

# **Hazard Matrix Analysis of Health, Safety and Environment Management Risk Evaluation In Construction Site**

Dr. K. VELUSAMY<sup>1</sup>, S. VIMAL<sup>2</sup>, AKARSH. R. V<sup>3</sup>

Professor<sup>1</sup>, Assistant Professor<sup>2</sup>, PG Student<sup>3</sup>

Annai Mathammal Sheela Engineering College, Namakkal

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**ABSTRACT:** *The Environment, Health & Safety Plan is required of each construction project. Environment Health & Safety plan is a written set of guides for managing site health and safety matters. The EHS plan must be prepared by the main contractor before the project is commenced. It is important that the safety plan is understood by every staff and worker on the site and be made available at all times. It addresses those activities associated with work to be performed. The outline of project EHS Plan contains objective of project, description of project ,resources and organization chart, roles and responsibilities of all ,details of project EHS committee members, EHS risk assessment and safe work procedure for all activities, list of applicable legal & other requirement, work permit system to be followed, emergency response plan to deal with emergency situations, list of PPE applicable to perform the specific activity & their standard, training calendar and communication/reporting system. EHS Plan assisting the project management team to perform their tasks in a normal and emergency situation. The field staff and the Site Safety professional will implement this plan during site work. Compliance with this Environmental, Health, and Safety Plan is required of all persons and third parties that perform fieldwork for project. The content of this EHS Plan may change or undergo revision based upon additional information made available to health and safety personnel, monitoring results, or changes in the technical scope of the work.*

**Keywords:** *EHS,HIRA,PPE.*

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## **I. INTRODUCTION:**

Any potential for harm or sickness is a hazard, and a thorough risk assessment can identify them. Hazards in a healthcare facility might include everything from electrical equipment, chemicals being used, and fire to slips, trips, and even microbial risks. HSE includes a variety of procedures, rules, and guidelines designed to reduce risks, stop accidents and injuries, and encourage sustainable behavior. HSE is essential for preserving people's health and safety, safeguarding the environment, and ensuring sustainable operations across several sectors. A risk assessment will help to: determine which workers are exposed and at danger. find out what procedures and sources are producing the danger. Identify whether or if control measures ought to be used, and what kind. test the efficiency of the current control measures. You must be aware of the many hazards involved in building projects in order to handle them properly. These can have internal and external causes and take the form of financial, contractual, operational, and environmental issues. In this paper When there are more building employees engaged, the employer must form a Safety Committee made up of the number of representatives of the employer and the building workers as the State Government may require: As long as there are always more people representing the employer than there are people representing the employees[1]. The corporate Environment, Health and Safety (EHS) Policy underlines our dedication to a workplace free of accidents and the management system that will be implemented throughout organizations. The senior management regularly reviews the policy to ensure its applicability [2]. According to section 2(e) of the Building and Construction Workers Act, a "building worker" is any individual who is hired to perform any manual, supervisory, technical, or clerical work for hire or reward, in which the terms are either expressed or implied in connection with Building or other construction work [3].

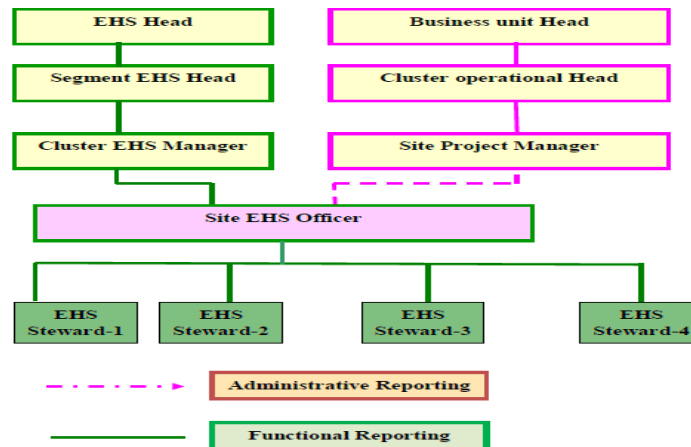
## **II. ENVIRONMENT HEALTH AND SAFETY PLAN**

The main advantage of EHS and workplace EHS programs is plain to see: they reduce the likelihood of incidents like accidents, diseases, and emissions that harm the environment.

### **➤ EHS Organization Chart:**

By clearly defining "who does what," the health and safety organization chart aims to assure proper

administration of the "health and safety system." Each icon in the organizational chart is responsible for carrying out particular tasks.



➤ **EHS Roles & Responsibilities:**

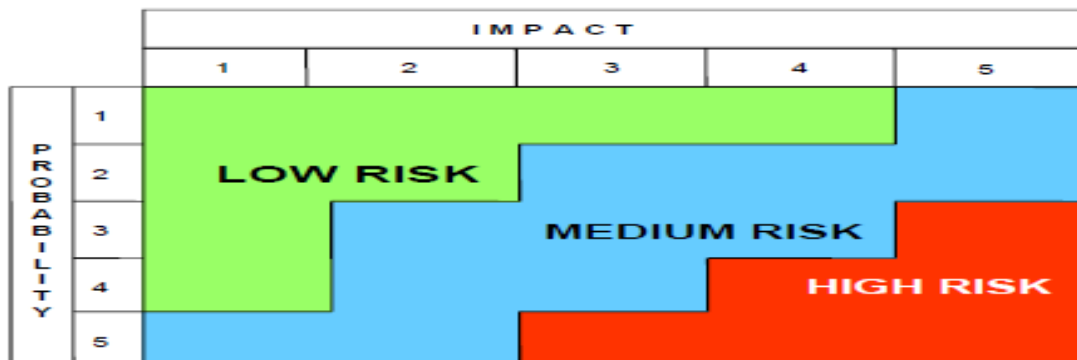
Organizations find it simpler to comply with RACI (Responsible, Accountable, Consulted, and Informed) standards thanks to the EHS matrix. Those that support environmental health and safety are considered to be responsible parties. In the case that EHS fails, accountable parties are those who are held liable.

➤ **EHS Risk Assessment:**

The formal process of identifying potential environmental, health, and safety risks associated with the operations of your firm is known as an EHS risk assessment.

➤ **Matrix for Hazard Identification Risk Assessment:**

A risk assessment matrix—also referred to as a probability and severity or likelihood and impact risk matrix—is a visual tool that illustrates potential risks that could have an impact on a company. The probability that a risk event will occur and its possible effects are the two intersecting components that form the basis of the risk matrix.



➤ **Emergency Response Plan:**

A document known as an emergency response plan outlines the series of actions your company will take in the case of a catastrophic incident, such as a fire or active shooter threat, in order to protect personnel and limit the impact on crucial operations. Protecting life, property, and the environment against the effects of emergencies that may occur on site. systematic coordination of emergency response actions to stop the spread of an emergency, remove persons from the area if necessary, and provide rehabilitation.

➤ **JOB specific PPE:**

SL.NO	Description of PPE	Applicable standard
1	Safety helmet HDPE	IS - 2925 – 1994
2	Safety helmet Refill	ECC - STANDARD : 102
3	Full Body Harness	EN 361
4	Fall arrestor (Rope Grab type)	EN 353 - 2 – 1993
5	Retractable fall arrestor	EN 360
6	Safety Belt	IS : 3521 – 1989
7	Safety Net – Knotted	ECC - STANDARD : 105
8	Nose Mask	IS 8522 – 1977
9	Ear Plug	IS 9467 – 1977
10	Welder's Helmet	IS 1179 – 1967
11	Welding Helmet glass - White / Black	IS 5986 - 1971
12	Welder's Shield	IS 1179 - 1967
13	Face Shield (Gas cutting)	IS 1179 - 1967
14	Face Shield with helmet	IS 1179 - 1967
15	ELCB / RCCB	IS 5180 - 1980
16	Fire Extinguisher DCP	IS 2171 - 1985
17	Fire Extinguisher CO2	IS 2878 - 1985
18	Fire Bucket	IS 2546 - 1974
19	Flash back arrestor - DA / Oxygen	IS11006 - 1984

➤ **EHS Committee Roles:**

When a safety committee functions well, management and staff communicate possible safety concerns and stop them from hurting people. Frontline staff who volunteer to participate attend safety committee meetings, which are often run by EHS managers.

### III. CONCLUSION

Future applications of the HM methodology should include the following: 1) a deeper investigation of the weights used within the methodology; 2) enhancements made to the data collection of hazards and sectors; and 3) the creation of a better integration between risks pertaining to the occupational aspect of the analysis and those risks which expose a larger community. In an occupational risk assessment, the HM idea and implementation in HSE is a potent yet straightforward method of decision-making. Any company's risk management program includes it in full. There are usually already structures and resources available to do this. The inherent resource limitations that every firm faces as well as the challenge of comparing expected accidents on a scale of importance support the strategic role that a risk prioritization stage plays at HSE. Human perceptions of risk relevance are not a trustworthy basis for choosing which risk mitigation measures to prioritize, as demonstrated in the first study instance. In this situation, using the HM in conjunction with a risk identification technique like the Hazards Preliminary Analysis (HPA) makes it possible to prioritize the already discovered and classified sectors and hazards by ranking them on a critical scale. Since there are several HM applications, it's critical to realize that their utilization when paired with the original HM model takes a complementary stance. Thus, both an occupational and an environmental Hazard Matrix can be constructed for the HSE of a corporation, for instance. However, it is currently difficult to compare occupational and environmental risks in order to prioritize risk mitigation methods. You may claim that HM is the approach of choice for risk management since it allows you to prioritize risks and decide how best to use strategic resources. However, the HM technique and results go much beyond the simple notion of risk prioritization. They should be viewed as an effective, global, and multidisciplinary analysis that is linked to numerous elements of risk management, resource utilization, and optimization.

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### BIOGRAPH

#### **Dr.K.VELUSAMY , M.E., Ph.D.,**

Received the B.Engineering Degree from Thigarajar College of Engg, Madurai in 1988. The M.E Degree from Jayaram college of Engg and Technology, Tiruchirappalli in 2009.



The Ph.D Degree Anna University , Chennai in 2018. He has been working as Professor in Annai Mathammal Sheela Engineering College, Erumapatty, Tamilnadu, India. His research interest is manufacturing technology.

Email: [velusamy40nkl@gmail.com](mailto:velusamy40nkl@gmail.com)

#### **Mr.S.VIMAL**

Received the B.Engineering Degree from Dhanalakshmi Srinivasan Engg College, Prembalur in 2008. The M.E degree from Starlion college of Engg and



Technology, Thanjavur in 2015. He has been working as an Assistant professor in Annai Mathammal Sheela Engineering College, Erumapatty, Tamilnadu, India. His research interest is Manufacturing technology.

Email: [vimalmech1988@gmail.com](mailto:vimalmech1988@gmail.com)

#### **Mr. AKARSH R V**

He is pursuing his M.E degree in ISE at Annai Mathammal Sheela Engg College, Erumapatty in 2023.



He obtained his B.Tech degree from Vidya Academy of Science & Technology in 2019. His research interests include "Onshore, Offshore, and oil and gas safety".

Email: [akarshrvmr@gmail.com](mailto:akarshrvmr@gmail.com)