

ENVIRONMENTAL MANAGEMENT SYSTEM AS THE TOOL OF ENVIRONMENTALLY CONSCIOUS MANAGEMENT

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Key words and phrases: environmental management system; environmental responsibility; environmentally conscious management.

Abstract: The paper deals with a pressing issue – environmental disasters as a result of low level of human environmental responsibility and environmental unconsciousness. The main purpose of this paper is to present environmental management system as the tool of environmentally conscious management and raising environmental responsibility.

Three examples of environmental disasters are mentioned: industrial accident at the Ajka alumina plant in Ajka, an oil spill as the result of an explosion on the drilling rig Deepwater Horizon in the Gulf of Mexico, and Fukushima Daiichi nuclear disaster. The authors assume that abiding main rules of environmentally conscious management may raise environmental responsibility and prevent most of industrial disasters. Pursuant to the authors' point of view, for providing the fulfillment of these rules organizations need to implement a structured management system that is based on the environmental management standard ISO 14001. The above-mentioned standard and its potential benefits are described.

In the Russian Federation the current year is called “The year of environmental protection”. In accordance with Presidential decree № 1157 of August 11, 2012, the main purpose of this campaign is to ensure the human right of any inhabitant to a favorable environment [1]. The necessity of such a campaign is obvious and indisputable since the number of environmental

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problems is constantly growing throughout the world, and their scale is enormous.

An environmental problem is an environmental change caused by human activities, leading to negative social, economic and other consequences. These include climate change, ozone layer depletion, greenhouse effect, water contamination, air pollution and many others. Along with environmental problems the history knows many examples of environmental disasters. Environmental disaster is a disaster to the natural environment which is caused by some form of human intervention. The example of such a disaster is the industrial accident, which happened at the Ajka alumina plant in Ajka, western Hungary. On October 4, 2010 the dam of reservoir with liquid waste from red mud lakes collapsed, freeing approximately one million cubic meters of waste. The mud was released as a 1 – 2 m wave, flooding several nearby localities. At least 9 people died, and 122 people were injured. About 40 square kilometers of land was initially affected. The streams of waste were even brought to neighboring countries by the rivers. This accident was very harmful for local flora and fauna [2].

Another example of environmental disaster is an oil spill, which happened on April 20, 2010 as the result of an explosion on the drilling rig Deepwater Horizon in the Gulf of Mexico. In this accident 11 people perished at the moment of explosion and 2 more people died during the disaster relief operation. Three years later the full impact of this catastrophe on marine life, human life, and the environment is still unknown. Approximately 4.9 million barrels of oil was spilled into the Gulf. About 650 miles of coastline was oiled. The impact on marine life is horrifying: 6.814 dead animals were collected, including 6.104 birds, 609 sea turtles, 100 dolphins and other mammals, and one reptile of other species. In addition, about 40 % of American Gulf waters had to be closed to fishing – putting thousands of fishermen out of work [3].

Speaking about environmental disasters, one more horrifying example shouldn't go unmentioned – Fukushima Daiichi nuclear disaster, a series of equipment failures, nuclear meltdowns and releases of radioactive materials at the Fukushima I Nuclear Power Plant, following the Tōhoku earthquake and tsunami on 11 March 2011. Avoiding the consequences of natural disasters – earthquakes and tsunami – it's necessary to note, that the nuclear catastrophe may influence people's health. The potential negative health effects of the Fukushima nuclear disaster include thyroid abnormalities, infertility and an increased risk of cancer. The report of World Health Organization found that there is a significant increase in the risk of developing cancers for people who live near Fukushima. This includes a 70 % higher risk of developing thyroid cancer for newborn babies, a 7 % higher risk of leukemia in males exposed as infants, a 6 % higher risk of breast cancer in females exposed as infants and a 4 % higher risk of developing solid cancers for females. An increase in infertility has also been feared [3].

All environmental problems and disasters are results of human activities to a greater or lesser extent. Moreover, most of them could be avoided in the case of higher social and environmental responsibility. Environmental responsibility involves the reduction of environmental impact and risks in all fields of activity and at all stages of the product life cycle. Environmental responsibility is

embodied in the environmentally conscious management. What does it mean? In short, the essential idea of such kind of management is in representing the organization as the subsystem of the environment [4]. Therefore, the organization as part of the whole shall change its strategy so that its negative impact on the environment would tend to zero. For achieving this goal it is important to abide by the following rules:

- protecting resources (purchasing only eco-friendly resources and lean use of resources);
- limiting emissions (i.e. the prevention and reducing the leakage of harmful substances into the environment);
- reducing wastes (reducing the quantity of wastes, recycling and reuse);
- reducing accident risks;
- manufacturing eco-friendly products.

So, it is necessary to pass from control over the production of harmful substances to managing the use of resources at the input and preventing the formation of harmful substances.

To ensure the implementation of all these conditions organizations need to apply a structured management system that is integrated within the organization. For example, the system, that is based on the environmental management standard ISO 14001.

This standard is the world's most recognized framework for environmental management systems – implemented from Argentina to Zimbabwe – that helps organizations both to manage better the impact of their activities on the environment and to demonstrate sound environmental management. This system can be described the most widely used in the world, with over 223 000 organizations certified in 159 countries [5]. Nowadays a lot of successful companies implement ISO 14001. For example, Gazprom, Rosneft, The Coca-Cola company, Apple, Microsoft and others.

ISO 14001 is a part of family of standards ISO 14000. It specifies the actual requirements for an environmental management system. And it does not itself state specific environmental performance criteria. ISO 14001 applies to those environmental aspects which the organization has to control and over which it can be expected to have an influence.

This standard is applicable to any organization that wishes to:

- implement, maintain and improve an environmental management system;
- assure itself of its conformance with its own stated environmental policy (those policy commitments of course must be made);
- demonstrate conformance;
- ensure compliance with environmental laws and regulations;
- seek certification of its environmental management system by an external third party organization;
- make self-determination to conformance [6, 7].

Like other ISO standards international standard ISO 14001 is based on the methodology known as Plan-Do-Check-Act (**PDCA**):

1. Plan: establish the objectives and processes necessary to deliver results in accordance with the organization's environmental policy.
2. Do: implement the process.
3. Check: monitor and measure processes against environmental policy, objectives, targets, legal and other requirements, and report the results.

4. Act: take actions to continually improve performance of the environmental management system [6].

The potential benefits of using ISO 14001 for the organization may include:

- reduced cost of waste management;
- savings in consumption of energy and materials;
- lower distribution costs;
- improved corporate image among regulators, customers and the public;
- etc.

Pursuant to advantages and world-wide popularity of ISO 14001, it can be concluded, that a properly designed environmental management system is an effective tool which enables an organization to achieve and systematically control its level of environmental performance. Obviously, implementing such system can't be a universal key to solving all environmental problems and preventing all possible disasters. However, it can be used as an effective tool of environmentally conscious management.

References

1. Указ Президента Российской Федерации «О проведении в Российской Федерации Года охраны окружающей среды». – URL : <http://gov.cap.ru/HOME/4/zakonod/0001.tif>.

2. Pulitzer Centre on Crisis Reporting. – URL : <http://pulitzercenter.org/articles/hungary-toxic-sludge-recalculating-normal-ajka-alumina-disaster>.

3. Switchboard. – URL : http://switchboard.nrdc.org/blogs/luatoni/the_evaluation_of_deepwater_ho.html.

4. Мильнер, Б.З. Теория организации : учеб. пособие / Б. З. Мильнер. – М. : Инфра-М, 2008. – 794 с.

5. Environmental management. The ISO 14000 family of International Standards. – URL : http://www.iso.org/iso/theiso14000family_2009.pdf.

6. ГОСТ Р ИСО 14001. Системы экологического менеджмента. Требования и руководство по применению. – Введ. 2007-10-01. – М. : Стандарт-информ, 2007. – 21 с.

7. Мищенко, Е.С. Взаимосвязь элементов организационной структуры с макропроцессами системы менеджмента качества образовательной организации / Е.С. Мищенко, С.В. Пономарев // Вестн. Моск. автомобильно-дорожного гос. техн. ун-та (МАДИ). – 2009. – Вып. 4(19). – С. 60–65.

Экологическая система менеджмента как инструмент экологически осознанного руководства

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Ключевые слова и фразы: система экологического менеджмента; экологическая ответственность; экологически осознанное руководство.

Аннотация: Дано описание актуальной и важной проблемы – экологической катастрофы как результата низкого уровня экологической ответственности людей и экологической неосознанности. Представлена система экологического менеджмента как инструмент экологически осознанного руководства.

Приведены три примера экологических катастроф: промышленная авария на алюминиевом заводе в городе Айка; разлив нефти в результате взрыва на буровой установке Deepwater Horizon в Мексиканском заливе и авария на АЭС Фукусима-1. Соблюдение основных правил экологически осознанного руководства способно повысить экологическую ответственность и предотвратить большую часть промышленных катастроф. В целях обеспечения выполнения этих правил, организациям необходимо внедрять четко выстроенную систему управления, основанную на стандарте экологического менеджмента ISO 14001. Рассмотрен стандарт ISO 14001 и показана его потенциальная польза.

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