

## **Integrated Management System on Implementation of ISO 14001 and 18001 - A case study of BEML, Bangalore**

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### **Abstract**

*The International Labour Organization (ILO) estimates that every year there are 2.2 million fatal and 270 million non-fatal accidents or occupational diseases worldwide. Occupational Health and Safety looks at the research what causes accidents and errors in the work place. Employer concern for employee health, safety and well-being would appear to lie at the heart of a positive employment relationship. It would be very hard for managers to argue that they valued employees whilst disregarding their welfare in the workplace. Subsequently, the claim of many employers that people represent a valued organizational asset is perhaps nowhere better examined than in the light of its approach to health and safety at work. Integrated Management System (IMS) is the combination of Environment Management System (EMS) Occupational Health and Safety Assessment Series (OHSAS) and Quality Management System (QMS). Environment includes water, air and land, the inter relationship that exists among and between water, air, land, human beings and other living creatures, plants, micro-organisms and property. Human beings are part of it and are inter-related, inter-connected, inter-dependent. OHSAS-ISO-18001. Occupational Health and Safety is today a major concern of companies not only from critical sectors like oil and gas, mining and construction but also in sectors seen as "safe" like food or services in general. This study identifies the environment aspects / impacts hazards and the risk assessment carried out at BEML (Bharath Earth Movers Ltd) and specify how the environment, safety and health of all employees is secured and managed. The study undertaken is empirical investigation into the aspects of employee safety, hazards, health and to monitor the effectiveness of environment management system and occupational Health and Safety implementation helps in determining the methods to make the employees take effective measures during work in an organization.*

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**Key Words:** *Integrated Management, Health, Safety, Environment Management System, OHSAS.*

## **1. Introduction**

Employer concern for employee health, safety and well-being would appear to lie at the heart of a positive employment relationship. It would be very hard for managers to argue that they valued employees whilst disregarding their welfare in the workplace. Subsequently, the claim of many employers that people represent a valued organizational asset is perhaps nowhere better examined than in the light of its approach to health and safety at work. Alongside the growing emphasis on people, added value in firms, the note that the concept of “employee well-being” has grown in significance over the past few years. This concern is partly associated with the high cost to businesses of ill health and associated absence. The development of legislation covering workplace health and safety, demographic change and the shift to a service – dominated industry – developments which have contributed to the creation of a wider set of health, safety and welfare concerns for employers. Moreover, trends in the management and experience of work – including the greater use of contingent reward, flexible working, work intensification increases job insecurity and work-related stress are placing greater pressures on employees and have contributed to a rise in the experience of work-related mental ill health.

Managing health, safety and well-being at work:

The legal framework governing health and safety at work provides the backdrop against which the management of employee well – being is set. A primary concern for the management of employee well-being is, therefore, ensuring that workplace policies, practices, activities and the working environment comply with legal requirements, including codes of practice and health safety employee guidelines and ensuring that statutory responsibilities are clearly communicated and understood.

Bharat Earth Movers Limited (BEML) is a Premier ISO – 9001 – 2000 Company in India and the Second Largest Public Sector undertaking manufacturer of earthmoving equipment in Asia. A four decade old – location and multi – product company, BEML has vital applications in diverse sectors of economy such as coal, mining, steel, cement powder, irrigation, construction, road building and railway. A public sector undertaking BEML commands 70% market share in domestic earthmover industry. Nearly 40% of its equity has been diversified in financial institutions. BEML has its corporate headquarters and central marketing division in Bangalore.

All the manufacturing units of the company have been certified for ISO – 9001 – 2008 Quality Management System (QMS), the KGF Complex, Bangalore Complex, and Mysore complex are certified for ISO – 14001 – 2004 Environment Management System (EMS). Also, the Bangalore Complex is certified for BSOHSAS 18001 – 2007 OHSAS Integrated Management System.

## **2. Statement of the Problem**

To identify the environment aspects / impacts and hazards identified and risk assesses, how the employer is going to manage his or her environment, safety and healthy responsibilities include a commitment to empathy with legal obligations, protective and preventive measures taken, the resource provided for safety and health at the workplace and the arrangements used to fulfill these responsibilities.

## **3. Objectives of the Study**

- To study the various types of organizational environment aspects / impacts, hazards, and risk assessment in an organization.
- To study how the employees has been exposed to environmental aspects / impacts and hazards.
- To opine the causes of environmental impacts, occupational hazards.
- To measure the continuous updating of environmental aspects / impacts and Hazards Identification and Risk Assessment (HIRA).
- To provide solutions to the various occupational hazards that exists in the organization.

### **3.1 Scope of the Study**

The study monitors the effectiveness of EMS and OHSAS, implementation and adaptability at various work units and complex and to determine the methods to make the employees take effective measures during their works.

## **4. Research Methodology**

The study is based on both primary as well as secondary data. For the present study, the primary data was collected through a structured questionnaire by survey method. And also the observational method was also employed for collecting the data the secondary data has been collected from different sources like books, journals and company records.

### **4.1 Sample Size and Respondents**

The size consists of 200 employees working in different departments like HR department, quality control department, R & D department, and production units.

### **4.2 Plan of Analysis**

The collected data were analyzed with the help of statistical tools and techniques such as averages, percentages, dispersion, and correlation and wherever necessary tables, graphs and charts were made use of.

### **4.3 Interpretation of Data**

The study at BEML Limited, Bangalore complex was taken up with the following objectives:

- To study the present environment management system & occupational health and safety assessment series, OHSAS (ISO 1800-2007) at BEML.
- To study the efficiency of the environment management system occupational health and safety policies and procedures implemented in the organization.
- To study the level of environment management system health and safety awareness among employees.
- To study the IMS implementation of international standards the organization.
- To analyze the methods for the sustenance of ISO 14001:2002 & 18001:2007 and betterment of organization under the study.

The structured questionnaire was used to get information from the employees. A sample size of 50 respondents has taken for the study. The analysis of the filled-in-questionnaire has been depicted bellow in percentiles in the form of tables and graphs. In order to get accurate information without any inhibitions the questionnaire did not seek any information the employee's personal data. It was also doubly assured to them that the information would be held confidential.

**Table 1: Awareness on ISO-14001 & ISO 18001**

Are you Aware of Environment aspect/impact ISO 14001 & Occupational Health and safety Assessment series OHSAS ISO 18001 policy and objectives?

Serial Number	Comments	No of respondents	Percentage (%)
1	Yes	40	80
2	No	10	20

Analysis:

- (1) With the reference of above table, it is observed that majority of the respondents (80%) are aware of OHSAS at BEML
- (2) (20%) of respondents are unaware of the concepts.

Interpretation:

Majority of the respondents are aware of the occupation health and safety assessment series (OHSAS-18001:2007) at BEML

**Table2: Training on ISO 14001 & ISO 18001**

Is the training given to you about IMS system (EMS & OHAS)?

Serial number	Comments	No. of respondents	Percentage (%)
1	yes	40	80%
2	no	10	20%

Analysis:

1. With the reference of above table it is observed that majority of the respondents says that the training is given about OHAS in the organization.
2. 20% of respondents say that the training is not given about OHAS in the organization.

Interpretation:

Majority of the respondents agree that the training is given about Occupational health & safety assessment series (OHSAS) in the organization.

**Table 3: Resources Available for Implementation for IMS System**  
Are the essential resources available for implementation of IMS system?

Serial Number	Comments	No.of Respondents	Percentage (%)
1.	YES	34	68%
2.	NO	16	32%

Analysis:

1. From the reference of the above table it is observed that the majority (68%) of the respondents agree that there are resources available for the implementation of ISO 18001:2007.
2. 32% of respondents say that the essential resources are not available for implementation of ISO 18001:2007.

Interpretation:

Majority of the respondents agree that there are essential resources available for the implementation of ISO 18001:2007 in the organization.

**Table 4: Hazard Identification and Risk Assessment (HIRA)**  
Are you aware of Hazard identification and Risk assessment (HIRA)?

Serial number	Comments	No.of Respondents	Percentage (%)
1	YES	40	80%
2	NO	10	20%

Analysis:

1. With reference of the above table it is observed that majority(80%) of the respondents are aware of Hazard identification and Risk assessment (HIRA)
2. 20% of respondents are unaware of Hazard identification and Risk assessment(HIRA)

Interpretation:

Majority (80%) of respondents are aware of Hazard identification and Risk assessment (HIRA) at BEML.

**Table 5: HIRA Process**  
Are you aware of HIRA process?

Serial Number	Comments	No. of Respondents	Percentage (%)
1	Yes	36	72%
2	No	14	28%

Analysis:

- (1) With the reference of above table it is observed that majority (72%) of the respondents are aware about the process of HIRA.
- (2) 28% of the respondents are unaware about the process of HIRA.

Interpretation:

Majority of the respondents are aware about the process of Hazard Identification and Risk assessment (HIRA) at BEML.

**Table 6: Identification of the Hazards at Work Place**  
Has the identification of all the hazards at your work place been identified?

Serial Number	Comments	No. of Respondents	Percentage (%)
1	Yes	42	84%
2	No	8	16%

Analysis:

- (1) With the reference of above table it is observed that majority (84%) of the respondents are agreed that the identification of all the hazards at their work place has been identified.
- (2) 16% of the respondents do not agree that the hazard has not been identified at their work place.

Interpretation:

Majority of respondents agree that the identification of all hazards has been identified.

**Table 7: Hazards Exposed**  
In your routine work what are the hazards you are exposed to?

Serial number	comments	No.of respondents	Percentage
1	physical	14	28%
2	chemical	16	32%
3	Mechanical	20	40%

Analysis:

1. With reference to the above table it is observed that majority (40%) of respondents are exposed to mechanical hazard.
2. 32% of the respondents are exposed to chemical hazard.
3. 28% of respondents are exposed to physical hazard.

Interpretation

Majority of the respondents are exposed to mechanical hazard at their routine work at BEML

**Table 8: Personnel Protective Equipment (PPE) in Shop Against the Injuries**  
To what % the personnel protective equipment in shop has bought down injuries?

Serial Number	Comments	No. of respondents	%
1	00-25%	4	8
2	25-50%	4	8
3	50-75%	10	20
4	75-100%	32	64

Analysis:

- 1) With reference to the above table it is observed that 48% of the respondents agree that the use of PPE in the shop has bought injuries at a % of 50-75%.
- 2) 32% of respondents agree that use of PPE in the shop has bought down injuries at a % of 00-25%.
- 3) 16% of respondents agree that use of PPE in the shop has bought down injuries at of 25-50%

4) 4% of the respondents agree that use of PPE in the shop has bought down injuries at of75-100%

Interpretation: majority of respondents agree that the use of PPE in the shop has bought down injuries at the rate of50-75%.

**Table 9: Use Personnel Protective Equipment**  
According to you, how many % of workers use PPE while doing their work?

Serial Number	Comments	No. of respondents	%
1	00-25%	8	16
2	25-50%	14	28
3	50-75%	12	24
4	75-100%	16	32

Analysis:

- 1) with reference to the above table it is observed that majority 32% respondents says that the workers use PPE while doing their work is at the % of 75-100%
- 2) 28% of the respondents say that the workers use PPE is at the % of 25-50%
- 3) 24%of the respondents say that the workers use PPE in their work is at the % of 50-75%
- 4) 16%of the respondents say that the workers use PPE in their work is at the % of00-25%

Interpretation:

Majority of respondents agree that 75-100% of the workers use PPE while doing their work.

**Table 10: Safety Measures Taken by the Management**  
Is there enough safety measures taken by the management?

Serial Number	Comments	No. of respondents	%
1	Less safety measures	6	12
2	Average safety measures	10	20
3	Satisfactory	10	20
4	To the maximum extent	24	48

Analysis:

- 1) with reference to the above table it is observed that majority 48% respondents says that50-75% of safety measures taken by the management has helped the employees in accident free environment at the rate of 50-75%
- 2) 20%of the respondents say that the safety measures taken by the management at the rate of 75-100%
- 3) 20%of the respondents say that the safety measures taken by the management at the rate of25-50%
- 4) 12%of the respondents say that the safety measures taken by the management at the rate of00-25%

Interpretation:

Majority of the respondents agree that safety measures taken by the management has helped the employees in accident free environment at the rate of 50-75%

**Table 11: Facilities Reducing the Stress**

To what percentage the better lighting and ventilation facilities have reduced stress during work?

Serial number	Comments	No. of respondents	Percentage (%)
1	00-25%	8	16%
2	25-50%	16	32%
3	50-75%	14	28%
4	75-100%	12	24%

Analysis:

1. From the above table it is observed that 32% of the respondents say that 25-50% of lighting and ventilation facilities have reduced stress during work.
2. 28% of respondents agree that 50-70% of lighting and ventilation facility have reduced stress during work.
3. 24% of respondents agree that 75-100% of lighting and ventilation facility have reduced stress during work.
4. 16% of respondents agree that 0-25% of lighting and ventilation facilities have reduced stress during work.

Interpretation:

Majority of respondents agree that better lighting & ventilation facilities have reduced stress during work at the rate of 25-50% only.

**Table 12: Elements Contributing to Organizational Hazards in a Manufacturing Department**

In your opinion, what are the main elements that contribute the organizational hazards in a manufacturing department?

Serial Number	Comments	No. of respondents	Percentage (%)
1	Air	20	8%
2	Smoke	6	12%
3	Noise	20	40%
4	Machinery	4	40%

Analysis:

1. 40% respondents agree that the main elements which contribute to the occupational hazard are Noise.
2. 40% respondents agree that the main elements which contribute to the occupational hazard are Machinery.
3. 12% respondents agree that the main elements which contribute to the occupational hazards are Smoke.
4. 8% respondents agree that the main elements which contribute to the occupational hazards are Air.



Interpretation:

Majority of respondents agree that the main element which contributes to the occupational hazard is noise & machinery.

**Table 13: Effective Way of Disposing Scrap**  
What is the effective way of disposing scrap?

Serial number	Comments	No. of respondents	Percentage (%)
1	Auction	20	40%
2	disposal	24	48%
3	throwing	2	4%
4	dumping	4	8%

Analysis:

1. With reference to the above table it is observed that majority 48% of the respondents says that the effective way of disposing scrap is disposal bins.
2. 40% of respondents says auction
3. 8% of respondents says auction
4. 4% of respondents says throwing

Interpretation:

Majority of respondents agree that the main elements which contribute to the occupational hazard are noise and machinery.

**Table 14: Internal Communication among the Various Levels of the Organization**  
What is the most applicable way of internal communication among the various levels of the organization?

Serial number	Comments	No. of Respondents	Percentage (%)
1	Work group	24	48%
2	News letters	6	12%
3	Bulletin boards	20	40%
4	Intranet sites	0	0%

Analysis:

- (1) With reference to the above table it is observed that majority (48%) of the respondents say that work group meetings is the most applicable way of internal communication
- (2) 40% of respondents say Bulletin Boards most effective
- (3) 12% of respondents say news letters are most effective
- (4) 0% of respondents sat intranet sites.

Interpretation: Majority of respondents agree that the most applicable way on internal communication is through work group meetings.

**Table 15: Safety Measures and Equipment at Your Work Place**  
Do you have sufficient safety measures ad equipments at your work place?

Serial number	Comments	No. of Respondents	Percentage (%)
1	Yes	30	60%
2	No	10	20%
3	Sometimes	10	20%

Analysis:

- (1) With reference to the above it is observed that 60% of respondents say that there are sufficient safety measures and equipments at their work place.
- (2) 20% of respondents say that there are no sufficient safety measures and equipment at their work place.
- (3) 20% of respondents say that only sometime safety measures and equipments available at their work place.

Interpretation: Majority of the respondents agree that there are sufficient safety measures and equipment available at their workplace.

**Table 16: Free Hazards at Your Workplace**  
Do you feel free from hazards at your workplace?

Serial number	Comments	No. of respondents	Percentage (%)
1	Yes	24	48%
2	No	26	52%

Analysis:

- (1) With the reference to the above table it is observed that 48% of the respondents say that they are free from hazards at their workplace.
- (2) Majority of 52% of the respondents say that they don't feel free from hazards at their workplace.

Interpretation:

Majority of the respondents say that they don't feel free from hazards at their workplace

**Table 17: Safety Training Conducted in the Organization**  
How often is the safety training conducted in the organization?

Serial number	comments	No. of respondents	percentage
1	Monthly	20	40%
2	Quarterly	9	18%
3	Half yearly	11	22%
4	Yearly	10	20%

Analysis:

1. With the reference to the above table it is observed that 40% of respondents say that training must be conducted monthly
2. 22% of respondents say that training must be conducted quarterly.
3. 20% of respondents say that training must be conducted half yearly.
4. 18% of respondents say that training must be conducted yearly about OHSAS.

Interpretation:

Majority of the respondents say that the training about OHSAS should be conducted monthly in their organization.

**Table 18: Response by the Management for Inspecting the Machinery.**  
How much is the rate of response by the management for inspecting the machinery?

Serial number	comments	No. of respondents	percentage
1	00-25%	10	10%
2	25-50%	16	24%
3	50-75%	12	42%
4	75-100%	12	24%

Analysis:

1. With the reference to the above table it is observed that 42% of the respondents agree that the rate of response for inspecting the machines is 50-75%.
2. 24% of the respondents say that the rate of response for inspecting the machinery is 25-50%
3. 24% of the respondents say that the rate of response for inspecting the machinery is 75-100%
4. 10% of the respondents say that the rate of response for inspecting the machinery is 00-25%

Interpretation:

Majority of respondents agree that the rate of response by the management for inspecting the machinery is 50-75%

**Table 19: Represents Awareness in Fire & Electrical Safety**  
Are you aware of fire & electrical safety?

Serial number	Comments	No of respondents	Percentage (%)
1	Yes	8	16%
2	No	42	84%

Analysis:

- (1) With the reference of the above table it is observed that 84% of respondents say that they are aware fire & electricity safety.
- (2) 16% of respondents say that they are aware fire & electricity safety.

Interpretation:

Majority of respondents say that they are aware of fire & electrical safety at their workplace.

**Table 20: Represents Satisfactions on Maintenance at Work Place**  
Are you satisfied with maintenance facilities provided at your work place?

Serial number	Comments	N0. Of Responding	Percentage (%)
1	Yes	32	64%
2	No	18	36%

Analysis:

- (1) With the reference of above table it is observed that 64% of employees are satisfied with maintenance facilities at their workplace.
- (2) 36% of employees are not satisfied with maintenance facilities at their workplace.

Interpretation:

Majority of respondents say that they are satisfied with maintenance facilities at their workplace.

**Table 21: Respondents Awareness in Fair & Electrical Safety**  
Are you aware of fire & electrical safety?

Serial number	Comments	No. of Respondent	Percentage (%)
1	Yes	8	16%
2	No	42	84%

Analysis:

- (1) With the reference of the above table it is observed that 84% of respondent say that they are aware fire & electrical safety
- (2) 16% of respondents say that are not aware of fire & electrical safety.

Interpretation:

Majority of respondents say that they are aware of fire & electrical safety at all their workplace

**Table 22: Represents Satisfaction with SHE Police of their Company**  
Are you satisfied with safety health and environment (SHE) policy of BEML?

Serial number	Comments	No. of Respondents	Percentage (%)
1	Highly satisfied	6	12%
2	Satisfied	22	48%
3	Average	16	32%
4	Unsatisfied	4	8%

Analysis:

- (1) With the reference to the above table it is observed that 48% are satisfied with safety & health & environment (SHE) policy of BEML.
- (2) 32% of respondents agree that they are average satisfied with safety health & environment policy of BEML.
- (3) 12% of respondents agree that they are highly satisfied with safety health & environment policy of BEML.
- (4) 8% of respondents agree that they are unsatisfied with safety health & environment policy of BEML.

Interpretation:

Majority of respondents say that they are satisfied with safety health & environment (SHE) policy of BEML.

**Table 23: Represent Necessity of Internal Audit on IMS System.**

Is it necessary to conduct internal audits for efficiency of existing IMS System?

Serial number	Comments	No. of Respondents	Percentage (%)
1	Yes	16	92%
2	No	2	4%
3	Don't know	2	4%

Analysis:

- (1) With reference to the above table it is observed that 92% of the respondents agree that it is necessary to conduct internal audits for efficiency of existing OHSAS
- (2) 4% of respondents say that it is not necessary to conduct internal audits
- (3) 4% of respondents say that they don't know if the management should conduct internal audits

Interpretation:

Majority of respondents agree that it's necessary to conduct internal audit for the efficiency of existing OHSAS

**Table 24: Respondent the requirements for being certified for IMS system**

Do you think that BEML fulfills all the requirements for being certified as IMS System?

Serial number	Comments	No. of respondents	Percentage (%)
1	Yes	42	84%
2	No	8	16%

Analysis:

- (1) With reference to the above table it is observed that 84% of respondents say that BEML fulfills all the requirements for being certified as ISO 18001:2007
- (2) 16% of respondents say that BEML does not fulfill all the requirements for being certified as ISO 18001:2007

Interpretation:

Majority of respondents agree that BEML fulfill all the requirements for being certified as ISO 18001:2007

## 5. Summary of Findings

- 80% of Respondents concluded that they are aware of occupational health and safety assessment series OHSAS (ISO:18001) 20% of the respondents concluded that they are not aware of occupational health and safety assessment series OHSAS (ISO:18001)
- 80% of Respondents concluded that the training is given to the employees about OHSAS. 20% of respondents concluded that the training is given to the employees about OHSAS in their organization.
- 68% of respondents concluded that there are essential resources available for the implementation of ISO 18001:2007.

- 80% of Respondents concluded that they are aware of hazard identification and risk assessment (HIRA). 20% of respondents concluded that they are not aware of hazard identification and risk assessment (HIRA)
- 84% of Respondents concluded that various hazards have been identified at their workplace. 16% of respondents concluded that the hazard has not been identified at their workplace.
- 72% of the respondents concluded that they are aware about the HIRA process in their organization. 28% of respondents concluded that they are not aware about the HIRA process.
- 28% of the respondents concluded that they are exposed to physical hazard at their workplace. 32% of the respondents concluded that they are exposed to chemical hazard at their workplace. 40% of the respondents concluded that they are exposed to the mechanical hazard at their workplace.
- 8% of Respondents concluded that 0-25% of injury is brought down injury by the use of personnel protective equipment. 8% of respondents concluded that 25-50% injury is brought down injury by the use of personnel protective equipment. 20% of respondents concluded that 50-75% of injury is brought down injury by the use of personnel protective equipment. 64% of respondents concluded that 75-100% of injury is brought down injury by the use of personnel protective equipment.
- 16% of respondents concluded that 0-25% of the employees use personnel protective equipment while doing their work. 28% of respondents concluded that 25-50% of the employees use personnel protective equipment while doing their work. 24% of the respondents concluded that 50-75% of the employees use personnel protective equipment while doing their work. 32% of respondents concluded that 75-100% of the employees use personnel protective equipment while doing their work.
- 12% of respondents concluded that the safety measure which has taken by the management has helped in accident free environment at the rate of 0-25%. 20% respondents concluded that the safety measure which has taken by the management has helped in accident free environment at the rate of 25-50%. 48% respondents concluded that the safety measure which has taken by the management has helped in accident free environment at the rate of 50-75%. 20% respondents concluded that the safety measure which has taken by the management has helped in accident free environment at the rate of 75-100%.
- 16% of respondents concluded that better lighting and facilities have reduced stress during work at the rate of 0-25%. 32% of respondents concluded that better lighting and facilities have reduced stress during work at the rate of 25-50%. 28% of respondents

concluded that better lighting and facilities have reduced stress during work at the rate of 50-75%. 24% of respondents concluded that better lighting and facilities have reduced stress during work at the rate of 75-100%.

- 40% of respondents concluded that the main elements which to occupational hazard are noise. 40% of respondents concluded that the main element is machinery. 12% of respondents concluded that the main element is smoke. 8% of respondents concluded that the main element is air for occupational hazard at work place.
- 40% of respondents concluded that the effective way of disposing scraps is through auction. 48% of respondents concluded that the effective way of disposing scraps is through disposal bins. 4% of respondents concluded that the effective way of disposing scraps is through throwing. 8% of the respondents concluded that the effective way of disposing scraps is through Dumping.
- 48% of respondents concluded that the most applicable way of communication among various levels of the organizations is through workgroup meetings. 12% of respondents say newsletters. 40% of respondents say bulletin boards. 0% of respondents say intranet sites.
- 60% of the respondents concluded that they have sufficient safety measures and equipment at their workplace. 20% of the respondents concluded that they don't have sufficient safety measures and equipment at their workplace. 10% of the respondents concluded that sometimes there are sufficient safety measures and equipment at their workplace.
- 48% of the respondents concluded that they feel free from hazards at their workplace. 52% of the respondents concluded that they do not feel free from hazards at their workplace.
- 40% of respondents concluded that the training about OHSAS in their organization is conducted monthly. 18% of respondents concluded that the training about OHSAS in their organization is conducted quarterly. 22% of respondents concluded that the training about OHSAS in their organization is concluded half yearly. 20% of respondents concluded that the training about OHSAS in their organization is conducted yearly in their organization.
- 10% of the respondents conclude that the rate of response by the management is only at 0-25%. 24% of the respondents conclude that the rate of response by the management is only at 25-50% for inspecting the machinery. 42% of the respondents conclude that the rate of response by the management is 75-100% for inspecting the machinery.
- 16% of respondents concluded that they are aware of fire and electrical safety at their workplace. 84% of respondents concluded that they are unaware of fire and electrical safety at their workplace.

- 64% of the respondents concluded that they are satisfied with the maintenance facilities which are provided at their workplace. 36% of respondents concluded that they are satisfied with the maintenance facilities which are provided at their workplace.
- 12% of respondents concluded that the first aid facilities provided to them is excellent. 60% of respondents concluded that the first aid facilities provided to them is good. 28% of respondents concluded that the first aid facilities provided to them is satisfactory.
- 12% of the respondents concluded that they are highly satisfied with the safety health and environment (SHE) policy of BEML. 48% of the respondents concluded that they are only satisfied with the safety health and environment (SHE) policy of BEML. 32% of the respondents concluded that they are averagely satisfied with the safety health and environment (SHE) policy of BEML. 8% of the respondents concluded that they are unsatisfied with the safety health and environment (SHE) policy of BEML.
- 92% of respondents concluded that the management should conduct internal audit for efficiency of existing OHSAS. 4% of respondents concluded that management should not conduct internal audit for efficiency of the existing OHSAS. 4% of respondents concluded that they don't know if the management should conduct internal audit for efficiency of the existing OHSAS.
- 84% of the respondents concluded that BEML fulfills the entire requirement for being certified as ISO 18001:2007. 16% of respondents concluded that BEML does not fulfill the entire requirement for being certified as ISO 18001:2007.

## **6. Suggestions**

On the basis of my research study, I would like to suggest these factors by personal visit of plant/work place as well as findings

To be accredited the EMS has to meet the clauses of the ISO 14001 Standard. It is this Standard that provides the structure and organization for the system which is made up distinct stages.

1. Staff Awareness Raising-over 50 staff in the sample size has received training 40 employees; still training is required for the other employees.
2. Practical Environmental Management (PEM) - They form an officer Working group that contributes effectively to implementing the EMS. However, all staff receives information on the purpose, benefits and progress of the EMS to enable them to consider how their day to day activities affect our environmental performance and what they can do to improve this performance.
3. To start the process, a Staff Environmental Suggestion Scheme may be undertaken the aim of the scheme to find out what the staff think we should do to improve our environmental



performance. The Scheme involved all Council staff, who could either email their ideas, or put them in one of the Suggestion Boxes located in the council House. At the same time there can be a poster campaign in the Council House, showing how we can all save energy and reduce waste.

The Suggestion Scheme creates a lot of interest and more useful innovative environmental suggestions can be received. These have been drawn together into an Environmental Response Table, which also includes information on the action that is already being undertaken. This information will be used in the later stages of the EMS to inform the development of action plans.

Water usage:

- Install efficient flush toilets and shower heads.
- Limit times and duration of sprinkler use.
- Fix leaking pipes and drains.
- Use efficient –flow hose nozzle
- Implement mercury effluent monitoring at the waste water treatment plant.

Provide training opportunity to construction industry related to erosion, sediment control, and storm water management issues.

1. Implement a Clean Air Action Day Program to notify all employees. Recognize those businesses that have partnered with the community or signed a pledge to reduce emissions on high ozone days, or have the local government pledge to take steps to reduce emissions
2. Implement a “green” purchasing program (purchase recycled content materials, re-refined motor oil, energy-efficient equipment, low toxicity cleaners and adhesives).
3. Include environmental consideration in the selection of contractors.
4. FIRST AID & medical facilities may be improved based on the employee’s requirements.
5. Hazardous waste disposal can be disposed to the right consent as per the IMS manual.
6. Behavior Based Study will help the management in identifying behavior of the employees in IMS.
7. Strict action may be taken against those doing work without proper PPE’S by the management.
8. All employees shall be instructed that caution signs indicate a possible hazard against which proper precaution should be taken.
9. During my visit to the pre-treated and painting department ,I has absorbed that the painting booth is Not effective were the smoke sucking below is far away from the painting actually occurs. This booth may be rectified with proper bellows.

10. Other findings from this project you find important for the IMS system may please be adopted and implemented.

## **7. Conclusion**

We can conclude that the employees are working well in their organization, they work to achieve the goals and targets of the organization, following factors would be considered important

1. A detailed study on just “in-time flex concept”.
2. This research work is universal.
3. This research will be helpful not only for the organization but for also to the third party and society.
4. Awareness must be given to all employees 100% on both ENVIRONMENTS as well as in OHSAS point of view.
5. This Integrated Management System is not one time worry but it is life time and this requires constant and shared effort.
6. It is a continuous /continual process.
7. Organization must consider this program equally important as they give importance to the production activities.
8. We don't mine out the heavy mineral sand but strive to protect its natural environment. By conservation the environment we can earn a profit to the organization and protect our country our mother earth and safety of our brothers and sisters for the future. And their livelihood.

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