Occupational Health and Safety Management System (OHSMS)

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Abstract: An Occupational Health and Safety Management System is an industry's threat management strategy for managing high risk and insecure activities. A management system is a dynamic process in which a set of classified components enable an organisation to attain a set of goals. An OHSMS is a framework used in many organizations. This framework helps in monitoring the safety of an organization from various threats and reduces the possibility of occurrence of any dangerous activities. Hence, it enhances the health and safety of the employees of an organization there by gradually increasing the organization's performance. It occurs with a plan of action and is being controlled like other aspects of a business such as social, technical or administrative functions. An OHS management system provides us the facility to safe guard our workplace and helps us promote healthy and safer working environment. By applying and executing an OHSMS in an organization, it allows us to protect the workplace, follow legal requirements and enhances the performance. An OHSMS is an internationally recognized standard that falls under ISO 45001 Standard. This ISO 45001 standard clearly explains the prerequisites for organization's competency and liability with respect to Occupational Health and Safety management. Health and safety are an issue that affects everyone in the workplace including employees, volunteers, contractors, vendors and visitors. Effective safety management will help the industry improve employee wellbeing, workplace ambience and operations. Therefore, there is always a need for a secure working place. The idea of an OHSMS is more important and prominent in the industries. Hence, this concept is more familiar among the organizations. An OHSMS provide a systematic way of managing health and safety risks, controlling hazardous incidents in the workplace with continual improvement.

Keywords: OHSMS, Framework, Risk Management Strategy, Organization, Health, Control, Incidents, Safe Workplace

I. INTRODUCTION

An OHS management system gradually monitors and increases the performance of an organization, hence ensuring its health and security as well. It is well designed and follows a plan which controls any other aspect of a business such as marketing or engineering. It gives us a framework for assisting the organization in enhancing the safety of the workplace. Therefore, it is built based on an existing risk management strategy.

The workflow of functions in an OHSMS is:

1. Review the operational health and safety hazards.
2. Assess the risks associated with them.
3. Find out the aspects involved in reducing the impacts and risks in the workplace.
4. Set targets for health and safety performance.
5. Create a scheme to achieve the targets.
6. Monitor performance against targets and goals.
7. Report the results.
8. Review the OHSMS results

An OHSMS is an active and well-structured approach for monitoring health and safety. An OHSMS helps an industry to gradually increase their security and acceptance to health and safety legislation and standards. This helps in establishing safer working environments that protect people at work by terminating, or better managing, health and safety hazards. It helps out in developing safer working environment, and it decreases damages and cost raised due to injury-related activities by preventing injuries, the victim's remuneration, insurance claim excesses, replacement of labour and increased workers' compensation, insurance premiums, improves business opportunities. Many companies have preferential

policies for OHSMS, by which the whole organization should be managed and the workplace should obey the protocols as mentioned in the policies

The main objective of this project is to assist systems' department to create and maintain a healthy and safe working environment through an OHS Management System that needs to be implemented across the industry; To enhance the performance of OHSMS and its steps, to manage the human resources as well as industrial threats. Considering that an OHSMS not only reduces the probability of accidents and its costs, illness and health issues, but it also improves the performance and effectiveness of the workplace. Therefore, the goal is to recognize and review the workplace threats and controlling them.

Besides this, we facilitate to report any incident that takes place in the working environment along with the required photo attachments. Further the report will be inspected and the query is solved by respective officials. The OHSMS handles the approval requests and examines the valid requests and approves it.

Hence our dashboard handles:

- Incident report – reporting any incident that occurs in industrial surrounding with all the necessary details

- Permit-To-Work – authorizing an individual / set of employees to carry out work at different locations and regions

- Change Management – measures / practices to ensure company's changes does not cause or create hazards

- Event Permit/Event Plan Permit – approval to implement an event

- OHS Surveyor – supervising the workplace and checking inspection checklists for any potential hazards

II. EXISTING SYSTEM

The previous way is based on the employee's policy which ensures the health and safety of its officials. The industry currently has dedicated resources (personnel) to fulfil this desire and is committed to ensure worker participation to attain this. Consequently, an OHS manager is tasked with ensuring a safe workplace. He is held accountable by management to achieve this and has been communicated to the workers. The Occupational Health and Safety manager's competency is enhanced by the attendance during coaching, workshops and his discipline.

The employer may use several products in their manufacturing process and may carry out several activities in the industry. Risk assessments have been conducted on their use and risk control measures are in place to ensure safe systems of work that are followed. Action plans, schemes and plots have been developed to enhance the control measures to assist in reduction of risks and hazardous activities.

A maintenance team that conducts a proper planned preventative maintenance to ensure that the control measures are operating correctly to reduce the risks and with the focus of reducing the stand in need for fault management. Through a management review of the processes and in discussions with workers, decisions were made to revise the control measures and enhance Occupational Health & Safety.

Disadvantages of Existing System:

- Lack of safety statistics and trend analysis

- Dearth of emergency preparedness and response

- Partial documentation and improper record maintenance

- Inadequate acquisition of incident details

III. PROPOSED SYSTEM

The proposed system is an Occupational Health and Safety Management System – Web Portal that provides a realistic solution to improve the security of the workforce and health of other personnel. This enhances the identification of threats and assesses the risks. It reduces the overall damage cost occurred due to incidents and the count of declared insurances.

It is helpful to store and manage files virtually and provide a user interface for the management to find, navigate and manage files. Since it is a web portal, employees, volunteers and staffs can access from anywhere; at any time; across any device which helps the organization in betterment of its safety.
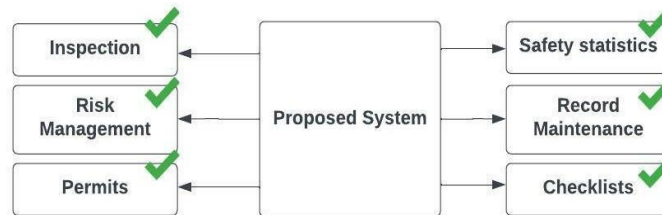

Figure 1: Proposed System

Advantages:

- Risk assessment made easy

The OHSMS Portal streamlines risk assessment tasks and makes sure that such activities are backed by safe work procedures, predefined compliance checklists, etc.

- Keeps records organized

High quality OHS Management System (in terms of a portal) provides a centralized repository of all data. Therefore, we don't have to worry about misplacing files or forgetting where certain files are stored.

- Action taking is fast

Detailed information regarding any incident/query is obtained in a proper manner that can be referred, understood & immediate action can be taken accordingly.

- Savings

With a right OHS Management System, the industry could curb the expenses related to hospitalization, therapy, treatments, sick days, and insurance premiums down the line.

- Pre-Inspection

OHS Surveyor in the system helps in verifying the various inspection checklists. Checklists consists details about inspection type, verified attachments and documents, inspection reports etc.

- Enhance the organization's health and safety performance

The OHSMS Portal helps the organization to implement a more systematic approach to overseeing Occupational Health and Safety and an effective way to boost the management strategies.

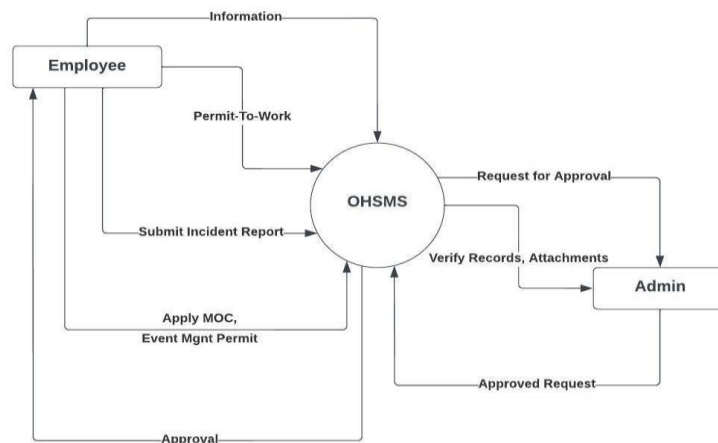## IV. FRAMEWORK AND ARCHITECTURE DIAGRAM

Figure 2: Framework of OHSMS

Architecture diagram depicts the workflow of our OHS Management System by giving clear view on how an employee can claim report through the system. It describes how the admin retrieves the data from database and how the requests from the employee are initiated, verified and approved request are sent to the employee.
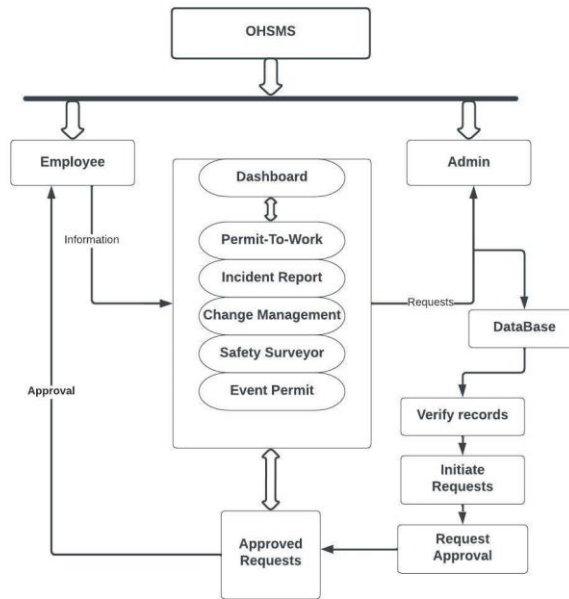
Figure 3: Architecture Diagram of OHSMS

V.   MODULES

Figure 4: Modules of OHSMS

1. Dashboard

Employee Dashboard consists of total number of incidents occurred, no. of work permits granted and the count of changes happened. It also consists of graphical representation of data.
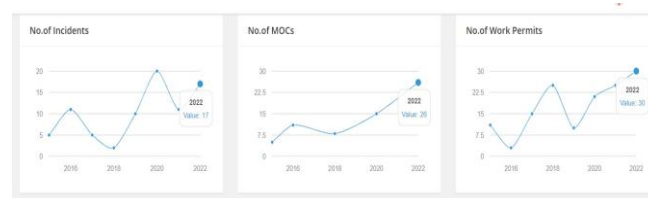

Figure 5: Dashboard

2. Incident Report

This module includes the functionality of reporting an incident that occurs anywhere within the organization and the process involved in managing and correcting the incident occurred and its undergoing investigation. This module helps in preventing the working environment from hazardous accidents and safeguards the workplace. Improper maintenance of this function or lack of this strategy can put an organization at high risk.
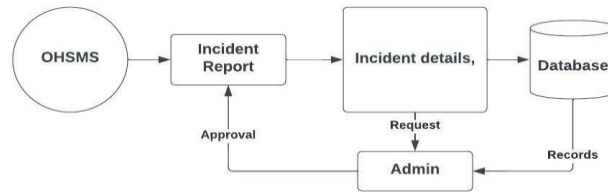

Figure 6: Incident Report

3. Change Management

Change Management is a classic approach that is used when an organization needs to change any property that may expose an organization to some great threat. Change Management usually applies to industrial facilities and their operations, to ensure that the environmental, health, and safety risks are carefully assessed and managed prior to executing significant changes. Change Management is also known as Management of Change (MOC) in industrial terms which gives employees a chance to identify potential new hazards that could result from these changes.
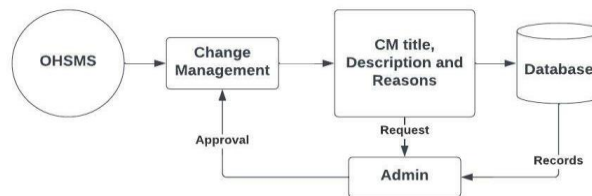

Figure 7: Change Management

4. Permit-To-Work

Permit-To-Work (PTW) is a transcript to control major threat health and safety incidents. Permit-To-Work sanction required employees to perform high-risk work at a particular time and place, guaranteeing the process details in the report and ensuring that the mentioned documents are followed. They are used for coordinating supporting safe working conditions without any health and safety risks.
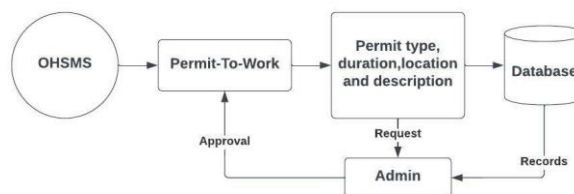

Figure 8: PTW

5. Safety Surveyor

Performing a safety inspection means inspecting the workplace critically to find out and give an account of hazards that can be removed or avoided. Workplace inspection should be supported by other measures to prevent risks and ensure the industry standards adhering to Occupational Health and Safety.
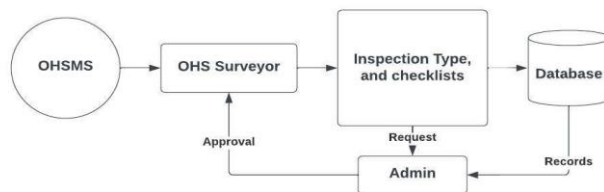
Figure 9: Safety Surveyor

6. Event Permit/Event Plan Permit

This module works on guiding the operations of an event; to establish plans, procedures and guidelines for supervisors, event/venue staff, volunteers, etc.; and inform safety partners. Event plan permit is based on Risk-Threat-Vulnerability (RTV) Assessment. In simple terms, EMP is a permit to implement any event within the organization.
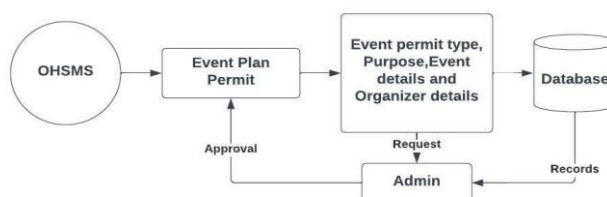

Figure 10: Event Plan Permit

VI.   RESULTS

The proposed system helps in proactively evaluating the Occupational Health and Safety Management System's performance and foster continuous improvement. This system prevents work-related injuries and incidents, and hence provide a secured workplace for the employees. This System enables industry to protect its workplace from hazardous incidents by having control on it.

VII. CONCLUSIONS

This paper explains about an Occupational Health and Safety Management System, a risk management strategy used for promoting safe and healthy environment in the organization. Our project fulfils the objective to assist systems' department to create and maintain a healthy and safe working environment through an OHS Management System that needs to be implemented across the industry. It promotes Health and Safety measures by reducing industrial threats and hazardous activities. This system for health and safety management not only reduces loss and cost of accidents, injury and ill-health, but it also improves the performance and efficiency of employees. So, we identify the workplace hazards, assess them and control risks.

VIII. REFERENCES

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