REDUCING THE NEGATIVE INFLUENCE OF ELECTRODISTRIBUTIVE PLANTS AND DUCTS ON THE LIFE COMFORMITY AND ENVIRONMENT

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SUMMARY

Considering the electromagnetic emissions, various life dangers (voltage, explosion, fire etc.), robust appearance and dimensions, frequently vibrations and noise, (i.e. inevitable companions of the electro energetic devices and equipment) and the compromise between the technological possibilities on one side, and regulations and norms on the other side, set the reality of their functioning and exploitation.
With the rise of demands from the sphere of ecology i.e. reducing the emission of harmful gases and all kinds of radiations in the life and work surrounding, reducing the level of noise, vibrations and dust; followed by the affirmation of 'aesthetic principles' in the meaning of ambience, both in the urban and populated areas, and in the non-populated and 'clear natural ones', all the elements of electro distributive plants and ducts are investigated thoroughly by the new providence.
The aim of this entire paper is to provide with short review of aspects and ways of influencing the electro distributive plants and ducts on environment in the lights and meaning of the contemporary understandings of this problem. Also, through examples of national and international norms and recommendations, the comparative perception of the actual conditions in different areas is given, as well (EU, USA, Japan, transitional countries).
Finally, emphasizing the need of awareness on constant promotion of products and service's quality, with the final aim of improving the human and natural ambience, some real offers and possibilities, by which the projecting, building and maintaining of electro distributive plants and ducts, can be connected to contemporary trends and expectations of the widest circle of users.

Key words: ways of influencing , 'aesthetic principles', improving the human and natural ambience

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INTRODUCTION

A special part in the chain of electric power supply, the closest, the most visible and most present in any case to the users, is the distribution i.e. the techno-logic complex which consists of electro distributive plants and ducts, among other things. On this occasion, we will work on some of aspects of these elements, about reducing the negative influence on life conformity and environment.
Though the field of electromagnetics does not have such spectacular development and the trend of technologic innovations as electronics for example, it does not mean that the major changes within it do not happen just as the new, significant changes and comprehensions. Among other things, the specific aspect of influence on, practically all the dominant areas of life in the modern society, contributes to it, and it consists of growing individual and collective awareness of need on healthy life, environment protection, balanced and harmonized-sustainable development.
Based on the set of fundamental and universal human rights, international agreements, findings of the leading scientific jurisdiction, demands for clean environment, reduction of the level of pollution and harmful influences, are louder and more present, and are articulated both by the official authorities and the informal movements, non-governmental organizations and eminent individuals of public life. Therefore, 'the ecologic movement' and 'the Green' are a reality, and practical repercussions of acting in this area are the improved standards and severe sanctions for harmful gases' emission, vibrations, all kinds of radiation, and the affirmation and 'human and aesthetic principles' on work and life ambience in the widest sense of the word.
Considering the electro magnetic emissions, various life dangers (voltage, explosion, fire etc.), robust appearance and dimensions, frequent vibrations and noise, (i.e. inevitable companions of electro energetic devices and equipment), it was completely logic to find them under the thorough investigation of the ecological thought. It is allowed to say, that for almost all the electro distributive plants and ducts, is possible to find the direct or indirect chain of negative influence on life conformity and environment, within the measure of finding the compromises between the technological possibilities, regulations and norms, on one side, and desires and capabilities to recognize and reduce the influences, on the other side, which would set the reality of their functioning and exploitation.

DIRECT AND INDIRECT NEGATIVE INFLUENCES

The negative influences can be classified variously and according to many bases, but for this occasion, we will choose the simplified classification on direct and indirect influences, naturally, based on the subject of our interest, which is the life conformity and environment.

Within the negative influences we can recognize two basic groups – dangers and exposure.
The greatest part of the direct negative influences originates from the basic and functional structure of electro distributive plants and ducts, which is valid for transformers, switches, distributative connections or closets, equally for the cables or over ground ducts and, generally speaking, we can classify them into dangers. Fire dangers, damages, dangerous voltages of touch and steps, atmospheric over-voltages also belong to this classification. The precautionary measures i.e. the measures of risk reducing, precisely and overwhelmingly are given by the national and international technical regulations, standards and laws on these areas (fire protection, work protection...).
Exposure is the second group of the direct negative influences. The direct exposure, constant or temporary to the electric or magnetic field, vibrations, noise, gasses and harmful particles, which are the product of work of the electro distributive plants and ducts, in normal or damaged condition. The regulations are somewhat less strict here then in the previous case, and mostly stated are the allowed levels of different parameters in specific cases.
When we speak about indirect negative influences, we think on those that happen with the spatial and weather changes, and those that are derived from the causative-resultant connection. From this very definition, it is visible that this influence group is harder to identify, and therefore describe, quantify or standardize. Therefore, the list of indirect negative influences will mostly depend on its maker! For example, the direct negative influence would be the post-damage condition of some transformer, when the leaked oil and hard-degradable and carcinogenic substance from the fire extinguisher gets into the soil, then through drainage to the underground water currents, and later gets into the nutrition chain or the spring of drinking water, followed by serious consequences to the health of people. Or, the company which operates in cutting and preparing the lumber for low voltage or long-distance power pillars does not work properly and cuts the trees during the vegetation period. As a consequence we have the inadequate impregnation materials, highly reduced exploitative limits of the pillar; therefore it is necessary to obtain and build them in more frequently. And the new, objectively unnecessary cut down of wood follows, so the final consequences are the acres of lost wood.

EXAMPLES OF SOME COUNTRIES

Much sooner than the ecological wave splashed the entire planet, some countries, Japan and Scandinavia for example, had the reputation of the areas, which maximally and with great attention, took care about the environment protection and healthy life. Even now, when it comes to harmonization of electro energetic policies and regulations with electro demands, they are the leaders. Indeed, while Japan is the major power of the world in the area of nuclear centrals use, Denmark has the moratorium on building them, but , regardless of the primary manner of electric energy creation, which dominantly determinates the availability of the resources, the expressed awareness, that through regulations and realistically used practice, reduces the negative influences on man and environment.
The member countries of EU, just as in many other fields of interest, in the fields of environment protection and reduction of the negative influences, have the set of obligatory regulations and areas of independent acting. In accordance to the strength of the national economy and stated public's will, they give the initiatives, suggest, adopt and conduct, individually or in group, different measures and activities. Finally, as a union, EU is the creator and the signatory of many significant international agreements and contracts, which, as a final effect, have the growth of the life quality and the level of natural ambience preservation.
The position of USA is very interesting in the 'ecological story.' Being the economically most powerful country of the world, it has been refusing for a long time to ratify the Kyoto Agreement, and the analytics claim that the reasons are more of economic not of ecological nature. However, being the leading pollution maker of the world, conducting the regulations from that Agreement (reducing the pollution and emission of the harmful gases into the atmosphere) would cost the United Statesa so much, that it would stir the country more than seriously. Let's notice the importance and domination of the economical, profit reasons, because the same matrix can be applied generally in the decision making process about reducing the negative influence of the electro distributative plants and ducts on life conformity and environment. On the other side, as America is the example of civil and personal freedoms, protection of law and legal safety, the principle of economic efficiency has to be seen in accordance to these regulations. The pressure of public and concrete demands of individuals for the healthy life and work space, especially if you add on to it the compensation for health violation or work ability, resulted in many concrete qualitative solutions, both in technology of materials and equipment and in the standards and procedures. All of this can be seen as another contribution or experimental example in seeking the way of reducing the negative influences on life conformity and the environment.

The transitional countries, in facing the acting priorities, saw the questions of environment pollution and problems of harmful influences as the luxury, or were objectively forced to neglect them. Therefore the condition of scope of electro distributative plants and ducts was full of examples with shown negative sides, damages or even dramatic situations in which the health of people, their work, life and natural ambience was degraded. Bad functioning of services and institutions, lack of good control and coordination is a characteristic for the societies in the transition, which contributed to this condition. With the affirmation of European integration processes, technological, informational and cultural opening, signified the shift in the practice and consciousness of people, therefore, there are more and more positive examples in the field on protection of human and natural ambience.

WHAT TO DO AND HOW?

Proceeding with two axioms, the first – necessity on reducing the negative influences on life conformity and environment; and the other – on their recognition and treatment in the widest context of modern understandings of life and nature, we come to the principles and methodological assumptions on which the ways of acting have to be developed, just as the concrete tools in this area. Therefore, the informational, economical interest and any other connection and permeation of the modern world, which enables and contributes to the spreading of consciousness on needs of synthetical and synergic access in treating the overall quality of living, including the social and natural ambience, is something that you start with and strive to. At the same time it is a credo and motto of all the activities and of all the doers in that field.

Let's try to identify now some of the key factors and practical steps that would lead to the possibility of reducing the negative influences of electrodistributative plants and ducts of life conformity and environment. When we speak about the narrower, local level, those are electrodistributative companies, institutions and population in this concrete field, and on the wider level, we recognize the national expert, legislative and control institutes, while, on the global level, we recognize new international bodies and organizations with their standards and recommendations (ISO, WHO etc.). Except formally responsible and authorized for these areas, the presence of public, in direct, through media, political or some other way, is understood.

Let's go back to the classification of negative influences of electro distributative plants and ducts on live conformity and environment. It is easy to conclude from it, that it was relatively easier or simplier to influence on the direct negative influences, than to the indirect ones. Through persistent respect, the appropriate procedures and regulations influence greatly on the appearance and reduce the direct negative influences. Conscientious work, regular and extraordinary controls, additionally help in reducing the risks of danger, and preventive actions, watchfulness and information are the prerequisites of reducing the scope and intensities of the harmful acting. The work coordination of various services, trained, motivated and efficient staff is an additional quality. Finally, developing the sense of initiative and responsibility in all employed in the organsational and business chain that are tied to the work of the electrodistributative plants and ducts, greatly leads to the target reduction of negative influences on the environment.

The indirect harmful influences are less explicit and a bit formally represented in the standards through technical regulations or laws, but not less important or less accessible to the influence, both from the repercussions they produce, and from existing the effective and efficient way of conducting them. Sometimes, they are just the beginning of opening the line of problems, while in some other cases the hardest thing is to nominate them, as the nomination itself and analysis of the individual indirect harmful influence, open the road and perspectives of its solution. Therefore, when we speak of this kind of harmful influences, the creative entrepreneurship, the civil and expert courage and consciousness are of the key importance. It is completely understandable that greater and stronger part of the public and public opinion means the faster and safer road to the aim.

In order to confront the negative influences in the best possible way, we can state some other characteristics, even if everything is according to the regulations, it does not mean that harmful influences are not there i.e. that those cannot be reduced, and that just through analysis of subsequent consequences can state the existence and intensity of harmful effects. Here are some examples. The level of noise and transformer X/0, 4 kV vibrations, which are often found in the buildings, or in their immediate vicinity, can be completely in accordance with the interval of allowed values by regulations. The vibrations and noise are transferred through metal framework and concrete structures to great number of apartments, so registering them and reaction to them is individual – different people would have different levels of disturbances and problems – beginning with absentmindedness, lower concentration, followed by insomnia, nervousness or tiredness. It is similar to the exposure to the

electromagnetic field – there are numerous examples of the sick people who live and work completely in accordance to 'the safety heights and distance from parts under voltage', or 'allowed time of stay in the zones of field actions' which shows that just the strict respect of regulations does not eliminate the negative influence.
If we include the harmful effects of other factors, like the antennae and receivers of mobile telephony, wireless transfer, house electric gadgets, computers, radiation of constriction materials, medicinal and geo-cosmic radiations, we come to the significant number of factors that through aggressive action on immune-biologic systems, deposit the harmful effects in the body. Therefore, it is very important to notice the real knowledge in the micro area in order to reduce the individual levels of harmful influences and reduce the possibility of cross section exposure to individual factors, whether by arrangement of elements, system decomposition, dislocation of disturbance sources, education or similar methods.
Just like the human bodies, the nature is attacked. Whether it was the demographic pressure conditioned that in the recent wider surrounding of the cities (lawfully) clear the woods and parks and build (illegal) buildings whose tenants have the power line pillars in the backyards and conductors on the windows, or to go to expanding and building by plan, the electrodistributative network expands just as the number of transformer substations, cubicles and connections. All of this is followed and by the other elements of endangering the environment –the business administrative objects, road and communal infrastructure, traffic, air-pollution etc. Considering it legitimate, the trends of strengthening social and economic demands of one area, therefore the imminent awareness should be assumed just as the care and knowledge in designing and shaping the newly created urban areas, and the very organization of life and standards of behavior. Therefore, while creating, projecting and building the new one, it is a commitment not to repeat the mistakes, and what we imply, is the multidisciplinary access to the problems, balance of demands and harmony of interests.

CONCLUSION

The need and presence of awareness on constant promotion of products and services' quality, with the ultimate goal of improvement of the humane ambinence and preservation of natural ambience, lead and commit people and organizations, which get in touch with projecting, building and supporting the electrodistributative plants and ducts, to create and work in accordance to the modern trends and expectations of the widest circle of users. Therefore, the success of solving the questions of reducing the negative influence of the electro energetic devices and equipment to the life conformity and environment, more and more becomes the measure of comparative advantage of the expert and professional affirmation.

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