

VALUATION OF ENVIRONMENTAL ASPECTS COMPOSING A SYSTEM OF ENVIRONMENTAL MANAGEMENT AND AUDIT (SEMA)

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Valuation of environmental aspects is one of the most important steps in elaboration and implementation of environmental management systems. It is also a very important part of environmental audit. In this paper a system of valuation and assessment of environmental aspects, based on the EU recommendations, with requirements and features of Ukrainian environmental legislation taken into account, is suggested.

According to the concepts given in ISO 14000 standards, environmental aspect is an element of object activity, product or service, which could coexist with the environment. Environmental influence of an object is a modification of environment, positive or negative, which could completely or partly be a result of the object activity or use of this product or service. Nowadays there are a lot of methodical approaches and recommendations for determination and differentiation of environmental aspects based on the EMAS (Environmental Eco-Management and Audit Scheme) and ISO 14000 standards.

Procedure for identification of powerful environmental aspects could be described in the following way:

- 1 - exposure to all environmental aspects;
- 2 - definition of ponderability criteria, with the legislation being taken account of;
- 3 - definition of ponderable environmental aspects based on ponderability criteria.

It is suggested to identify riskiness of an aspect for the environment under normal conditions by two indices – hazardousness of influence and susceptibility of a receptor – atmospheric air, water objects, soil etc. (tables 1-2). Risk of causing harm to environment by accidents or off-opt situations could be identified through a possible level of consequences of such situation and by probability/frequency of its occurrence. Susceptibility of the environment is to be identified by the category of soil, where the object is situated, and environmental value.

Table 1- Definition of discharge riskiness for the environment

Susceptibility of a receptor	Class of hazardousness/mode of combined action of pollutants in discharges			
	Discharges contain chemical substances of Class 4 hazardousness	Discharges contain chemical substances of Class 3 hazardousness and/or chemical substances for which factor of combined activity is higher than 1,0	Discharges contain chemical substances of Class 2 hazardousness and/or chemical substances for which factor of combined activity is higher than 1,0	Discharges contain chemical substances of Class 1 hazardousness and/or chemical substances for which factor of combined activity is higher than 1,0
Zone of low pollution potential	A	A	B	C
Zone of temperate pollution potential	A	B	B	C
Zone of increased pollution potential	B	B	C	C
Zone of high pollution potential	B	B	C	C
Zone of very high pollution potential	B	C	C	C

Table 2 – Assessment of hazardousness for various levels of influence on plant and animal world

Susceptibility of a receptor (presence of species and groups)	Kind of influence			
	No influence	Short-term influence, which	Influence, which lead to reversible	Influence, which lead to irreversible

in zone of object influence)		does not lead to changes in groups and populations	changes in groups and populations	changes in groups and populations
Plant world	A	A	B	C
Animal world	A	B	B	C
Species of flora that are included in The Red Data or the Green Book	B	B	C	Impossible
Species of fauna that are included in The Red Data or the Green Book	B	C	Impossible	Impossible
Species of flora and fauna that are included in The Red Data or the Green Book	B	C	Impossible	Impossible