

Assessment of Safety, Health and Environment status in Lamerd Cement Factory Based on the European Quality Model (EQFM)

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Abstract

The main objective of this research is to evaluate the safety, health and environment status of the Lamerd cement factory based on the European Quality Model (EQFM). This research is an applied and descriptive-analytical survey. The statistical population of this study consists of 26 managers and experts in safety, health and environment at Lamerd Cement Factory. The statistical sample and the sampling method of this study were carried out by non-Probability sampling of the judgment method (census). Research instruments in this study were three researcher-made health assessment, safety assessment, environmental assessment and safety, health and environment assessment standard questionnaire based on EFQM model. The content validity of the data was guided by the supervisor and its reliability was assessed by Cronbach's alpha method. The reliability was 0.793, 0.719, 0.819, and 0.911, respectively. One-sample t-test was used to analyze the hypotheses test. Friedman test was used to rank variables. SPSS software was used for analysis. In general, based on the tests carried out and the results obtained, we conclude that the safety, health and environment status in Lamerd Cement Factory based on the standard EFQM model is in a good condition. It is suggested to examine the impact of HSE training on employees' behavior and their environmental culture.

Key words: Safety, health, and environment status, Lamerd Cement Factory.

1. Introduction

The health, safety and environmental system is a management system which by changing the reaction approach to dynamic and forward-looking approach toward health, safety and the environmental risks comprehensively does management risks at all levels of people's lives and activities. Many factories are progressing to assess the performance of their environmental,

health and safety system, with ongoing reviews and audits in the form of an organized management system that meets the requirements of the HSE standard. Implementation of the environmental, safety and occupational health management system is one of the factors affecting the reduction of environmental pollutants and the reduction of humanitarian risks in the cement factory (Hadian et al., 2012).

Today, HSE philosophy with a new approach to health, safety and environmental issues in the oil industry is of particular importance in the country's comprehensive development and human development. The policies adopted in this approach are based on goals such as improving the health of employees, reducing the adverse effects of industry on the environment, increasing the positive effects on the environment, increasing the positive impact of industry on society, increasing the safety of employees, equipment and facilities in industrial centers, , reducing incidents and damages to industrial environments to the lowest possible through the removal of unsafe situations. Over the years, health and environmental safety issues have been discussed in the oil industry. Today, with the management supervision of the unit, these issues have been addressed systematically and comprehensively (Razvian, 2013).

The HSE comprehensive management system, by creating a cultural context, explains the interactions between health, safety and environmental factors, and evaluates deficiencies, potential hazards, events and problems and provides preventive methods (Gholavand et al., 2014). The most important goal of risk assessment is to identify the criteria and indicators of the organization to act on safety and health rules, thus reducing the number of injuries and occupational diseases and reducing environmental pollutants. In 1974, a series of safety and health laws were designed aimed at helping the employer by defining the criteria for action in the field of occupational safety and health (Javid et al., 2015). So the main question of this research is how the safety, health and environment status is in Lamerd cement factory based on the European Quality of Quality Model (EQFM)?

2. Research theoretical basis

The Integrated Health, Safety and Environment (HSE) package is one of the most effective structural factors putting people in tune behaviors with others and the environment. The wise

layout of these three themes will provide a constructive cultural and psychological reflection among the people and provide a very good motivation to create a fit and proper life-style behavior and promote social interaction at a high level. The three issues of health, safety and the environment are one of the areas that have mutual effect on each other. The ultimate goal of each of these three issues is to protect human health and life. Since humans are also part of the environment, any factor that threatens human health is ultimately a threat to the environment. One of the necessities of combining these three issues is to prevent parallel work and reduce related costs because the inclusive HSE system offers a systematic approach to mitigating risks and maximizing opportunities. Considering these three issues is the use of healthy workforce in a healthy environment with safe equipment and devices, resulting in a product with higher quality in this system. While these three categories have synergistic effects, their effect on labor productivity is far more extensive and widespread. Although industrial hygiene has a long history in Iran's industry, it has never been seen with engineering visibility. This leads to the fact that many of detrimental factors in workplace (physical, chemical, biological, and ergonomic) be identified, evaluated and controlled by industrial health professionals with a preventive vision in order to minimize labor exposure. While previously, there was a predominantly curative look at this issue. The second approach involves spending a lot on the treatment of injured labors, increasing absenteeism due to occupational diseases and injuries, the cost of paying for compensation, the loss of trained and experienced workforce, the additional costs involved in training alternative labor and time waste. When the three categories of health, safety and environment are managed under the management and a single system, its synergistic effects are greatly enhanced. After World War II, with the formation of the US Energy Department, the debate on combining these three issues was raised. Of course, safety issue has been shaped since the beginning of the industrial revolution, and over time, the health debate has also been added and many associations and NGOs in this field were created, such as the Association of Metal Industries, which was formed in England, and focused on events such as the fall of mines and the damage caused by the overwhelming work in mines. The environmental issue has been added to the two previous issues in recent decades. Over the past two decades, we are seeing a coordinated plan for these three issues globally. Today, many companies in the world believe that more attention to the HSE category will lead to significant success in the production, as using HSE's integrated management can eliminate many problems and costs and experience a

higher level of quality. Based on industrial experiences in developed countries, it should always be borne in mind that the implementation of HSE in a community is a sign of civilization and the people level of culture (Kayani et al., 2015).

Given the central role of health in HSE, it is necessary to explain the importance of industrial hygiene. In the developmental plans, the relationship between health and sustainable development has been seriously considered, and in the fourth developmental plan of the Islamic Republic of Iran, this issue has been addressed in Chapter VII (Articles 85 and 89) in order to reduce the health hazards in the workplace, and developing regulations and guidelines for the HSE have been emphasized. Because human health situation has a profound effect on his performance and is considered an important tool for achieving the highest level of productivity. Today all advanced and developing countries recognize that health guarantees the achievement of sustainable and comprehensive development. In addition to dealing with illness and injury, this approach addresses the widespread prosperity of life and workplace, and its practical meaning has been to blend economic production by creating a living and working standard and excellence. Therefore, the development of an appropriate and people-oriented industrialized society leads to health and vice versa. But in the outdated and unsustainable economic development, health, safety, and the environment are severely threatened. For this reason, it is necessary to create a balance between "nature and society" and "industrial and economic development". What has been said has increased the need for a new approach to professional health, in particular within the framework of the HSE integrated system. As stated in IMO Convention No. 155 of the International Labor Conference (ILO), each organization should regulate and implement a coherent and clear policy on occupational health and safety, and periodically review it. This approach is based on all the chemical, physical and biological elements of the work environment and consists of all work processes, including the relationships between material elements and those who work in the environment, injuries and accidents, health and safety education, communication and cooperation at the levels of work groups and companies, protecting workers and even communities.

Based on this attitude, institutions such as the American Industrial Health Association (AIHA) define "professional health" as "science and technology that devotes their efforts to identifying, assessing and controlling those factors and pressures from the working environment which may

lead to ill and health problems, and cause major disadvantages and inefficiencies among workers and citizens.” It is clear that the use of motivational and well-trained human, the availability of equipment for measuring harmful factors, the planned and supported planning from the management of the organization and coordination with the different sectors, will have a synergistic effect on improving and accelerating the creation of a healthy environment And And appropriate culture creation is the main driver for success (Kashfi al-'Alas et al., 2012).

HSE Unit of Lamerd Cement factory attempts to minimize risks, pays attention to personnel health and environmental protection and in this regard, by implementing the Monthly Safety and Health Committee meetings and establishing the environmental cores, and carrying out monitoring and self-declaration plans in accordance with environmental laws, it has taken steps to implement industrial waste management plans in accordance with existing standards. Assessing the status of health and environment at the factory level from different dimensions and perspectives is the research projects of the factory, which encouraged researchers to carry out such plans.

3. Literature Review

Manfared and Askari (2017) conducted a research on the performance evaluation of units in Pars Oil and Gas Company based on the criteria of the European Quality Management Model (EFQM). The results of this research showed that organizational and personnel performance in Pars Oil and Gas Company are in desirable level based on EFQM model criteria. According to Friedman test results, we conclude that customer results are ranked higher, followed by leadership, business partners and interests, policy and strategy, staff, community outcomes, key performance outcomes, employee outcomes and ultimately process factors.

Ramezani et al. (2016) conducted a study on the effectiveness of HSE education based on the EFQM organizational excellence model (Case study: technical and health protection research and training Center). The results of this study indicate that holding of HSE workshops by the center can play a significant role in institutionalizing the HSE management system in the industries of the country.

Kiani and Ranjbar Binava (2015) conducted a research entitled sustainable management of urban systems with an assessment of the level of health, safety and environmental (HSE) culture. According to this research one of the most important problems faced by managers, especially in developing countries, is the selection and guiding of health, safety and environmental programs under their managed organizations. Because organizations like humans have different life-cycle organization ages that each of these courses has their own specific characteristics and needs. The health, safety and environmental management system is a tool to reduce the unpleasant effects of the industry on humans and the world. If the management system is properly implemented, and the effectiveness of all its components is followed up, the organizational activities of the management system, for all individuals, at different levels of management, becomes a behavior. The purpose of this study was to evaluate the HSE culture in a municipality of Mashhad (District 2). The results showed that the culture of having the HSE indicators in the municipal organization under study is at a moderate level, and this organization can boost its position by creating scheduling and identifying policies in the health, safety and environmental sectors, raising awareness and allocating the necessary resources.

Javid and Kazemi (2015) conducted a research in order to assess the status of the performance of the HSE safety, health and environment management system in organizations (case study: Port Authority and Marine Administration of Khorramshahr). The purpose of this study was to evaluate the performance of the HSE safety, health and environment management system in organizations through the application of the HSE maturity model. The organization under study on the basis of obtained scores according to HSE elements and requirements had shown that the level of policy setting is in a better position than other components of the HSE schema management system. But regarding the results of safety, health and environmental indicators, the level of the organization should be improved. Regarding the performance of the organization, it was determined that the HSE for organization under study is growing. Generally speaking, in terms of the maturity model used in this study, the organization's performance is moderate and growing.

Hadian et al. (2012) carried out a research on the assessment of environmental pollution, professional safety and health systems at Abian Cement Factory (Experimental Study). The purpose of this study is to create a structure for assessing the key health and safety features and

reducing environmental contaminants as well as ensuring that the organizational processes meet the legal requirements in line with management commitments in the organization's policy. The results of this study show that, considering the performance evaluation of this system (HSE), its existence is effective in reducing in NO_x produced in the environment, reducing in the use of natural resources and number of occupational injuries.

Cooper et al. (2017) conducted a study titled "Negative safety events as work stress tension factors. This paper examines the extent to which adverse safety events (ie, work-related injuries, unsafe work habits, watching unsafe work habits of others) are related to work safety tension. The work safety tension is a two-dimensional issue that is described in this paper as a perceived contradiction between production and the following security rules (barriers to accepting safety rules) and between production and more secure working methods (barriers to safety participation). Experience or direct observation of negative safety events can inform employees about the extent to which their organizations prioritize production to safety. Using a survey data from 316 supervisors (97% male, average age 44) who worked at a UK rail maintenance company, we tested a model of negative safety events as a predictor of barriers to accepting safety rules and barriers to safety participation. The number of injuries had a positive correlation with the perceived barriers to accepting safety rules, while the number of times respondents saw unsafe work habits of other employees was positively related to the perceived safety components.

Laura et al. (2016) had studied and presented a model for assessing HSE management in oil and gas construction sites. In this research, using the results of descriptive evaluation of HSE management, which was collected using a pilot and researcher-made questionnaire, its data were collected, the main reasons for the weakness of HSE management on these sites were reviewed, and solutions for improving the situation were presented. Then, a model based on research records had been suggested for assessing HSE management in oil and gas construction sites. The results of the study have reported the applicability of the model.

4. Research objectives

4.1 The main purpose

The main objective of this research is to assess the safety, health and environment status of the Lamerd cement factory based on the European Quality Model (EQFM).

4.2 Special Purposes

1. Assessing the safety, health and environment status of the Lamerd cement factory based on policy and strategy criteria.
2. Assessing the safety, health and environment status of the Lamerd cement factory based on the leadership criteria
3. Assessing the safety, health and environment status of the Lamerd cement factory based on personnel criteria
4. Assessing the safety, health and environment status of the Lamerd cement factory based on business partners and interests criteria.
5. Assessing the safety, health and environment status of the Lamerd cement factory based on process criteria.
6. Assessing the safety, health and environment status of the Lamerd cement factory based on customers' results
7. Assessing the safety, health and environment status of the Lamerd cement factory based on employees' results
8. Assessing the safety, health and environment status of the Lamerd cement factory based on community results
9. Assessing of the safety, health and environment status of the Lamerd cement factory based on criteria of key performance results

5. Research method

The purpose of this study was to assess the safety, health and environment status of the Lamerd cement factory based on the European Quality of Life Model (EQFM) and to determine the empirical relationships between the variables and to add to the applied knowledge in this field. Accordingly, the present study is an applied and descriptive-analytical survey. The statistical population of this study consists of 26 managers and experts in safety, health and environment at Lamerd Cement Factory. The statistical sample and the sampling method of this study were carried out by non- Probability sampling of the judgment method (census). The statistical population of this study will be considered as a statistical sample by census method.

Research instruments in this study were three researcher-made health assessment, safety assessment, environmental assessment and safety, health and environment assessment standard questionnaire based on EFQM model. The content validity of the data was guided by the supervisor and its reliability was assessed by Cronbach's alpha method. The reliability was 0.793, 0.719, 0.819, and 0.911, respectively. One-sample t-test was used to analyze the hypotheses test. Friedman test was used to rank variables. SPSS software was used for analysis.

6. Results

In this section, we use the conventional method in parametric statistics to examine each of the hypotheses. Therefore, one-sample t-test method was used to test the hypotheses.

1. The First Special Hypothesis: Safety, health and environmental status in Lamerd cement factory is in a good condition on the basis of the European Quality Model (EQFM). These results are reported in Table 1.

Table 1: Results of the first hypothesis with one-sample t-test

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on EFQM model criteria	26	3.079	0.225	25	28.406	3.302	2.855	0.000

Company health based on EFQM model criteria	26	3.185	0.425	25	58.950	3.293	3.077	0.000
The company's environment based on the EFQM model criteria	26	3.280	0.825	25	32.225	3.476	3.083	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05, and the upper and lower limit are positive, so it can be concluded that safety, health and environment in the Lamerd cement factory based on the EFQM model are in a desirable condition.

2. Second Special Hypothesis: Safety, health and environment in the Lamerd cement factory are in a good condition based on policy and strategy criteria. Using the one-sample t-test, the second hypothesis is obtained. This question is reported in Table 2.

Table 2: Test results of the second hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on policy benchmark and strategy	26	3.223	0.335	25	33.901	3.312	2.977	0.000
Company health based on policy benchmark and strategy	26	4.120	0.610	25	30.154	3.862	3.559	0.000
The company's environment based on policy benchmark and strategy	26	3.910	0.518	25	29.132	3.196	3.002	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on the policy benchmark and strategy.

3. Third Special Hypothesis: Safety, Health and Environment at the Lamerd Cement Plant are in a good condition on the basis of leadership criteria. Using the single sample t-test, the third hypothesis was obtained. This question is reported in Table 3.

Table 3: Test results of the third hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on leadership criteria	26	3.153	0.435	25	36.914	3.329	2.977	0.000
Company health based on leadership criteria	26	3.940	0.760	25	32.356	3.621	3.159	0.000
The company's environment based on leadership criteria	26	4.994	0.848	25	29.525	3.196	2.192	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on the leadership criteria.

4. The fourth special hypothesis: Safety, health and the environment in the Lamerd cement factory are in a good condition on the basis of personnel criteria. Using the single-sample t-test, the fourth hypothesis is obtained. This hypothesis is reported in Table 4.

Table 4: Test results of the fourth hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on personnel criteria	26	3.089	0.808	25	23.543	3.546	2.763	0.000
Company health based on personnel criteria	26	3.321	0.531	25	17.456	3.675	2.987	0.000
The company's environment based on personnel criteria	26	3.612	0.653	25	27.201	3.876	3.063	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive,

it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on personnel criteria.

5. The fifth special hypothesis: Safety, health and environment at the Lamerd cement factory are in a desirable condition on the basis of the business partners and interests criteria. Using the single-sample t-test, we obtained the fifth hypothesis. This question is reported in Table 5.

Table 5: Test results of the fifth hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on the business partners and interests criteria	26	3.044	0.692	25	22.433	3.324	2.765	0.000
Company health based on the business partners and interests criteria	26	3.88	0.512	25	29.321	3.961	3.321	0.000
The company's environment based on the business partners and interests criteria	26	3.344	0.442	25	25.132	3.467	2.831	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on business partners and interests criteria.

The sixth special hypothesis: Safety, Health and Environment at Lamerd Cement Factory are in a desirable condition based on process criteria. Using the one-sample t test, the sixth hypothesis was obtained. This hypothesis is reported in Table 6.

Table 6: Test results of the sixth hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	

Company safety based on the process criteria	26	3.182	0.391	25	17.382	2.127	2.012	0.000
Company health based on the process criteria	26	3.387	0.387	25	26.321	2.971	2.321	0.000
The company's environment based on process criteria	26	3.011	0.299	25	29.201	3.089	2.231	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on process criteria.

7. Seventh special hypothesis: Safety, health and environment at Lamerd cement factory are in a desirable situation on the basis of customers' results. Using the single-sample t-test, the seventh hypothesis is obtained. This hypothesis is reported in Table 7.

Table 7: Test results of the seventh hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on the customers' results	26	3.455	0.544	25	32.328	3.112	2.451	0.000
Company health based on the customers' results	26	3.135	0.657	25	17.328	2.889	1.931	0.000
The company's environment based on customers' results	26	3.657	0.378	25	17.328	3.437	2.651	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on customers' results.

8. Eighth special hypothesis: Safety, Health and Environment at Lamerd cement factory are in a desirable situation on the basis of the employee's results. Using the single-sample t-test, we obtained the eighth hypothesis. This hypothesis is reported in Table 8.

Table 8: Test results of the eighth hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on the customers' results	26	3.455	0.544	25	17.382	2.127	2.127	0.000
Company health based on the customers' results	26	3.811	0.189	25	23.141	3.411	2.791	0.000
The company's environment based on customers' results	26	3.521	0.342	25	27.321	4.011	3.476	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on employees' results.

9. Ninth special hypothesis: Safety, Health and Environment at Lamerd cement factory are in a desirable situation on the basis of the community results. Using the single-sample t-test, we obtained the eighth hypothesis. This hypothesis is reported in Table 9.

Table 9: Test results of the ninth hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on the community' results	26	3.455	0.544	25	17.328	2.127	2.012	0.000
Company health based on the community results	26	3.557	0.326	25	20.473	3.661	2.855	0.000
The company's environment based on community results	26	3.738	0.199	25	29.345	3.976	2.903	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on community results.

10. 10th special hypothesis: Safety, Health and Environment at Lamerd cement factory are in a desirable situation on the basis of criteria of key performance results. Using the single-sample t-test, the tenth hypothesis is obtained. This hypothesis is reported in Table 10.

Table 10: Test results of the tenth hypothesis

Research hypothesis	N	mean	Standard deviation	Degree of freedom	t	Confidence interval		Significance level
						upper limit	Lower limit	
Company safety based on the criteria of key performance results	26	3.455	0.544	25	17.328	2.127	2.012	0.000
Company health based on the criteria of key performance results	26	3.619	0.381	25	12.128	3.933	2.741	0.000
The company's environment based on criteria of key performance results	26	3.811	0.189	25	23.141	3.411	2.791	0.000

Given that the mean of all variables is greater than 3 (average) and t is greater than 1.96 and the significance level for all components is less than 0.05 and the upper and lower limits are positive, it can be concluded that safety, health and environment in Lamerd cement factory are in a desirable condition based on criteria of key performance results.

11. Comparison of mean rank of variables using Friedman test

Friedman test has been used to ensure the above ranking and prioritization of the variables in the research. Using the Friedman test, we can compare the ranking of variables.

Table 11- Results of the comparison of the mean rank of variables using Friedman test

Criteria of EFQM model	Average rating	N	Degree of freedom	Amount	Significance level
Policy and strategy	7.15	257	8	1899.048	0.000
Leadership	8.12				
personnel	6.93				
Business partners and interests criteria.	7.75				
processes	4.13				
Customers' results	8.84				
Employees' results	5.34				

Community results	6.69				
Key performance results	5.45				

Considering the significant level, it can be concluded that there is a significant difference between the average rankings of the EFQM model criteria. According to the results, we conclude that customer results are ranked higher, followed by leadership, business partners and interests, policy and strategy, personnel, community results, key performance results, employees' results and ultimately the process.

7. Discussion and Conclusion

In this research, we evaluated the safety, health and environment status of Lamerd cement factory based on EFQM model. The results of this study indicate that the evaluation of the dimensions of safety, health and environment in Lamerd cement factory are in a desirable and standard condition.

Today, due to the development of cement factories in the country, as well as the growing importance of environmental issues in various industries, especially the cement industry, the need to use better and more efficient technologies for controlling pollutants and waste from the activity of the cement factory has been further developed. The cement industry is considered one of the industries that is always considered as a cause for polluting environment. Although in recent years it has been trying to modernize its equipment and machinery to meet the environmental standards required, it is still considered one of the most important contributors to air pollution.

Today, all countries have come to the conclusion that priority must be given to achieving sustainable development, human, society and the environmental health. Fortunately, the allocation of fifth and seventh seasons in the fourth five-year plan of the country's development to protect the environment and promote health and improve the quality of life also indicates the country's approach towards the HSE. In the course of economic development, in order to achieve sustainable and healthy development, a balance should be struck between health and occupational health, and this is more to be considered in the process of development planning of

the country. It should always be remembered that the three categories of health, safety and the environment have synergistic effects, and their simultaneous effect on the productivity of work is far more extensive and widespread. In the world, after the Second World War, the discussion of the integration of these three issues has been raised and has so far been actively pursued, so that the implementation of the HSE Integration in a community is a sign of civilization and the cultural level of the people of the community. The lack of any of them can have a negative impact on the coherence of this integrated management system. Considering the pivotal role of health in the HSE topic and the fact that the high goal of each of these three issues is the preservation of human health and life, more attention is required to the field of health. An HSE management system in industrial environments can effectively achieve its goals, preventing accidents, reducing financial losses and injuries, maintaining resources and the environment, and increasing returns. For this reason, it is necessary to systematically identify and assess the threats of individuals, the environment and property, and measures be taken to reduce them; it is imperative that any action is taken to protect the health of the workforce. Health risks are evaluated systematically in order to take appropriate action. Personnel qualifications are regularly evaluated, followed by appropriate training programs. Any incident, pseudo-accident or unsafe condition must be reported in writing and analyzed, and appropriate action is taken to prevent its recurrence. The experiences gained from this analysis are systematically communicated to all operational units and used in preparation for future operations. In each activity, the implementation of the HSE policy is monitored periodically. When conducting audits, internal inspections and reviews, it is necessary to assess the effectiveness of the HSE. In order to implement the HSE culture in an organization, it should set a certain value for it, strengthen the commitment of managers, and provide appropriate training courses for all levels of the organization. Considering the key role of managers and expert in the operation of the cement industry, it is logical for corporate executives to focus on other aspects of management, such as quality, economics, technology and production, management in the aspects of occupational health, safety and the environment of the company. In particular, they should also consider HSE managers. The assessment and selection of HSE staff and employees should be based on their performance in the field of HSE exploration and production. Their responsibilities for HSE need to be clearly explained in the contracts because improvement in the overall performance of the organization is not possible without addressing these aspects. Examining the

experiences of the world's leading companies shows that investing in health, safety and the environment is of high priority and the environmental issue is one of the permanent concerns in the exploration and production of all levels of the organization. It is hoped that with the full implementation of the HSE policy by organizations and the implementation of HSE's rich culture by the directors and experts in this field, we will see in the near future the growing prosperity and efficiency of managing the health, safety and environment of the cement and other industries in Iran. Based on the information and results obtained, the following suggestions are provided to the Lamerd cement factory to maintain and enhance safety, health and environment condition base on the European Quality Model (EQFM):

1. With the strict implementation of the rules of recruitment, the assignment of a job be based on one's talents and abilities and after periodic reviews, if needed, change the job to avoid further damage to the job.
2. The system of rewarding and promotion be based on the actual performance of the staff
3. Considering employee participation in decision making and giving responsibility to them
4. By identifying responsible individuals, they will be given these sensitive and hazardous jobs that require more attention and accountability.
5. In the organization, arrangements should be made for employees to feel more secure.
6. Provide relative autonomy to employees to carry out tasks, provide employees with the opportunity to participate in planning and decision making, as well as assignment of affairs to them.

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