

Presentation on

**CONTROL AND MANAGEMENT
OF INDUSTRIAL DISASTERS
IN
THE STATE OF KARNATAKA
PROGRESS AND NEW INITIATIVES**

By
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Introduction

The State of Karnataka has 11553 factories and 2799 boilers registered with the department. It employs around 11 lakh workmen. Amongst 11553 registered factories, about 1019 units have been identified as industries involving hazardous processes of which 77 industries are classified as Major Accident Hazardous installations.

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- Hazardous Units**
- 77 industries has been classified as major accident hazard installations in the State of Karnataka, as per schedule - 2 of Chemical Accident (Emergency Planning, Preparedness, Response) Rules, 1996.
 - All the MAH industries have got their On-site emergency plans approved from the department of Factories and Boilers.
 - All the onsite emergency plans are revised on any change in the capacities, process, organization setups.
 - All these MAH installations have furnished the technical informations, details of off site effects by conducting risk analysis, identifying the affecting area, population, flora-fauna, available resources, mutual aid partners, etc.
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CHEMICAL INDUSTRIES STATISTICS

Sl No	Particulars	Total
1	No. of chemical units	1019
2	No. of MAH Units	77
3	No. of employees involved in hazardous industries	1,41,857
4	No. of On-site Emergency Plans approved in respect of MAH units	77
5	No. of Safety Audit & Safety reports prepared.	25
6	No. of rehearsals (mock drill) of Major Accident Hazard Industries.	212

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DISTRICT WISE LOCATIONS OF MAH INSTALLATIONS

Sl.No.	Name of the District	No. of MAH units
1	Bangalore Rural	18
2	Bangalore Urban	13
3	Belgaum	05
4	Bellary	03
5	Dakshina Kannada	12
6	Dharwad	06
7	Haveri	02

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DISTRICT WISE LOCATIONS OF MAH INSTALLATIONS
contd.....

Sl.No.	Name of the District	NO. of MAH units
8	Hassan	01
9	Kolar	01
10	Koppal	01
11	Mysore	07
12	Raichur	01
13	Shimoga	03
14	Tumkur	02
15	Uttar Kannada	02

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**THE INVENTORY OF HAZARDOUS MATERIAL
STORED, USED AND HANDLED IN THE STATE.**

Sl. No.	Particulars	Quantity	Main Hazard
1	LPG	72580 MT	Fire / Explosion
2	Petroleum Products	295396 KL	Fire
3	Chlorine	1705 MT	Toxic and Corrosive
4	Liquid Oxygen	4591 MT	Cold burns, oxidizing
5	Carbon Di sulphide	200 MT	Toxic
6	Ammonia	10053 MT	Toxic and Corrosive
7	Liquid Nitrogen	720 MT	Cold burns

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**THE INVENTORY OF HAZARDOUS MATERIAL
STORED, USED AND HANDLED IN THE STATE.**

Sl. No.	Particulars	Quantity	Main Hazard
8	Corex Gas	100000nm ³	Toxic, Fire & Explosion
9	Hydrochloric acid	1185 MT	Corrosive
10	Sulphuric acid	3039 MT	Corrosive
11	Phosphoric acid	21000 MT	Corrosive
12	Blast furnace gas	27000 nm ³	Toxic, Fire and Explosion
13	Other chemicals like Naptha, Solvent, Ethyl Mercaptan, Sulphur dioxide, Sodium Hydroxide, etc.	5402 Mt	-

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**GLANCE AT DISTRICT WISE DISTRIBUTION OF
HAZARDOUS MATERIALS**

- Large storage of capacity of petroleum product is at Dakshina Kannada followed by Bangalore Districts.
- Large quantity of chlorine is handled in Uttara Kannada followed by Shimoga and Haveri Districts.
- Large quantity of Ammonia is being handled at Dakshina Kannada.
- Large quantity of liquid oxygen is being handled at Bengaluru, Bellary, Koppal and Shimoga Districts.
- Large quantity of (5.6 million metric tones per annum) petroleum products is being pumped in the Mangalore – Bangalore oil pipeline.

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Compliance by the State

- The State Crisis Group has been constituted in the year 1998.
- The District Crisis Groups have been constituted in all the 15 Districts which are having MAH units and reconstituted wherever necessary.
- The Local Crisis Groups have been constituted in respect of six talukas (wherever MAH industries are located away from the District Head Quarters).

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The Constitution of different Crisis Groups under the Chemical Accident (Emergency Planning, Preparedness and Response) Rules, 1996 speaks on four tier system of Control and Mitigation procedures. They are :-

- | | |
|-----------------------------|--|
| I. Central Crisis Group. | Secretary, Government of India,
Ministry of Environment and Forest. |
| II. State Crisis Group. | Chief Secretary to Government. |
| III. District Crisis Group. | Deputy Commissioner / District Collector. |
| IV. Local Crisis Group. | Sub-Divisional Magistrate. |

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Functioning of SCG

- Monitoring the
 - safety status of MAH installations in the state.
 - preparation and updating of Off-site emergency plans.
 - siting of major and potentially hazard installations.
- Identifying the shortfalls in resources required to handle the emergencies recommending the concerned for compliance.
- Reviewing of chemical accidents.
- Assisting the district in fulfilling the shortfalls and augmentation of emergency facilities.
- Conducting of National / State level symposiums, seminars, workshops for sensitization of top and middle level managements and public authorities.
- Reviewing of off-site emergency plans and mock drills.
- Updating the Central Crisis Group by furnishing the necessary informations.

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Functioning of DCG

- All the Districts are conducting DCG meetings at an intervals of 3 – 6 months.
- Reviewing the
 - Health and safety status of the industries,
 - On site emergency plans
 - Mock drills conducted by the industries.
 - Infrastructure facilities available in industries, emergency authorities and other organizations.
 - Inspections and Compliance by the industry.
- Conducting the on site emergency mock drills in presence of district administration, experts and local authorities to analyse the strength and weakness in the system.

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Functioning of DCG

contd...

- Assist the district administration in handling of disasters and emergencies.
- Preparation and publication of off-site emergency plan and review on need basis.
- Investigation of chemical accidents.
- Conducting public awareness programmes
- Conducting training programmes, workshops, seminars and symposiums.

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Details of DCG constituted

Sl.No.	Name of the District	NO. of MAH units	Whether DCG constituted or not?
1	Bangalore Rural	18	Constituted
2	Bangalore Urban	13	Constituted
3	Belgaum	05	Constituted
4	Bellary	03	Constituted
5	Dakshina Kannada	12	Constituted
6	Dharwar	06	Constituted
7	Haveri	02	Constituted

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Details of DCG constituted

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10	Koppal	01	Constituted
11	Mysore	07	Constituted
12	Raichur	01	Constituted
13	Shimoga	03	Constituted
14	Tumkur	02	Constituted
15	Uttara Kannada	02	Constituted

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Functioning of LCG.

- Assisting the DCG in preparation of off-site emergency plan.
- Conducting on site emergency mock drills.
- Coordinating with the industries in augmenting the mutual aid system in industrial pockets.
- Preparation of resource directories.
- Conducting local public awareness programmes.

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Constitution of Local Crisis Groups

Sl. No.	Name of the District	NO. of MAH units	Whether DCG constituted or not?
1	Haliyal	01	Constituted
2	Puttur	01	Constituted
3	Ramanagaram	03	Constituted
4	Nelamangala	07	Constituted
5	Hoskote	06	Constituted
6	Kunigal	02	Constituted

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Initiatives of the State Government

- Constitution of Central Safety Monitoring Cell.
- Constitution of Site Appraisal Committee.

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THE CENTRAL SAFETY MONITORING CELL(1989).

- ↳ Identify hazardous Industries.
- ↳ Creation of data-bank
- ↳ Approval of On-site Emergency Plans.
- ↳ Assisting the Districts in preparation of Off site emergency plan.
- ↳ Organize awareness programmes / Seminars/ Symposiums/ Workshop, in Prevention of Chemical Disasters.
- ↳ Monitoring the inspections of MAH installations,
- ↳ organizing the expert committees visits.
- ↳ Monitoring of work environment using scientific instruments.
- ↳ Coordinating with NDMA and DMI in conducting of off site exercise and other awareness programmes.

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Technical Assistance

- ↳ State/ District/ Local Crisis Groups
- ↳ Periodical Mock-rehearsals / Public awareness .
- ↳ Investigation into all Chemical Accidents.
- ↳ Information to Central Crisis Group.
- ↳ Coordination with Governmental and Non- Governmental agencies.

STATISTICS OF CSMC

Subject	2005	2006	2007
No. of On site emergency plans approved	151	104	111
No. of on site emergency mock drills conducted	206	124	206
No. of public awareness programmes conducted	03	02	02
No. of special training programmes conducted	02	01	03
No. of state level seminars	01	02	01

Special achievements

- The full scale Off site emergency mock exercise was conducted under the aegis of NDMA, New Delhi and DMI, Bhopal.
- State level seminars conducted
 - Plant and Process Safety, Emergency Preparedness in Hazardous Industries – 2005.
 - Disaster Prevention, Planning and Emergency Response in Hazardous Industries – 2006.
 - New Trends and Challenges in SHE Management in Hazardous Industries – 2007.

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Two days National Conference on

OCCUPATIONAL SAFETY, HEALTH AND WORK ENVIRONMENT.

Theme : **CALL FOR GLOBAL PERSPECTIVE**
on 13th & 14th November 2008.

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J.N.Tata Auditorium,
Indian Institute of Science,
Bengaluru.

**State level Site Appraisal Committee constituted
w.e.f. 11.12.2007**

- Director of Factories and Boilers - Chairman
- KSPCB ,Member Secretary - Member
- ROC, Officer In-charge (Occupational Health Specialist) - Member
- IISc-Professor and HOD (Chemical Engineering Dept) - Member
- State Oil Coordinator (Oil Industry Expert) - Member
- Joint Director of Factories - Member Convener

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**State level Site Appraisal Committee
Main Functions**

- Clearance for siting and expansion of MAH and potentially hazardous industries
- Review of On-Site and Off-Site Emergency plans
- Visiting the factories to review the safety and health status.
- Investigation of chemical accidents/ disasters and give its report and recommendations.

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Statistics of SAC

(01-01-2008 onwards)

Subject	No's
No. of site clearances issued for initial location / expansion	59
No. of on site emergency plans reviewed and revised	05
No. of hazardous installations visited	08
No. of accidents / dangerous occurrences Investigated	04
No. of site clearance rejected	06

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PERIPHERAL ACTIVITIES

- ✓ Interactions - Institutions and departments.
- ✓ MoEF, GOI, New Delhi.
- ✓ DGFASLI, Mumbai.
- ✓ DMI, Bhopal.
- ✓ NDMA, New Delhi.
- ✓ RLI, Chennai.
- ✓ Labour Bureau, Simla.
- ✓ NIOH and ROHC, Ahemadabad & Bengaluru.

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- ✓ KSPCB, Bengaluru.
- ✓ KUM, Bengaluru.
- ✓ Industries & Commerce.
- ✓ Forest, Environment and Ecology.
- ✓ Revenue (Disaster Management)
- ✓ Science and Technology.
- ✓ Fire and Emergency Services
- ✓ Police
- ✓ Building and Other Construction Workers Board
- ✓ Electrical Inspectorate.
- ✓ Control of Explosives (PESO)
- ✓ ATI & DTI.
- ✓ National Safety Council,
- ✓ National Productivity Council,
- ✓ Central Boilers Board,
- ✓ BHEL, Tirchi,
- ✓ CII, FKCCI, FICCI, KASSIA, PIA other industrial and trade union associations.
- ✓ Medical and Engineering Colleges.

THANK YOU



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