment: This section indicates what information should be gathered about the release and the response operation. Key response personnel could be instructed to maintain an accurate log of their activities. Actual response costs should be documented in order to facilitate cost recovery.

It is also important to identify who is responsible for the post-incident investigation to discover quickly the exact circumstances and cause of the release. Critiques of real incidents, if handled tactfully, allow improvements to be made based on actual experience. The documentation described above should help this investigation determine if response operations were effective, whether the emergency plan should be amended, and what follow-up responder and public training programs are needed.

N.B. The Following Members of this Plan shall enquire all technological disasters & transport disasters & report to LCG

- ❖ **Chief Fire Officer AMC**
- ❖ **Jt. Chief Controller of Explosives Office Address : CGO complex, CBD Belapur, Navi Mumbai. Tel No. 022 – 7575946.**
- ❖ **Regional Officer MPCB Aurangabad**
- ❖ **ACP Aurangabad**
- ❖ **RTO Aurangabad**

F PROCEDURE FOR TESTING AND UPDATING PLAN

POTENTIAL MEMBERS OF PLANNING TEAM :

- ❖ Chairman Local Crisis Group – Incharge
- ❖ Deputy Director Industrial Safety & Health & Member Secretary Local Crisis Group
- ❖ Chief Fire Officer AMC
- ❖ ACP Aurangabad
- ❖ Deputy Controller Civil Defence Aurangabad
- ❖ Regional Officer MPCB Aurangabad
- ❖ Chief Medical Officer AMC
- ❖ Civil Surgeon Aurangabad
- ❖ District Health Officer Aurangabad
- ❖ Certifying Surgeon Aurangabad
- ❖ Medical Superintendent AMC Hospital Aurangabad
- ❖ RTO Aurangabad
- ❖ All MAH Industries in Aurangabad District
- ❖ Technical Experts in District
- ❖ NGO
- ❖ District Information Officer Aurangabad
- ❖ Representative of TV/Radio
- ❖ Editor of Lokmat /Sakal
- ❖ Superintendent Agriculture Officer Aurangabad
- ❖ Executive Engineer PWD/MIDC/CIDCO
- ❖ Co-ordinator MARG
- ❖ President MASSIA

F.1 TESTING THE PLAN

Factors

- ❖ Provision For Regular Table Top, Functional, Mock & Full Scale exercises
- ❖ Organisation Incharge Of the Exercise
- ❖ Types of the Exercise
- ❖ Frequency of Exercise

DRILLS AND SIMULATION EXERCISES

The regular drills and simulation exercises is a progressive commitment to ensuring that the personnel, Organisational structure, and resources identified in the area plan can function to achieve the most favourable outcome in the event of real accident. The terms used in this exercise are defined as:

Orientation Seminars : The orientation seminar is an informal activity which focuses on training and familiarizations with roles, procedures, responsibilities, and personalities in the management plan. The general purpose is for participants to review plans and procedures in a low stress no “ real-time environment with little or no attempt at any simulation.

Tabletop exercise : The tabletop exercise provides a specific simulation exercise whose focus is on reviewing the plans and procedures unique to the situation. This exercise makes sure that all the participants have reviewed the plan details in an interactive fashion.

Functional Exercise : The exercise is designed to taste or evaluate individual function. Each function is exercised separately. As far as possible the functional exercises should be held near the site.

Full Scale exercise : This is done by simulating an event.

Exercise Cycle

The exercise cycle is a calendar of events reflecting a series of exercise that moves the area in the direction towards preparedness. A good exercise cycle is updated regularly to account for changes in the area plan. An recommended exercise cycle may look as below.

Exercise Type	Purpose	Participants	Incharge
Orientation	Review Plan	Planning Team Members	District Collector
Tabletop	Review Co-ordination	Emergency Management staff & Responders	Chief Fire Officer AMC assisted by CMO AMC
Orientation	Evacuation procedures	Emergency Management Staff & responders, community leaders	Chief Fire Officer AMC
Tabletop	Risk Communication	Emergency Management Staff, Information Officer, Media	Public Relation Officer, Collector office assisted by District Information Officer
Functional	Simulated evacuation	Media	Public Relation Officer, Collector office assisted by District Information Officer
Full Scale	Simulated toxic gas release	All emergency response system personnel and volunteers	District Collector

Exercise Momentum

Motivation and enthusiasm are the keys to success in any important endeavour and emergency planning is no exception. Individually and collectively the LCG has to maintain their commitment and to be aggressive in the community to carry the message of preparedness.

Keeping the momentum going requires a creative Exercise program that is well timed and constructed so that participants are reinforced with more realistic perception of risks and consequences of chemical disasters. Following are some of the points which may be kept in mind for keeping the momentum going.

- ❖ Information and discussion about incidents happening in other area
- ❖ Field trips in a group of two or three to high risk areas to see, first hand, the source of risk and to get the mental picture of what could go wrong.

- ❖ Exchanging views with other area for various operations.
- ❖ Regular address of the District Collector/AMC Municipal Commissioner to LCG members.
- ❖ The AMC Commissioner to take initiative and get the busy LCG members to come some of their meetings.

RECORD KEEPING :

Record keeping plays an integral role in the administration of the emergency preparedness plan. Records are maintained to document the status of the various points of this section. Following three types of records are suggested as a part of the Disaster preparedness plan.

Responder-Specific Records that pertain to individual responder, such as training required and completed, refresher course completed medical surveillance information and respiratory fit testing.

Equipment – Specific Documentation of equipment inspection, calibration and testing.

Programmatic: Documentation and records of program activities and implementation such as safety meeting and drills, and records of incidents

- ❖ **Procedure for evaluating performance, making changes to plans, and correcting identified deficiencies in response capabilities as necessary.**

Any emergency plan must be evaluated and kept up-to-date through the review of actual responses, simulation exercises, and regular collection of new data. Effective emergency

Preparedness requires periodic review and evaluation and the necessary effort must be sustained at the community level. Plans should reflect changes in the economy, land use, permit waivers, available technology, response capabilities, hazardous materials present, Central and state laws ,local laws and ordinances, road configurations, population change emergency telephone numbers, and facility location. This section describes key aspects of appraisal and provides specific guidance for maintaining an updated hazardous materials emergency plan.

- Plan review and approval are critically important responsibilities of the planning team. This section discusses the various means by which a plan can be reviewed thoroughly and systematically.

- Internal Review

The Planning team, after drafting the plan, should conduct an internal review of the plan. It is not sufficient merely to read over the plan for clarity or to search for errors. The plan should also be assessed for adequacy and completeness. Individual planning team members can use these questions to conduct self review of their own work and the team can assign a committee to review the total plan. Once the team accomplishes this internal review the plan should be revised in preparation for external review.

- External Review :

External review legitimises the authority and fosters community acceptances of the plan. The review process should involve elements of peer review, upper level review,

and community input. The Planning team must devise a process to receive, review and respond to comments from external reviewers.

➤ Peer Review

Peer review entails finding qualified individuals who can provide objective reviews of the plan. Individuals with qualifications similar to those considered for inclusion on the planning team should be selected as Peer reviewers. Examples of appropriate individuals include :

- ❑ The Safety or environmental Engineer in a MAH industry.
- ❑ Responsible authorities from Govt. agencies
- ❑ College Professors & Safety Professionals from Hazardous Industries & Consultants familiar with hazardous materials response operations; and
- ❑ A concerned Citizens groups.

➤ Upper Level Review

Upper Level review involves submitting the plan to an individual or group with oversight authority or responsibility for the plan. Upper level review should take place after peer review and modification of the plan.

➤ Community Input :

Community involvement is vital to success throughout the planning process.

At the plan appraisal stage, such involvement greatly facilitates formal acceptance of the plan by the community. Approaches that can be include:

- ❑ Community Workshops
- ❑ Publication of Notice
- ❑ Public Meetings
- ❑ Invited reviews
- ❑ Advisory Councils

These activities do more than encourage community consensus building. Community outreach at this stage in the process also improves the soundness of the plan by increased public input and expands public understanding of the plan and thus the effectiveness of the emergency response to a hazardous materials incident.

➤ State /Central Review :

After local review and testing through exercises a community may want to request review of the plan by State and or Central officials. Such a review will depend upon the availability of staff resources. District Crisis Group set up in accordance with Chemical Accidents (Emergency Planning & Preparedness) Rules 1996 are to submit a copy of the Off-Site Disaster Plan to the State Crisis Group for review to ensure co-ordination of the plan with emergency plans of other planning Districts. Central Crisis Group may review and comment upon an Off-site Disaster Plan.

➤ Plan approval : The planning team should identify and comply with any local or State requirements for formal plan approval. It may be necessary for local officials to enact legislation that gives legal recognition to the emergency plan.

F.2 UPDATING THE PLAN

Factors

- ❖ Title and Organisation of responsible person(s)
- ❖ Change notification procedures
- ❖ How often the plan should be audited and what mechanisms will be used to change the plan

Comment: Responsibility should be delegated to someone to make sure that the plan is updated frequently and that all plan holders are informed of the changes. Notification of changes should be by written memorandum or letter; the changes should be recorded in the RECORD OF AMENDMENTS page at the front of the completed plan.. Changes should be consequently numbered for ease of tracking and accounting.

Following are examples of information that must regularly be checked for accuracy:

- ❖ Identify and phone numbers of response personnel
- ❖ Name, quantity, properties, and location of hazardous materials in the community. (If new hazardous ,materials are made, used, stored, or transported in the community, revise the plan as needed)
- ❖ Facility maps
- ❖ Transportation routes.
- ❖ Emergency services available
- ❖ Resource availability

KEEPING THE PLAN UP-TO-DATE

All emergency plans become outdated because of social, economic, and environmental changes. Keeping the plan current is a difficult task, but can be achieved by scheduling reviews regularly. As noted in section above the plan itself should indicate who is responsible for keeping it up-to-date. Outdated information should be replaced, and the results of appraisals exercises should be incorporated into the plan. The Following techniques will aid in keeping abreast of relevant changes.

- Establish a regular review period- yearly
- Test the plan through regularly scheduled exercises.
- Publish a notice and announce a comment period for plan review and revisions.
- Maintain a list of individuals, agencies, and organisations that will be interested in participating in the review process.
- Make one reliable organisation responsible for Co-ordination of the review and overall stewardship of the plan.
- Include a “Record of Amendments and Changes” Notice in the plan
- Include a “When & Where to Report Changes” notice in the Plan
- Make any sections of the plan that are subject to frequent changes either easily replaceable. So that old material may be crossed out and new data easily written in.

The Organisation responsible for review should do the following :

- ❑ Maintain a list of Plan holders based on the original distribution list
- ❑ Check all telephone numbers, persons named with particular responsibilities, and equipment locations and availability
- ❑ Distribute Changes. Changes should be consecutively numbered from ease of tracking.
- ❑ Attend any Plan Critics meetings & Issue Changes as may be required.
- ❑ Integrate changes with other related plans.

Incident Review

When a hazardous materials incident does occur, a review or critique of the incident is a means of evaluating the plan's effectiveness.

Recommendations for conducting a incident review are:

- ❑ Assign responsibility for incident review to the same organisation that is responsible for plan update the planning team
- ❑ Conduct the review only after the emergency is under control and sufficient time has passed to allow emergency respondents to be objective about the incident.
- ❑ Use questionnaires, telephone interviews, or personal interviews to obtain comments and suggestions from emergency respondents. Follow up non-respondents.
- ❑ Identify plan and response deficiencies items that were overlooked improperly, identified, or were not effective.
- ❑ Convene the Planning team to review comments and make appropriate plan changes.
- ❑ Revise the plan as necessary. Communicate personal or departmental deficiencies informally to the appropriate person or department. Follow up to see that deficiencies are corrected.

See Annexure 15 : Format For Comments

G

REFERENCES

G.1 LABORATORY, CONSULTANT, AND OTHER TECHNICAL SUPPORT RESOURCES

Telephone directory of technical support services

- Laboratories (environmental and public health)
- Private consultants
- Colleges or universities (chemistry departments and special courses)
- Local chemical plants

G.2 TECHNICAL LIBRARY

List of references, their location, and their availability

- General planning references
- Specific references for hazardous materials
- Technical references and methods for using national databases

ANNEXTURE - 1

INITIAL INFORMATION

Incident Information Summary.

- i. Date and time :
- ii. Name of person receiving call :
- iii. Name and telephone number of on -scene contact :
- iv. Location :
- v. Near populations. :
- vi. Nature (e.g. Leak explosion, spill, VCE) :
- vii. Time of release :
- viii. Possible health effects /medical emergency information.:
- ix. Number of dead or injured where dead / injured are taken.
- x. Name of material (s) released; if known :
- xi. Characteristics of material (e.g. Colour, smell, physical effects):
Only if readily detectable. :
- xii. Present physical state of the material (i.e. gas liquid, solid) :
- xiii. Total amount of material that may be released. :
- xiv. Other hazardous materials in area. :
- xv. Amount of material released so far / duration of release :
- xvi. Whether significant amounts of the material appear to be
Entering the atmosphere, nearby water, storm drain, or soil.
- xvii. Direction, height, colour, odour of any vapour clouds or Fumes.
- xviii. Weather conditions (wind direction and speed) :
- xix. Local terrain conditions. :

Comment:-

Initial information is critical. Answers to some of these question may be unknown by the caller, but it is important to gather as much information as possible very quickly in order to facilitate decisions on public notification and evacuation. Some questions will apply to fixed facility incidents and others will apply only to transportation incidents. Some questions will apply specifically to air releases, while other questions will gather information about spills onto the ground or into water. Identification numbers, shipping manifests and placard information are essential to identify any hazardous materials involved in transportation incidents, and to take initial precautionary and containment steps.

ANNEXTURE - 2

Transport Routes

Zone	Area Covered	Main Road adjacent to zone
I	CHIKALTHANA	MSH 5 – Aurangabad to Jalna & towards Pune SH 60 MSH 8 – Aurangabad to Jalgaon
II	AURANGABAD MIDC (RAILWAY STATION)	SH 30 – Aurangabad to Paithan
III	WALUJ	SH 60 – Aurangabad to Pune By pass connected to SH 30
IV	CHITEGOAN / BALAPUR	SH 30 – Aurangabad to Paithan
V	PAITHAN	SH 30 – Aurangabad to Paithan to Shahagad SH 148 – Paithan to Ambad
VI	SILLOD (MANIKGAD)	MSH 8 – Aurangabad - Jalgaon SH 183 – Kannad to Jalna
VII	SHIVUR	SH 47 – Aurangabad to Vaijapur SH 16 – Aurangabad to Nandgaon
VIII	SHENDRA	MSH 5 – Aurangabad to Jalna

ANNEXTURE - 3

Vulnerable Zones

Zone	Area Covered
I	CHIKALTHANA
II	AURANGABAD MIDC (RAILWAY STATION)
III	WALUJ/SAJJAPUR/RANJANGAON/WALUJ MAHANAGAR/BAJAJ NAGAR
IV	CHITEGOAN / BALAPUR
V	PAITHAN
VI	SILLOD
VII	SHIVUR
VIII	SHENDRA

ANNEXTURE - 4

Hazardous Chemicals in District (NFPA Level)

Sr. No.	List Of Chemicals	Nh	Nf	Nr	IDLH
1	Ethyl Alcohol	0	3	0	
2	Hydrochloric Acid	3	0	0	100 ppm
3	Bromine	4	0	0	
4	Chlorine	3	0	0	25 ppm
5	Kerosene	0	2	0	-
6	Liquefied petroleum gas	1	4	0	19,000 ppm
7	Methanol	1	3	0	25,000 ppm
8	Ethyl Di Chloride	2	3	1	
9	Motor Spirit	1	3	0	-
10	Nitric Acid	3	0	0	100 ppm
11	Ammonia	2	1	0	
12	Ethyl Acetate	1	3	0	
13	Sulphuric acid	3	0	2	80 mg / m ³
14	Toluene	2	3	0	2,000 ppm

Nh - Health

- 0 - No Hazard beyond that of ordinary combustible
- 1 - Only minor injury likely
- 2 - Medical attention required to avoid temporary or residual injury
- 3 - Materials causing serious injury
- 4 - Short exposure causes death or serious injury

Nf - Flammability

- 0 - Non combustible
- 1 - Flash point greater than 100°C
- 2 - Flash point greater than 40°C but less than 100°C
- 3 - Flash point between 20°C to 40°C
- 4 - Flash point less than 20°C

Nr - Reactivity

- 0 - Non reactive even under fire
- 1 - Mildly reactive
- 2 - Significantly reactive without heating
- 3 - Detonation possible with confinement
- 4 - Detonation possible without confinement

ANNEXTURE – 5

(FIRE & RESCUE)

NAME & TELEPHONE NUMBERS OF FIRE BRIGADE PERSONNEL

Sr. No.	Name / Place	Telephone No.
1.	Fire Station AMC(Padmpura)	101 /2334000
	Mr. Shivaji Zanzan Chief Fire Officer	Off: 2331444 Resi: 2339101 Mobile 98230 33322
2	Fire Station CIDCO	2472099
	Sub Fire Officer	Off: Hotline from Padampura to CIDCO
3	Waluj MIDC Fire Station	
	Sub Fire Officer	Off. 2554255
4	Paithan Fire Station	
	Fire Officer	Off: 223010
5	Garware Polyester Ltd. Waluj :	2555135
	Chikalthana :	2486919
6	Bajaj Auto Ltd. Waluj	6633000
7	Videocon Appliances Ltd. Chitegoan	02431-251501

(Annexure 5 contd...)

RESOURCE MOBILISATION (Fire & Safety)

STRENGTH OF THE FIRE STATION

Sr. No.	Place		No.
1.	AMC Fire Station		
	Personnel	Chief Fire Officer	01
		Station Officer	01
		Sub Officer	04
		Driver Operator	13
		Leading Fire men	06
		Firemen	31
	Equipment	Fire Tender	04
		Foam Tender	01
		Ambulance	01
		Water Tanker	01
		Emergency Vehicle	01

ANNEXTURE – 6

Emergency Equipment Availability : ZONEWISE

Type	Sr. No	Name of Equipment	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII	Zone VIII	Total
Fire Fighting	1	Fire Tender	4	4	2	1	1	-	-	-	12
	2	Fire Vehicle	-	1	1	-	-	-	-	-	2
	3	Foam Monitor	2	-	-	-	-	-	-	-	2
	4	Foam Engine	1	1	1	-	-	-	-	-	3
	5	Foam Compound	1.5 KL	0.5 KL	1 KL	-	-	-	-	-	2 KL
	6	Fire Ladders	3	2	2	1	1	-	-	-	9
	7	Fire Suits	2	2	2	-	-	-	-	-	6
	8	Fire Hoses	100	40	150	50	30	-	-	-	370
	9	Nozzles	50	20	20	20	15	-	-	-	125
	10	Firemen	50	25	40	8	20	-	-	-	143
Leak/Spill Control	1	Breathing Apparatus	5	2	2	-	-	-	-	-	9
	2	Spare Air Cylinders	1	1	1	-	-	-	-	-	3
	3	Gas Leakage Kit	-	-	1	-	-	-	-	-	1
	4	Chemical Suit	2	1	2	-	-	-	-	-	5
	5	Gas Mask	-	-	-	-	-	-	-	-	-
	6	Aprons, Gloves etc	10	5	10	-	-	-	-	-	25
	7	Any other equipment	-	-	-	-	-	-	-	-	-
Medical	1	Ambulance	3	2	5	1	1	2	1	-	15
	2	Oxygen Cylinder	-	-	-	-	-	-	-	-	-
	3	Spare Oxygen Cylinder	-	-	-	-	-	-	-	-	-
	4	Antidotes for Chemical -specify	-	-	-	-	-	-	-	-	-

ANNEXTURE – 6

SUMMARY OF THE LIST OF EMERGENCY EQUIPMENT FOR ALL ZONES

A :

List of Zones	Name of the Equipment (Fire fighting)						
	Fire Tender	Foam Monitor	Foam engine	Foam Compound	Fire ladder	Fire Suits	Fire Hoses
Zone - I	4	2	1	1.5 KL	3	2	100
Zone - II	4	-	1	0.5 KL	2	2	40
Zone - III	2	-	1	1.0 KL	2	2	150
Zone - IV	1	-	-	-	1	-	50
Zone - V	1	-	-	-	1	-	30
Zone - VI	-	-	-	-	-	-	-
Zone - VII	-	-	-	-	-	-	-
Zone - VIII	-	-	-	-	-	-	-
Total	12	2	3	2 KL	9	6	370

B :

List of Zones	Name of the Equipment (Leak / Spill Control)						
	B.A. Sets	Spare Cylinder	Gas Leak Kit	Chemical Suit	Gas Mask	Aprons, Gloves, Etc.	Other Equipment
Zone - I	5	1	-	2	-	10	-
Zone - II	2	1	-	1	-	5	-
Zone - III	2	1	1	2	-	10	-
Zone - IV	-	-	-	-	-	-	-
Zone - V	-	-	-	-	-	-	-
Zone - VI	-	-	-	-	-	-	-
Zone - VII	-	-	-	-	-	-	-
Zone - VIII	-	-	-	-	-	-	-
Total	12	3	1	5	-	25	-

ANNEXTURE – 7 (Hazmat Response Van)

PROPOSED HAZMAT RESPONSE VAN AND HAZMAT KIT

1 PROTECTIVE CLOTHING

- Chemical protective suits for SCBA
- Splash apron (neoprene / butyl) large
- Proximity apron
- Acid suits
- Neoprene 14” gloves
- Viton 11” gloves
- Butyl 14” gloves
- Natural rubber gloves
- Surgical gloves
- High voltage lineman’s gloves
- TYVEK coverall
- Raingear (Jacket, Pants)
- Overall, abanda, TYVEK material, non-sparking zipper
- High visibility vests
- Goggles (Polycarbonate lens)
- Hard-hats with headband suspension
- Face shield (full) 10 x 19 x 0.060
- Boots (neoprene, steel toe and modsole)
- Boot cover
- Safety harness
- Ear protectors
- Turnout pants / jacket (large)

2. BREATHING APPARATUS

- Positive pressure self - contained breathing apparatus
- Spare cylinder
- Full face cartridge type respirator
- Cartridges GMC - H G, C, GMP, GMC - S
- B9 five - minute escape mask
- Three cylinder cascade with manifold

3. LEAK CONTROL EQUIPEMNT

- Bungs (for 55 gallon drum)
- Drum gaskets (55 gallon)
- Epoxy kit (plug and dike series p-200)
- Caulking compound (plug and dike 48p)
- Patch Kit (assorted patches) (plug and dike 24 - R, 16 - R, 8 - R)

4. MISCELLANEOUS

- Duct 2-x300 tap
- Teflon thread 1" * 300 tape
- Barricade 3 / 4" * 50 yds (red & white stripped) tape
- Friction 3 / 4" * 300 tape
- Electrical 1" * 300 tape
- Box sealing / packing (paper with glue backing) tape
- Masking 1" * 300'
- Pipe pieces, assorted
- Pipe union, assorted
- Pipe caps, assorted
- Hose clamps, assorted
- Saddle clamps, assorted
- Couplings (galvanised), assorted
- Hand cleaner (waterless)
- Flashlight (NS)
- Large wheel chock
- Wooden stakes (18")
- Electric flares (NS)
- Reflective triangles

5. ABSORBENT AND CONTAINERS

- Absorbent Pads (3 M type 1557 - 3 / 8" * 36") (50 per bale)
- Plastic can liners / bags (55 gallon)
- Recovery drum sets 30,555,85 gallon
- Diatomaceous earth 3 cu. ft. bag
- Sponges 2" * 4" * 6"
- Nylon Salvage Covers (vinyl laminated nylon) 12" * 16"

6. NEUTRALISING AGENTS

- Acid neutralising agent (neutrasorb 100 = box) (neutrasol 2 - 1 / 2 gallon container / carton)
- Neutraliser Neutracid
- Chlorox

7. TOOLS AND HARDWARE

- Square end, assorted sizes
- Flathead, assorted sizes
- Phillipshead, No.2 - 8, No.4 - 8 wrenches
- Hex Key / Allen, assorted sizes
- Crescent Adjustable, assorted sizes
- Basen - adjustable (4")
- M70 pipe, assorted sizes

Bung - universal (NS)
 Drum (standard) 17 - 1 / 2" length
 Socket ratchet 3 / 4" drive
 Socket 3 / 4" drive, assorted sizes
 Socket ratchet 1 / 2" drive 14 piece set 7 / 16" thr 1 - 1 / 2"
 Socket ratchet 1 / 2" drive
 Standard combination box / open end, assorted sizes
 Metric combination wrenches open / box 5 -25mm
 Bits, assorted sizes
 Drill (electrical) 1 / 2" chuck
 Drill set , assorted sizes (short length)
 Drill set , assorted sizes (large diameter)
 Slip joint 8" length 1" jaw
 Needle nosed 8", 6" plastic covered handles
 Vise grip (straight jaw) 10" Battery
 Vise brush 10" (NS)
 Curved claw 16oz
 Straight claw 16oz (fibreglass handle)
 Putty knife
 paint brushes, 3", 4" polyester bristle
 Tape measure 3/8-x100' steel tape
 Folding ruler (wooden) 6'
 Pipe wire (4')
 Welding kit two stage oxy-acetylene welding outfit with say-fuel thumb
 wheel torch
 Wood chisels, assorted size blade (plastic handle)
 Cold chisels, assorted size blade
 Hacksaw 10"-12" adjustable
 Hacksaw blades 12 (24 teeth / inch high speed design 5 per package)
 Keyhole saw
 Pipe cutters 1/8"-2"
 Pry bar, assorted sizes
 Safety line 7/32-x100' roll (16" metal)
 Broom, push 24" heads (long wooden handle)
 Lantern lights (battery type)
 Battery jumpers cables (8'-10')
 Drum dollies for 55 gallon drum
 Chemical bucket (5 gal) butyl
 Rubber
 Dust pans(standard 12 " plastic)

8. MONITORING EQUIPMENT

Combustible gas and oxygen detector and calibration kit (Ranges : 0-100%,
 LEL 0-5PPM, 0-24% Oxygen)
 CO-indicator
 Multi gas detector kit (extension hose, air current, kit tubes) (Draeger CH304)
 0-13 Range, Battery
 pH paper (0-14) (Hydrin, 1/2 * 50 with dispenser) Water sample test kit (standard)

Chromium test set
Fluorescent dye (red, green)
Ultraviolet light, hand held, 100 volts.
Indication wind system AC, DC recording cup and vane anemometer with meter
Telescopic mast

9. MEDICAL FIRST AID

Extinguisher capable of handling Class A,B, C and D fires (No.20)
First Aid kit (36 units)
Resuscitator (B, W, S, CPR Portable with aspirator P/N 900-002-111-01
Wood fire blankets.

10. OXYGEN TRAUMA, FIRST AID BOX, EMERGENCY BOX KIT

- a. Oxygen Cylinder
- b. Burn sheets
- c. Rescue Blankets
- d. Oxygen breathing kit
- e. Instant Glucose
- f. Paramedic Scissors
- g. Bandage Scissors
- h. Forceps
- i. Suction Unit & Stat stick
- j. Ring cutter
- k. Cervical collar (3 sizes)
- l. Eye pads
- m. Tourniquets
- n. Multi-Trauma Dressings
- o. Adaptic Dressing
- p. Flexible Bandages
- q. Pocket Masks / Eye-Wash Bottle
- r. Orthopaedic stretcher.
- s. Bag mask resuscitator
- t. Mouth- to-mask
- u. Portable respirator
- v. Ophthalmic solution
- w. Bold-pressure equipment
- x. Gloves
- y. Portable lamps / Torches

11. MISCELLANEOUS

- | | |
|--|---------------------------------|
| a. Portable flood lights (500 4 nos.) | g. Portable Foam Extinguisher |
| b. Telescopic flood light | h. Portable D.C.P. extinguisher |
| c. Emergency suits (4 nos.) | i. Two way radio |
| d. SCBA - 4 nos. | j. Hydraulic cutter |
| e. Hatler Battery operated | k. Hydraulic spreader |
| f. Hydraulic pump unit (Portable) | |

ANNEXTURE – 8

HEALTH & MEDICAL (See Ambulance Support)

Sr. No.	Source	Location	Telephone
1	Govt. Medical College Hospital	Aurangabad	2404412-16
2	Mahtma Gandhi Mission Hospital	Aurangabad	2483401, 2484693
3	AMC	Aurangabad	2334000, 2482654
4	Faiz-a-am Trust	Aurangabad	2330140, 2323204
5	Hegdevar Hoispital	Aurangabad	2331195
6	Dhoot Hospital	Aurangabad	2489001-10
7	Kamal Nayan Hospital	Aurangabad	2377999
8	Shivsena	Aurangabad	2331125
9	Sumananjali Hospital	Aurangabad	2486900
10	Lions Club	Aurangabad	2482032
11	Mather Teresa Mission	Aurangabad	2332712
12	Marathwada Cancer Hospital	Aurangabad	2484192
13	Garware Company	Aurangabad	2482025
14	Civil Hospital	Sillod	(02430) 222046
15	Civil Hospital	Gangapur	(02433) 221259
16	Civil Hospital	Paithan	(02431) 223037, 223238
17	Civil Hospital	Vaijapur	(02436) 222083
18	Civil Hospital	Pishor	(02435) 229026
19	Civil Hospital	Soygoan	(02438) 24333
20	Civil Hospital	Pachod	(02431) 221417

ANNEXTURE – 9

(See Hospital Support)

LIST OF HOSPITALS (Public & Private)

Sr. No.	Name Of Hospital		Telephone
1	Govt. Medical College Hospital	Aurangabad	2404412-16
2	Mahtma Gandhi Mission Hospital	Aurangabad	2483401, 2484693
3	Shushrut Hospital	Aurangabad	2339192
4	Hegdevar Hoispital	Aurangabad	2331195
5	Dr. Patwardhan Hospital	Aurangabad	354022
6	Kamal Nayan Hospital	Aurangabad	2377999
7	Sumananjali Hospital	Aurangabad	2485900, 2486900
8	Marathwada Cancer Hospital	Aurangabad	2484192
9	Dhoot Hospital	Aurangabad	2489001-10
10	Dhanvantari Nursing Home	Pandharpur	2554542
11	Awanti Hospital	Pandharpur	2555302
12	Civil Hospital	Paithan	(02431) 223037, 223238
13	Civil Hospital	Vaijapur	(02436) 222083
14	Civil Hospital	Pishor	(02435) 229026
15	Civil Hospital	Soygoan	(02438) 24333
16	Civil Hospital	Pachod	(02431) 221417

DAY - AND - NIGHT CHEMISTS (MEDICAL STORES)

Sr. No.	Chemist	Telephone
1	Krushana Medical store (MGM Campus)	2481124

BLOOD BANKS

1	Sheth Nandalal Dhoot Hospital, Aurangabad	2489001-10
2	Government Hospital	2334411 Extn. 31

ANNEXTURE – 10

(See Transport Supplier)

Details of Heavy Equipment Cranes

SR. No	Name	Location	Telephone
1	Hind Crane Services	Shop No-12, Mondha naka, Jalna road, Aurangabad	(o)2333670/2336998
2	Lucky Bulldozers & Crane Services	Mill Corner Police Commissioner office aurangabad	M-9545454583
3	Aurangabad Crane & Transport	Opposite Bhaji mandi ,Railway station Road.	(o) 354880
4	Manisha Enterprises	MIDC Wajuj aurangabad	(o) 25644464
5	Shriram crane Services	Maharana Pratap Chock, Near Tirupati Guest house Bajaj nagar Waluj MIDC Aurangabad	M-9822666442
6	Ellora Bulldozer & Crane services	Mill Coner Near Police Commissioner office Aurangabad	(o) 2340878
7	J K Bulldozers & Crane Services	Mill Corner, Kotwadpura Police Head Quarters Mehaboob Yearkhan Road Aurangpura Aurangabad	(o) 2335779
8	Unde Crane Hiring Company	Unde niwas, Shop No-1,Near Ranjangoan Phata Waluj MIDC Aurangaad	(o) 554059

ANNEXTURE – 11

INCIDENT COMMANDER & ON SCENE COMMANDERS

(See MARG C.8.6.3)

Sr. No.	Name of MAH/ Hazardous Unit	Incident Commander	On Scene Commander
<u>ZONE - I</u>			
1	HPCL	Mr. Devidas Dethekar Regional Manager Tel. (o) 2481850 (M) 9657702070	Mr.Devendra Kale Safety Officer Tel. (o) 2481850 (M) 758829920
2	United Spirits Ltd.	Mr. Upadhye Tel. (o) 2483312	Mr.Shirsat Tel. (o) 2483312
3	NRB Bearings Ltd.	Mr. Moreshwar Patil GM Tel. (o) 2485486 (M) 9689945614	Mr. P. M. Humne M- 9850119139
4	Radient Agro Chem. Pvt. Ltd.	Mr. Asa Singh M.D. Tel. (o) 2482450	Mr. S.K. Thakur Production Manager Tel. (o) 2482450
5	Garware Polyester Ltd. Chikalhana	Mr. A.S. Gokhale Sr. GM Tel. (o) 2486006 Ext. 355	Mr. RP Mallavat GM – Engg. Tel. (o) 2485465 Ext. 220

(Annexure 11 contd...)

Sr. No.	Name of MAH/ Hazardous Unit	Incident Commander	On Scene Commander
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ZONE - II

1	Morganite Crucible Ltd. Waluj	Mr. Vinod Mhalsekar GM M-9372340492 (o) 6652532	Mr. Deshpande EHS Head M-8411000612 (o) 6652528
2	Bajaj Auto Ltd. Waluj	Mr. K. J. Zanjari V.P. MCD Tel (o) 6633000	Mr. Khadse Sr. Manager Safety Tel (o) 6633000
3	Garware Poyester Ltd.	Mr. MS Adsul Sr. GM Tel. (o) 2554124	Mr. RP Mallavat GM – Engg. Tel. (o) 2554125
4	Ipca Lab. Ltd.	Mr. V. B. Mailapure Factory Manager Tel (o) 2564113 Mobile 8888867033	Mr. Ajinath Survase Production Manager Tel (o) 2564994 Mobile 8888867017
5	Hospira Healthcare India Ltd.	Mr. Pramod Deshpande Factory Manager Tel. (o) 2554994/256399	Mr. Vijay Kulkarni Sr. Manager – Safety Tel. (o) 2554994 / 256399

ZONE - III

1	Videocon Industries Ltd.	Mr. Rajendra Bang GM Tel (o) 335105	Mr. Deepak Patil Safety Officer Tel (o) 2251555-60 Mobile 7387054775
2	Encore Health Care Pvt. Ltd.	Mr. BS Dhepe Plant Manager Tel. (o) 2232212/3	Mr. Mungikar Personal Manager Tel (o) 2232212/3

(Annexure 11 contd...)

Sr. No.	Name of MAH/ Hazardous Unit	Incident Commander	On Scene Commander
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ZONE - IV

1	Skoda Auto India Pvt. Ltd. MIDC, Shendra	Mr. Uma Rao General Manager Production Tel. (o) 5631102-1111-2222	Mr. Y.S. Wani Safety Officer Tel. (o) 5631102-1111-2222 Mobile 9372244476
2	Herman Finochem Pvt. Ltd.	Mr. K.G.Sharma Plant Manager Tel – 2485706	Mr. Ravi Ambulgekar Safety Officer Tel – 2748950

ZONE - V

1	Sidheshwar Sahkari Sahkari Karkhana	Mr A. D. Magar MD Tel (o) 02430 - 230276	Mr. Chavan Mobile 9881513148
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ZONE - VI

1	Sancheti Gas Bottling Pvt. Ltd.	Mr. SS Sancheti MD Tel (o) 02490-2354479	Mr. Gautam Sancheti M- 9422205566
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ANNEXTURE – 12

List of Experts

Sr. No	Name	Expertise	Tel.No.
1	Mr. Devidas Dethekar	Manager HPCL, Chikalthana, Aurangabad	(o) 2481850 M-9657702070
2	Mr. Milind Sangwikar	Safety Professional & Competent Person Unser factories Act	(o) 2338017 M-925319626
3	Mr.Ami Dagade	Safety Professional & Competent Person Unser factories Act	(o) 6612044 M- 9890873527
4	Mr. Anil Nalawde	Wockhardt Ltd.,L-1, MIDC, Chikalthana.	(o) 6637464 M-9850824472

ANNEXTURE – 13

ANTIDOTES COMMONLY USED AGAINST SPECIFIC AGENT

Specific Agent	Symptoms Requiring Treatment	Antidote	Dosage
Acetaminophen (Tylenol®, Nebs#)	Hepatotoxicity (hepatocellular necrosis)	Z-acetylcysteine	Oral : 140 mg/kg initial dose followed by 70 mg/kg every 4 hours for 17 doses.
Anticholinergic agents	Central and/or peripheral anticholinergic symptoms and at least one of the following Hypertension Hallucinations Convulsions Coma Arrhythmias	Physostigmine	Adults : 1 or 2 mg IV slowly (1mg/Minute,) Repeat in 20 minutes if no Reversal. Then 1 to 2 mg IV for recurrent Symptoms. Children : 0.5 mg IV (0.5 mg/minute), Readminister at 5-minute intervals to Maximum of 2 mg if symptoms persist, Repeat with lowest effective trial dose if life-threatening symptoms recur.
Cholinergic agents Physostigmine Neostigmine Pyridostigmine Pilocarpine Bethanechol Methacholine	Cholinergic crisis Diaphoresis Lacrimation Bronchial secretions Excessive urination and Defecation Convulsions Fasciculations	Atropine sulfate	Adults : 2 mg IV Children : 0.05 mg/kg IV Repeat until Cessation of secretions
Cyanide (potassium cyanide, hydrocyanic acid, laetrile, nitroprusside sodium)	Cyanosis Cardiopulmonary arrest Convulsions Coma	Sodium nitrite Then Sodium thiosulfate	Adults : 300 mg IV (10 ml of 3% solution) Children : Dose based on serum hemoglobin Adults : 12.5 grams IV (50 ml of 25% Solution) Cobalt E.D.T.A
Ethylene glycol	Acidosis Oxalate crystals in urine	Ethanol	Loading dose : 600 mg/kg (1 ml absolute alcohol = 790 mg) IV in D5 W over 15 minutes. Maintenance dose : To maintain blood Level of 100 mg percent. It varies Depending on drinking history of patient.
Specific Agent	Symptoms Requiring treatment	Antidote	Dosage

Neuroleptic agents Haloperidol (Haldol #) Loxapine succinate (Loxitane #) Molindone (Moban #) Phenothiazines Chlorpromazine (Thorpromazine #) Fluphenazine (Prolixin #) Thioridazine (Mellaril #)	Extrapyramidal symptoms: Dystonia Dyskinesia Oculogyric crisis Parkinsonian symptoms	Diphenhydramine Or Benztropine	25 to 50 mg IV, IM or 1 to 2 mg IV, IM
Iron salts (ferrous sulfate, ferrous gluconate)	Hypotension Shock Coma (free serum iron present)	Deferoxamine	Shock and/or Coma : 15 mg/kg/hour IV For 8 hours. Absence of Shock or coma but SI TIBC : 90 mg/kg IM every 8 hours* 3 doses
Methanol	Acidosis Methanol blood level Exceeding 20 mg%	Ethanol	Loading dose : 600 mg/kg/ (1 ml absolute alcohol = 790 mg) IV in D2W over 15 minutes. Maintenance Dose : To maintain blood level of 100 mg percent. Varies depending on drinking history of the patient.
Methemoglobin-Producing agents Nitrates/nitrites Phenazopyridine Phenacetin	Methemoglobinemia (30%)	Methylene blue	1 to 2 mg/kg IV (0.1 to 0.2 ml/kg) of 1 percent solution. Note : Contraindicated in methemoglobinemia secondary to sodium nitrite in cyanide poisoning.
Specific Agent	Symptoms Requiring treatment	Antidote	Dosage

Narcotic	Respiratory	Naloxone	Adults : 0.8 mg IV, IM,
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ANNEXTURE – 14

List of District Crisis Group Member

District Crisis Group

Sr.No	Office Name	Designation	Person Name	Tel.No.
1	District Collector	Chair Person	Miss.Nidhi Pandey	(o) 2331200 (R)2331100
2	Inspector of Factories, (Deputy Director, Industrial Safety & Health, Aurangabad)	Member Secretary	Mr. P.V.Surse	(o) 2331326 M-9405122969
3	District Energy Officer Mah State Elec Distributin Co.	Member	Supdt Engineer (Urban) Executive Engineer Urban	(o) 2240121 (R) 2485575 (o) 2334065
4	Chief Fire Officer	Member	Mr. Shivaji Zanzan	(o)2334000 (R) 2331444 M-9823033322
5	District Information Officer	Member	Mr. Govind Ahankari	(o)2331285 M-9850097173
6	Jt. Chief Controller of Explosives Add CGO complex, CBD Belapur, Navi Mumbai.	Member	Mr. G.m. Reddy	(o) 022– 27575946.
7	Chief Civil Defence (Commandant, Home Guards)	Member	Mr. Santosh Lakhotia	2334683
8	One representative of Trade union to be nominated by District Collector	Member	Mr. Bhalchandra Kango	
9	Superintendent of Police Aurangabad.	Member	Mr. Anil Kumbhare	(o) 2380808 M-9823138169
10	Deputy Superintendent of Police	Member	Being followed up	(o) 2240501
11	District Health Officer/Chief Medical Officer (Civil SURGEON Civil Hospital Aurangabad)	Member	Dr. Mr. D.N. Patil	(o) 2331019 (R) 2343890
12	District Health Officer (District Health Officer Z.P. Aurangabad)	Member	Dr. Mr. Pramod Mane	(o) 2350744 M-9049723272

13	Commissioner - AMC	Member	Mr. Prakash Mahajan	(o) 2331194 (R) 2331309
14	Representative of the Department of Public Health Engineering (Executive engineer PWD Aurangabad)	Member	Mr. Hemant Pagare	(o) 2331022 M-9822615732
15	4 Experts (Industrial Safety & Health) to be nominated by the District Collector			
	Name		Expertise	Contact No.
	Mr.Devidas Dethekar		Manager HPCL, Chikalthana, Aurangabad	(o) 2481850 M -9657702070
	Mr. Milind Sangwkar		Safety Professional & Competent Person Under factories Act	(o) 2338017 M-925319626
16.	Mr.Amit Dagade		Safety Professional & Competent Person Under factories Act	(o) 6612044 M- 9890873527
	Mr.Anil Nalawde		EHS India Head, Morganite Crucible, B-11, MIDC Waluj	(o) 6637464 M-9850824472
17	Commissioner Transport (Deputy Regional Transport Officer R.T.O.)	Member	Mr. T.M. Hazare	(o)2242156 M-9326251422
18	One representative of industry to be nominated by the District Collector	Member	Mr.	
19	Chair Person/Member Secretary Local Crises Group	Member	Mr. P.V.Surse	(o) 2331326

2. LCG Chikalthana & MIDC Railway Station Area

Sr. No	Designation	Officials	Name	Tel.No.
1	Chairman	Sub-Divisional Magistrate Aurangabad	Dr. Bharat Kadam Deputy Collector	2334127 2020125
2	Member Secretary	Asst. Director DISH, A,bad	Mr. S.K.Deshmukh	2331326
3	Member	Industries in the District industrial area / Industrial pockets	a) HPCL (Bottling) b) United Spirit Ltd.	2481662
4	Member	Transporters of Hazardous Chemicals - 2 Nos.	Mr. P. M. Hadke	(o) 2481850
5	Member	Fire Officer	Mr. Shivaji Zanzan	(o)2334000 (R) 2331444 M-9823033322
6	Member	Station House officer (Police)	Mr. G.H. Garad	2240558
7	Member	Block Development Officer	Mr.	2341542
8	Member	One representative of Civil Defence		
9	Member	Medical Officer,Primary Health Center.	Dr.	2481703
10	Member	Editor of Local News Paper	Mr. Chakradhar Dalvi	2485301
11	Member	Community leader /Corporator nominated by Chair Person	Mr.	
12	Member	One Representative of NGO to be nominated by Chair person	Mr.Vijay Kulkarni Vice Chairman-II NSC-MC-MAC	M-9764007104
13	Member	Two Doctors in the local areas to be nominated by Chair person	Dr. Milind Deshpande, Sumananjali Hospital Dr. Pradeep Inamdar, Avanti Hospital	2485900 M-9325219099
14	Member	Two Social Workers to be nominated by Chair person	Dr. Zulfikar Hussein, Faiz-E-am Trust Mr. Vijay Anna Borade, Janarth Trust	2330140

3. LCG Aurangabad - Waluj Area

Sr. No	Designation	Officials	Name	Tel.No.
1	Chairman	Sub-Divisional Magistrate Aurangabad	Dr. Bharat Kadam Deputy Collector	2334127 2020125
2	Member Secretary	Asst. Director DISH, A,bad	Mr. P.M.Jadhav	2331326
3	Member	Industries in the District industrial area / Industrial pockets	a) Bajaj Auto Ltd. b) Morganite Crucible Ltd. c) Garware - DMT Plant	6633000 2554405 2554124
4	Member	Transporters of Hazardous Chemicals - 2 Nos.	HPCL IOC	
5	Member	Fire Officer	Mr. Patil	2554255
6	Member	Police Station officer MIDC, Waluj.	Mr. Navle	2240560
7	Member	Block Development Officer	Mr.	221005
8	Member	One representative of Civil Defence		
9	Member	Medical Officer Primary Health Officer	Dr. Kulkarni, Neha Hospital (ESIC approved)	9890635868
10	Member	Editor of Local News Paper	Mr. Chakradhar Dalvi	2485301
11	Member	Community leader Sarpanch / Village Pradhan nominated by Chair Person	Mr. Dalvi (Kamlapur) Mr. Ashok Jadhav (Ranjangoan)	M-9371008067 M-9422201287
12	Member	One Representative of NGO to be nominated by Chair person	Mr.Vijay Kulkarni Vice Chairman-II NSC-MC-MAC	M-9764007104
13	Member	Two Doctors in the local areas to be nominated by Chair person	Dr. P.P.Inamdar, Avanti Hospital , Bajaj Nagar, Waluj. Dr. Khanna, Tirupati Hospital , Bajaj Nagar, Waluj.	2555302 2555886, 2244770 9325207004
14	Member	Two Social Workers to be nominated by Chair person	Dr. Zulfikar Hussein, Faiz-E-am Trust Mr. Vijay Anna Borade, Janarth Trust	2330140

ANNEXTURE – 15

Format For Comments

To make any specific comments and/or suggestions for Plan improvement following format can be used.

To,
The Member Secretary
Local Crisis Group, Chikalthana Area,
Office Of the Jt. Director, Aurangabad
Tel.No.

Name of the Department/Agency :
Address :

Contact Name :
Phone Number :
Fax Number :

Suggestions for Plan improvement :

Errors or inaccuracies noted in this plan :

Signature :

Date :

ANNEXTURE – 16

General Guidelines in Disaster

(Personal Protection of Citizens)

- ❖ Keep calm
- ❖ Don't Panic
- ❖ Cover mouth and Nose with wet cloth
- ❖ Don't spread rumour
- ❖ Don't crowd at incident sight
- ❖ Walk fast at right angle to the wind direction
- ❖ Close doors and windows in case of toxic gas release
- ❖ Turn off LPG gas incase of inflammable Gas leakage
- ❖ Keep phone lines clear
- ❖ Inform Police & Fire brigade
- ❖ Follow direction from proper authority
- ❖ Keep the road clear
- ❖ Give way to Emergency vehicles immediately

ANNEXTURE – 17

Safety Precautions

(Response Personal Safety)

APPROACH CAUTIOUSLY FROM UPWIND.

Resist the urge to rush in; others cannot be helped until the situation has been fully assessed.

SECURE THE SCENE.

Without entering the immediate hazard area, isolate the area and assure the safety of people and the environment, keep people away from the scene and outside the safety perimeter. Allow enough room to move your own equipment.

IDENTIFY THE HAZARDS .

Placards, container labels, shipping documents and / or expert persons on the scene are valuable information sources. Evaluate all available information and consult the recommended MSDS to reduce immediate risks.

ASSESS THE SITUATION .

Consider the following

- ❖ Is there a fire, a spill or a leak?
- ❖ What are the weather conditions?
- ❖ What is the terrain like ?
- ❖ Who/what is at risk: people, property or the environment ?
- ❖ What actions should be taken: Is an evacuation necessary ?
Is diking necessary ? What resources(human and equipment) are required and are readily available ?
- ❖ What can be done immediately ?

OBTAIN HELP :

Advise your ECC notify responsible agencies and call for assistance from qualified personnel.

DECIDE ON SITE ENTRY :

Any efforts made to rescue persons, protect property or the environment must be weighed against the possibility that you could become part of the problem. Enter the area only when wearing appropriate protective gear (see the MSDS on protective clothing and equipments)

RESPOND :

Respond in an appropriate manner. Establish a command post and lines of communication. Rescue casualties where possible & evacuate if necessary. Maintain control of the site. Continually re-assess the situation & modify the response accordingly. The first duty is to consider the safety of the people in the immediate area, including your own.

ABOVE ALL :

Don't walk into or touch spilled materials. Avoid inhalation of fumes, smoke & vapours, even if no dangerous chemicals are known to be involved. Don't assume that the gases or vapours are harmless because of lack of smell – odourless gases or vapours may be harmful.

ANNEXTURE – 18

Water Reactive Chemicals (Containment & Clean-up)

Serial No.	Name of the Chemical	Toxic Vapour Produced
1	Methyldichlorosilane	HCL
2	Methytrichlorosolane	HCL
3	Tricholorosilane	HCL
4	Calcium Phosphide	PH3
5	Aluminium Phosphide	PH3
6	Lithium Amide	NH3
7	Magnesium Aluminium Phosphide	PH3
8	Sodium Phosphide	PH3
9	Stannic Phosphide	PH3
10	Stannous Chloride	HCL
11	Lithium Hypochloride	CL2,HCL
12	Potassium /Sodium Cyanide	HCN
13	Zinc Phosphide	PH3
14	Acetyl Bromide	HBR
15	Acetyl Chloride	HCL
16	Aluminium Bromide	HBR
17	Aluminium Chloride	HCL
18	Antimony Pentafluoride	HF
19	Calcium Hypochlorites	CL2, HCL
20	Phosphorus PentaChloride	HCL
21	Phosphorus Pentasulphide	H2S
22	Thionyl Chloride	HCL, So2
23	Acetyl iodide	HI
24	Sulpherdiochloride	SO2, SO3, & HCL
25	Chlorine dioxide, Hydrade	CL2

ANNEXTURE – 19

See B EMERGENCY ASSISTANCE TELEPHONE ROSTER

❖ Emergency Control Centre (Police)	100 / 2240500
❖ District Emergency Control Room	2331077
❖ Fire Brigade	101/ 2334000 / 2331444
❖ Blood	104

1. COMMUNITY SERVICE.

<u>Name of Authority</u>	<u>Telephone.</u>
i. Commissioner of Police	2240501
ii. Superintendent of Police	2380808
iii. Fire Chief AMC	2334000 / 2339101
iv. Civil Surgeon	2331019 / 2343890
v. District Health Officer	2350744
vi. Chief Medical Officer AMC	2333536
vii. RTO, Aurangabad	2331135,2331164
viii. Executive Engineer, PWD	2334171
ix. Executive Engineer Jeevan Pradhikaran.	2331205
x. Executive Engineer MIDC,	2342188 / 2343129
xi. Ambulance	List in Annexure 8
xii. Hospitals	List in Annexure 9
xiii. Utilities	
Gas	
Telecom Dept. GM	2350100
MSEB	2334588
xii Municipal Commissioner	2331194
xiii Mayor	2334497
xiv AMC	2321664
xv Jt. DISH, Aurangabad	2331326
xvi RO, MPCB, Aurangabad	2473463
xvii Jt. CCE, CBD.	(022) 27575946
xviii District Collector & Chairman DCG	2331200
xix Dy. DISH Aurangabad	2331326
xx Members see LCG	Annexure 14
xxi MSRTC, Aurangabad	2242164
xxii Commandant, Home Guards	2334683
xxiii Aurangabad Railway Stn	2334244

2.	VOLUNTEERS GROUPS i. Lions Club, Aurangabad Mr. Satish Upadhaya	Telephone 2482032 M-9832010525
3.	RESPONSE PERSONNEL i. Incident commander ii. Deputy Municipal Commissioner, AMC	See Annexure 11 2321664 Ext. 211
4.	INDUSTRIES. i. MIA ii. Transporters iii. GARWARE iv. Bajaj Auto Ltd. v. HPCL	2333029 / 2324509 2485465 / 2554127 2663000 2484247 / 2485269
5.	MEDIA i. Television ii. News paper (Lokmat) iii. All India Radio (Aurangabad) iv. District Information Officer. v. Sakal vi. Samana vii. City Channel	4940357 2485301 to 04 2334551 to 54 2331285 2476261 2332225 2354277 / 350748
6.	STATE ASSISTANCE i. Chairman State Crisis Management Committee. ii. Secretary Environment iii. Secretary Labour & Member Secretary SCG iv. Transport Commissioner v. Secretary PWD vi. Secretary Health Department. vii. Director of Health Services. viii. Secretary Agriculture ix. Director DISH x. Chairman MPCB xi. Member Secretary MPCB xii. Divisional Commissioner, Marathwada xiii. DGI & PR xiv. Commandant General Home guard	 (022) 22027990 (022) 22026767 (022) 22883175 (022) 22026691/22025368 (022) 22024800 / 22026612 (022) 22023848 (022) 22621031 / 22621006 (022) 22029342 (022) 23522230-33 (022) 22671356 (022) 22671356 (0240) 22331294 / 2350044 (022) 22027956 (022) 22022246

7. OTHERS :

i. All MARG Members	See Annexure 11
ii. Deputy Director, DISH, Jalgoan.	(0257) 2229689
iii. Chairman LCG	2324100, 2342196
iv. District Collector, Jalna	(02482) 224700
v. DISH Ahemednagar	(0241) 2411167

8. CENTRAL

Telephone

i. CCG Chairman	011-3010454
ii. Secretary Transport	011-3710121
iii. Member Secretary CPCB	
iv. Secretary Agriculture	011-3782691
v. DGFASLI	022- 4092203
vi. National Crisis Management Control Room	2150855/8893361
vii. Army, Western Command	
viii. Navy, Western Command	022-2661354 / 4949 / 3030
ix. Air Force	022-5342209/10
x. Bomb Disposal / explosive Ordnance team, Army.	
xi. Atomic Energy Commission	022- 2026823 / 2028972
xii. Atomic Energy Dept. Head Crisis Management	022- 2021714
xiii. DAE Safety Review Committee	022- 5565717
xiv. M Sec. AERB	022- 2024554

9 POLICE

i. Home Secretary (Mumbai)	(022) 22023572 / 22855925
ii. Director General of Police	(022) 22026586 / 22026672
iii. Police Commissioner, Aurangabad	(0240) 2240501
iv. DIG, Aurangabad Region	(0240) 2331473
v. DCP, Aurangabad	(0240) 2240501
vi. Police Control Room	100 / 2334333
vii. State Police Control Room, Mumbai	(022) 22026566 / 22026636

10 POLICE, Aurangabad :

i. Rural	2380808
ii. Traffic Police Dept. (complaint)	2240456
iii. Chikalthana	2240558
iv. MIDC CIDCO	2240558
v. Waluj	2240560
vi. Waluj MIDC	2240559
vii. Beedkin	(02431) 241433
viii. Paithan MIDC	(02431) 232113 / 223033
ix. Gangapur	(02433) 221333
x. Khultabad	241100
xi. Vaijapur	222012
xii. Kannad	221044
xiii. Sillod	222033 / 22233
xiv. Soygoan	234433

11 TELECOM

- i. Fault Complaint 198 / 2336250 / 2331940
- ii. Divisional Engineer (Chikalthana) 2484199
- iii. Divisional Engineer (A,bad City) 2353511 / 2320999
- iv. Divisional Engineer (Waluj) 2555252
- v. Divisional Engineer (Harsool) 2381000

12 RAILWAY :

- i. Aurangabad Railway Station 2358018, 131, 135
- ii. Lasur Railway Station 241360
- iii. Jalna Railway Station (02482) 230300

13 EDUCATIONAL INSTITUTIONS :

- i. Jawaharlal Nehru Engineering College 2482893
- ii. Government Engineering College 2334348
- iii. People's Education Society engineering 2336967
- iv. S. B. College 2332193
- v. Dr. BAM University 2400431-35
- vi. Azad College 2381102
- vii. Deogiri College 2334577 / 2333070

14 SECURITY SERVICES :

- i. Mediator & Ajanta Security Pvt. Ltd. 2485627 / 2485824

15 TRANSPORTERS :

- Hoist & Crane Services 2335710

16 VIDEO & CABLE :

- i. City Channel 2354277
- ii. M.C.Net work 2352688

ANNEXTURE – 20

MATERIAL SAFETY DATA SHEET (MSDS)

Sr. No.	Chemical	Page no.
1	Ammonia	
2	Chlorine	
3	Isopropyl Alcohol	
4	LPG	
5	Petrol	
6	Methanol	
7	Toluene	
8	Ethanol	