OCCUPATIONAL HEALTH GUIDELINES

GAIL (India) Limited
Message

The health and well-being of human resources is the prime driver of Organizational Health, productivity, corporate reputation and performance. While, health and wellbeing is traditionally considered to be taken care by an individual, today organizations give due importance to the health of their employees, given the time they spend at the workplace and the impact of the working environment on their health. Hence, efficient systems and practices in Occupational Health can and must aim to prevent work related injury, ill-health and disease. Good maintenance of health is not only important to the employee but also to the concerned department and the organization because it offers a win-win situation for all stakeholders. This can be achieved through Occupational Health systems which pro-actively aid, encourage and ensure preventive, curative and rehabilitative health.

I am happy to note that Guidelines on Occupational Health have been formulated for the Company to bring in systemic and positive changes in area of work related health and well-being. These guidelines attempt to bring uniformity in Occupational Health practices across all sites of GAIL. This is expected to improve the practice of occupational health in the organization. The purpose of institutionalizing occupational health systems is to provide everyone safe, uniform and healthy working conditions. I am hopeful that these guidelines will help in facilitating the overall objective of Occupational Health, including developing good infrastructure and services for our employees.

In this regard, Occupational Health Checkup is an important part of occupational health management and a tool to ensure healthy workforce and an efficient organization. I urge all concerned to accord due importance to regular health checkups and ensure effective implementation of these guidelines in all areas of work. I hope that these guidelines will be effectively implemented and reviewed from time to time to maintain their continued relevance in tune with the industry best practices.

With Best Wishes,

(B.C. Tripathi)
There is widening recognition of the interplay of health with work, conditions of work and other factors that influence health, health benefits and behaviors. Healthy workforce is an asset to an organization in realizing its targets, efficiency & productivity.

Technological advances in the oil & Gas industry have changed the type and nature of work related hazards leading to lesser number of occupational health related issues. Health of the worker is influenced by so many factors which may be occupational as well as non-occupational. Occupational Health monitoring is aimed at identifying occupational health related problems at an early preventive stage. Occupational Health is not restricted to specific occupational diseases but takes care of all aspects of health - preventive, curative and rehabilitative. An optimum occupational health program followed with true spirit can lead an employee to live a physically, socially and economical productive life, during employment.

Occupational Health Guidelines have been formulated which I am sure will be a handy document for all sites. This will help us in ultimately achieving best occupational Health Practices for the benefit of GAIL workforce.

With best wishes.

(M. Ravindran)
Message

Sound health of Workforce is essential for sustainable growth of any Organization. Occupational health Practices play a vital role in ensuring good health of Workforce. While improving the productivity significantly, Organization’s holistic approach in taking care of their Workforce will also develop a good perception about Organization in the external business environment.

GAIL sites are spread across length & breadth of the country and each site has its own site specific occupational hazards over and above the commonly recognized occupational hazards. I am happy to note that Comprehensive Occupational Health Guidelines have been formulated to assist all sites in taking proactive steps for safeguarding the health & well-being of the Workforce.

As prevention is always better than cure, I request all to adopt healthy lifestyle for wellbeing of self and family. Regular exercise and nutritious diet are the stepping stones for sound health, improved focus and reduced stress.

I congratulate Corporate HSE Department for their efforts in this direction.

With best wishes.

(Dr. Ashutosh Karnatak)
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Chapter-1

Introduction

An organisation is recognised by its production, profit, product quality and concern for safety, health and environment. To achieve all this to its maximum, right input in the form of best material, adequate investment and skilled manpower is required. Healthy worker is an asset to an organisation as only a healthy worker can give his maximum output in terms Productivity. Technological advances in the oil & Gas industry is changing the type and nature of work related hazards and ill health problems among the workers.

Health of the worker is influenced by factors which are occupational as well as non-occupational. The interaction of the worker with his working environment may result in impairment of his health leading to his work related illnesses; also known as occupational diseases. The occupational diseases are those which may arise out of or in the course of employment. The working environment may be responsible in causation of occupation diseases or exacerbation of other non-occupational diseases.

Occupational Health monitoring is aimed at identifying occupational diseases at an early preventive stage. Occupational Health is not restricted to specific occupational diseases but takes care of all aspects of health-preventive, curative and rehabilitative. It is necessary to consider not only the traditional specific hazards to health at work but also control of health problems of employees which are closely related to work conditions; are aggravated or influenced by work exposures; are susceptible to control or amelioration by interventions at work place.

The face of occupational health has undergone change during recent times. Many Organisations are now proactively implementing occupational health programs. An optimum occupational health program followed with true spirit can lead an employee to live a physically, socially and economical productive life, during employment and after superannuation.
1.1 PURPOSE & SCOPE OF OCCUPATIONAL HEALTH GUIDELINES

The occupational health guidelines shall provide minimum requirements for uniform implementation of Occupational Health programme throughout the Organization and will serve the following purpose:

- Ensuring compliance of all statutory regulations and guidelines
- Identification of occupational health hazards and their control techniques
- Work environment and personal exposure monitoring
- Screening of all employees exposed to chemical, toxic or any harmful substances for regular check-up at periodic intervals
- Pre-employment medical check-up
- Carry out intensive biological and toxicological check-up of personnel engaged in handling of chemicals/substances at periodic intervals
- Maintaining records of health/disease for each employee undergoing periodic examination.
- Analysis of the health records, for formulating a strategy for improved occupational health care
- Creation of Occupational Health awareness amongst all employees on regular basis so that objective and importance reaches all
- Protecting the community around from the hazards of our establishments if any

1.2 BRIEF STRUCTURE OF THE DOCUMENT

Occupational Health guidelines is a maiden attempt to integrate and document the systems and procedures to be followed in our organisation for addressing relevant aspects of occupational disease and their predictive/preventive strategy.

This document is divided in to 12 chapters delineating regulatory provisions, occupational health infrastructure requirements, medical surveillance, occupational hygiene etc.

Various formats to be used for occupational health monitoring and relevant information is Appended as Annexure I to XVIII.

“The guidelines were prepared by a committee consisting of Dr. Chandra Tripathi (CMO-CO), Dr. B.S. Mathur (CMO-Vijaipur), Dr S.K. Singh (SM(MS)-Dibiyapur) and Dr. D. Shankar (Manager (MS)-Rajahmundry) in coordination with Corporate HSE department.”

S.P. Garg
GM, HSE
Gail (India) Ltd.
Chapter -2

Regulatory Requirements

Disclaimer: Regulatory provisions contained herein are for the purpose of providing information only and it is the responsibility of the sites to comply with all the applicable laws of the land.

2.0 INTRODUCTION

According to Resolutions / Conventions of the United Nations, WHO and ILO, every citizen of the world has a right to healthy and safe work and work environment.

The constitution of India enshrines detailed provisions for the rights of the citizens and other persons and for the principles in the governance of the country labelled as “Directive Principles of State Policy”. These Directive Principles provide for securing the health and strength of employees, men and women, that the tender age of children are not abused, that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength (Article 39), just and humane conditions of work and maternity relief are provided (Article 42), that the Government shall take steps, by suitable legislation or in any other way, to secure the participation of employee in the management of undertakings, establishments or other organizations engaged in any industry (Article 43A), for ensuring that no child below the age of 14 is employed to work in any factory or mine or engaged in any other hazardous employment (Article 24).

On the basis of these Directive Principles and International instruments, the Government of India declares its policy, priorities, strategies and purposes through the exercise of its power and has enacted a number of Safety and health legislations to provide for Safety and Health of the workers.

The Industrial Safety and Health branch of the Ministry of Labour & Employment under Government of India discharges the overall functions relating to policy decisions and laying down guidelines for countrywide
adoption. The Ministry of Labour & Employment, Govt. of India & Labour Departments of the States and Union Territories are responsible for the safety & health of the workers. Directorate General of Factory Advice Service & Labour Institutes (DGFASLI) and Directorate General of Mines Safety (DGMS) assist the Ministry in the technical aspects of Occupational Safety & Health in factories, port sectors and mines respectively.

The provisions under the Factories Act, 1948 and the State Factories Rules notified there under are enforced by the Department of Labour of respective State governments. For this purpose, in every State Inspectorate of Factories is established which enforces the Factories Act 1948 and the State Factories Rules and other labour related statutes such as the Child Labour (Prohibition and Regulation) Act, 1986; the Maternity Benefit Act, 1961; The Employee’s Compensation Act, 1923 etc. as relating to factories.

While framing the legislations concerning safety and occupational health, the Government of India, as one of the founding members of the ILO derives inspiration from the various conventions, recommendations and codes of practices framed by ILO in this regard. The ILO has so far adopted 182 conventions and 190 recommendations encompassing subjects such as worker’s fundamental rights, worker’s protection, social security, labour welfare, occupational safety, women & child labour, migrant labour, indigenous and tribal people, etc.

Comprehensive safety and health statutes for regulating safety and health of persons at work are in place in respect of four sectors – namely factories, docks, mining and construction sectors and these statutes are highly sector-specific. The approach in these statutes is to lay down specific and detailed requirements to prevent risk of injuries in specific operations and circumstances.

The National Policy on Safety, Health and Environment at work place was declared by the Govt. of India on 20.02.2009. The fundamental purpose of the National Policy is not only to the eliminate the incidence of the work related injuries diseases, fatalities, disaster and loss of national assets and ensuring achievement of high level occupational safety and health through proactive approaches but also to enhance the well-being of the employee and society at large.

### 2.2 APPLICABLE ACTS, RULES, STANDARDS AND GUIDELINES

Various rules and regulations covering Occupational Health aspects are mentioned below:

8. SMPV Rules, 1981.
13. Important Applicable acts, Rules, Standards and guidelines are summarised below:

2.2.1 The Factories Act, 1948

This is an umbrella Act applicable to those units where manufacturing process is carried out employing 10 or more workers with the aid of power or 20 or more workers are employed without the aid of power or where the state government is of the opinion that the manufacturing process or operations carried out exposes any person employed in it to a serious risk of bodily injury, poisoning or disease. The object of the Factories Act, 1948 is to secure the workers employed in the factories health, safety, welfare, working hours, leave and other benefits.

The following are the requirements as per the Factories act

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<td>Sufficient and suitable lighting – natural or artificial or both shall be provided in a factory where workers are working and passing</td>
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<td>Effective arrangement shall be made to provide and maintain at suitable points conveniently situated for all workers employed therein a sufficient supply of wholesome drinking water</td>
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2.2.2 Workmen’s Compensation Act, 1923

This act provides a legal obligation on the employer to pay compensation to a workman involved in accidents arising out of and in course of his employment or contracts any specified therein as occupational disease. The list of Occupational Diseases is listed in in Schedule III of Workmen’s Compensation Act, 1923(Annexure-I).

2.2.3 The Employee’s State Insurance (ESI) Act, 1948

This act is a social security legislation enacted with the object of ameliorating various risks and contingencies sustained by workers while serving in a factory or establishment.

2.2.4 Biomedical Waste (Management and Handling) Rules, 1998

These Rules provide a methodology to adopt in collection, receipt, storage, transport, treatment and disposal of biomedical wastes without adverse effect to human health and environment framed under Environment Protection Act.

These rules are applicable to all persons who generate, collect, store, transport, treat, dispose or handle biomedical waste in any form.
2.2.5 Oil Industry Safety Directorate, Guideline (OISD-GDN-166)

Oil Industry Safety Directorate (OISD) constituted by the Ministry of Petroleum and Natural Gas, Govt. of India is a technical directorate that formulates and coordinates the implementation of a series of self-regulatory measures aimed at enhancing the safety in the oil & gas industry in India.

This Guideline lays down minimum requirements for practicing Occupational Health Monitoring in petroleum refineries, oil/gas exploration/production/processing plants both offshore and onshore, cross country pipelines, LPG bottling plants and other petroleum handling facilities/installations. This gives guidelines to establish Occupational Health Monitoring in the industry to provide specific level of occupational health and hygiene services to the employees and includes personal health of the individuals, the health of the occupational group, assessment of the employees’ occupational environment and appraisal of the evidence linking job conditions and exposure to effect on health and course of the disease.

Due to various reasons, if it is not possible to provide the required facilities of its own for the Occupational Health Monitoring at the petroleum handling facility/installation, the same should be arranged through outside agencies.

2.2.6 OHSAS 18001

OHSAS 18000 is an International Occupational Health and Safety Management System specification. It comprises two parts, 18001 and 18002 and embraces BS8800 and a number of other publications.

The OHSAS specification is applicable to any organization that wishes to:

• Establish an OH&S management system to eliminate or minimize risk to employees and other interested parties who may be exposed to OH&S risks associated with its activities
• Assure itself of its conformance with its stated OH&S policy
• Demonstrate such conformance to others
• Implement, maintain and continually improve an OH&S Management system
• Make a self-determination and declaration of conformance with this OHSAS specification.
• Seek certification/registration of its OH&S Management System by an external organization.
Chapter-3

Occupational Health Committee

3.0 INTRODUCTION

Occupational Health (OH) Committees were constituted in GAIL in the year 2008 at corporate level and at local level at various process plants in order to handle occupational health related matters in a professional manner. Consequently local level occupational health committees were constituted at various compressor and booster station of both natural gas and LPG pipelines in the year 2013.

3.1 CORPORATE OCCUPATIONAL HEALTH COMMITTEE

1. The committee shall comprise of the following members:
2. HOD, Corporate HSE Department: Chairperson
3. HOD, Medical Services, Corporate office: Member
4. HOD, Medical Services, Vijaipur: Member
5. HOD, Medical Services, Pata: Member
6. Representative from corporate HR: Member
7. Senior Representative (HSE):Co-ordinator

3.1.1 Main functions

- Review of the performance of local level Occupational Health committee
- Review of the implementation of recommendations of ED level committee regarding standard practices to be followed for occupational health services
- To address all occupational health issues in GAIL (India) Ltd.
- Regular visits to various plant locations for the purpose of Gap analysis and occupational health Audits

3.2 LOCAL LEVEL OCCUPATIONAL HEALTH COMMITTEE

The Committee shall comprise of the following members:

1. OIC or representative nominated by OIC-head of the committee
2. HOD (Medical services)-coordinator
3. HOD (HR)
4. HOD (F&S)
5. HOD (EMS)
6. Members from operation department
7. Officer’s representative
8. Employee representatives

3.2.1 Main Functions

- Evaluation of process to identify hazards & suggest appropriate control
- Job analysis in view of physiological & psychological factors
- Survey & check for use of PPE & advice to employee
- Monitoring of hygiene of eating places & sanitary installations
- Ensuring that occupational health surveillance plan is executed properly
- To conduct awareness program on occupational health

3.2.2 Guidelines for local level occupational health committee

i) Identification of occupational health hazards shall be conducted keeping in mind the following categories of hazards:
A. Physical hazards for example noise, heat, dust, radiation, indoor air quality etc.
B. Chemical hazards for example solvents, acid & alkalis etc.
C. Biological hazards for example bacterial infections, viral, animal bites, plant allergies etc.
D. Ergonomic hazards for example due to manual handlings of weights, computers work, poor working postures etc.
E. Psychological hazards for example stress, time pressure, poor interpersonal relationships etc.

ii. Once the hazards are identified, work environment monitoring shall be done for their concentration or level in the work environment needs to be carried as per following:
   A. Noise level monitoring by means of sound level meter - Quarterly
   B. Illumination monitoring by lux meters etc. - Quarterly
   C. Monitoring of Chemical hazards – Quarterly
   D. Ergonomics & occupational stress study by competent authority – One Time

iii. The monitored level of hazards shall be compared with legal & other reference values, for example Schedule II of Factories Act

iv. Checklist shall be developed for plant inspections

v. Engineering controls shall be employed for control of hazards and their impact
   Local level Occupation health committee will conduct plant inspection and will meet Quarterly and submit progress report based on occupational health indicators (as mentioned below) to OIC with a copy to HOD, Corporate HSE.

3.2.3 Occupational health Indicators

The following indicators are developed to monitor the performance of local level occupational health committee and for bench marking:

i Resource indicators
   A. Infrastructure index: With reference to recommended infrastructure by corporate level Occupational Health committee
   B. Manpower index: Manpower availability with respect to recommended infrastructures by corporate level Occupational Health committee
   C. Equipment index: Basic equipment availability & functionality as per recommended infrastructures by corporate level Occupational Health committee
ii. **Organization indicators**
   
   A. Formation of local Occupational Health committee
   
   B. Performance of local Occupational Health committee in term of
      
      i) No. of meetings in a quarter
      
      ii) Plant inspections carried out

iii. **Occupational hygiene indicators**

   A. Availability of monitoring equipment for hazard identified
   
   B. Regular conduct of chemical hazard monitoring
   
   C. Regular conduct of monitoring of other hazards

iv. **Occupational health surveillance indicators**

   A. Availability of hazard based Occupational Health surveillance plan
   
   B. Coverage of Occupational Health surveillance: % of employee covered under
   
   C. Frequency of work related health disorders & occupational disease
   
   D. Percentage follow up of work related disorders according to surveillance plan
   
   E. Number of Occupational Health awareness trainings conducted

v. **Personal health status indicators**

   A. Tobacco users %
   
   B. BMI (body mass index) distribution among employee.
Chapter - 4

Occupational Health Centre

4.0 INTRODUCTION

Occupational Health monitoring shall be performed at various locations through occupational health centre. For effective implementation of the occupational health monitoring, occupational health centre shall be provided with the facilities and manpower in line with the statutory regulations.

4.1 Occupational Health Centre facilities at Process Plants

The occupational health facilities at process plants shall be as under:

4.1.1 Infrastructure for occupational health centre

A. Consultation room size-15’x10’
B. Dressing/emergency/observation room Size-20’x20’(with Toilet and wash basin)
C. Store cum dispensing room -Size 10’x10’(with transparent Almirah-02 nos.)

4.1.2 Manpower

A. **Full time Medical Officer**- 01no. for Pata and Vijaipur on GAIL pay roll and for other Process Plants on Contract basis
B. **Dresser Cum Compounder**: Round The clock services-01no.
C. **Sweeper/Ward Boy**: Round the clock services -01no.
D. **Occupational Hygienist**: Required -01no. (Service can be outsourced)
E. **Medical Laboratory Technician**: LabTechnician -01no. (Service can be outsourced)
### 4.1.3 Equipment

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<td>02</td>
<td>BP measuring Equipment</td>
<td>02</td>
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<td>03</td>
<td>Oxygen Cylinder</td>
<td>02</td>
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<td>04</td>
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<td>01 or 02</td>
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<tr>
<td>07</td>
<td>Suction Unit</td>
<td>01</td>
</tr>
<tr>
<td>08</td>
<td>Wheel chair</td>
<td>01</td>
</tr>
<tr>
<td>09</td>
<td>Facility for IV fluid administration</td>
<td>Required</td>
</tr>
<tr>
<td>10</td>
<td>Facility for Stitches</td>
<td>Required</td>
</tr>
<tr>
<td>11</td>
<td>Audiometry</td>
<td>Required(can be out sourced)</td>
</tr>
<tr>
<td>12</td>
<td>Pulmonary Function Test</td>
<td>Required(can be out sourced)</td>
</tr>
<tr>
<td>13</td>
<td>ECG Machine</td>
<td>Required</td>
</tr>
<tr>
<td>14</td>
<td>Nerve Conduction Velocity measurement</td>
<td>Required(can be out sourced)</td>
</tr>
<tr>
<td>15</td>
<td>Biochemistry Lab Facility</td>
<td>Required(can be out sourced)</td>
</tr>
<tr>
<td>16</td>
<td>Autoclave</td>
<td>01</td>
</tr>
<tr>
<td>17</td>
<td>PC with internet and intranet facility</td>
<td>01</td>
</tr>
<tr>
<td>18</td>
<td>Facility of AED</td>
<td>Required</td>
</tr>
<tr>
<td>19</td>
<td>Oxygen Concentrator</td>
<td>01</td>
</tr>
</tbody>
</table>
4.2 OCCUPATIONAL HEALTH CENTRE FACILITIES AT COMPRESSORS AND PUMPING STATIONS

The occupational health facilities at compressors and pumping stations shall be as follows:

4.2.1 Infrastructure for occupational health centre

A. Consultation room size-15’x10’
B. Dressing/emergency/observation room Size-20’x20’(with Toilet and wash basin)
C. Store cum dispensing room -Size 10’x10’(with transparent Almirah-02 nos.)

4.2.2 Manpower

A. Full time Medical Officer-01 full time medical officer depending up on remoteness of place and nearby medical facility within 1km corresponding with recommended Infrastructure
B. Dresser Cum Compounder: Round The clock services-01no.
C. Sweeper /Ward Boy: Round the clock services -01no.
### 4.2.3 Equipment

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of Equipment</th>
<th>Recommended Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Stethoscope</td>
<td>02</td>
</tr>
<tr>
<td>02.</td>
<td>BP measuring Equipment</td>
<td>02</td>
</tr>
<tr>
<td>03.</td>
<td>Oxygen Cylinder</td>
<td>02</td>
</tr>
<tr>
<td>04.</td>
<td>Hospital Bed</td>
<td>01 or 02</td>
</tr>
<tr>
<td>05.</td>
<td>Examination Table</td>
<td>01</td>
</tr>
<tr>
<td>06.</td>
<td>Wheeled Stretcher</td>
<td>01</td>
</tr>
<tr>
<td>07.</td>
<td>Suction Unit</td>
<td>01</td>
</tr>
<tr>
<td>08.</td>
<td>Wheel chair</td>
<td>01</td>
</tr>
<tr>
<td>09.</td>
<td>Facility for IV fluid administration</td>
<td>Required</td>
</tr>
<tr>
<td>10.</td>
<td>Facility for Stitches</td>
<td>Required</td>
</tr>
<tr>
<td>11.</td>
<td>NEBULISER</td>
<td>Required</td>
</tr>
<tr>
<td>12.</td>
<td>ECG</td>
<td>Required</td>
</tr>
<tr>
<td>13.</td>
<td>Autoclave</td>
<td>01</td>
</tr>
<tr>
<td>14.</td>
<td>PC with internet and intranet facility</td>
<td>01</td>
</tr>
<tr>
<td>15.</td>
<td>Facility of AED</td>
<td>Required</td>
</tr>
<tr>
<td>16.</td>
<td>Oxygen Concentrator</td>
<td>01</td>
</tr>
</tbody>
</table>

**Note:** Effort may be made to maintain the manpower and infrastructure as suggested above at process plants, compressors and pumping stations wherever possible otherwise sites/establishment is required to maintain minimum requirement according to Factory Act/ rules of concerned state.
Chapter-5

Occupational Health Communications

5.0 INTRODUCTION

Proper communication is an important tool in achieving the goals & targets. This holds true in case of Occupational Health services too. Communication includes sending of report or data, its acknowledgement by receiver & submission of a feedback or report.

There are two types of communication involved pertaining to Occupational Health program. One is Internal-with in the company and the other is External - to the external agencies.

5.1 INTERNAL COMMUNICATION

Within an organisation it is necessary to have communication with management, as well as with employees because it is a joint responsibility of management as well as the employee to maintain best positive level of health & to prevent any accident, mishap or deviation of health index.
It is the responsibility of management and employees to

- Provide and maintain safe & hygienic work environment
- Identify occupational hazards
- Implement changes in engineering methods to reduce the hazards and their impact
- Adopt job rotation to reduce the impact of the hazards.

All the above is possible if proper communication is maintained between Occupational Health Services, management and employees.

5.1.1 Communication with individual employee

An important way of communication in Occupational Health Services is communicating with the employees individually. The employee shall be communicated for Occupational Health check-up through circulars/notices/emails. The employees shall also be communicated and counselled when they come for follow up during routine visits.

5.1.2 Communication with employees in groups

A. **Awareness programs:** Lectures& workshops in life styles related diseases, their causes, symptoms, complications& method to prevent these shall be given to employee & their families in groups. Quarterly time table shall be followed for such program. The program related to stress management and yoga shall also be conducted from time to time.

B. **Health information:** Regular health information shall be provided to employees, through internal email system. Such valuable information is also helpful for the employee to prevent occupational disease.
C. **Use of PPEs:** Advice to use Personal protective equipment shall also be given from time to time in a scheduled manner by Fire and Safety & other departments.

### 5.1.3 Communication with management

The following are the important communications of occupational health services to the management.

A. **Health score of employees:** Based on reports of annual occupational health checkup, health score of each employee shall be calculated. The average of health score of all employees at particular location is the health index of that site.

   The average of health index of all work centers shall be taken as Company’s health index and shall be communicated to Management.

B. **Reports of Industrial Hygiene survey:** Reports of industrial hygiene survey as per existing guidelines and practices shall be communicated to the management.

C. **Report of accidents and fatalities:** Report of accidents and fatalities occurring in plant premises shall be sent to Fire and safety department as well as management within 24 hrs of its reporting as per daily incident reporting format (Annexure-II).

### 5.2 External Communication

Communication with external agencies/Government bodies shall be done to comply with statutory requirements.

#### 5.2.1 Local authorities

Local authorities shall be informed and local community sensitized about hazards which may affect the health condition of residents in nearby area. They should also be communicated means & methods to prevent these hazards. People should also be informed about mock drills and emergency preparedness to cope up with any emergency.

#### 5.2.2 Pollution control board

Yearly report shall be sent to pollution control board regarding the biomedical wastes generated, its amount, and method of disposing and safety taken during disposal of these wastes. The authorization from state pollution control board should be renewed periodically according to Biomedical Waste Management rules.

### 5.2.3 District Medical authorities

- Monthly Report of all positive cases of Malaria to District Medical Officer
- Report of tuberculosis patients taking treatment and new cases monthly
5.2.4 Factory Inspector

- Any reportable accident to factory inspector as per prescribed format (Annexure-III)
- Occurrence of notifiable diseases under Factory Act Schedule II as per given format (Annexure-IV)
6.0 INTRODUCTION

Health Index is a numerical index which indicates the overall health of the organisation. It shall be derived from the health score of all employees based on the predefined parameters. These parameters shall be checked annually under occupational health check-up program.

6.1 HEALTH INDEX CALCULATION

6.1.1 Medical parameters & health score of employees

Following medical parameters shall be used to access health score of individual employee.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Medical parameters / Investigations (within normal range)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body Mass Index (BMI) &lt; 25</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Blood pressure</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Blood sugar</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>ECG/ TMT / Coronary Enzymes</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Lipid profile</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Pulmonary Function Test(PFT)</td>
<td>05</td>
</tr>
<tr>
<td>7</td>
<td>Thyroid profile</td>
<td>05</td>
</tr>
<tr>
<td>8</td>
<td>Liver Function Test (LFT)</td>
<td>05</td>
</tr>
<tr>
<td>9</td>
<td>Renal Function test</td>
<td>05</td>
</tr>
<tr>
<td>10</td>
<td>Vision ( Eye test)</td>
<td>05</td>
</tr>
<tr>
<td>11</td>
<td>ENT check-up / Hearing test (Audiometry)</td>
<td>05</td>
</tr>
<tr>
<td>12</td>
<td>No addiction to tobacco chewing / smoking</td>
<td>05</td>
</tr>
<tr>
<td>13</td>
<td>No history of chronic drinking (chronic alcoholism)</td>
<td>05</td>
</tr>
<tr>
<td>14</td>
<td>No other medical problem / no any other investigation is positive</td>
<td>05</td>
</tr>
<tr>
<td>15</td>
<td>Psychological tests / Questionnaire.</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>100</td>
</tr>
</tbody>
</table>
Out of the above 15 parameters, first five parameters are given 10 marks each as they are related to lifestyle diseases and affects the human body more than others.

If the reports of above tests are within normal range, employee shall be given full score. In case of any abnormal parameter, the employee shall be given nil score. (The format for summary of reports and recommendation based on occupational health check-up is given in Annexure-V).

Health score of each employee shall be calculated by adding scores of all parameters. After accessing the individual health score of employee, health index of that particular work centre shall be calculated and accordingly average health index of the Company shall be derived every year.

6.1.2 Zone wise distribution of GAIL employees

All employees working in different work stations at GAIL are divided into 4 medical zones. Thus, there are 4 zonal medical coordinators, one for each zone i.e. Corporate Office & NCR, Pata region, Vijaipur and South zone. Zone wise distribution of GAIL Locations is as follows:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Zone</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Delhi CO</td>
<td>Chandigarh, Bhatinda, Nagal, Chandigarh ZNL, Delhi-Corporate, Delhi DGHC, Agra GAIL Gas Devas GAIL Gas, Ferozabad GAIL Gas, Kota GAIL Gas, Meerut GAIL Gas, Noida GAIL Gas, Sonipat GAIL Gas, Delhi IGI, Mangalore, Delhi CVC, Delhi DPE, Delhi PNGRB, Delhi PPAC – CO, Lucknow, Phulpur, Shahjahanpur Terminal, GTI-Noida, Agra, Dholpur, Ferozabad, Kailaras, Mathura Terminal Cairo, Bhondsi, Loni, MadanpurKhadar, Piyalal, M достижная, Noida PARC, Ranjhi, Bahadurgarh Terminal, Bawana Terminal, Dadri Terminal Daruhera, Desu Terminal, Faridabad Terminal, Gaziabad Terminal, Kashipur, Maruti-Gurgaon NCR, Sahibabad, Yamuna Nagar, NCR ZNL, Chainsa, Delhi-MoPNG, Singapore-GGSPL, Texas, Kashipur, Chainsa, Noida, Noida PDIL, Noida PARC BCPL, Nagpur, Guwahati, Kolkata, Kolkata ZNL, Kolkata-GCGSCL</td>
</tr>
<tr>
<td>2</td>
<td>Pata</td>
<td>Aonla Terminal, Babrala, Bairelly, Dibiyapur, Jagdishpur Term, Jhandi Maintena, Kanpur- O&amp;M, Kanpur CUGL, Lucknow GGL, Lucknow ZNL, Agartala, Agartala-Neepco, Agartal TNGCL, Pata</td>
</tr>
<tr>
<td>3</td>
<td>Vijaipur</td>
<td>Abu Road, Gandhar, Jaipur, GTI Jaipur, Mansrampura-IPS, Ramgarh Terminal, Hazira, Jaipur ZNL, Jhabua, Kandla, Devas, Khera, Pithampur, Nasirabad, Samakhi, Ahmedabad, Bhagirath Terminal, Dahej Terminal, Kadi Terminal, Mehsana Terminal, OPAL-Vadodara, Undera Terminal, Vadodara, Vadodara GGL, Vaghodia, Ahmedabad ZNL, Jannagar, Anta Terminal, Gadepan Terminal, Gwalior, Malanpur, Bhopal ZNL, Samcore Terminal, Indore Avtk, Vijaipur, Vijaipur-LPG &amp;HC</td>
</tr>
<tr>
<td>4</td>
<td>Rajahmundry</td>
<td>Hyderabad BGL, Hyderabad ZNL, Kochi ZNL, Belapur, Dabhul, Hubli, IIL Dolvi Terminal, Kolhapur, Mahape, Mangan, Mumbai, Panvel, Pune, RCF Thal Terminal, Silvassa, Uran Terminal, Mumbai MGL, Mumbai ZNL, Usar, Coimbatore, Karaikal, Kuthalam, Perungulam, Puducherry, Thirumokkati, Pune MNGL, Bangalore, Chitradurg, Coimbatore, Kochi, Kozhikode, Mangalore, Salem, Zuarik Terminal Goa, Bangalore GGL, Bangalore ZNL, Kochi GGL, Chennai ZNL, Guvindava, Kakinada Terminal, Lanco Terminal, G Konduru, Rajahmundry, Titapaka Terminal, Vizjesswaram Terminal, Vizag Cherlapalli, Hyderabad-APGDC, Noida RGPPPL, Dabhol RGPPPL</td>
</tr>
</tbody>
</table>

The Zonal Occupational health coordinators shall calculate average health index of their respective Zones.

The health index thus calculated shall be communicated to the management for their review. Based on the results of the health index, awareness programs and health camps on diabetes, hypertension and cardiac diseases shall be organised for employees of different work centres.
Chapter-7

Occupational Hygiene

7.0 INTRODUCTION

Occupational Hygiene is generally defined as the art and science dedicated to the anticipation, recognition, evaluation, communication and control of environmental hazards or stressors in, or arising from, the workplace that may result in injury, illness, impairment, or affect the wellbeing of workers and members of the community.

Occupational /Industrial Hygiene focus essentially on a preventative approach through the minimization of exposure to biological, chemical, physical, ergonomic and psychosocial agents in the work environment and the adoption of good ergonomic practices.

7.1 OBJECTIVES

- To identity the presence of hazards and potential health risks faced by the employees at worksite
- To assess the degree or level of health risk faced by the employee and to differentiate between acceptable and unacceptable exposures in compliance with the standard Schedule II (Annexure-VI) of Factories Act
- To evaluate the adequacy and efficiencies of design and to suggest and implement the control measures
- To provide information and awareness to the employees regarding environmental conditions, their health effects and measures to control them
7.2 QUANTIFICATION OF OCCUPATIONAL EXPOSURE

The quantitative aspects of safe occupational exposures should be expressed in the concepts of Threshold Limit Values (TLV), a time weighted average exposure as detailed in Annexure-VII.

7.3 OCCUPATIONAL HAZARDS

These are the environmental factors or stressors that can cause sickness, impaired health or significant discomfort to the employee. Format used for occupation-wise hazard identification is in Annexure-VIII.

Occupational hazards / stressors are divided into different categories such as: physical, chemical, biological, ergonomic and psychosocial.

- **Physical**- Noise, Heat, Illumination, Radiation
- **Chemical**- Dust, gases, fumes, vapors, smokes, liquids and solids
- **Biological**- Insects, molds, fungi etc.
- **Ergonomic**- Improper lifting, improperly designed tools, improperly designed work station and incorrect body postures
- **Psychological**- Various aspects of work stress

7.3.1 Physical Hazards

i. **Noise**

The level of noise at work place shall be monitored at least once in a quarter as per given format (Annexure-IX A). Ear plugs etc. should be provided to personnel working / entering in high noise areas.

Threshold Limit Values (TLVs) for Noise exposure are given in the Table-1 of Annexure-X and are as per OISD-GDN-166.

ii. **Heat Stress**

Heat stress is the aggregate of environmental factors such as air temperature, relative humidity, air movement, radiant heat etc. and physical factors such as clothing worn, work load etc. that constitutes the total heat load imposed on body. These parameters shall be monitored during summer particularly. The heat stress at work place shall be monitored by using techniques like wet bulb globe temperature index. The acceptable limits should be arrived at depending upon heat, relative humidity, hours of working etc.
iii. **Illumination**

The illumination levels in working / movement areas shall be monitored once in a quarter as per given format (Annexure-IX B).

The illumination level shall be maintained above the recommended levels.

Recommended levels of illumination for various classes of visual task are given in the Table-2 of Annexure-X and are as per OISD-GDN-166.

iv. **Radiation**

Radiation can be ionizing or non-ionizing. Radiation exposure can occur during radiography, O&M of nucleonic gauges, X-ray etc.

Personal Protective equipment shall be provided to personnel working in the area. Training shall be provided to personnel on the hazards associated with type of radiation and its preventive measures.

7.3.2 **Chemical Hazards**

The chemical compounds in the form of gases, vapours, and particulate matter that includes dust, fumes, smoke, aerosols and mist exert their toxic effects when it comes into contact with body cell. The entry of chemicals in the body may be by inhalation, skin absorption, ingestion or combination of these routes. Degree of risk of any chemical depends on the magnitude and duration of exposure.

The concentration of various chemicals used shall be monitored once in a quarter as per given format (Annexure-IX C).

Wherever Chemicals are handled, one supervisor / officer shall be assigned the responsibility for carrying out safe handling of chemicals. His responsibility shall include: procuring and safe keeping of MSDS (Material Safety Data Sheet), training employees for safe handling of chemicals, handling of spillages, if any, and First aid in case of over exposure.

7.3.3 **Biological Hazards**

Biological hazards can be a part of total environment or associated with certain occupations. They can be viruses, bacteria, fungus, parasite or any living organism that can cause a disease in human beings.

7.3.4 **Ergonomic Hazards**

Ergonomic monitoring of the workplace shall be done in one time by Competent Authority and also when major changes in workplace are carried out and corrective action should be undertaken accordingly.
7.3.5 Psychological Hazards

These are caused by psychosocial factors which include work environment like organizational culture, climate, work rules, interpersonal relationship and design and content of the tasks. During the course of survey, attempt should be made to identify psychological hazards and corrective actions taken accordingly.

7.4 OCCUPATIONAL HAZARD MEASUREMENT

The occupational health hazards shall be measured with standard equipment and with accepted measurement techniques.

The measurement technique shall include:

i. **Work environment monitoring** - The measurement device is placed in a fixed location in the work area that is generally occupied by employees. This type of sampling is also called area sampling.

ii. **Personal Sampling** - This is the measurement of a particular employee’s exposure to hazard during work and rest. The sensor of measurement device or dosimeter is placed as close as possible to the hazards entry portal into the body.

iii. **Breathing Zone Sampling** - The measurement device is held in the employees breathing zone. Air that is most likely to be inhaled by the employee enters the breathing zone.

Selection of Equipment shall be based on:

- Characteristics of the hazards
- Interferences
- Required accuracy and sensitivity
- Method complexity
- Sampling area
- Sample duration
- Regulatory environment

7.5 OCCUPATIONAL HAZARD CONTROL

The various methods of controlling the hazards at work place shall be as follows:

- Substitution with less harmful material
- Process change
- Enclosure of process
- Wet methods
• Local exhaust ventilation
• General Exhaust ventilation
• Dilution Ventilation
• Increase the distance between source and worker
• Enclosure of employee
• Personal Protective and monitoring devices
• Training and health education for safe handling of hazardous substances

7.6 OCCUPATIONAL EXPOSURE ASSESSMENT STRATEGY

Occupational exposures shall be assessed for recognizing, evaluating, documenting and developing controls based on following major steps.

i. Basic characterization of the work place (Occupational Health Hazard Survey)
   During this survey, a description of operations, tasks, and work practices that take place in the workplace is obtained. The description includes list of hazardous material used in workplace, list of physical & chemical hazards that present significant risk, description of existing controls (Annexure-XI).

ii. Qualitative risk assessment & setting priorities
   Considering all the information available, the next step is to assess if there are significant personal exposures to toxic chemicals and physical agents. When a task or operation has a significant exposure they will be prioritized for subsequent monitoring.

iii. Exposure Monitoring
   Monitoring the workplace for toxic substances or harmful physical agents is the primary means of assessing (a) Personal Exposure (b) Need for control measure (c) Effectiveness of measures directed at reducing or eliminating the hazards.

iv. Interpretation and Decision Making
   Data collected are evaluated to determine
   a. Degree of personal exposure - under permissible limit or not.
   b. Recommendation for placement of personnel in medical surveillance program
   c. Whether existing controls are adequate or not
   d. Whether periodic exposure monitoring is necessary or not
v. **Recommendation and reporting**

   Survey report reflects all surveyed activity, status of monitoring; if the inference of test result may lead to some permanent damage, then means to control the same should be suggested to the individual.

vi. **Re-evaluation**

   Periodic re-evaluation shall be done. Occupational Hygiene Survey is required once in every 5 years. However, a major change in the process will warrant a fresh survey as per OISD-GDN-166 (GUIDELINES FOR OCCUPATIONAL HEALTH MONITORING IN OIL & GAS INDUSTRY).
Chapter-8

Medical Surveillance

8.0 INTRODUCTION

Medical Surveillance shall be carried out to assess the health of employees. Prospective candidates seeking employment in GAIL (India) Limited shall be assessed for their well-being and fitness before induction. Regular employees shall be assessed annually for their well-being by doing Occupational Health Checkups. Medical examination shall be carried out as under:

- Pre-employment
- Periodic-Annual Occupational Health Check-up

8.1 PRE-EMPLOYMENT

Prior to permanent appointment in the GAIL (India) limited, a candidate shall be required to undergo medical examination as per Medical Rules (Annexure-XII). The pre-employment medical check-up shall be done as per the format in Annexure-XIII. The Candidate will be declared FIT considering his health status and his job profile. The aim should be to select a person, for a particular post, who must be in good physical and mental health and must be free from any physical defect or disability that is likely to interfere with efficient performance of duties and/or safety of plants, machinery or co-workers.

8.2 PERIODIC

Periodic medical examination of all employees shall be done as per the Factories Act and guidelines given by OHSAS and MOP & NG. Its aim shall be to detect susceptible workers for whom corrective actions are required before they develop occupational diseases.
The annual examination for all GAIL employees shall be carried out as per the prescribed format (Annexure-XIV). The Head of the Medical Department / HR Department shall ensure that all employees of their work centres are medically examined annually. Executives shall be medically checked up regularly after attaining the age of 35.

8.2.1 Procedure for Periodic Medical Examination

i. **Intimation for annual health check-up**

A yearly routine shall be fixed for annual health check-up in consultation with every department looking into shift Rota and availability of employee. Concerned employee shall be informed about the date & time of his / her annual health check-up. The instructions given shall be as follows:

- The Medical Examination starts in the morning hours on the mentioned dates and generally takes 4 to 6 hours.
- All are requested to have normal food on the previous night. No intake of alcohol, high protein diet or high fat diet is advised, which may influence the laboratory findings.
- No food of any kind – liquid/solid should be consumed after 8.30 p.m. onwards on the previous day till the morning of test. One may, however, take plain water and also regular medication if any.
- There are various tests which include Blood Examination, ECG, Lung Function Test, Audiometry, Vision Testing and clinical examination by the doctors.
- The medical examination will be carried out as per matrix provided in OISD-GDN-166 and /or MSDS. Refer Annexure-XV.

ii. **Report of OH Check-up, categorization and follow up**

After full & exhaustive health check-up & its analysis, employee shall be informed about his/her health status, category & advised for further investigations, if required as per following table:

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Category</th>
<th>Description</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>Health within normal limits</td>
<td>Annual</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>Hypertension</td>
<td>Monthly</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>Diabetes Mellitus</td>
<td>Monthly</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>Allergic illness, Bronchial Asthma &amp; seasonal Rhinitis</td>
<td>Annual</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td>Backache</td>
<td>Annual</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>Stress &amp; anxiety</td>
<td>Annual</td>
</tr>
<tr>
<td>7</td>
<td>H</td>
<td>Hearing &amp; Visual loss</td>
<td>Repeat audiometry every 6 months and annually for visual loss</td>
</tr>
<tr>
<td>8</td>
<td>I</td>
<td>Disease not covered above i.e. dyslipidemia, thyroid disorders-etc.</td>
<td>Every three months or as and when required</td>
</tr>
</tbody>
</table>
Patients who require further investigation in the form of TMT, Stress echo, angiography shall be sent to higher centers for further evaluation.

Any deviation in health status, especially if the reason is occupation will be investigated in detail to ascertain / locate the exact cause. Concerned HOD should also be requested to devise ways and means for elimination / reducing the effect of hazards. Every possible effort will be made to rotate the job/ location of employee so that the employee is not exposed to the similar hazards again and again.

8.3 SUPERVISION OF WORKING ENVIRONMENT

Periodic inspection of working environment provides information to check occupational health hazards. Hence, all members of local Occupational Health Committee which includes safety Engineer, medical officer etc. along with HOD/OIC shall pay frequent visits to plant area for assessments of working environments like temperature, noise, humidity, ventilation, pollution, sanitation, lighting etc. which have an important bearing on health and welfare of employees.

8.4 MAINTENANCE AND ANALYSIS OF RECORDS

Proper records are essential for the planning, development and efficient operation of occupational health services. Medical and occupational health records are confidential documents, hence shall be kept in safe custody at respective health centres/HR Department. Computerized records of all employees shall be kept in safe custody of centralized Electronic Document Management System (EDMS) separately. Records of occupational health will be analysed and corrective measures will be taken in consultation with HOD/OIC in case of any deviation.

8.5 PERFORMANCE AUDIT

Each facility should undergo a formal occupational health audit at least once in 3 years by an inter-unit audit team.
Chapter-9

Documentation and Analysis of Health Data

9.0 INTRODUCTION

Documentation shall provide information about a data collection’s contents, origin and structure, and the terms and conditions that apply to its use. It shall be sufficiently detailed to allow the data creator to use the resource in future, when the data creation process has started to fade from memory. It shall also be comprehensive enough to enable others to explore the resource fully, and detailed enough to allow someone who has not been involved in the data creation process to understand the data collection and the process by which it was created.

Proper documentation of data is essential for providing the contemporary professionals and future generations the opportunities to know, learn, and benefit from the past knowledge and experience.

9.1 DOCUMENTATION

Medical and occupational health records are confidential documents, hence shall be kept in safe custody at respective health centres / HR Department. Computerized records of all employees shall be kept in safe custody of centralized electronic document management system (EDMS) separately.

The detailed individual medical records shall be documented for long-term vitality; without it the resource will not be suitable for future use. The medical records shall be kept permanently till the employee retires from service and be kept for 10 more years along with personal file.

The documentation shall be labelled for availability, accessibility and easy retrieval. To achieve this, the medical records are made part of the personal file. They are also available in the electronic form to the authorized medical personnel for data analysis.
9.2 DATA ANALYSIS

Records of occupational health will be analysed and corrective measures will be taken in consultation with HOD / OIC in case of any deviation. The data analysis shall be on individual basis to know trends and course of the health status and on group basis in relation to the age group, work group etc. The analysed data shall also be documented for interventions as and when required.

9.3 Responsibility of keeping records

- Occupational health record-
  - Health center wherever exists
  - HR Department where health center no exists
- Pre-employment medical examination record-HR Department
- Pre-placement medical examination record-HR Department

9.4 LIST OF OCCUPATIONAL HEALTH DOCUMENTS

- Pre-Employment Medical Check up
- Periodic medical check-up
- Communication of Reports of Periodic Medical check up
- Annual report of Bio medical waste generation and disposal
- Format for reporting of accidental cases to Fire and safety department from hospitals along with injury report
- Injury Form for reporting of reportable accidents
- Form for notification of occupational diseases
- Report of industrial hygiene survey
- Daily ambulance check list
- Form for re -filling of first aid boxes
Chapter-10

First Aid and Ambulance

10.0 INTRODUCTION

First aid is the first assistance or treatment given to a casualty for an injury or sudden illness before the arrival of an ambulance or qualified medical expert. It may involve improvising with facilities and materials available at the time.

- Each unit/installation shall provide & maintain first aid boxes equipped with prescribed contents, readily accessible during all working hours. The number of such boxes to be maintained shall not be less than one for every 150 workers ordinarily employed at any one time in the factory.
- Nothing except the prescribed content shall be kept in a first aid box or cupboard.
- Each first aid box or cupboard shall be kept in charge of a separate responsible person (who holds a certificate in first aid treatment recognized by state government) & who shall always be readily available during the working hours of the factory.
- The name of the trained first aider should be prominently displayed.

10.1 FIRST AID (FA) BOX

- First aid box should be distinctively marked with a red/green cross on a white background.
- First aid box should be kept in prominent place.
- Custodians of the first aid boxes are qualified first aiders only.
- Name of the first aider should be displayed near each first aid box along with their first aid training date.
• First aider should be available in each shift.
• First aider must have attended course of first aid approved by state Govt./ directorate of factories.
• The First Aid training program should be as per approved specifications.
• Refresher course of 2 days should be imparted every 2 years to qualified first aider.
• First aid boxes should be checked every month & replenished as & when required.
• Date of refilling of first aid box should be maintained & record of each First aid material issued should be entered.
• There should be list of contents with expiry date of contents of first aid box pasted inside the box.
• A register should be kept near first aid box indicating name date time & nature of injury/sicknesses, type of first aid given & by whom & whether the employee was referred to hospital.
• A display should be pasted in English & local language indicating to contact hospital telephone in case of sickness/ injury.

10.1.1 Contents of First Aid box

i. Factories with employee less than 20
• 6 small sterilized dressings
• 3 medium size sterilized dressings
• 3 large size sterilized dressings
• 3 large size sterilized burn dressings
• 1 bottle of 1% cetrimide/suitable antiseptic solution
• 1 rolls of adhesive plaster
• 6 pieces of sterilized eye pads in separate sealed packets
• A bottle containing 100 tabs of aspirin or any other analgesics
• A polythene wash bottle (500cc) for washing eyes
• 1 snake bite lancet
• 1 bottle of potassium permanganate crystals
• 1 copy of the first aid leaflet issued by DGFASLI, Bombay
• 1 pair scissors
ii. **Factories with employees 20-100**
   - 12 small sterilized dressings
   - 6 medium size sterilized dressings
   - 6 large size sterilized dressings
   - 6 packets sterilized cotton wools
   - 1 bottle 1% cetrimide/suitable antiseptic solution
   - 1 pair scissors
   - 2 rolls of adhesive plasters
   - 8 piece of sterilized eye pad in separate sealed packets
   - 1 dozens safety pins
   - A bottle containing 100 tabs of aspirin or any other analgesic
   - 1 polythene wash bottle (500cc) for washing eyes
   - 1 snake bite lancet
   - 1 Oz. bottle of potassium permanganate crystals
   - 1 copy of first aider leaflet issued by DGFASLI Bombay

iii. **Factories with employees more than 100**
   - 24 small sterilized dressings
   - 12 medium size sterilized dressings
   - 12 large size sterilized dressings
   - 12 large size sterilized burn dressings
   - 12 packets sterilized cotton wool
   - 1 bottle of 1% cetrimide/suitable antiseptic solution
   - 1 bottle of mercurochrome solution (2%) in water
   - 1 pair scissors
   - 1 rolls of adhesive plaster (6cmsX1M)
   - 2 roll of adhesive plaster (2cmsX1M)
   - 12 pieces of sterilized eye pads in separate sealed packets
   - A bottle containing 100 tabs of aspirin or any other analgesics
   - 1polythene wash bottle (500cc) for washing eyes
• 12 roller bandages (10cms wide)
• 12 roller bandages (5cms wide)
• 6 triangular bandages
• A supply of suitable splint
• 2 packets of safety pins
• Kidney tray
• 1 snake bite lancet
• 1 bottle of potassium permanganate crystals
• 1 copy of the first aid leaflet issued by directorate of factories

The above list is indicative and the units/installations are required to maintain First Aid boxes as per the Factory Rules of the respective State/Union Territory.

Format at Annexure-XVI shall be used for refilling of First-Aid Box.

10.2 AMBULANCE

Since our industry falls under the category “Major Accident Hazard”, an ambulance as equipped below, manned by full time driver cum mechanic and a helper trained in first aid for the purpose of transportation of serious cases of accidents or sickness should be available round the clock. Ambulance shall not be used for any other purpose other than the purpose stipulated herein and will normally be stationed at or near OHC or suitable place where it can be contacted easily.

10.2.1 Ambulance shall have the followings:

i. General
   • A wheeled stretcher with folding and adjusting devices with the head of the stretcher capable of being tilted upwards.
   • Pillow with case, sheets, blankets, towel, emesis bag, bedpan, urinal glass.
   • Torch
   • Water Supply Tank
   • Drinking water

ii. Emergency Care Equipment
   a. Resuscitation
      • BP manometer, stethoscope.
      • Portable suction unit, portable oxygen unit.
- Bag valve mask, hand operated artificial ventilation unit.
- Airways, Mouth-gage, Tracheostomy adopters.
- Short spine board, IV fluid with administration unit.

b. **Immobilization**
- Long and short padded boards, wire ladder splints
- Triangular bandages, long and short spine boards.

c. **Dressings**
- Roll of aluminum foil, soft roller bandages 15cmsX5mts, Adhesive tape in 7.5cms, safety pins.
- Bandage sheets, burn sheets.

iii. **Emergency Medicines**

As per requirement (under the advice of medical officer only)

The ambulance shall be checked daily as per the format *(Annexure-XVII)*.
Chapter-11

Training

11.0 INTRODUCTION

Medicine is an ever-changing science and art of healing. An organisation should give emphasis on imparting training for the doctors, Para-medicals and employees related to occupational health for enhancing their knowledge on health safety.

11.1 TRAINING FOR DOCTORS

As per factory act requirement, every factory medical officer has to undergo training in Industrial health for minimum 3 months of duration. The factory act states that:

The factory Medical Officer required to be appointed under sub rule(1) shall have qualifications included in schedules to the Indian medical degrees act 1916 or in the schedules to the Indian Medical council act, 1956 and possess a certificate of training in industrial health of minimum 3 months duration recognized by the state government. Provided that:

A person possessing a diploma in industrial health or equivalent shall not be required to possess the certificate of training as aforesaid if;

- the chief inspector, subject to such conditions as he may specify grant exemptions from the requirement of this sub rule, if in his opinion a suitable person possessing the necessary qualification is not available for appointment;
- in case of a person who has been working as a factory medical officer for a period of 3 years subject to the condition that the said person shall obtain the aforesaid certificate of training within a period of 3 years
The syllabus of the course leading to the above certificate and the organizations conducting the state course shall be approved by the DGFASLI or the state Government in accordance with the guidelines issued by the DGFASLI.

Within one month of the appointment of a factory medical officer, the occupier of the factory shall furnish to the chief Inspector the following particulars:

- Name and address of the Factory Medical Officer:
- Qualifications:
- Experience, if any: and
- The sub rule under which appointment given

11.2 TRAINING FOR PARA MEDICAL STAFF

Apart from training doctors, the paramedical staffs shall also be educated for occupational health practices. The central labour institute is conducting training program of short duration for paramedical persons.

11.3 TRAINING FOR EMPLOYEES

Employees will be imparted training as per statutory requirements for enhancing skill in First Aid and raising awareness on Occupational Health.

i. First Aid

- Each and every employee should be imparted first aid training so that in compressor stations, process plants and petrochemical plant where there are regular shift duties, at least two trained first aiders must be available round the clock.
- These first aiders shall be the first responders who have basic knowledge about how to use the contents of first aid box along with Automatic External Defibrillator in a beneficial manner.
- The St John’s Ambulance Association and Indian Red Cross Society have formulated the design and syllabus for such first aid training.

ii. Occupational Health Awareness Program

Information and awareness is the first step in prevention / protection from any hazard. Awareness program on Occupational Heath shall be conducted by Training Department in association with Occupational Health experts for the employees. The program shall also deal with various types of potential health hazards an employee is exposed to. Occupational Health awareness Program can be conducted independently at bigger locations, while at smaller locations it can be clubbed with Safety related/First Aid program.
Chapter-12

Bio-Medical Waste Management

12.0 INTRODUCTION

Bio-medical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological and including categories mentioned in Schedule I of Bio-Medical Waste (Management and Handling) Rules, 1998.

Biomedical waste differs from other types of hazardous waste, such as industrial waste, in that it comes from biological sources or is used in the diagnosis, prevention, or treatment of diseases. Common producers of biomedical waste include hospitals, health clinics, nursing homes, medical research laboratories, offices of physicians, dentists, and veterinarians, home health care, and funeral homes.

12.1 APPLICABILITY

Bio-Medical Waste (Management and Handling) Rules, 1998 apply to all who generate, collect, receive, store, transport, treat, dispose, or handle biomedical waste in any form.

12.2 RESPONSIBILITIES OF OCCUPIER

Occupier of any institution generating bio-medical waste has to take all steps to ensure that such waste is handled without any adverse effect to human health and the environment.

12.3 TREATMENT AND DISPOSAL

- Bio-medical waste shall be treated and disposed of in accordance with Schedule I, and in compliance with the standards prescribed in Schedule V.
• Every occupier, where required, shall set up in accordance with the time-schedule in Schedule VI, requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, or, ensure requisite treatment of waste at a common or any other waste treatment facility.

12.4 SEGREGATION, PACKAGING, TRANSPORTATION AND STORAGE

• Bio-medical waste shall not be mixed with other wastes.

• Bio-medical waste shall be segregated into containers/bags at the point of generation in accordance with Schedule II prior to its storage, transportation, treatment and disposal. The containers shall be labelled according to Schedule III.

<table>
<thead>
<tr>
<th>YELLOW BAGS</th>
<th>RED BAGS</th>
<th>BLUE BAGS</th>
<th>BLACK CARBOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious waste, bandages, gauze, cotton or any other objects in contact with body fluids, human body parts, placenta etc.</td>
<td>Plastic waste such as catheters, injection syringes, tubings, iv bottles</td>
<td>All types of glass bottles and broken glass articles, outdated &amp; discarded medicines</td>
<td>Needles without syringes, blades, sharps and all metal articles</td>
</tr>
</tbody>
</table>

• If a container is transported from the premises where bio-medical waste is generated to any waste treatment facility outside the premises, the container shall, apart from the label prescribed in Schedule III, also carry information prescribed in Schedule IV.

• Notwithstanding anything contained in the Motor Vehicles Act, 1988, or rules thereunder, untreated biomedical waste shall be transported only in such vehicle as may be authorized for the purpose by the competent authority as specified by the government.

• No untreated bio-medical waste shall be kept stored beyond a period of 48 hours.

Provided that if for any reason it becomes necessary to store the waste beyond such period, the authorized person must take permission of the prescribed authority and take measures to ensure that the waste does not adversely affect human health and the environment.

12.5 AUTHORIZATION

• Every occupier of an institution generating, collecting, receiving, storing, transporting, treating, disposing and/or handling bio-medical waste in any other manner, except such occupier of clinics, dispensaries, pathological laboratories, blood banks providing treatment/service to less than 1000
(one thousand) patients per month, shall make an application in Form I to the prescribed authority for grant of authorization.

- Every operator of a bio-medical waste facility shall make an application in Form I to the prescribed authority for grant of authorization.
- Every application in Form I for grant of authorization shall be accompanied by a fee as may be prescribed by the Government of the State or Union Territory.

12.6 ANNUAL REPORT

Every occupier/operator shall submit an annual report to the prescribed authority in Form II by 31 January every year, to include information about the categories and quantities of bio-medical wastes handled during the preceding year. The prescribed authority shall send this information in a compiled form to the Central Pollution Control Board by 31 March every year.

12.7 MAINTENANCE OF RECORDS

Every authorized person shall maintain records related to the generation, collection, reception, storage, transportation, treatment, disposal and/or any form of handling of bio-medical waste in accordance with these rules and any guidelines issued. All records shall be subject to inspection and verification by the prescribed authority at any time.
12.8 ACCIDENT REPORTING

When any accident occurs at any institution or facility or any other site where bio-medical waste is handled or during transportation of such waste, the authorized person shall report the accident in Form III to the prescribed authority forthwith.

Govt. notification on Biological Waste Management is in Annexures-XVIII.

The various Schedules and Forms of Bio-Medical Waste (Management and Handling) Rules, 1998 is summarised as below:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule-I</td>
<td>Categories of bio-medical waste</td>
</tr>
<tr>
<td>Schedule-II</td>
<td>Colour coding and type of container for disposal of bio-medical wastes</td>
</tr>
<tr>
<td>Schedule-III</td>
<td>Label for bio-medical waste containers/bags</td>
</tr>
<tr>
<td>Schedule-IV</td>
<td>Label for transport of bio-medical waste containers/bags</td>
</tr>
<tr>
<td>Schedule-V</td>
<td>Standards for treatment and disposal of bio-medical wastes</td>
</tr>
<tr>
<td>Schedule-VI</td>
<td>Schedule for waste treatment facilities like incinerator/ autoclave / microwave system</td>
</tr>
<tr>
<td>Form-I</td>
<td>Application for authorisation /renewal of authorisation</td>
</tr>
<tr>
<td>Form-II</td>
<td>Annual report</td>
</tr>
<tr>
<td>Form-III</td>
<td>Accident reporting</td>
</tr>
</tbody>
</table>
Annexures
# LIST OF OCCUPATIONAL DISEASES

Workmen's Compensation Act, Schedule-III

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Occupational Disease</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PART-A</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1     | Infectious and parasitic diseases contracted in an occupation where there is a particular risk of contamination. | (a) All work involving exposure to contracted in an occupation health or laboratory work;  
(b) All work involving exposure to veterinary work;  
(c) Work relating to handling animals, animal carcasses, part of such carcasses, or merchandise which may have been contaminated by animals or animal carcasses;  
(d) Other work carrying a particular risk of contamination. |
<p>| 2     | Diseases caused by work in compressed air.                                            | All work involving exposure to the risk concerned.                        |
| 3     | Diseases caused by lead or its toxic compounds.                                       | All work involving exposure to the risk concerned.                        |
| 4     | Poisoning by nitrous fumes.                                                           | All work involving exposure to the risk concerned.                        |
| 5     | Poisoning by organophosphorus compounds.                                              | All work involving exposure to the risk concerned.                        |
| <strong>PART-B</strong> |                                                                                        |                                                                           |
| 1     | Diseases caused by phosphorus or its toxic compounds.                                  | All work involving exposure to the risk concerned.                        |
| 2     | Diseases caused by mercury or its toxic compounds.                                     | All work involving exposure to the risk concerned.                        |
| 3     | Diseases caused by benzene or its toxic homologues.                                    | All work involving exposure to the risk concerned.                        |
| 4     | Diseases caused by nitro and amido toxic derivatives of benzene or its homologues.     | All work involving exposure to the risk concerned.                        |
| 5     | Diseases caused by chromium, or its toxic compounds                                    | All work involving exposure to the risk concerned.                        |
| 6     | Diseases caused by arsenic or its toxic compounds.                                     | All work involving exposure to the risk concerned.                        |
| 7     | Diseases caused by radioactive substances or radiations.                                | All work involving exposure to the substances and ionising action of radioactive ionising radiations. |</p>
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Occupational Disease</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Primary epitheliomatous cancer of the skin, caused by tar, pitch, bitumen, mineral oil, anthracene, or the compounds, products or residues of these substances.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>9</td>
<td>Disease caused by the toxic halogen derivatives of hydrocarbons (of the aliphatic and aromatic series).</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>10</td>
<td>Diseases caused by carbon disulphide.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>11</td>
<td>Occupational cataract due to infra-red radiations.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>12</td>
<td>Diseases caused by manganese or its toxic compounds.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>13</td>
<td>Skin diseases caused by physical, chemical or biological agents not included in other items.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>14</td>
<td>Hearing impairment caused by noise.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>15</td>
<td>Poisoning by dinitrophenol or a homologue or by substituted dinitrophenol or by the salts of such substances.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>16</td>
<td>Diseases caused by beryllium or its toxic compounds.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>17</td>
<td>Diseases caused by cadmium or its toxic compounds.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>18</td>
<td>Occupational asthma caused by recognised sensitising agents inherent to the work process.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>19</td>
<td>Diseases caused by fluorine or its toxic compounds.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>20</td>
<td>Diseases caused by nitroglycerine or other nitroacid esters.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>21</td>
<td>Diseases caused by alcohols and ketones.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>22</td>
<td>Diseases caused by asphyxiants carbon monoxide, and its toxic derivatives, hydrogen sulfide.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>23</td>
<td>Lung cancer and mesotheliomas caused by asbestos.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>24</td>
<td>Primary neoplasm of the epithelial lining of the urinary bladder or the kidney or the ureter.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>25</td>
<td>Snow blindness in snow bound areas.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>26</td>
<td>Disease due to effect of cold in extreme cold climate.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>27</td>
<td>Disease due to effect of cold in extreme cold climate.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>S.No.</td>
<td>Occupational Disease</td>
<td>Employment</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Pneumoconioses caused by sclerogenic mineral dust (silicosis, anthraosilicosis, asbestosis) and silicotuberculosis provided that silicosis is an essential factor in causing the resultant incapacity or death.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>2</td>
<td>Bagassosis.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>3</td>
<td>Bronchopulmonary diseases caused by cotton, flax hemp and sisal dust (Byssinosis).</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>4</td>
<td>Extrinsic allergic alveolitis caused by the inhalation of organic dusts.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>5</td>
<td>Bronchopulmonary diseases caused by hard metals.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
<tr>
<td>6</td>
<td>Acute Pulmonary Oedema of High Altitude.</td>
<td>All work involving exposure to the risk concerned.</td>
</tr>
</tbody>
</table>
GAIL (India) Ltd

DAILY INCIDENT REPORTING FORMAT

OPD Registration No.: ____________  Location: ____________________________

1. Date & Time of the injured Reporting to Hospital
   : ..............................................................

2. Date & Time of Incident
   : ..............................................................

3. DETAILS OF INJURED PERSON:
   A) GAIL Employee
      i) Name & Age of the injured Person:
         : ..............................................................
      ii) Designation, Department & CPF No.:
         : ..............................................................
      iii) Father’s Name:
         : ..............................................................

   B) Contract Employee
      i) Name & Age of the injured Person
         : ..............................................................
      ii) Name of the Contractor /EIC of the job
         : ..............................................................
      iii) Full correspondence address with Phone No.
         : ..............................................................

4. Type of Injury (√ in appropriate):
   (a) FIRST AID
       : ..............................................................
   (b) REPORTABLE
       : ..............................................................
   (c) NON REPORTABLE
       : ..............................................................

5. Details of Injury
   : ..............................................................
   ..............................................................
   ..............................................................

6. Medical rest advised, if yes, for how many days:
   : ..............................................................

NOTE:
FIRST AID INJURY: BACK TO WORK AFTER FIRST AID TREATMENT.
NON-REPORTABLE INJURY: REST FOR NOT MORE THAN TWO DAYS.
REPORTABLE INJURY: REST FOR MORE THAN TWO DAYS.
Form No. 18

NOTICE OF ACCIDENT OR DANGEROUS OCCURRENCE RESULTING IN DEATH OR BODILY INJURY

E.S.I.C. Employer’s Code number:
E.S.I.C. Insurance Number of the injured person:

1. Name of occupier (or factory)/employer ..................................................................................................................

2. Address of works / premises where the accident or dangerous occurrence took place :

3. Nature of industry ..........................................................................................................................................................

4. Branch or department and exact place
   where the accident or dangerous occurrence took place ..................................................................................................

5. Name and address of the injured person ......................................................................................................................

6. (a) Sex ...........................................................................................................................................................................
   (b) Age (at the last birthday) ........................................................................................................................................
   (c) Occupation of the injured person ..........................................................................................................................

7. Local E.S.I.C. Office to which the injured person is attached ..........................................................................................
8. Date, shift and hour of accident or
dangerous occurrence: .................................................................

9. (a) Hour at which the injured person
started work on the day of accident
or dangerous occurrence: .................................................................

(b) Whether wages in full or part are
payable to him for the day of the
accident or dangerous occurrence: .................................................................

10. (a) Cause or nature of accident or
dangerous occurrence: .................................................................

(b) If caused by machinery: -

(i) Give the name of machine and
the part causing the accident
or dangerous occurrence: .................................................................

(ii) State whether it was moved
by mechanical power at the time of
accident or dangerous occurrence: .................................................................

(c) State exactly what the injured person
was doing at the time of accident
or dangerous occurrence: .................................................................

(d) In your opinion, was the injured
person at the time of accident or
dangerous occurrence: .................................................................
(i) Acting in contravention of provisions:
of any law applicable to him; or:

(ii) Acting in contravention of any orders
given by or on behalf of his employer, or:

(iii) Acting without instructions
from his employer?

(e) In case reply to (d) (i), (ii) or (iii)
is in the affirmative, state whether
the act was done for the purpose
of and in connection with the
employer’s trade or business:

11. In case the accident or dangerous
ocurrence took place while
travelling in the employer’s transport, state whether:

(a) The injured person was
travelling as a passenger to or from
his place of works:

(b) The injured person was travelling
with the express or implied
permission of his employer:

(c) The transport is being operated
by or on behalf of the employer or
some other person by whom it is
provided in pursuance of
arrangements made with the
employer; and:
(d) The vehicle is being/not being operated in the ordinary course of public transport service: ..............................................................

12. In case the accident or dangerous occurrence took place while meeting emergency, state :-

(a) Its nature; and: .................................................................................................................................................................

(b) whether the injured person at the time of accident or dangerous occurrence was employed for the occurrence was trade or business in or about the premises at which the accident or dangerous occurrence took place: .................................................................................................

13. Describe briefly how the accident or dangerous occurrence took place: ...............................................................................................................

14. Names and addresses of witnesses

(1) ............................................................................................................................................................................................
............................................................................................................................................................................................

(2) ............................................................................................................................................................................................
............................................................................................................................................................................................

15. (a) Nature and extent of injury (e.g. fatal, loss of finger, fracture of leg, scald, scratch followed by sepsis, etc.): .................................................................

(b) Location of injury (e.g. right leg, left hand, left eye, etc.): .............................................................................................................
16. (a) If the accident or dangerous occurrence was not fatal, state whether the injured person was disabled for more than 48 hours:
................................................................................................................

(b) Date and hour of return of work:
................................................................................................................

17. (a) Physician, dispensary or hospital from whom or which the injured person received or is receiving treatment:
..................................................................................................................

(b) Name of dispensary/panel doctor elected by the injured person:
..................................................................................................................

18. (a) Has the injured person died?:
..................................................................................................................

(b) If so, date of death:
..................................................................................................................

I certify that to the best of my knowledge and belief the above particulars are correct in every respect.

Signature of manager/employer:
..................................................................................................................

Name, designation and address of manager/employer:
..................................................................................................................

Date of dispatch of report:
..................................................................................................................
(This space is to be completed by the Inspector of Factories)

District ........................................................ Date of receipt: .........................................................

Number of the accident or dangerous occurrence: ..........................................................................

Causation: ...........................................................................................................................................

Other particulars (e.g. fatal, leg injury, arm injury, etc.): ...........................................................................

Date of investigation: ............................................................................................................................

Result of investigation: ...........................................................................................................................
Form No. 19
NOTICE OF POISONING OR DISEASE
(See instruction reverse)

ESIS Employer’s Code No ........................................................ Registration No.................................................................
ESIS Insurance No................................................................. Licence No.................................................................
Name & Address of the NIC Code No. ........................................................ ........................................................
Injured person As given in the licence) ........................................................ ........................................................
Local ESIC officer. ...............................................................................................................................................

1. Name and address of factory:........................................................................................................................

2. Name, address and telephone number:........................................................................................................

3. Nature of injury:..............................................................................................................................................

4. Particulars of affected workers:
   (a) Name: ......................................................................................................................................................
   (b) Age : ...........................................................................................................................................................
   (c) Sex:..............................................................................................................................................................
   (d) Serial number as per Register of audit/ .....................................................................................................

   Child Worker:
   (e) Address:....................................................................................................................................................
   (f) Precise Occupation:.....................................................................................................................................
   (g) Nature of Job: .............................................................................................................................................

5. Nature of poisoning/disease:..........................................................................................................................
   (Give serial number and name as per the list overleaf)
6. (a) Harmful agent or process to which Poisoning or disease is attributed: .................................................................................................................................

(b) Approximate date of beginning & Cessation of exposure of the worker to the harmful agent or process: .................................................................................................................................

7. Has the case been reported to the Certifying Surgeon/Administrative Medical Officer, ESIS/Medical Inspector of Factories: Yes/No

Date: ....................................................................................................................... Signature of Manager .................................................................................................................................

Name (in Capital Letters).................................................................................................................................

Tel. No. .................................................................................................................................................................

Note:- This notice should be sent forthwith to the following authorities:

(i) Chief Inspector of Factories & Boilers .................................................................................................................................

(ii) Medical Inspector of Factories .................................................................................................................................................................

(iii) Certifying Surgeon .................................................................................................................................................................

(iv) Administrative officer, ESIS .................................................................................................................................................................

(to be filled in by the Factory Inspectorate)

Number of the case: .................................................................................................................................................................

Remarks .............................................................................................................. Signature .................................................................................................................................

Date: .............................................................................................................. Name (block letters) .................................................................................................................................

Designation .................................................................................................................................................................
Where any worker in a factory contracts any disease specified in the schedule, the manager of the factory shall send a notice thereof to such authorities and in such form as within such time, as may be prescribed.

**SCHEDULE**

1. List of Notifiable Diseases
2. Lead poisoning including poisoning by any preparation or compound of lead or their sequelae.
3. Lead tetra-ethyl poisoning.
4. Phosphorous poisoning or its sequelae.
5. Mercury poisoning or its sequelae.
6. Manganese poisoning or its sequelae.
7. Arsenic poisoning or its sequelae.
8. Poisoning by nitrous fumes.
10. Benzene poisoning, including poisoning by any of its homologues, their nitro or amido derivatives or its sequelae.
11. Chrome ulceration or its sequelae.
12. Anthrax.
13. Silicosis.
14. Poisoning by halogens or halogen derivatives of the hydrocarbons, of the aliphatic series.
15. Pathological manifestation due to: -
16. Radium or other radioactive substances.
17. X-rays.
18. Primary epitheliomatous cancer of the skin.
20. Toxic jaundice due to poisonous substances.
21. Oil acne or dermatitis due to mineral oils and compounds containing mineral oil base.
22. Byssinosis.
23. Asbestosis.
24. Occupational or contact dermatitis caused by direct contract with chemical and paints. These are of types, that is, primary irritants and allergic sensitizers.
25. Noise induced hearing loss (exposure to high noise levels).
27. Carbon monoxide.
28. Coal miners’ pneumoconiosis.
29. Phosgene poisoning.
30. Occupational cancer.
31. Isocyanates poisoning.
32. Toxic nephritis.
GAIL (India) Ltd

Summary of reports and recommendation based on occupational health check-up (also to be used for calculating health index)

Name of Employee: ........................................................................................................ CPF No: ........................................

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Test</th>
<th>Status</th>
<th>Category</th>
<th>Max Marks allotted</th>
<th>Marks obtained</th>
<th>Follow up</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body Mass Index - &lt; 25 (Normal)</td>
<td>Normal/High</td>
<td>No Effect</td>
<td>10</td>
<td>--</td>
<td>Monthly</td>
<td>If Patient is on Anti-Hypertensive Drugs he has to be labelled Hypertensive</td>
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<tr>
<td>2</td>
<td>Hypertension (Blood Pressure)</td>
<td>Normal/High</td>
<td>B</td>
<td>10</td>
<td>--</td>
<td>Monthly</td>
<td>If taking antidiabetic and has normal blood sugar he has to be labelled as diabetic</td>
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<tr>
<td>3</td>
<td>Diabetes (Blood Sugar Level)</td>
<td>Normal/High</td>
<td>C</td>
<td>10</td>
<td>--</td>
<td>Monthly</td>
<td>If on lipid lowering drugs then also to be labelled as Dyslipedemia</td>
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<tr>
<td>4</td>
<td>Any Abnormality In ECG/TMT/Angiogaryphorh/o CABG</td>
<td>Yes/No</td>
<td>No Effect</td>
<td>10</td>
<td>--</td>
<td>SOS</td>
<td>If corrected by spects than consider it normal</td>
</tr>
<tr>
<td>5</td>
<td>Lipid Profile</td>
<td>Normal/High</td>
<td>I</td>
<td>10</td>
<td>--</td>
<td>Quarterly</td>
<td>If on lipid lowering drugs then also to be labelled as Dyslipedemia</td>
</tr>
<tr>
<td>6</td>
<td>Pulmonary Function Test</td>
<td>Normal/Abnormal</td>
<td>I</td>
<td>5</td>
<td>--</td>
<td>Quarterly</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Thyroid Profile</td>
<td>Normal/High</td>
<td>I</td>
<td>5</td>
<td>--</td>
<td>Monthly</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Liver Function Test</td>
<td>Normal/High</td>
<td>I</td>
<td>5</td>
<td>--</td>
<td>SoS</td>
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<tr>
<td>9</td>
<td>Renal Function Test</td>
<td>Normal/High</td>
<td>I</td>
<td>5</td>
<td>--</td>
<td>SoS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Vision</td>
<td>Normal/High</td>
<td>H</td>
<td>5</td>
<td>--</td>
<td>SoS</td>
<td>If corrected by spects than consider it normal</td>
</tr>
<tr>
<td>S. No.</td>
<td>Test</td>
<td>Status</td>
<td>Category</td>
<td>Max Marks allotted</td>
<td>Marks obtained</td>
<td>Follow up</td>
<td>Remarks</td>
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<td>-------------------------------------------------------------------------</td>
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<tr>
<td>11</td>
<td>Audiometry</td>
<td>Normal/Abnormal</td>
<td>H</td>
<td>5</td>
<td></td>
<td>Half yearly</td>
<td>Only severe cases of hearing loss as per annexure</td>
</tr>
<tr>
<td>12</td>
<td>Tobacco Use</td>
<td>Yes/No</td>
<td>No Effect</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Chronic Alcohol Intake</td>
<td>Yes/No</td>
<td>No Effect</td>
<td>5</td>
<td></td>
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<tr>
<td>14</td>
<td>No Other Medical/Surgical Problem(Except Diseases Covered Above)</td>
<td>Yes/No</td>
<td>I</td>
<td>5</td>
<td></td>
<td>SOS</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Psychological testing for Job Stress</td>
<td>Mild/Moderate/Severe</td>
<td>F</td>
<td>5</td>
<td></td>
<td></td>
<td>0-30-Mild, 31-70-Moderate, above 71-Severe</td>
</tr>
</tbody>
</table>

Signature of Company Doctor / C.M.O.
The Second Schedule
(Sec. 41 F)

Permissible Levels of Certain Chemical Substances in Work Environment

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Toxic Chemicals or Substances</th>
<th>Permissible Limits of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA (8 hrs.)</td>
<td>STEL (15 min)</td>
</tr>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>100</td>
<td>180</td>
</tr>
<tr>
<td>Acetone</td>
<td>750</td>
<td>1750</td>
</tr>
<tr>
<td>Arsenic</td>
<td>-</td>
<td>0.2</td>
</tr>
<tr>
<td>Ammonia</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Benzene</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Beryllium</td>
<td>-</td>
<td>0.002</td>
</tr>
<tr>
<td>Butane</td>
<td>800</td>
<td>1900</td>
</tr>
<tr>
<td>Butyl Mercaptan</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Calcium Oxide</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Cadmium dust</td>
<td>-</td>
<td>0.05</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Carbon Disulphide</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td>Chloroform</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Chromates</td>
<td>-</td>
<td>0.05</td>
</tr>
<tr>
<td>Chlorine</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Cyanides</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>DDT</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Ethyl Alcohol</td>
<td>1000</td>
<td>1900</td>
</tr>
<tr>
<td>Furfural</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>S.No.</td>
<td>Toxic Chemicals or Substances</td>
<td>Permissible Limits of Exposure</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>TWA (8 hrs.)</td>
<td>STEL (15 min)</td>
</tr>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Gasoline</td>
<td>300</td>
<td>900</td>
</tr>
<tr>
<td>Hydrazine</td>
<td>0.1</td>
<td>0.1 Skim</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Hydrogen Chloride</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Lead – Inorganic</td>
<td>-</td>
<td>0.1</td>
</tr>
<tr>
<td>MEK</td>
<td>200</td>
<td>590</td>
</tr>
<tr>
<td>Manganese</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Methyl Alcohol</td>
<td>200</td>
<td>260</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Naphtha</td>
<td>100-400</td>
<td>1590</td>
</tr>
<tr>
<td>Oil Mist</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Phenol</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Sulphur Oxide</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Sulphuric acid</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Toluene</td>
<td>100</td>
<td>375</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Welding fumes</td>
<td>-</td>
<td>5</td>
</tr>
</tbody>
</table>
Threshold Limit Values

Threshold Limit Values refer to airborne concentrations of substances/levels of physical agents and represent conditions under which it is believed that nearly all the employees may be repeatedly exposed, day after day, without adverse effect. Because of wide variation in individual susceptibility, however, a small percentage of employees may experience discomfort from substances at concentrations at or below the TLV; a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness.

Categories of TLVs are specified as:

1. Threshold Limit Value - Time Weighted Average (TLV-TWA) represents the time weighted average concentration for a normal 8-hour workday and a 40 hour workweek, to which nearly all employees may be repeatedly exposed day after day without adverse effect.

2. Threshold Limit Value - Short Term Exposure Limit (TLV-STEL) represents the concentration to which employees can be exposed continuously for a short period of time without suffering from (1) irritation; (2) chronic or irreversible tissue change; (3) narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency and provided that the daily TLV-TWA also is not exceeded. A STEL is defined as a 15 minute time weighted average exposure which should not be exceeded at any time during a work day, even if the eight hour time weighted average is within the TLV. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times a day. There should be at least 60 minutes gap between successive exposures at the STEL.

3. Threshold Limit Value - Ceiling (TLV-C) represents the concentration that should not be exceeded even instantaneously. For some substances, e.g. irritant gases, only TLV-C may be relevant. For other substances, either two or three categories may be relevant, depending upon their physiological action. It is important to observe that if any one of the three categories TLVs is exceeded, a potential hazard is presumed to exist.

Wet Bulb Globe Temperature (WBGT) index is a technique adopted to measure environmental heat stress. Portable WBGT instrument consisting of three separate resistance thermometers - globe thermometer to measure radiant energy, a wet bulb thermometer to measure relative humidity and a dry bulb thermometer to measure ambient temperature is made use of. By means of a switch, each thermometer can be individually read on a scale. A fourth position of the switch integrates the outputs of the three thermometers into a single reading WBGT index which is read on a separate scale. The operation is from line power or batteries.
Noise

A wide range of equipment is available for measurement of sound. The basic general purpose sound level meter measures the sound levels in decibels. Portable single hand-held battery powered precision integrating sound level meters are made use of for all kinds of sound level measurements including Leq., frequency analysis using a filter set. Personal noise dose meters worn by working personnel are made use of to get accurate assessment of the total noise dose the wearer has received throughout his working day. These instruments are easy to use, self-contained pocket size units, battery powered with concealed or visible digital display for readout.

Illumination

Evaluation of lighting effectiveness is not just a question of quantity of light, but also of the quality of the lighting environment. Portable, contrast, rendered by lighting systems and visual display battery powered instrument is available for measurement of general luminance, and luminance battery powered instrument is available for measurement of general luminance, and luminance contrast, rendered by lighting systems.

There being no single instrument which performs acceptable under all conditions and requirements met with in practice; different types of instruments and detectors are used in various applications to obtain the monitoring characteristics required for different forms of radiation hazards. The radiation detection most widely used in survey instruments are isolation chambers, Geiger-Mueller counters, proportional counters and scintillation detectors. To assess the dose received by the individual, either film meters or Thermo luminescent dosimeters (TLD) or a combination of both are used for personal monitoring of exposure to external sources of radiation.
HAZARD IDENTIFICATION: OCCUPATION-WISE

Department: Unit:
Date of visit: ..........................................................................................................
Area/Unit Supervisor: .............................................................................................
Name: ......................................................................................................................
Desg: .........................................................................................................................
Area of survey ...........................................................................................................
Operation & final Product of unit. ............................................................................
Chemical & Additives:
   a. Chemical Used in process: ................................................................................
   b. Intermediate product: ........................................................................................
   c. By-product .......................................................................................................... 
   d. Final Product ....................................................................................................... 
   e. Any Additives Used in processing: ...................................................................... 
   f. Toxic gases, fumes, dust if any ...........................................................................
7. Total no. of employees working in the unit:
   A shift .......................................................................................................................
   B shift ......................................................................................................................
   C shift ......................................................................................................................
   General shift .......................................................................................................... 
   Total No. of employees ..........................................................................................
   Executives: ...............................................................................................................
   Shift .........................................................................................................................
   General Shift .........................................................................................................
   Non-Executives- Master Optr. ................................................................................
- Optr. A
- Optr. B
- Optr. C/Helpers
Total No.
Maintenance Employees:
8. Total no. of officer working in general shift:
9. Nature of jobs for employees:
   (i) Executives:
   (ii) Non Executives:
      Hazards Present:
         Physical:
         Chemical:
         Biological:
11. Compliance with Legal Requirements:
12. Observation:
13. Conclusion:
14. Corrective or preventive action to be taken (if any):
   Follow Ups / Remarks:
CHECKING OF NOISE AT VARIOUS WORK PLACE

Installation: .................................  Date: ...............................  

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Area / Location</th>
<th>Time</th>
<th>Recommended as per OISD</th>
<th>Measured in db</th>
<th>Remarks</th>
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<thead>
<tr>
<th>Name</th>
<th>Designation</th>
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<tr>
<td>Received by</td>
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CHECKING OF ILLUMINATION AT VARIOUS WORK PLACE

Installation: ...............................  Date: .............................

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<th>Remarks</th>
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<tr>
<td>Received by</td>
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# MEASUREMENT OF TOXIC CHEMICAL ENVIRONMENT

Installation: ...........................................  Toxic Chemical: ..................................................  Date: ....................................................

<table>
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<th>S.No.</th>
<th>Place</th>
<th>Exact Location</th>
<th>Time</th>
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<td>Received by</td>
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80
### TABLE–1
Threshold Limit Values for Noise*

<table>
<thead>
<tr>
<th>Duration per day</th>
<th>Sound level</th>
<th>Hours dBA</th>
</tr>
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<tbody>
<tr>
<td>8</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>1-1/2</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>1/4 or less</td>
<td>115</td>
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</tbody>
</table>

Note: No exposure to continuous, intermittent, or impact noise in excess of a peak C-weighted level of 140 dB. If instrumentation is not available to measure a C-weighted peak, an unweighted peak measurement below 140 dB may be used to imply that the C-weighted peak is below 140 dB.

* Limited by the noise source - not administrative control. It is also recommended that a dosimeter or integrating sound level meter be used for sounds above 120 decibels.
TABLE–2

Recommended Service Illuminance for Various Classes of Visual Task

<table>
<thead>
<tr>
<th>Class of Recommended Typical examples</th>
<th>visual task illuminance (lx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceptionally</td>
<td>2400 or more Inspection of minute work difficult tasks (e.g. very small instruments)</td>
</tr>
<tr>
<td>Very difficult</td>
<td>1600 Extra-fine bench and machine work, tool and die making (tolerances below 25 um); gauging and inspection of small or intricate parts.</td>
</tr>
<tr>
<td>1200</td>
<td>Inspection, examining and hand finishing light goods.</td>
</tr>
<tr>
<td>Difficult</td>
<td>800 Fine bench and machine work (tolerances down to 25 um); inspection of fine work (e.g.calibrated scales, precision mechanisms and instruments).</td>
</tr>
<tr>
<td>Normal range</td>
<td>600 Office work with poor contrast drawing tasks and workplaces offices-boards, fine painting, spraying and computer rooms-input and output terminals.</td>
</tr>
<tr>
<td>Moderately difficult</td>
<td>400 Medium bench and machine work (tolerances down to 125 μm); routine office work-typing, filing, reading, writing; inspection of medium work (e.g.”Go” and”No Go” gauges, machine work; structural steel fabrication-marking off; enquiry desks</td>
</tr>
<tr>
<td>Ordinary</td>
<td>300 Training room, chalkboards and charts; pharmaceutical stores; kitchens - food preparation, cooking, washing up; staff canteens – counters.</td>
</tr>
<tr>
<td>Simple</td>
<td>200 Rough bench and machine work (tolerances above 750 um); rough visual inspection,counting, rough checking of stock parts; structural steel fabrication-general areas; entrance halls; waiting rooms; LPG Plants, POL Depots / Terminals staff canteens general. warehouses and bulk stores -packing and despatch</td>
</tr>
<tr>
<td>Rough inter-</td>
<td>100 Loading bays; office strongrooms, staff mitten tasks change rooms; locker rooms.</td>
</tr>
<tr>
<td>Movement and Corridors</td>
<td>50 Corridors with heavy traffic; orientation indoor car parks (lanes); walkways and movement areas in industrial plant; stairs; rest rooms</td>
</tr>
<tr>
<td>20 Corridors</td>
<td>Corridors with light traffic</td>
</tr>
</tbody>
</table>
# OCCUPATIONAL HEALTH HAZARD SURVEY

**Installation:** ........................................
**Surveyed by:** .......................................
**Unit:** ................................................
**Data Sources:** .................................
**Operation:** .................................
**Date:** ..............................................

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Nature of Job or Tasks</th>
<th>Occupational Health Hazards</th>
<th>Control Measures</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eliminate or substitute</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Local Exhaust</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>General Ventilation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wet Down</td>
<td></td>
</tr>
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<td></td>
<td>PPE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shielding</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Isolation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Administrative Practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Work practice</td>
<td></td>
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<thead>
<tr>
<th>Name</th>
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Guidelines on Medical Standards/Norms for Pre-employment Medical Examination

OBJECTIVE

• The objective of these guidelines is to select, for a particular post, a person who must be in good physical and mental health and must be free from any physical defect or disability that is likely to interfere with efficient performance of the duties and/or safety of the plants, machinery or co-workers.

SCOPE

• Any person seeking appointment in GAIL shall be required to undergo medical examination
• The pre-employment medical examination shall be a part of selection procedure of a candidate for a particular post

GENERAL GUIDELINES

• “Medical Authority” For medical examination and issuance of medical fitness certificate on first appointment in the Company means, Chairman of Medical Board or Civil Surgeon or Medical Superintendent or Chief Medical Officer or equivalent of a Central/State Govt. hospital (having the status of minimum District Hospital) or of GAIL nominated empanelled hospital.
• Acceptance of joining will be subject to the fitness certificate so issued by the Medical Authority being further accepted by designated CMO, GAIL.
• In work Centres where no Medical Officer has been posted, HR In charges shall forward the scanned copies of the medical reports as obtained from prescribed medical authority to designated CMO for acceptance, where after joining will be allowed.
• GAIL reserves the right to re-examine or review the medical examination report submitted by the candidate without assigning any reason and decision of GAIL’s designated CMO will be final and binding.
SPECIFIC GUIDELINES

1. **Age/Height/Weight:**
   - In the matter of correlation of age, height & weight of candidates of Indian race, it is left to discretion of the medical authority to use whatever correlation figures are considered most suitable. The medical authority will be empowered to marginally relax the standards so long as such relaxation does not impede the performance of the job.
   - Measurement of Height: Measurement will be taken in cm with the individual standing barefooted and straight weight thrown on both heels kept together. Tendency to stand on toes or raise heels will be strictly avoided.

2. **Chest**
   - Acceptable chest measurement at full expiration will be 79cm. (relaxable by 5cm) and minimum expansion 5 cm. The range of expansion up to 4cm. i.e. a deviation of 20% will be acceptable. This is not applicable to female candidates.

3. **Eyes**
   - Any organic disease or a progressive refractive error which is likely to result in lowering the acuity shall be considered as a disqualification
   - Retinal diseases in diabetes, hypertension and atherosclerosis will be considered disqualification for all categories
   - Candidates having grossly affected field of vision will be considered disqualified
   - Night blindness will be acceptable in all categories if curable, not acceptable if Congenital.

**Visual Acuity**

<table>
<thead>
<tr>
<th>Age</th>
<th>Distant Vision</th>
<th>Near Vision</th>
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<tbody>
<tr>
<td></td>
<td>Better Eye</td>
<td>Worse Eye</td>
</tr>
<tr>
<td>Below 35 yrs</td>
<td>6/9</td>
<td>6/9</td>
</tr>
<tr>
<td></td>
<td>6/6</td>
<td>6/12</td>
</tr>
<tr>
<td>35 yrs. &amp; above</td>
<td>6/12</td>
<td>6/12</td>
</tr>
<tr>
<td></td>
<td>6/9</td>
<td>6/18</td>
</tr>
</tbody>
</table>

- Corrected Myopia (including cylinder) exceeding (-) 6D and Hypermetropia (+) 4D in each eye up to the age of 35 years will be considered as disqualification.
- Corrected Myopia (including cylinder) exceeding (-) 6D and Hypermetropia (+) 6D in each eye beyond 35 years of age will be considered as disqualification.
**Colour Vision**

- Acceptable for non-technical person.
- Not acceptable for all Technical Personnel, Fire Fighting Personnel, Drivers, etc. and other occupants where perception of colour is considered essential in view of nature of duties of the offered post and future posts likely to be occupied by the candidate either on appointment on promotion or on job rotation/transfer. The candidate’s ability to distinguish colours must be tested and recorded.
- Whenever an employee suffering from colour blindness is posted or transferred into a category wherein colour perception is required, his eyes will be re-examined for the same along with the examination for visual acuity. If not found as per the norms, shall be considered as disqualification.

**Trachoma**

- Unless complicated shall not ordinarily be a disqualification

**Squint**

- For technical services / skilled, where the presence of Binocular vision is essential squint even if the visual acuity is of the prescribed standard Shall be considered as a disqualification. For other services, the presence of squint should not be considered as a disqualification if the visual acuity of each eye is of the prescribed standard.

**Contact Lens & Intraocular Implant**

- Correction with contact lenses / intraocular implant/ Lasik surgery is not a bar for employment provided the prescribed standards are fulfilled.

4. **EAR**

- The candidate should be free from any active disease of the ear. The candidate should be able to hear whispering voices separately in both the ears at distances of 2 ft in a quiet room. A candidate with doubtful hearing capacity will be sent for audiometry test to determine his hearing capabilities. if the disease is not progressive in nature, the candidate may be declared temporarily unfit and his hearing capacity tested again after 4 weeks.
- Bilateral Nerve Deafness- Not acceptable for all categories.
- Unilateral nerve defects not acceptable in Drilling, exploration, Operations, Technical discipline, Fire Fighting Staff, Security and Drivers except in case of Materials Management, Personnel & Administration, Finance& Accounts Disciplines.
5. **GLANDS**
   • **Thyroid**

Hypothyroidism without any other organ involvement will be declared fit hyperthyroidism- declared unfit.
   • Any lymphadenopathy should be thoroughly investigated to rule out any chronic granumatous disease like TB, sarcoidosis and blood dyscrasias, if found declared unfit
   • Pituitary disorders will be declared unfit

6. **NOSE**

   • A candidate should be free from any active disease of the nose. Deviated nasal septum (DNS), Nasal polyposis, sinusitis of severe nature etc. will be declared temporarily unfit.

7. **THROAT**

   • State of tonsils - Slight Hypertrophy without evidence of repeated tonsillitis is not a cause for rejection. Enlarged tonsils cause temporary unfitness until treated with tonsillectomy. Throat, palate, gums, jaws, temporomandibular joints and dentition should be within normal limits, in case of any active lesion like bleeding gums, aphthous ulcer, septic tonsillitis declared temporarily unfit.

8. **SKIN & VENEREAL DISEASES**

   • Leprosy or chronic and inveterate skin conditions will be declared unfit.
   • Candidates suffering from venereal diseases declared temporarily unfit unless detail examination of urethral smear & serology test prove negative.

9. **DIABETES**

   • Type-I & Type-II diabetes with any of the target organ involvement will be declared unfit irrespective of age

10. **EPILEPSY**

    • Declared Unfit

11. **PULMONARY TUBERCULOSIS**

    • Temporarily unfit for 03 months.
12. **MALIGNANCY**

- Any carcinoma, multiple myeloma will be declared unfit.

13. **HEART DISEASE**

Declared Unfit in case of:

- Ischaemic heart disease
- organic/valvular/congenital heart disease with definite signs and symptoms

14. **BLOOD PRESSURE**

The medical authority will use its discretion regarding Blood Pressure. A rough method of calculating normal maximum systolic pressure is as follows:

i) With young subjects 15-25 years of age the average is about 100 plus the age.

ii) With subjects over 25 years of age the general rule of 110 plus half the age seems quite satisfactory. N.B. As a general rule any systolic pressure over 140 and diastolic over 99 should be regarded as suspicious and the candidate should be examined/investigated thoroughly by the Competent Medical Authority before giving his final opinion regarding the candidate's fitness or otherwise. The detailed report should indicate whether it is due to any organic disease or not. In all such cases, X-Ray, and E.C.G, lipid profile and renal function test should also be done as a routine. The final decision as a fitness or otherwise of a candidate will, however, rest with the medical authority only.

15. **PREGNANCY**

- If at the time of medical examination, a candidate is pregnant for more than 12 weeks she shall be declared temporarily unfit until she has completed 6 weeks after confinement. After confinement the candidate shall be required to produce a medical certificate of fitness from a registered medical practitioner before being called up for a final medical examination

16. **UNDESCENDED TESTES**

- Declared Unfit

17. **CANDIDATES WILL BE DECLARED TEMPORARILY UNFIT for following Conditions:-**

- Hernia
- Hydrocele
- Haemorrhoids
- Phimosis
• Gallstones
• Renal stones
• Perforation of tympanic membrane
  (Candidates will be declared fit if corrective measures taken within 6 months).

18. LIVER DISORDER

Declared unfit in case of:
• Cirrhosis of Liver
• Chronic Liver Disease

19. RENAL DISORDER

Declared unfit in case of:
• Chronic renal failure
• Diabetic nephropathy

20. NEUROLOGICAL DISORDER

Declared unfit in case of:
• Seizure disorder
• Parkinsonism
• Ataxia
• Psychosis
• Any other major neurological disorder

21. LUNGS DISORDER

Declared unfit in case of:
• Lung Cancer
• Chronic Obstructive Lung Disease
• H/o Lobectomy/Pneumonectomy
22. **ANY COLLAGEN DISEASE** like SLE, Polyarteritis Nodosa and Wegeners Granulomatosis will be declared unfit.

23. **ANY MAJOR ORGAN DAMAGE** involving Heart, Lung, Liver, Kidney and Brain will be declared unfit.

24. **PHYSICALLY CHALLENGED CANDIDATE**

   - Congenital or acquired physical defects, if any noticed will be recorded on the medical examination form with a clear opinion as to whether it is likely to interfere with the efficient performance of the duties for which the candidate is under consideration for employment. The norms and standards shall however be further relaxed for physically challenged candidates as per government guidelines.

25. **EXAMINATION OF HEAD & NECK**

   The examination of the head and neck will be made from above down- wards. The examiner will note the intelligence character of voice, power of hearing by his replies to the questions put to him.

   A) The scalp is examined for any blows and cuts on the head.

   B) The examination of the nose should reveal that the candidate is free from any infectious disease of the nose.

   C) Glands: In thyroid glands there should be no evidence of hyperthyroidism or generalized enlargement of lymph glands. Scars, if any, of the previous removal of tubercular glands should be normal and there must not have been any active diseases in the last five years. The movements of the neck should be free in all possible directions.

   It is absolutely essential to extend due regard to candidates privacy and decency. Every part of the body must be examined and if a candidate does not submit to this even after persuasion he should be rejected. A staff Nurse or a Hospital attendant will be present when female candidate are examined.

   The candidate should now be made to walk at least 50 mtrs. To judge the locomotion (gait) the candidate is then advised to stand upright with feet apart and arms extended above head. The examiner should walk slowly round the candidate for careful inspection of whole surface of the body. The following observations shall be made and recorded:-

1) General physical development

2) Formation and development of limbs

3) Skin diseases

4) Varicose veins

5) Scars or ulcers

6) Tattoo marks

7) Any special marks on account of congenital or post accidental cases
1. Candidates suffering from Leprosy or Chronic and inveterate skin conditions will be declared unfit. Vitilio cases are acceptable.

2. Candidates with advanced degree of varicose veins should be considered as a ground for temporary disqualification.

3. Congenital or acquired physical defects, if any, noticed will be recorded on the medical examination report with clear information as to whether it is likely to interfere with the efficient performance of the duties for which the candidate is under consideration for employment. The candidate is then directed to walk up and down the hall briskly 2 to 4 times to hop about the hall on the toes of the right foot then again on the toes of the left foot.

The examiner will observe:

1. The power and range of movements of joints including gait
2. The flatness of feet.
3. Formation of the toes.

26. Examination of the trunk

The trunk will be examined from below upwards. The candidate will stand with his arms extended overhead, the hands being in contact. The Medical officer will examine:

a) The abdominal and parities of the chest. He instructs the candidate to take in a full breath several times while he watches the action and note the expansion of the chest. Careful stethoscope Examination of the lungs is made.

b) The heart sounds, the heart rate, and its functions etc. are noted.

c) Any enlargement of the spleen or liver is noted.

d) Indications of venereal diseases are observed.

e) The scrotum is examined to ascertain whether the testicles have descended and are normal or if there be vericocele, Hydrocele or other diseases.

f) Signs of Hernia are looked for by inserting the point of the finger into the external abdominal ring of each side and instruction given to the candidate to cough 2 to 3 times.

g) The candidate is examined for Haemorrhoids, Fistulae, Condylomata etc. For this purpose the candidate is instructed to turn with his back towards the Examiner, stoop down and separate the buttocks with his hands and strain down gently. The examination of the perineum and of the genitalia may be deferred until the end if considered desirable.

1) The candidate chest should be well formal with several sufficient expansions and his heart, lungs should be sound.
2) The enlargement of spleen and liver should be investigated for any chronic diseases. Candidate with chronic diseases should be considered temporarily unfit or unfit depending upon the nature and severity of the disease.

3) There should be no evidence of any abdominal disease.

4) Venereal Diseases: Candidate who has suffered or are suffering from V.D will not be declared fit unless detailed examination of urethral smear and serology tests prove negative.

5) Un-descended testicle should be considered a disqualification only when situated within the inguinal canal or at the external abdominal rings.

6) The candidate should not have suffered from Hydrocele, a severe degree of varicocele, varicose veins or piles.

7) Hernia: Candidate with Hernias will be considered temporarily unfit and will be re-examined after surgical treatment.

27 UPPER EXTREMITIES

The examination of the upper extremities will be made from below upwards. The following directions are given to the candidates:

a) Stretch your arms with the palms of your hands upwards.

b) Bend your arms with the palms of your hands upwards.

c) Bend the fingers over your thumbs.

d) Bend your wrists backwards and forwards.

e) Bend your elbows.

f) Turn the back of the hands upwards.

g) Swing your arms around your head.

This examination will give an indication of defects of the wrists, elbows, shoulder joints, rotational movements of the forearms.

28. LOWER EXTREMITIES AND BACK

The inspection of the lower extremities and back will be made from below upwards. The candidate first faces the medical examiner and afterwards turns his back towards him. The following directions are given to the candidate:

a) Stand on your right foot, put the left forward.

b) Bend the ankle joint and toes alternately backwards and forwards.

c) Repeat down on one knee.
d) Kneel down on the other knee.
e) Up again
f) Kneel down on the other knee.
g) up again
h) Down on both knees and up from position with a simultaneous spring on both legs.
i) Turn round and separate the legs.
j) Touch the ground with the hands.

This examination indicates any defects of the toes, ankles knee joints and of the spine. Deformities of the Spine, Knock knees, Flat foot and nature of duties expected to be performed by the candidate.

29 PULSE

The candidate pulse is felt and its rate and rhythm as well as any other abnormality noted. The candidate, whose pulse rate is persistently over 100 but responding well to the exercise tolerance test, should be attended by the medical officer who should re-examine him the following morning. If on examination, the pulse rate is less than 100, he should be accepted. If still over 100, he should be declared unfit.

NOTE:

i) Any abnormal findings on investigations should be noted. Depending upon the nature and the extent of the abnormality the tests may be either repeated or the candidates may be declared fit, unfit or temporarily unfit.

ii) A candidate having abnormally high blood sugar should be considered unfit.
Medical Certificate for Appointment in GAIL

1. Name in full (in block letters) .......................................................... ..........................................................

2. Age .........................................................................................................

3. Date of birth: .....................................................................................

4. Place of Birth: .....................................................................................

5. Please tick the appropriate answer:

   - Have you ever suffered from:
     - Enlargement or Suppuration of glands
     - Spitting of blood
     - Asthma
     - Heart Disease
     - Rheumatism
     - Fainting attack
     - Epilepsy
     - Intermittent or any other fever
     - Any other disease (give details)

6. Have you under gone any surgery in the past. If yes give details:
7. क्या आप कभी अधिक कार्य अथवा किसी अन्य कारण से बेचैनी या घबराहट से ब्राह्म हुए हैं/ Have you ever suffered from any form of nervousness due to over work of any other cause. हाँ/Yes नहीं/No यदि हाँ तो विवरण दें/if yes give details

8. क्या पिछले तीन वर्षों में चिकित्सा अधिकारी/चिकित्सा बोर्ड द्वारा आपकी चिकित्सा परीक्षा दी हुई है और आप सरकारी सेवा के अधीन घोषित किए गए हैं/Have you been examined & declared unfit for Government service by a medical officer/medical board within last three years. हाँ/Yes नहीं/No यदि हाँ तो विवरण दें/if yes give details

9. क्या आपका कोई विशेष मस्तिष्की उपरोक्त में से किसी रोग से ब्राह्म हुआ है (अथवा अन्य किसी बीमारी से ब्राह्म हैं)/Have any of your near relatives suffered from any of the Above mentioned ailments (or any other disease) यदि हाँ तो विवरण दें/if yes give details

10. कृपया अपने परिवार से सम्बंधित निम्नलिखित जानकारी दें/Please furnish the following particulars concerning your family

<table>
<thead>
<tr>
<th>पिता की आयु और स्वास्थ्य (यदि जीवित हैं)</th>
<th>मृत के समय पिता की आयु और मृत्यु का कारण/Father’s age if living and state of health</th>
<th>जीवित भाईयों की संख्या, आयु और स्वास्थ्य/No of Brothers living, their age and stat of health</th>
<th>मृत भाईयों की संख्या, मृत्यु के समय उनकी आयु और मृत्यु का कारण/No. of brothers dead, their ages at death and cause of death</th>
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<th>माता की आयु और स्वास्थ्य (यदि जीवित हैं)</th>
<th>मृत के समय माता की आयु और मृत्यु का कारण/Mother’s age if living and state of health</th>
<th>जीवित बहनों की संख्या, आयु और स्वास्थ्य/No. of sisters living, their ages and state of health</th>
<th>मृत बहनों की संख्या, मृत्यु के समय उनकी आयु और मृत्यु का कारण/No. of sisters dead, their ages at death and cause of death</th>
</tr>
</thead>
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</tr>
</tbody>
</table>


I Declare that:

1. All the above information is true to the best of my knowledge and belief.

I have not received disability certificate/pension on account of any disease or any other condition.

Marks of Identification:

1.
2.

अभ्यार्थी के हस्ताक्षर/Signature of Candidate

मेरी उपरिथिति में हस्ताक्षर किये गये हैं/Signed in my presence गृह विभिन्ता अधिकारी के हस्ताक्षर

दिनांक/Dated ...................... Signature of Medical Authority* ..................................................

Note:

If the fact that false information has been furnished or that there has been suppression of any factual information in the Attestation Form comes to notice at any time during the service of a person, his/her services would be liable to be terminated and his/her claims to any terminal benefit shall be forfeited.

Chairman of Medical Board or Civil Surgeon or Medical Superintendent or Chief Medical Officer or equivalent of a Central/State Govt. hospital (having the status of minimum District Hospital) or of GAIL nominated empanelled hospital.
MEDICAL EXAMINATION REPORT
PHYSICAL EXAMINATION

Name of the candidate: ................................................................................................................................................

1. General Development :

   Good ................................................................. Fair ..................................................... Poor ....................................................
   Thin ................................................................. Average ........................................... Obese ...........................................

   Height (without shoes) ......................... Cm           Weight ................. Kg.

Girth-of chest:

   (a) (After full inspiration)..............................
   (b) (After full expiration)..............................

2. Appearance:

   a. Temperament : Sober/Nervous/Irritable
   b. Nutrition : Good/Fair/Poor
   c. Marks of Primary Vaccination : Present/Absent
   d. Deformities
   e. Operation Scars

3. Skin: any obvious disease ..............................................................
   (Leprosy or chronic and inveterate skin conditions will be declared unfit).

4. Eyes:
   a. Any disease ..............................................................
   b. Night blindness ..............................................................
   c. Defect in colour vision..............................................................
   d. Field of vision ..............................................................
   e. Visual acuity:
      - Distant vision (naked eyes) : RE LE
      - Distant vision with glasses or contact lenses : RE LE
      - Near Vision (naked eyes) : RE LE
      - Near vision with glasses or contact lenses : RE LE
Strength of glasses used:

<table>
<thead>
<tr>
<th></th>
<th>Sph.</th>
<th>Cyl.</th>
<th>Axis</th>
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</thead>
<tbody>
<tr>
<td>Corrected Myopia (including cylinder) exceeding (-) 6D and Hypermetropia (+) 4D in each eye up to the age of 35 years will be considered as disqualification.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Corrected Myopia (including cylinder) exceeding (-) 6 D and Hypermetropia (+) 6D in each eye beyond 35 years of age will be considered as disqualification.</td>
<td></td>
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</tr>
</tbody>
</table>

Colour vision:

- Acceptable for non-technical person
- Not acceptable for all Technical Personnel, Fire Fighting Personnel, Drivers, etc. The candidate’s ability to distinguish colours must be tested and recorded. Colour blindness is a disqualification for the following:
  - Whenever an employee suffering from colour blindness is posted or transferred into a category wherein colour perception is required, his eyes will be re-examined for the same along with the examination for visual acuity. If not found as per the norms, shall be considered as disqualification.

(Correction with contact lenses / intraocular implant/Lasik surgery is not a bar for employment provided the prescribed standards are fulfilled).

(Retinal diseases in diabetes, hypertension and atherosclerosis will be considered disqualification for all categories)

5. Ears:
   General inspection .................................................................

   Hearing: Right Ear ........................................... Left Ear ..............................

   (Bilateral Nerve Deafness- Not acceptable for all categories.)

6. Nose:
   (A candidate should be free from any active disease of the nose. Deviated nasal septum, Nasal polyposis, sinusitis of severe nature etc. will be declared temporarily unfit).

7. Throat:
   (Slight Hypertrophy without evidence of repeated tonsillitis is not a cause for rejection. Enlarged tonsils cause temporary unfitness until treated with tonsillectomy).
8. Glands .............................................................................................................
   Thyroid ...........................................................................................................
   (Hyperthyroidism/ Pituitary disorders declared unfit).

9. Condition of teeth ...........................................................................................
   (Dental caries and decaying teeth declared temporarily unfit.)

10. Respiratory System: ......................................................................................
    Cases diagnose as suffering from pulmonary tuberculosis will be declared temporarily unfit for 03 months.

11. Circulatory System: ......................................................................................
    (a) Heart Rate: ............................................................................................
        Any organic lesion ....................................................................................
    (b) Heart Rate/Pulse rate Standing ......................................................... after hopping
        25 times ......................................................... 2 minutes after hopping ...................
        (If pulse rate still over 100 after rest, candidate should be declared unfit)
    (c) Blood pressure:
        Systolic ..................................................
        Diastolic ..................................................
        (A candidate having abnormally high blood pressure should be considered unfit)

12. Abdomen:
    Girth ..........................................................................................
    Tenderness .....................................................................................
    Liver .............................................................................................
    Spleen ......................................................................................
    (Cirrhosis of Liver – declared unfit)

13. Nervous System:
    (Epileptic and mentally challenged candidate – declared unfit)

14. Blood Vessels:
    1. Pulse in upper and lower extremity.
       (Candidate with varicose vein declared temporarily unfit)
15. Loco-Motor System:
   (Candidate with deformity or Amputation of a limb to such degree that interferes with successful and safer performance and emergency evacuation declared unfit)

16. Spine:
   (Kyphosis, Scoliosis, Kyphoscoliosis and lordosis declared unfit).

17. Genito Urinary System:
   Hernia ......................................................................................
   Hydrocele ...................................................................................
   Varicocele ...................................................................................
   Any other ...................................................................................

   (Candidate will be declared fit if corrective measures taken within 8 weeks.

18. For female candidates:
   (a) History of menstrual cycle: regular/irregular
   (b) Breasts
   (c) Pregnancy with duration
   (d) Local/PV/PAP Smear examination if required.

   (If at the time medical examination, a candidate is pregnant of 12 weeks or more, she shall be declared temporarily unfit until she has completed 6 weeks after confinement. After confinement the candidate shall be required to produce a medical certificate of fitness from a registered medical practitioner before being called up for a final medical examination.)

Is there anything in the health of the candidate likely to render him unfit for the efficient discharge of his duties in the services for which he is a candidate?

If yes, please indicate details

YES  NO

Comments:

Signature of the Examining Medical Authority*
(Office Seal)

Place: ..........................................................
Date: ..........................................................

Place: ..........................................................  Signature of the candidate..................................................
Date: ..........................................................  Name of the candidate..................................................

*Chairman of Medical Board or Civil Surgeon or Medical Superintendent or Chief Medical Officer or equivalent of a Central/State Govt. hospital (having the status of minimum District Hospital) or of GAIL nominated empanelled hospital.
LIST OF INVESTIGATIONS

EXAMINATION OF BLOOD
1. CBC
2. ESR
3. BLOOD SUGAR-FASTING & PP
4. LIPID PROFILE
5. LIVER PROFILE
6. RENAL PROFILE
7. THYROID PROFILE
8. VDRL
9. BLOOD GROUP & RH Typing

EXAMINATION OF URINE
1. Routine microscopy of urine

EXAMINATION OF STOOL
1. Routine Microscopy of Stool

EXAMINATION OF SPUTUM
1. Sputum for AFB

OTHER INVESTIGATIONS
1. X-ray chest PA view (not to be performed in case of pregnancy)
2. ECG – in all leads
3. Audiometry
4. Ultra-Sound-Whole Abdomen

THE FOLLOWING TEST TO BE DONE (If required)
1. Pulmonary Function Test
2. PAP Smear (after 35 years of age if married)
3. Mammography after 35 years of age.
4. FNAC - if there is any nodule presents
5. Any other Test, if required according to the examination of the candidate.
CERTIFICATE OF MEDICAL FITNESS ON FIRST APPOINTMENT IN
GAIL (INDIA) LIMITED

I hereby certify that I have examined Mr./Ms.__________________________ a candidate for employment in the
GAIL (India) Ltd. and cannot discover that he/she has any disease (communicable or otherwise), constitutional
weakness or bodily infirmity, except ___________________________. I do consider/do not consider this a
disqualification for employment to the post of ______________________. His/her age is according to his/her own
statement _______________ years and by appearance about Years.

I certify that the candidate is medically ___________________________

FIT       UNFIT       TEMPORARILY UNFIT

Medical Authority to refer to GAIL Guidelines on Medical Standards/Norms for pre-employment
medical examination before issuing certificate of fitness.

* Chairman of Medical Board or Civil Surgeon or Medical Superintendent or Chief Medical Officer or equivalent of
a Central/State Govt. hospital (having the status of minimum District Hospital) or of GAIL nominated empanelled
hospital
To,

Subject: YOUR MEDICAL EXAMINATION

Dear Sir,

With reference to your Medical Examination held on __________________________, we have to inform you that you have been found temporarily unfit on account of the following:-

You may undergo the treatment of yourself for the above disease/sickness and appear for a re-examination within _________________ * from the date of issue of this letter. While reappearing for medical examination, please carry a certificate from the treating doctor on fitness and treatment of aforesaid disease/sickness.

Yours faithfully,

(MEDICAL AUTHORITY)

*Prescribe the period up to six months depending up on disease, surgery required.

Copy for information to:

1. The appointing Authority
Annexure-XIV

GAIL (INDIA) LTD.

OCCUPATIONAL & MEDICAL EXAMINATION

Name: __________________________
OPD Reg.No. ______

Date: ____________

Designation: __________________________
Deptt: ____________

Date of Birth: ____________
Sex: ______

Phone No. (P-oh-ts-HVJ) ____________

Identification Mark: __________________________

Blood Group: __________________________

Single / Married __________________________

Male ______ Female ______

Vasectomy / Tubectomy ______

Vasectomy / Tubectomy ______

Previous Year OHSAS Category

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category</th>
<th>Clarification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>“A”</td>
<td>Health within normal limits</td>
</tr>
<tr>
<td>2</td>
<td>“B”</td>
<td>Hypertension</td>
</tr>
<tr>
<td>3</td>
<td>“C”</td>
<td>Diabetic</td>
</tr>
<tr>
<td>4</td>
<td>“D”</td>
<td>Allergic illness like - Cough, Cold, Seasonal Rhinitis</td>
</tr>
<tr>
<td>5</td>
<td>“E”</td>
<td>Backache</td>
</tr>
<tr>
<td>6</td>
<td>“F”</td>
<td>Stress &amp; Anxiety related illness</td>
</tr>
<tr>
<td>7</td>
<td>“H”</td>
<td>Deficient in hearing and sight</td>
</tr>
<tr>
<td>8</td>
<td>“I”</td>
<td>Disease which are not covered above</td>
</tr>
</tbody>
</table>
## To be filled by Examining Doctor

| 1. Were you examined for any major ailment or hospitalized during the last one year? | Yes/No |
| 2. Are you having: | |
| a. Hypertension (High Blood Pressure) | Yes/No |
| b. Ischemic heart disease? | Yes/No |
| c. Diabetes Mellitus? | Yes/No |
| d. Chronic cough / Br Asthma / COPD? | Yes/No |
| e. Epilepsy (Fits) / faintingspell? | Yes/No |
| f. Persistent Headache / Stroke? | Yes/No |
| g. Mental instability / Depression / Anxiety | Yes/No |
| 3. Have you suffered from Giddiness at any time? | Yes/No |
| 4. Have you suffered from Chest pain / Palpitation / Shortness of breath? | Yes/No |
| 5. Have you ever suffered from Tuberculosis / Jaundice / Gall Bladder Stone? | Yes/No |
| 6. Do you have: | |
| a. Loss of appetite | Yes/No |
| b. Alter bowel movement | Yes/No |
| c. Bleeding from rectum | Yes/No |
| d. Indigestion and heart burn | Yes/No |
7. Smoking habit (if yes, no. of cigarettes per day) Yes/No
8. Alcohol intake (if yes, average quantity per day) Yes/No
9. Any accident/injury/major surgery undergone so far? Yes/No
10. Are you taking any medicines? Yes/No
11. Do you have any allergy? Yes/No
12. Do you have difficulty in working on computer/diminution of vision? Yes/No
13. Do you have any problem in hearing? Yes/No
14. Do you have any numbness and tingling in limbs? Yes/No
15. Do you suffer from backache, if yes for how much time? Yes/No
16. Do you have difficulty in urination/pass blood in urine? Yes/No
17. Any additional information you want to give regarding your health? Yes/No
18. Occupational history - exposure to occupational health hazard in past/present Yes/No
19. For women Employees:
   a. menstrual disturbances Yes/No
   b. are you taking birth control pills Yes/No
   c. do you have lump in your breast Yes/No

If yes than give details:

GENERAL EXAMINATION

Height: _________________ cms. Weight: __________________ kgs.
Chest: (Non Expansion) _______ _____________________ cms. (Expansion) _____ _______________________ cms.
Pulse: __________________ / min., B.P.: __________________ mm Hg.
Body Fat _____ _____________________________ % Body Age (Metabolic) __ ________________
BMI _________________ _______ Body Age (Metabolic) __ ________________
Resting Metabolism _________________ Visceral Fat _________________

Any other observation: ___________________________________________
SYSTEMIC EXAMINATION

Cardiovascular System: __________________________________________
Respiratory System: __________________________________________
Gastro Intestinal System: ________________________________________
Any Other observation: __________________________________________

INVESTIGATIONS

Hb, gm/dl: ........................................... Blood Sugar..................................................
TLC: ............................................... Blood Sugar - F ...........................................
DLC: ............................................... Blood Sugar - PP ........................................
• Neutrophils : .......................................% Triglyceride level, mg/dl: .........................
• Lymphocytes : .......................................% Total Cholesterol, mg/dl: ....................
• Eosinophil : .......................................% SGOT: U/L ........................................
• Monocytes : .......................................% SGPT: U/L ........................................

Peripheral Smear: ________________

Kidney Function Test

• Urea, mg/dl :.................................
• Creatinine, mg/dl:..............................
• Uric Acid, mg/dl:..............................
• Electrolytes: .................................
• K+, mEq/L: ..................................
• Na+: mEq/L: ..................................

For males above the age of 35 yrs.

• PSA Test:_________________________
For females above the age of 35 years

- Mammography: ........................................
- PAP Smear: ........................................

For General Manager & above - additional tests are:

- Lipid Profile: ........................................

  a) Cardiac Profile: ........................................

Thyroid Function Test

- T3, UIU/mL: ........................................
- T4, UIU/mL: ........................................
- TSH: UIU/mL: ........................................

Urine Examination

- Albumin: ........................................
- Sugar: ........................................
- Bile Salt: ........................................
- Bile Pigments: ........................................
- Pus Cells: ........................................
- RBC: NIL/ HPE
- Epith. Cell: Occasional / HPE
- Others: ........................................

Electrocardiogram Report:

Pulmonary Function Test Report:

X-Ray Chest - P.A. View:

Ultrasound Abdomen
## FAR VISION

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>TEST</th>
<th>REPORT</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Binocularity Test</td>
<td>Ok/Not Ok</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Visual Acuity For Both Eyes</td>
<td>6/</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Visual Acuity For Right Eye</td>
<td>6/</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Visual Acuity For Left Eye</td>
<td>6/</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Stereo Depth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Colour Perception</td>
<td>Total Numbers Seen</td>
<td>Normal/ Mild/ Fail</td>
</tr>
<tr>
<td>7</td>
<td>Vertical Phoria</td>
<td>Left Hyperphoria/Orthophoria/Right Hyperphoria</td>
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</tr>
<tr>
<td>8</td>
<td>Lateral Phoria</td>
<td>Esophoria/Orthophoria/Exophoria</td>
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</tr>
<tr>
<td>9</td>
<td>Horizontal Field Vision</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Left Eye</td>
<td>Right Eye</td>
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# NEAR VISION

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<td>Binocularity Test</td>
<td>Ok/Not Ok</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Visual Acuity For Both Eyes</td>
<td>6/</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Visual Acuity For Right Eye</td>
<td>6/</td>
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<td>4</td>
<td>Visual Acuity For Left Eye</td>
<td>6/</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Stereo Depth</td>
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<td>6</td>
<td>Colour Perception</td>
<td>Total Numbers Seen</td>
<td>Normal/ Mild/ Fail</td>
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<td>Left Hyperphoria/Orthophoria/Right Hyperphoria</td>
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<td>8</td>
<td>Lateral Phoria</td>
<td>Esophoria/Orthophoria/Exophoria</td>
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</tr>
<tr>
<td>9</td>
<td>Horizontal Field Vision Left Eye</td>
<td></td>
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<td>Right Eye</td>
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<td>85°</td>
<td>Nasal 45°</td>
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<td>70°</td>
<td>85°</td>
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<td>55°</td>
<td>70°</td>
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<tr>
<td>Yes/ No</td>
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<td>Yes/ No</td>
<td>Yes/ No</td>
<td>Yes/ No</td>
<td>Yes/ No</td>
</tr>
</tbody>
</table>
## AUDIOMETRY

All frequencies must be filled in with value in dB

If hearing threshold is greater than 100 dB enter 100 dB

If hearing threshold is less than zero dB enter 0 dB

Patient’s age must greater than 18 yr. cal. presbycusis

### Air Conduction:

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<tr>
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### Bone Conduction:

<table>
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<th>Right</th>
<th>Left</th>
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<tbody>
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<td>6000</td>
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</table>

**Signature**

(Audiometry Done by)

**Report:**
कार्य के दौरान तनाव संबंधी परीक्षण / JOB STRESS QUESTIONNAIRE

नोट: इस फार्म को भरना अनिवार्य है / NOTE - IT IS MANDATORY TO FILL THIS FORM

अनुदेश / INSTRUCTIONS –

यह एक मनोवैज्ञानिक परीक्षण है। इसमें आपके कार्य वातावरण से संबंधी 10 कथन हैं। पूर्त्येनक कथन के लाई 1 से 10 तक 10 रेटिंग हैं। यदि आप कथन से प्रबल असहमत हैं तो आप 1, 2 या 3 को चहिनित कर सकते हैं। यदि आप कथन से सहमत हैं तो आप 4, 5, 6 या 7 को चहिनित कर सकते हैं। अन्यथा यदि आप कथन से प्रबल सहमत हैं तो आप 8, 9 या 10 को चहिनित कर सकते हैं। अपनी सहमतत्त्वी रेटिंग के अनुसार संबंधितअंक को गोले से घेर सकते हैं।

This questionnaire is a Psychological Test. There are 10 statements related to your work environment. Each statement has 10 ratings starting from 1 - 10. If you strongly disagree with statement you can mark 1, 2, 3 if you agree with statement you give marks 4, 5, 6 or 7 or if you strongly agree then you can mark on 8, 9, or 10. Depending upon your extent of agreements, please encircle the number against each statement from 1 - 10.

| क्र. No. | परीक्षण / Questions | पूर्त्येनक AGREE SOMEWHAT STRONGLY AGREE
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>STRONGLY DISAGREE DISAGREE SOMEWHAT STRONGLY AGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>1</td>
<td>मैं सही-सही बता नहीं सकता कि काम के दौरान वास्तव में मैं क्या सोचता हूँ, अथवा मेरे मन में क्या होता है।</td>
<td>1 2 3</td>
</tr>
<tr>
<td></td>
<td>I Can’t honestly say what I really think or what is in my mind at time of work.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>मेरा कार्य बहुत जिम्मेदार वाला है, परंतु मेरे पास अधिक अधिक को पाने में क्या है।</td>
<td>1 2 3</td>
</tr>
<tr>
<td></td>
<td>My job has lot of responsibility, but I don’t have very much authority.</td>
<td></td>
</tr>
</tbody>
</table>
| 3 | सामान्यतःयदि मुझे अधिक समय 
दिया जाए तो मैं अपना कार्य 
अधिक अच्छी तरह कर सकता हूं। | I could usually do a much better 
job if I were given more time | 1 2 3 4 5 6 7 8 9 10 |
| 4 | जब मेरा कार्य वास्तव में उत्तम 
होता है तबभी मुझे मुझे यदा-कदा ही 
पर्याप्त पुर्वशस्त्रि मिलती है। | I seldom receive adequate 
acknowledgement of 
appreciation when my work is 
really good | 1 2 3 4 5 6 7 8 9 10 |
| 5 | आमतौर पर मैं अपने कार्य से 
विशेषतःगौरवान्वित अथवा संतुष्ट 
नहीं हूं। | In general, I am not particularly 
proud or satisfied with my job | 1 2 3 4 5 6 7 8 9 10 |
| 6 | मुझे ऐसा लगता है कि आफिस 
कार्य में बार-बारमुझे ही लक्षणित 
किया जाता है अथवा मेरे साथ 
भेदभाव किया जाता है। | I have the impression that I 
am repeatedly picked on or 
discriminated against at work | 1 2 3 4 5 6 7 8 9 10 |
| 7 | मेरा कार्य स्थल का वातावरण 
बहुत खुशनुमा अथवा विशेषतः 
सुरक्षितमःतम नहीं है। | My workplace environment is 
not very pleasant or particularly 
safe | 1 2 3 4 5 6 7 8 9 10 |
| 8 | अकसर परिवार और 
सामाजिकमिति अथवा 
व्यक्तिगत जरूरतों के कारण 
मेरा कार्य में व्यवधानपूर्ण है। | My job often interferes with my 
family and social obligations or 
personal needs | 1 2 3 4 5 6 7 8 9 10 |
| 9 | पराम का अपने वर्णों, 
सहकर्मियों अथवा ग्राहकों के साथ 
कहा-मुही हो जाती है। | I tend to have frequent 
arguments with superiors, co-
workers or customers | 1 2 3 4 5 6 7 8 9 10 |
During work, I always feel that I have little control over my life.

NAME: ___________________________________________    EMP. No. ______________________

Reporting to be done by
Doctor______________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Category:

Additional investigation advised:
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Advise:
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
Medical Report of the Officer:

<table>
<thead>
<tr>
<th></th>
<th>Normal / Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin level of the Officer</td>
<td></td>
</tr>
<tr>
<td>Blood Sugar Level</td>
<td>Satisfactory/Normal/High/Low</td>
</tr>
<tr>
<td>Cholesterol level of the Officer</td>
<td>Normal/High/Low</td>
</tr>
<tr>
<td>Liver Functioning</td>
<td>Satisfactory/Normal/High/Low</td>
</tr>
<tr>
<td>Kidney Status</td>
<td>Normal/Both-One Kidney not functional optimally</td>
</tr>
<tr>
<td>Cardiac Status</td>
<td>Normal/Enlarged/Blocked/Not Normal</td>
</tr>
</tbody>
</table>

| Overall Health of the Officer   |                                  |
| Any other remarks based on the health check-up of the Officer |                                  |
| Health Profile grading         |                                  |

Date: ____________________                                        Doctor’s Signature _____________________________
Place: ....................................
# CMO

EMPLOYEE HEALTH CHECKUP  
*(Plant & Non Plant-GMs & above)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Test Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brief Clinical History</td>
</tr>
<tr>
<td></td>
<td>(a) Physical Examination</td>
</tr>
<tr>
<td></td>
<td>(b) Systemic Examination</td>
</tr>
<tr>
<td>2</td>
<td>Haemogram</td>
</tr>
<tr>
<td>3</td>
<td>Blood Sugar Fasting &amp; PP</td>
</tr>
<tr>
<td>4</td>
<td>HbA1C</td>
</tr>
<tr>
<td>5</td>
<td>Lipid Profile</td>
</tr>
<tr>
<td>6</td>
<td>Liver Function test</td>
</tr>
<tr>
<td>7</td>
<td>Kidney function test</td>
</tr>
<tr>
<td>8</td>
<td>Cardiac profile</td>
</tr>
<tr>
<td>9</td>
<td>Serum Electrolytes</td>
</tr>
<tr>
<td></td>
<td>--- Na⁺</td>
</tr>
<tr>
<td></td>
<td>--- K⁺</td>
</tr>
<tr>
<td></td>
<td>--- Calcium</td>
</tr>
<tr>
<td></td>
<td>--- Inorganic phosphate</td>
</tr>
<tr>
<td>10</td>
<td>ECG</td>
</tr>
<tr>
<td>11</td>
<td>TMT</td>
</tr>
<tr>
<td>12</td>
<td>X-Ray Chest PA View</td>
</tr>
<tr>
<td>13</td>
<td>USG Abdomen (Whole Abdomen)</td>
</tr>
<tr>
<td>14</td>
<td>Thyroid Function Test</td>
</tr>
<tr>
<td>15</td>
<td>FOR MALE</td>
</tr>
<tr>
<td>15(i)</td>
<td>PSA</td>
</tr>
<tr>
<td>15(ii)</td>
<td>All above tests</td>
</tr>
<tr>
<td>15(iii)</td>
<td>Mammography</td>
</tr>
<tr>
<td>15(iv)</td>
<td>PAP Smear</td>
</tr>
<tr>
<td>16</td>
<td>Physical Consultation</td>
</tr>
<tr>
<td></td>
<td><strong>Counselling</strong></td>
</tr>
<tr>
<td>17</td>
<td>Nutrition &amp; Diet</td>
</tr>
<tr>
<td>18</td>
<td>Stress Management</td>
</tr>
<tr>
<td>19</td>
<td>Exercise &amp; fitness</td>
</tr>
<tr>
<td>20</td>
<td>Risk Management for addictions, Cardiac Problems, Cancer, AIDS etc.</td>
</tr>
</tbody>
</table>
## Brief Clinical History

(a) Physical Examination  
(b) Systemic Examination  

## Laboratory Investigations

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
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</tr>
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<td>SGOT</td>
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<tr>
<td>6</td>
<td>SGPT</td>
</tr>
<tr>
<td>7</td>
<td>Urea</td>
</tr>
<tr>
<td>8</td>
<td>Creatinine</td>
</tr>
<tr>
<td>9</td>
<td>Uric Acid</td>
</tr>
<tr>
<td>10</td>
<td>Serum Electrolytes</td>
</tr>
<tr>
<td></td>
<td>Na+</td>
</tr>
<tr>
<td></td>
<td>K+</td>
</tr>
<tr>
<td>11</td>
<td>Serum Calcium</td>
</tr>
<tr>
<td>12</td>
<td>Urine (Routine)</td>
</tr>
<tr>
<td>13</td>
<td>ECG</td>
</tr>
<tr>
<td>14</td>
<td>TMT / ECHO</td>
</tr>
<tr>
<td>15</td>
<td>X-Ray Chest PA View</td>
</tr>
<tr>
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<td>USG Abdomen (Whole Abdomen)</td>
</tr>
<tr>
<td>17</td>
<td>Thyroid Function Test</td>
</tr>
</tbody>
</table>

## FOR MALE

18(i) PSA

## FOR FEMALE

18(ii) All above tests  
18(iii) Mammography  
18(iv) PAP Smear

## For Male and Female

19 Physical Consultation  

Counselling

20 Nutrition & Diet

21 Stress Management
(Non-Plant- > 35 years)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>SGPT</td>
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<td>Urea</td>
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<tr>
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<td>Uric Acid</td>
</tr>
<tr>
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<td>Serum Electrolytes</td>
</tr>
<tr>
<td>--</td>
<td>Na⁺</td>
</tr>
<tr>
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</tr>
<tr>
<td>18(iv)</td>
<td>PAP Smear</td>
</tr>
</tbody>
</table>

For Male and Female

| 19 | Physical Consultation |
| 20 | Nutrition & Diet |
| 21 | Stress Management |
**Brief Clinical History**

1. **Physical Examination**
2. **Systemic Examination**
3. **Haemogram**
4. **Blood Sugar Fasting & PP / HbA1C**
5. **Lipid Profile**
6. **Urine (Routine)**
7. **ECG**
8. **USG Abdomen (Whole Abdomen)**
9. **Thyroid Function Test**

**For Male and Female**

10. **Physical Consultation**
<table>
<thead>
<tr>
<th>Exposure</th>
<th>Target organ / tissue</th>
<th>Frequency of examination</th>
<th>Laboratory and other tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Urine analysis</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>Resp. system, skin, eyes, teeth</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Acetone</td>
<td>Mucous membranes, skin, CNS, liver, kidney</td>
<td>Annual</td>
<td>Acetone in urine</td>
</tr>
<tr>
<td>Alumina</td>
<td>Resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Aluminium chloride</td>
<td>Resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>Skin, eyes, mucous membranes, resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Ammonium chloride</td>
<td>Skin, eyes, mucous membranes</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Antimony chloride</td>
<td>Resp. system, eyes, skin, CVS</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Arsenic compounds</td>
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<td>Annual</td>
<td>Inorganic arsenic metabolites in urine</td>
</tr>
<tr>
<td>Asbestos</td>
<td>Resp. system, GI system</td>
<td>Once in two years</td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>Resp. system, eyes, skin</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>CNS, Blood</td>
<td>Annual</td>
<td>Phenol in urine</td>
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<tr>
<td>Butane</td>
<td>Eyes, skin CNS, resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Calcium hydroxide</td>
<td>Mucous membranes, skin, eyes, resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>Resp. system, eyes</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>Blood, resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Carbon tetra chloride</td>
<td>CNS, liver, kidneys</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Chlorine</td>
<td>Eyes, resp. system, mucous membranes</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Exposure</td>
<td>Target organ / tissue</td>
<td>Frequency of examination</td>
<td>Laboratory and other tests</td>
</tr>
<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Urine analysis</td>
</tr>
<tr>
<td>Chromium &amp; compounds</td>
<td>Resp. system, eyes, blood, skin, kidney</td>
<td>Annual</td>
<td>Chromium in urine</td>
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<tr>
<td>Clay</td>
<td>Resp. system</td>
<td>Annual</td>
<td>Urea, creatinine</td>
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<tr>
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<td>Resp. system, kidney</td>
<td>Annual</td>
<td>Urine cytology</td>
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<td>Graphite</td>
<td>Resp. system</td>
<td>Annual</td>
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<tr>
<td>Hexane (n-hexane)</td>
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<td>Annual</td>
<td>2.5 Hexanaladine in urine</td>
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<td>Hot environment</td>
<td>Heart, kidney, skin</td>
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<tr>
<td>Hydrazine</td>
<td>Resp. system, skin, eyes, CNS, blood, liver, kidney</td>
<td>Annual</td>
<td>Renal function tests, LFT, methaemoglobin</td>
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<td>Hydrogen chloride</td>
<td>Skin, eyes, mucous membranes, resp. system</td>
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<td>Haematology</td>
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<td>Haematology</td>
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<td>Hydrogen sulphide</td>
<td>Eyes, mucous membrane, resp. system, CNS</td>
<td>Annual</td>
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<td>Iron &amp; compounds</td>
<td>Resp. system</td>
<td>Annual</td>
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<td>Light</td>
<td>Eyes</td>
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<td>LPG</td>
<td>Resp. system, CNS</td>
<td>Annual</td>
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<td>Methanol</td>
<td>Mucous membranes, skin, eyes, CNS</td>
<td>Annual</td>
<td>Methanol in urine</td>
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<tr>
<td>Methyl isobutyl ketone (MIBK)</td>
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<td>Annual</td>
<td>MIBK in urine</td>
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<tr>
<td>Exposure</td>
<td>Target organ / tissue</td>
<td>Frequency of examination</td>
<td>Laboratory and other tests</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------</td>
<td>--------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>Molybdenum &amp; compounds</td>
<td>Resp. system, eyes, skin, blood, mucous membranes</td>
<td>Annual</td>
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<td>Urine analysis</td>
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<td>Nickel &amp; compounds</td>
<td>Resp. system, skin</td>
<td>Annual</td>
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<td>Nitric acid</td>
<td>Mucous membranes, skin, eyes, resp. system</td>
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<td>Nitrogen dioxide</td>
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</tr>
<tr>
<td>Noise</td>
<td>Ears, heart, blood vessels, bones</td>
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<td>Oil mist (mineral)</td>
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<td>Pentane</td>
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<td>Phenol</td>
<td>Skin, liver, kidney</td>
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</tr>
<tr>
<td>Phosgene</td>
<td>Resp. system, eyes, mucous membranes</td>
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<tr>
<td>Phosphoric acid</td>
<td>Eyes, resp. system, mucous membranes</td>
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<td>Ploy nuclear aromatic compounds</td>
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<td>Annual</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>Skin, CNS, eyes, mucous membranes</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica</td>
<td>Resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure</td>
<td>Target organ / tissue</td>
<td>Frequency of examination</td>
<td>Laboratory and other tests</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Resp. system, eyes, skin</td>
<td>Annual</td>
<td>Urine analysis, Blood parameters, Additional tests</td>
</tr>
<tr>
<td>Sulfur</td>
<td>Resp. system, eyes, skin</td>
<td>Annual</td>
<td>PFT, X-ray chest</td>
</tr>
<tr>
<td>Sulfur dioxide</td>
<td>Eyes, mucous membranes, skin, resp. system</td>
<td>Annual</td>
<td>PFT, X-ray chest</td>
</tr>
<tr>
<td>Sulfur mono chloride</td>
<td>Eyes, lungs, skin, resp. system</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>Heart, skin, resp. system</td>
<td>Annual</td>
<td>Haematology, PFT, X-ray chest</td>
</tr>
<tr>
<td>Tetra-ethyl lead</td>
<td>CNS, eyes, skin, resp. system</td>
<td>Once in three months</td>
<td>Lead in urine, Haematology, Z.P.P., blood lead, S.A.L.A., Tests of nervous system functions</td>
</tr>
<tr>
<td>Toluene</td>
<td>CNS, skin, mucous membranes</td>
<td>Annual</td>
<td>Hippuric acid in urine, LFT, renal function tests, Tests of nervous system functions</td>
</tr>
<tr>
<td>Vanadium &amp; compounds</td>
<td>Resp. system, skin, eyes, mucous membranes</td>
<td>Annual</td>
<td>Vanadium in urine, PFT, X-ray chest</td>
</tr>
<tr>
<td>Xylene</td>
<td>CNS, blood, skin</td>
<td>Annual</td>
<td>Methyl Hippuric acid in urine, LFT, renal function tests, Tests of nervous system functions</td>
</tr>
</tbody>
</table>
### Refilling Record of First-Aid Box (FAB)

**GAIL (INDIA) LTD**

Installation: .................................................

Location of FAB: ..............................................

<table>
<thead>
<tr>
<th>S No.</th>
<th>Items</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tab Disprin</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Oint Betadine 15g</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Bandage Size - 3”</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cotton 100g</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Dettol/ Savlon 50Ml</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Micropore Tape 1”</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Eye Drop Genticyn</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Hand Gloves</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Splint</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Signature**

**Name**

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refilled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annexure-XVII

GAIL (INDIA) LTD
Daily Ambulance Check list

Installation: ........................................
Location: ................................................

Date ..................................................
Ambulance No. .....................................
Ambulance Run in Kms. ..........................

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Particulars</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Availability at site</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Medicine in First Aid Box</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Filled Oxygen Cylinder with accessories</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>stretcher in Good Condition</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Diesel [At least 75% of Capacity]</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>A.C. in Working Condition</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Siren of Ambulance Working</td>
<td></td>
</tr>
</tbody>
</table>

Signature of Ward Attendant cum Dresser

Signature of Shift Duty Medical Officer
NOTIFICATION

New Delhi, 20th July, 1998

S.O. 630 (E).- Whereas a notification in exercise of the powers conferred by Sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) was published in the Gazette vide S.O. 746 (E) dated 16 October, 1997 inviting objections from the public within 60 days from the date of the publication of the said notification on the Bio-Medical Waste (Management and Handling) Rules, 1998 and whereas all objections received were duly considered.

Now, therefore, in exercise of the powers conferred by section 6, 8 and 25 of the Environment (Protection) Act, 1986 the Central Government hereby notifies the rules for the management and handling of bio-medical waste.

1. SHORT TITLE AND COMMENCEMENT:

(1) These rules may be called the Bio-Medical Waste (Management and Handling) Rules, 1998.

(2) They shall come into force on the date of their publication in the official Gazette.

2. APPLICATION:
These rules apply to all persons who generate, collect, receive, store, transport, treat, dispose, or handle bio-medical waste in any form.

3. DEFINITIONS: In these rules unless the context otherwise requires

(1) “Act” means the Environment (Protection) Act, 1986 (29 of 1986);

(2) “Animal House” means a place where animals are reared/kept for experiments or testing purposes;

(3) “Authorisation” means permission granted by the prescribed authority for the generation, collection, reception, storage, transportation, treatment, disposal and/or any other form of handling of bio-medical waste in accordance with these rules and any guidelines issued by the Central Government.

(4) “Authorised person” means an occupier or operator authorised by the prescribed authority to generate, collect, receive, store, transport, treat, dispose and/or handle bio-medical waste in accordance with these rules and any guidelines issued by the Central Government;

(5) “Bio-medical waste” means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biological, and including categories mentioned in Schedule I;

(6) “Biological” means any preparation made from organisms or micro-organisms or product of metabolism and biochemical reactions intended for use in the diagnosis, immunisation or the treatment of human beings or animals or in research activities pertaining thereto;
(7) “Bio-medical waste treatment facility” means any facility wherein treatment. Disposal of bio-medical waste or processes incidental to such treatment or disposal is carried out (and includes common treatment facilities). Added by Rule 2(1) of the Bio-Medical waste (M&H) (Second Amendment) Rules, 2000 notified vide notification No.S.O.545 (E), dated 2-06-2000 and came into force w.e.f 2-6-2000. (7 (a) Form means Form appended to these Rules)

(8) “Occupier” in relation to any institution generating bio-medical waste, which includes a hospital, nursing home, clinic dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called, means a person who has control over that institution and/or its premises;

(9) “Operator of a bio-medical waste facility” means a person who owns or controls or operates a facility for the collection, reception, storage, transport, treatment, disposal or any other form of handling of biomedical waste;

(10) “Schedule” means schedule appended to these rules;

4. DUTY OF OCCUPIER:

It shall be the duty of every occupier of an institution generating bio-medical waste which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called to take all steps to ensure that such waste is handled without any adverse effect to human health and the environment.

5. TREATMENT AND DISPOSAL

(1) Bio-medical waste shall be treated and disposed of in accordance with Schedule I, and in compliance with the standards prescribed in Schedule V.

(2) Every occupier, where required, shall set up in accordance with the time-schedule in Schedule VI, requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, or, ensure requisite treatment of waste at a common waste treatment facility or any other waste treatment facility.

6. SEGREGATION, PACKAGING, TRANSPORTATION AND STORAGE

(1) Bio-medical waste shall not be mixed with other wastes.

(2) Bio-medical waste shall be segregated into containers/bags at the point of generation in accordance with Schedule II prior to its storage, transportation, treatment and disposal. The containers shall be labelled according to Schedule III.

(3) If a container is transported from the premises where bio-medical waste is generated to any waste treatment facility outside the premises, the container shall, apart from the label prescribed in Schedule III, also carry information prescribed in Schedule IV.
(4) Notwithstanding anything contained in the Motor Vehicles Act, 1988, or rules there under, untreated biomedical waste shall be transported only in such vehicle as may be authorised for the purpose by the competent authority as specified by the government.

(5) No untreated bio-medical waste shall be kept stored beyond a period of 48 hours

Provided that if for any reason it becomes necessary to store the waste beyond such period, the authorised person must take permission of the prescribed authority and take measures to ensure that the waste does not adversely affect human health and the environment.

7. **PRESCRIBED AUTHORITY**

(1) The Government of every State and Union territory shall establish a prescribed authority with such members as may be specified for granting authorisation and implementing these rules. If the prescribed authority comprises of more than one member, a chairperson for the authority shall be designated.

(2) The prescribed authority for the State or Union Territory shall be appointed within one month of the coming into force of these rules.

(3) The prescribed authority shall function under the supervision and control of the respective Government of the State or Union Territory.

(4) The prescribed authority shall on receipt of Form 1 make such enquiry as it deems fit and if it is satisfied that the applicant possesses the necessary capacity to handle bio-medical waste in accordance with these rules, grant or renew an authorisation as the case may be.

(5) An authorisation shall be granted for a period of three years, including an initial trial period of one year from the date of issue. Thereafter, an application shall be made by the occupier/operator for renewal. All such subsequent authorisation shall be for a period of three years. A provisional authorisation will be granted for the trial period, to enable the occupier/operator to demonstrate the capacity of the facility.

(6) The prescribed authority may after giving reasonable opportunity of being heard to the applicant and for reasons thereof to be recorded in writing, refuse to grant or renew authorisation.

(7) Every application for authorisation shall be disposed of by the prescribed authority within ninety days from the date of receipt of the application.

(8) The prescribed authority may cancel or suspend an authorisation, if for reasons, to be recorded in writing, the occupier/operator has failed to comply with any provision of the Act or these rules:

Provided that no authorisation shall be cancelled or suspended without giving a reasonable opportunity to the occupier/operator of being heard.
8. AUTHORISATION

(1) Every occupier of an institution generating, collecting, receiving, storing, transporting, treating, disposing and/or handling bio-medical waste in any other manner, except such occupier of clinics, dispensaries, pathological laboratories, blood banks providing treatment/service to less than 1000 (one thousand) patients per month, shall make an application in Form I to the prescribed authority for grant of authorisation.

(2) Every operator of a bio-medical waste facility shall make an application in Form I to the prescribed authority for grant of authorisation.

(3) Every application in Form I for grant of authorisation shall be accompanied by a fee as may be prescribed by the Government of the State or Union Territory.

9. ADVISORY COMMITTEE

The Government of every State/Union Territory shall constitute an advisory committee. The committee will include experts in the field of medical and health, animal husbandry and veterinary sciences, environmental management, municipal administration, and any other related department or organisation including non-governmental organisations. As and when required, the committee shall advise the Government of the State/Union Territory and the prescribed authority on matters related to the implementation of these rules.

10. ANNUAL REPORT

Every occupier/operator shall submit an annual report to the prescribed authority in Form II by 31 January every year, to include information about the categories and quantities of bio-medical wastes handled during the preceding year. The prescribed authority shall send this information in a compiled form to the Central Pollution Control Board by 31 March every year.

11. MAINTENANCE OF RECORDS

(1) Every authorised person shall maintain records related to the generation, collection, reception, storage, transportation, treatment, disposal and/or any form of handling of bio-medical waste in accordance with these rules and any guidelines issued.

(2) All records shall be subject to inspection and verification by the prescribed authority at any time.

12. ACCIDENT REPORTING

When any accident occurs at any institution or facility or any other site where bio-medical waste is handled or during transportation of such waste, the authorised person shall report the accident in Form III to the prescribed authority forthwith.
13. APPEAL

Any person aggrieved by an order made by the prescribed authority under these rules may, within thirty days from the date on which the order is communicated to him, prefer an appeal to such authority as the Government of State / Union Territory may think fit to constitute:

Provided that the authority may entertain the appeal after the expiry of the said period of thirty days if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.

SCHEDULE I
Categories of Bio-Medical Waste

(see Rule 5)

<table>
<thead>
<tr>
<th>Option</th>
<th>Waste Category</th>
<th>Treatment &amp; Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category No. 1</td>
<td>Human Anatomical Waste (human tissues, organs, body parts)</td>
<td>Incineration @/deep burial*</td>
</tr>
<tr>
<td>Category No. 2</td>
<td>Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses)</td>
<td>Incineration @ / deep burial*</td>
</tr>
<tr>
<td>Category No. 3</td>
<td>Microbiology &amp; Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of microorganisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological, toxins, dishes and devices used for transfer of cultures)</td>
<td>local autoclaving / micro-waving / incineration@</td>
</tr>
<tr>
<td>Category No. 4</td>
<td>Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)</td>
<td>disinfection (chemical treatment @ 01/autoclaving / micro-waving and mutilation/ shredding”</td>
</tr>
<tr>
<td>Category No. 5</td>
<td>Discarded Medicines and Cytotoxic drugs (wastes comprising of outdated, contaminated and discarded medicines)</td>
<td>Incineration @/destruction and drugs disposal in secured landfills</td>
</tr>
<tr>
<td>Option</td>
<td>Waste Category</td>
<td>Treatment &amp; Disposal</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Category No. 6</td>
<td>Solid Waste (Items contaminated with blood, and body fluids including cotton dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)</td>
<td>Incineration @ autoclaving / micro-waving</td>
</tr>
<tr>
<td>Category No. 7</td>
<td>Solid Waste (Wastes generated from disposable items other than the waste shaprs such as tubings, catheters, intravenous sets etc.)</td>
<td>disinfection by chemical treatment @ @ autoclaving/ micro-waving and mutilation/ shredding##</td>
</tr>
<tr>
<td>Category No. 8</td>
<td>Liquid Waste (Waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)</td>
<td>disinfection by chemical treatment@@ and discharge into drains.</td>
</tr>
<tr>
<td>Category No. 9</td>
<td>Incineration Ash (ash from incineration of any bio-medical waste)</td>
<td>disposal in municipal landfill</td>
</tr>
<tr>
<td>Category No. 10</td>
<td>Chemical Waste (Chemicals used in production of biological, chemicals used in disinfection, as insecticides, etc.)</td>
<td>chemical treatment @@ and discharge into drains for liquids and secured landfill for solids</td>
</tr>
</tbody>
</table>

(See Rule 5 CATEGORIES OF BIO-MEDICAL WASTE)

@@ Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

### Mutilation/shredding must be such so as to prevent unauthorised reuse.

@@ There will be no chemical pre-treatment before incineration. Chlorinated plastics shall not be incinerated.

- Deep burial shall be an option available only in towns with population less than five lakhs and in rural areas.
## SCHEDULE II

### COLOUR CODING AND TYPE OF CONTAINER FOR DISPOSAL OF BIO-MEDICAL WASTES

(See Rule 6)

<table>
<thead>
<tr>
<th>Colour Coding</th>
<th>Type of Container-I</th>
<th>Waste Category</th>
<th>Treatment options as per Schedule I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>Plastic bag</td>
<td>Cat. 1, Cat. 2, and Cat. 3, Cat. 6.</td>
<td>Incineration/deep burial</td>
</tr>
<tr>
<td>Red</td>
<td>Disinfected container/plastic bag</td>
<td>Cat. 3, Cat. 6, Cat. 7.</td>
<td>Autoclaving/Microwaving/Chemical Treatment</td>
</tr>
<tr>
<td>Blue/White translucent</td>
<td>Plastic bag/puncture proof Container</td>
<td>Cat. 4, Cat. 7.</td>
<td>Autoclaving/Microwaving/Chemical Treatment and destruction/shredding</td>
</tr>
<tr>
<td>Black</td>
<td>Plastic bag</td>
<td>Cat. 5 and Cat. 9 and Cat. 10. (solid)</td>
<td>Disposal in secured landfill</td>
</tr>
</tbody>
</table>

**Notes:**

1. Colour coding of waste categories with multiple treatment options as defined in Schedule I, shall be selected depending on treatment option chosen, which shall be as specified in Schedule I.
2. Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.
3. Categories 8 and 10 (liquid) do not require containers/bags.
4. Category 3 if disinfected locally need not be put in containers/bags.
SCHEDULE III

(see Rule 6)

LABEL FOR BIO-MEDICAL WASTE CONTAINERS/BAGS

HANDLE WITH CARE

Note: Label shall be non-washable and prominently visible.
SCHEDULE IV

(See Rule 6)

LABEL FOR TRANSPORT OF BIO-MEDICAL WASTE CONTAINERS/BAGS

Day. .........................................Month ..................
Year ........................................
Date of generation ........................................

Waste category No: ............................................................... 
Waste class: ........................................................................ 
Waste description: .............................................................. 

Sender’s Name & Address
PhoneNo.................................................................
TelexNo.................................................................
Fax No.................................................................
Contact Person.....................................................

Receiver’s Name & Address
PhoneNo. .................................................................
TelexNo.................................................................
Fax No .................................................................
Contact Person.....................................................

In case of emergency please contact

Name & Address: ........................................................................................................
Phone No. .................................................................

Note: Label shall be non-washable and prominently visible.
SCHEDULE V

(see Rule 5 and Schedule 1)

STANDARDS FOR TREATMENT AND DISPOSAL OF BIO-MEDICAL WASTES

STANDARDS FOR INCINERATORS:

All incinerators shall meet the following operating and emission standards

A. Operating Standards

1. Combustion efficiency (CE) shall be at least 99.00%.

2. The Combustion efficiency is computed as follows:

   \[
   \text{C.E.} = \frac{\%\text{CO}_2}{\%\text{CO}_2 + \%\text{CO}} \times 100
   \]

3. The temperature of the primary chamber shall be 800 ± 50 deg. C°.

4. The secondary chamber gas residence time shall be at least 1 (one) second at 1050 ± 50 C°, with minimum 3% Oxygen in the stack gas.

B. Emission Standards

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Concentration mg/Nm³ at (12% CO₂ correction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Particulate matter</td>
<td>150</td>
</tr>
<tr>
<td>(2) Nitrogen Oxides</td>
<td>450</td>
</tr>
<tr>
<td>(3) HCl</td>
<td>50</td>
</tr>
<tr>
<td>(4) Minimum stack height</td>
<td>30 metres above ground</td>
</tr>
<tr>
<td>(5) Volatile organic compounds in ash</td>
<td>not be more than 0.01%</td>
</tr>
</tbody>
</table>

Note:

- Suitably designed pollution control devices should be installed/retrofitted with the incinerator to achieve the above emission limits, if necessary.
- Wastes to be incinerated shall not be chemically treated with any chlorinated disinfectants.
- Chlorinated plastics shall not be incinerated.
- Toxic metals in incineration ash shall be limited within the regulatory quantities as defined under the Hazardous Waste (Management and Handling Rules,) 1989.
- Only low sulphur fuel like L.D.O, L.S.H.S. Diesel shall be used as fuel in the incinerator.
STANDARDS FOR WASTE AUTOCLAVING:

The autoclave should be dedicated for the purposes of disinfecting and treating bio-medical waste,

(I) When operating a gravity flow autoclave, medical waste shall be subjected to:

   (i) a temperature of not less than 121 °C and pressure of 15 pounds per square inch (psi) for an autoclave
       residence time of not less than 60 minutes; or

   (ii) a temperature of not less than 135 °C° and a pressure of 31 psi for an autoclave residence time of not less
       than 45 minutes; or

   (iii) a temperature of not less than 149 °C° and a pressure of 52 psi for an autoclave residence time of not less
       than 30 minutes.

(II) When operating a vacuum autoclave, medical waste shall be subjected to a minimum of one pre-vacuum
     pulse to purge the autoclave of all air. The waste shall be subjected to the following:

   (i) a temperature of not less than 121 °C° and pressure of 15 psi per an autoclave residence time of not less
       than 45 minutes; or

   (ii) a temperature of not less than 135 °C° and a pressure of 31 psi for an autoclave residence time of not less
       than 30 minutes;

(III) Medical waste shall not be considered properly treated unless the time, temperature and pressure indicators
      indicate that the required time, temperature and pressure were reached during the autoclave process. If for
      any reasons, time temperature or pressure indicator indicates that the required temperature, pressure or
      residence time was not reached, the entire load of medical waste must be autoclaved again until the proper
      temperature, pressure and residence time were achieved.

(IV) Recording of operational parameters

   Each autoclave shall have graphic or computer recording devices which will automatically and continuously
   monitor and record dates, time of day, load identification number and operating parameters throughout the
   entire length of the autoclave cycle.

(V) Validation test

   Spore testing:

   The autoclave should completely and consistently kill the approved biological indicator at the maximum
   design capacity of each autoclave unit. Biological indicator for autoclave shall be Bacillus stearothermophilus
   spores using vials or spore Strips; with at least 1X10⁴ spores per millilitre. Under no circumstances will
   an autoclave have minimum operating parameters less than a residence time of 30 minutes, regardless of
   temperature and pressure, a temperature less than 121 °C° or a pressure less than 15 psi.
(VI) Routine Test

A chemical indicator strip/tape the changes colour when a certain temperature is reached can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different location to ensure that the inner content of the package has been adequately autoclaved.

STANDARD FOR LIQUID WASTE:

The effluent generated from the hospital should conform to the following limits

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>PERMISSIBLE LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>63-9.0</td>
</tr>
<tr>
<td>Suspended solids</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>10 mg/l</td>
</tr>
<tr>
<td>BOD</td>
<td>30 mg/l</td>
</tr>
<tr>
<td>COD</td>
<td>250 mg/l</td>
</tr>
<tr>
<td>Bioassays test</td>
<td>90% survival of fish after 96 hours in 100% effluent.</td>
</tr>
</tbody>
</table>

These limits are applicable to those, hospitals, which are either connected with sewers without terminal sewage treatment plant or not connected to public sewers. For discharge into public sewers with terminal facilities, the general standards as notified under the Environment (Protection) Act, 1986 shall be applicable.

STANDARDS OF MICROWAVING

1. Microwave treatment shall not be used for cytotoxic, hazardous or radioactive wastes, contaminated animal carcasses, body parts and large metal items.

2. The microwave system shall comply with the efficacy test/routine tests and a performance guarantee may be provided by the supplier before operation of the limit.

3. The microwave should completely and consistently kill the bacteria and other pathogenic organisms that are ensured by approved biological indicator at the maximum design capacity of each microwave unit. Biological indicators for microwave shall be Bacillus Subtilis spores using vials or spore strips with at least 1 × 10^1 spores per millilitre.

STANDARDS FOR DEEP BURIAL

1. A pit or trench should he dug about 2 meters deep. It should be half filled with waste, and then covered with lime within 50 cm of the surface, before filling the rest of the pit with soil.

2. It must be ensured that animals do not have any access to burial sites. Covers of galvanised iron/wire meshes may be used.

3. On each occasion, when wastes are added to the pit, a layer of 10 cm of soil shall be added to cover the wastes.
4. Burial must be performed under close and dedicated supervision.
5. The deep burial site should be relatively impermeable and no shallow well should be close to the site.
6. The pits should be distant from habitation, and sited so as to ensure that no contamination occurs of any surface water or ground water. The area should not be prone to flooding or erosion.
7. The location of the deep burial site will be authorised by the prescribed authority.
8. The institution shall maintain a record of all pits for deep burial.

**SCHEDULE VI**

*(see Rule 5)*

**SCHEDULE FOR WASTE TREATMENT FACILITIES LIKE INCINERATOR/ AUTOCLAVE / MICROWAVE SYSTEM**

<table>
<thead>
<tr>
<th>Category of Occupier</th>
<th>Time Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Hospitals and nursing homes in towns with population of 30 lakhs and above</td>
<td>by 31st December, 1999 or earlier</td>
</tr>
<tr>
<td>B. Hospitals and nursing homes in towns with population of below 30 lakhs,</td>
<td></td>
</tr>
<tr>
<td>(a) with 500 beds and above</td>
<td>by 31st December, 1999 or earlier</td>
</tr>
<tr>
<td>(b) with 200 beds and above but less than 500 beds</td>
<td>by 31st December, 2000 or earlier</td>
</tr>
<tr>
<td>(c) with 50 beds and above but less than 200 beds</td>
<td>by 31st December, 2001 or earlier</td>
</tr>
<tr>
<td>(d) with less than 50 beds</td>
<td>by 31st December, 2002 or earlier</td>
</tr>
<tr>
<td>C. All other institutions generating bio-medical waste not included in A and B above</td>
<td>by 31st December, 2002 or earlier</td>
</tr>
</tbody>
</table>
FORM I
(see rule 8)

[APPLICATION FOR AUTHORISATION /RENEWAL OF AUTHORISATION]
(To be submitted in duplicate.)

To

The Prescribed Authority

(Name of the State Govt / UT Administration)

Address.

1. Particulars of Applicant....................................................................................................................................................

   (i) Name of the Applicant...........................................................................................................................

       (In block letters & in full)

   (ii) Name of the Institution: .................................................................................................................................

       Address: .............................................................................................................................................................

       Tele No.:........................................ Fax No.:.......................................................... Telex No.:.................................

2. Activity for which authorisation is sought: ....................................................................................................................

   (i) Generation

   (ii) Collection

   (iii) Reception

   (iv) Storage

   (v) Transportation

   (vi) Treatment

   (vii) Disposal

   (viii) Any other form of handling
3. Please state whether applying for fresh authorisation or for renewal:
   (In case of renewal previous authorisation-number and date)

4. (i) Address of the institution handling bio-medical wastes:
   (ii) Address of the place of the treatment facility:
   (iii) Address of the place of disposal of the waste:

5. (i) Mode of transportation (in any) of bio-medical waste:
   (ii) Mode(s) of treatment:

6. Brief description of method of treatment and disposal (attach details):

7. (i) Category (see Schedule 1) of waste to be handled
   (ii) Quantity of waste (category-wise) to be handled per month

8. Declaration

   I do hereby declare that the statements made and information given above are true to the best of my
   knowledge and belief and that I have not concealed any information.

   I do also hereby undertake to provide any further information sought by the prescribed authority in relation
to these rules and to fulfil any conditions stipulated by the prescribed authority.

Date : ................................................  Signature of the Applicant .........................................................

Place : .............................................  Designation of the Applicant ......................................................
FORM II
(see rule 10)

ANNUAL REPORT
(To be submitted to the prescribed authority by 31 January every year)

1. Particulars of the applicant:
   (i) Name of the authorised person (occupier/operator): .................................................................
   (ii) Name of the institution: ................................................................................................................
       Address ........................................................................................................................................
       .................................................................................................................................................
       .................................................................................................................................................
       Tel. No .................................................................................................................................
       Telex No. ..............................................................................................................................
       Fax No. .................................................................................................................................

2. Categories of waste generated and quantity on a monthly average basis:

3. Brief details of the treatment facility:
   In case of off-site facility:
   (i) Name of the operator
   (ii) Name and address of the facility:

       Tel. No .................................................................................................................................
       Telex No. ..............................................................................................................................
       Fax No. .................................................................................................................................

4. Category-wise quantity of waste treated:

5. Mode of treatment with details:

6. Any other information:

7. Certified that the above report is for the period from. .................................................................
   ...................................................................................................................................................

Date: .................................................................. Signature: .................................................................
Place: ........................................................... Designation: ..............................................................
FORM III
(see Rule 12)

ACCIDENT REPORTING

1. Date and time of accident:
2. Sequence of events leading to accident
3. The waste involved in accident:
4. Assessment of the effects of the accidents on human health and the environment
5. Emergency measures taken
6. Steps taken to alleviate the effects of accidents
7. Steps taken to prevent the recurrence of such an accident ...................................

Date :........................................ Signature.................................................................

Place :........................................ Designation..............................................................
REFERENCES

1. The OHS Tide-Noise in Industry published by occupational health services, BHEL, Tiruchirapally
2. The OHS Tide- published by occupational health services, BHEL, Tiruchirapally
3. The OHS Tide-Performance Indicators in occupational Health, by occupational health services, BHEL, Tiruchirapally
4. The OHS Tide-Eye Protection at work place, by occupational health services, BHEL, Tiruchirapally
5. The OHS Tide-Factory Medical Centre, by occupational health services, BHEL, Tiruchirapally
8. First aid to the injured by St johns ambulance association
11. Legal provisions for protection of health and safety at work in India, Jagdish Patel.
14. ILO List of Occupational Diseases (revised 2010)
16. Park text book of preventive and social medicine