ANALYSIS OF THE APPLICATION OF THE ENVIRONMENTAL MANAGEMENT SYSTEM BASED ON STANDARDS IN THE INTERNATIONAL REQUIREMENTS OF ISO 14001

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Abstract

The environment is one of the important factors in the success of an industrial company. This triggers the company to improve overall performance to implement a better environmental management system. ISO 14001 is an international standard that can be applied by companies to maintain and improve environmental management systems. This study aims to analyze the application of the environmental management system in a specific company and to determine the extent of the company's readiness in implementing ISO 14001. The method used in this study is the Self Assessment Checklist for assessing clauses at ISO 14001. Data collection is done by observing the study site and conducting interviews with employees to obtain information at the company. Data processing is done by assessing the ISO 14001 clause with a self assessment checklist. The result of this study note that the value of the company's readiness to implement an environmental management system based on ISO 14001 standards is equal to 50.41% with a weak category.

Keywords: *Clause, Environmental Management System, ISO 14001, Self Assessment Checklist.*

Introduction

Environmental problems have become increasingly popular in the last few decades. Globalization in various fields lately is related to the development of environmental problems. This triggered the company to improve its overall performance to implement a better environmental management system (Ramadan et al., 2019).

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Received:11 July 2020
Revised: 18 August 2020
Accepted: 22 August 2020

Industrial development must be balanced with environmental management efforts in the form of handling the released waste (Panjaitan & Tanaya, 2015). Environmental problems have important implications that continue to increase for companies and other organizations, depending on how the company reacts (Hilman & Kristiningrum, 2008). However, nowadays all companies have started to realize the importance of environmental issues and they are trying to achieve and demonstrate good environmental performance by controlling the impact of their product or service activities on the environment, taking into account their environmental policies and objectives (Dwiningtyastuti, 2009).

The implementation of the ISO 14001 Environmental Management System (EMS) is

carried out to comply with regulations and responsibilities in supporting environmental protection, preventing pollution, and obtaining economic benefits through improving overall environmental performance (Natasaputra et al., 2015). Occupational Health and Safety also needs to be applied in companies because there are activities in the company that are carried out manually and can cause injury to workers (Sukanta et al., 2020).

The Environmental Management System (EMS) is an integral part of the company's overall management system which consists of a set of systematic arrangements which include organizational structure, responsibilities, procedures, processes, and resources in an effort to realize the environmental policies outlined by the company (Sastrawijaya, 2013). With regard to the environmental management system, ISO publishes a standardization regarding the environmental management system known as ISO 14001 which is part of the organization's management system used to develop and implement policies regarding the environment and also as a guide for organizations in managing their environmental aspects (Wicaksana & Hartini, 2014).

Environmental aspects resulting from company activities include: environmental impacts such as air, soil and water pollution and have not yet implemented and certified the ISO 14001:2015 system. Industrial development in people's lives has a positive and negative influence, namely the emergence of pollution and environmental crises (Sahri et al., 2019).

ISO 14001 is also designed for companies who wish to provide a self-statement that is given to a second party without the involvement of a third party, which states that the company has carried out well the provisions of the ISO 14001 standard (Hidayat, 2011).

Activities in the company are at risk of environmental pollution and crisis due to the absence of an environmental management system in accordance with ISO 14001 standards. The purpose of this study is to find out how the application and implementation of the environmental management system in the company and to know the extent of the company's readiness to implement ISO 14001.

If there is a mismatch that occurs in the application of the environmental management system in the company, it must be followed up so that the non-conformity can be corrected and does not occur again, so that it can improve the environmental management system that is even better according to ISO 14001 standards.

Monitoring the quality standards of mine water management is carried out by taking daily samples. The samples will then be analyzed to ensure that the water quality standards in the settling ponds are in accordance with the standards. In this case, monitoring is very important to determine or measure the level of waste with instruments or tools suitable for measuring activities that contain risk. Thus, that in the application of ISO 14001 monitoring of all objects so that aspects and their impact on the environment can be carried out (Darajatun & Sukanta, 2018)

Research Methodology

The research method used in this research is using the Self Assessment Checkist method for assessing the clauses of ISO 14001. This research is a descriptive analysis research with a qualitative approach which aims to obtain information from the application of an environmental management system based on ISO 14001 and the data obtained is used as material in writing of this report.

Descriptive analysis research is research that aims to describe or describe events that occur in the present and emphasize more on factual data rather than conclusions.

Research Stages

The research stage is the flow carried out by the author to solve or analyze a problem as outlined in the Final Project report. Stages of research are preliminary study, problem identification, research objective statement, literature review, field observation, ISO 14001 clauses categorization, evaluation of ISO 14001 clauses, conformity recapitulation of environmental management system, analysis and discussion, conclusion and recommendation.

Research Type

This research is a qualitative research. Qualitative research is descriptive research and tends to use analysis to examine a condition of a scientific object. So this research is used to examine in depth about the application of environmental management systems in companies.

Data Collection Method

To obtain the data and information needed by the author in conducting this final project research, the authors seek and collect data based on the following types of data:

1. Primary Data

Primary data is a data collection technique by conducting direct observations or observations to the location of the study (field study). In this case the researcher uses primary data in the form of direct interviews with employees or the parties concerned in order to obtain information. The interview used in this study contains questions that support the research theme of this Final Project.

2. Secondary Data

Secondary data is data obtained indirectly where data is obtained by collecting information or references that support the research theme from books, journals, and also literature related to the object of research.

Result and Discussion

Environmental Management System Study

The results and discussion explain the results of studies or research or planning which are also supported by sources or literature that can support the theme of this research.

The first step to take is to first assess the existing environmental management system by entering the clauses contained in the ISO 14001 requirements.

The clauses contained in the requirements of ISO 14001 are grouped into certain parts, the grouping is done to determine the relationship between the existing clauses. Table 1 shows the ISO 14001 clauses (Interpretation and Awareness ISO 14001:2015).

Table 1. ISO 14001 Clause Grouping

ISO 14001 Clause	
4	**Context of The Organization**
4.1	Understanding the organization and its context
4.2	Understanding the needs and expectations of interested parties
4.3	Determining the scope of the environmental management system
4.4	Environmental management system
5	**Leadership**
5.1	Leadership and commitment
5.2	Environmental policy
5.3	Organizational roles, responsibilities and authorities
6	**Planning**
6.1	Actions to address risks and oppurtunities
6.1.1	General
6.1.2	Environmental aspects
6.1.3	Compliance obligations
6.1.4	Planning action
6.2	Environmental objectives and planning to archieve them
6.21	Environmental objectives
6.2.2	Planning actions to achieve environmental objectives
7	**Support**
7.1	Resources
7.2	Competence
7.3	Awareness
7.4	Communication

ISO 14001 Clause	
7.4.1	General
7.4.2	Internal communications
7.4.3	External communications
7.5	Doccumented information
7.5.1	General
7.5.2	Creating and updating
7.5.3	Control of documented information
8	**Operation**
8.1	Operational Planning and control
8.2	Emergency preparedness and response
9	**Performance Evaluation**
9.1	Monitoring, measurement, analysis and evaluation
9.1.2	General
9.1.3	Evaluation of compliane
9.3	Management review
10	**Improvement**
10.1	General
10.2	Nonconformity and corrective action
10.3	Continual improvement

Scorsing of ISO 14001 Clause With Self Assessment Checklist

The interpretation of the value obtained from the results of this study uses a reference developed by Perry L. Johnson in his book entitled Meeting The New International Standard which is arranged in the order required. The application of this research is used to collect information assessment of the suitability of the company's Environmental Management System with predetermined standards.

In the reference developed by Perry L. Johnson, it has a range between 0-1200 which is divided into 4 intervals, namely 0-300, 301-600, 601-900, and 901-1200, to make it easier the authors take the range used to be 0-s100, which is divided into 4 intervals, namely:

$0 \leq n \leq 25$ is categorized as bad
$26 \leq n \leq 50$ is stated as a weak category
$51 \leq n \leq 75$ is stated as medium category
$76 \leq n \leq 100$ is stated as the strong category

For the assessment checklist, the author uses the number 1 for strong scores, 0.5 for moderate values, and 0 for weak values. The reason is a simplification related to 4 intervals so that when the value of each clause is accumulated according to the scale value range of 100 and multiplied by 100% to find the total category result.

The results of ISO 14001 Clause Checklist

Table 2 presents the recapitulation of environmental management system assessment of the company.

Table 2. Recapitulation of Environmental Management System Assessment

	ISO 14001 Clause	Score (Scale %)	Category
4.1	Understanding the organization and its context	25%	Weak
4.2	Understanding the needs and expectations of interested parties	33.33%	Weak
4.3	Determining the scope of the environmental management system	40%	Weak
4.4	Environmental management system	25%	Weak
5.1	Leadership and commitment	55.55%	Medium
5.2	Environmental policy	66.66%	Medium
5.3	Organizational roles, responsibilities and authorities	25%	Weak
6.1.1	General	16.66%	Weak
6.1.2	Environmental aspects	66.66%	Medium
6.1.3	Compliance obligations	83.33%	Strong
6.1.4	Planning action	66.66%	Medium
6.2.1	Environmental objectives	37.50%	Weak
6.2.2	Planning actions to achieve environmental objectives	25%	Weak
7.1	Resources	50%	Medium
7.2	Competence	83.33%	Strong
7.3	Awareness	12.50%	Weak
7.4.1	General	50%	Weak
7.4.2	Internal communications	75%	Medium
7.4.3	External communications	50%	Weak

ISO 14001 Clause		Score (Scale %)	Category
7.5.1	General	25%	Weak
7.5.2	Creating and updating	83.33%	Strong
7.5.3	Control of documented information	25%	Weak
8.1	Operational Planning and control	62.50%	Medium
8.2	Emergency preparedness and response	41.66%	Weak
9.1.1	General	30%	Weak
9.1.2	Evaluation of compliane	60%	Medium
9.2.1	General	100%	Strong
9.2.2	Internal audit programme	20%	Weak
9.3	Management review	100%	Strong
10.1	General	50%	Weak
10.2	Nonconformity and corrective action	78.57%	Strong
10.3	Continual improvement	50%	Weak
Total Score		**161.33%**	
Score of Company Readiness		**50.41%**	**WEAK**

Discussion of Company Readiness Analysis Results in Implementing an Environmental Management System Based on ISO 14001

After conducting an initial assessment of the suitability of the company's environmental management system for each of the clauses contained in the ISO 14001 standard, then a discussion is carried out on the results of the analysis of the company's readiness in implementing environmental management system standards based on ISO 14001.

This readiness assessment was carried out by adding up the values for each clause then dividing the number of values by the number of clauses in ISO 14001.Previously in Table 2 it was known that the value of the company's readiness in implementing an environmental management system based on the ISO 14001 standard got a percentage of 50, 41% are in the weak category, which is based on their interpretation, namely that most of the elements of the environmental management system in the company are not in accordance with the existing requirements of the ISO 14001 standard.

The readiness of the company in implementing an environmental management system based on the ISO 14001 standard is still at a weak or low level, so the company needs to maintain and improve overall the elements that are still weak in order to comply with ISO 14001 requirements.

Conclusion

Based on the results of observations, observations, interviews regarding the analysis of the management system ISO 14001 environmental management in the company, and conducting an assessment of the suitability of the company's environmental management system, the authors can draw the conclusion that:

1. From the results of data collection and analysis, it is known that the application and implementation of an environmental management system is still weak, and is not in accordance with ISO 14001 standards. So that it is necessary to make several plans for improving environmental management according to ISO 14001 so that companies can have an environmental management system that is in accordance with ISO standards 14001 overall.
2. There are several aspects that need to be considered in the environmental management system, namely environmental policy, planning, implementation and operation, inspection and corrective action, and management review.
3. From the results of the assessment on the ISO 14001 clause carried out in the company using the self-assessment checklist, the company readiness value in implementing the ISO 14001 environmental

management system is 50.41% with a weak category.

Thank You Note

On this occasion, the author gives thanks to Allah SWT and also thanks him profusely for the guidance, assistance, and support given to the realization of this final project. Author gratitude are extended to:

1. Both parents, that Mama and Papa who has provided the motivation and incessant prayers and thanks to the material and spiritual support to the author so that this report can be resolved.
2. Mr Sukanta, S.T., M.T., as the First Advisor who has provided many directions, assistance, solutions, and motivation to the author in completing this research article.
3. Mr. Kusnadi, S.T., M.T., as the Second Advisor who has provided guidance and direction to the author in completing this research article.
4. All colleagues Industrial Engineering Students Force 2016 has given a lot of support and motivation to the author.
5. Industrial Engineering Family B (B'Squad) 2016 which always provides enthusiasm and assistance to the author in completing this research article.

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