

The perception of the risk and the system of communication

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Abstract: The measures that are applied to regulate a certain practice, are based on the risk that implies the practice and in the acceptance of the above mentioned risk from the part affected by the practice. If the perception of the risk does not correspond to the reality the situation is unstable and it is possible to lose the control of the situation ..!

When discrepancies exist in the Perception of the Risk on the part of different sectors of the society, they can produce serious conflicts that affect the establishment of the protection measures.

The problem of " the perception of the risk " rests on the fact that the technical people and the public use generally different reasonings and therefore its coincidence is almost fortuitous.

The intuitive perception of the risk is often narrowly tied to a "symbolic mechanism" and once established the symbolic relation can produce a psychological phenomenon by means of which the individuals resist to the reality, and the symbols make prevail over the facts in order not to alter the interior symbolic pre-established scheme.

The perception of the risk appears in two different groups of persons:

- 1) the persons affected by the risk (the public) and
- 2) the persons who can modify this risk (operators).

IT IS IMPORTANT THAT THE PERCEPTION OF THE RISK IS COMPATIBLE WITH THE SCIENTIFIC HYPOTHESES TO AVOID CONFLICTS IN THE SITUATION 1 AND TO ASSURE THE CONTROL IN THE SITUATION 2 (SAFETY CULTURE)

The "perception of the risk" is fundamental to support the control of a practice and it is possible to modify it across the communication.

It is necessary to know which are all THE FACTORS that affect the perception of the risk to be able to design a strategy of suitable communication

Across different studies it has been learned which are the factors that affect the perception of risk:

- 1) some factors depend on the proper characteristics of the risk,
- 2) others depend on the proper characteristics of the individuals and finally
- 3) other factors depend on the conditions of the external environment or on the social local context.

One of the most important factors is the related with the direct benefits that are perceived. This determines, for example, that a person perceives minor risks of his cellular telephone that of the antennas (That allows that the system should work) when the situation is exactly the opposite one...

It is very important that the society establishes a system of rational and independent communication with all the affected parts (stakeholders) that allows to safeguard the systems of control.

The system of communication must be independent and cannot be handled or influenced by those that perceive an economic benefit since they are an interested part.

In this presentation a methodology and strategy is proposed for the communication with different groups affected by the risks come so much of the ionizing or non ionizing radiation.

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The PERCEPTION of the Risk is very changeable

The perception of the risk is not the same in all the persons and for this reason the attitude opposite to the prevention can be different:

- There can be different perception on the reasons and on the probability of occurrence of an event.
- There can be different perception on the consequences of an event on our health
- There can be different perception on the influence of ours to react in the safety.
- There can be different perception on the efficiency of the control procedures, etc

The rational and subjective perception of the risk

The problem of " the perception of risk " rests on that the technical personnel and the public use generally different facts and therefore his coincidence is almost fortuitous.

In case of the technical personnel or the scientists the Risk is defined habitually as the product between the magnitude of the hurt that can produce an event and the probability of occurrence of the above mentioned event.

For the public on the other hand the risk can be perceived in subjective form across intuitive judgments or for comparisons with different accidental scenes in such a way that it does not correspond always to the reality.

The perception across the symbols...

Frequently the intuitive perception of the risk is tied to a " symbolic mechanism ". An activity relates to a certain symbol that has for the individual a pre-established, clear and incontrovertible meaning.

Later, the judgment of values on a fact is established, not with relation to the concrete fact , but with relation to the symbol that is representing it.

Which are the consequences of a wrong perception of the risk.?

1) Consequences in the operating personnel:

The wrong perception of the risk can determine that a workman realizes his task with minor attention for what its strongly related to the " Safety Culture "

Therefore the care of the perception of the risk, both in the operating personnel and in the public it can be so important as the control itself of the risk ..!

This determines the convenience of which both the authorities of control and the persons in charge of the practices take the due precautions to avoid diversions or very significant differences between the " real risks " and the perceived risks...

2) Consequences in the public:

The wrong perception of the risk can produce that the public suffers psychological serious hurts. It is necessary to remember that inside the affected population of Chernobyl there was a very important increase in the rate of mortality, not due to the affections that can be caused by the radiation but by the stress and the anxiety caused by the psychological impact that the population suffered.

3) Consequences in the society:

The criteria of Radiological Protection and the measures of Safety that are applied to a certain practice, are fundamentally based on the Risk that implies the above mentioned practice and in the acceptance of the Risk..

In the extreme cases, if the risks are very high the criteria that are applied must be very strict and the very severe measures of safety, and if on the other hand the risks are not significant the safety measures can weaken.

Therefore the wrong perception of the risk determines that the protection measures are insufficient or excessive.

To use insufficient or exaggerate measures of protection produces a serious economic damage to the society since the measures of control will not be due optimized.

The optimization of the protection is the tool to achieve that the economic cost is minimal.

On the other hand if the perception of the risk is very different among different groups of opinion "conflicts" are generated between the authorities and the public that impede the control of the risks and determine that the chosen solutions are always incorrect

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This determines the convenience of which both the authorities of control and the persons in charge of the practices take them due precautions to avoid diversions or very significant differences between the " risks perceived " and the real risks...

The Radiological Protection fails if the perception of the risk is not born in mind...

The Radiological Protection carries out in three basic stages:

1) RISK EVALUATION: To identify the factors of risk, to establish the cause and effect relationship, to quantify the effects and to measure them.

2) TO ESTABLISH the PROTECTION CRITERIA: Procedure and criteria to limit the effects to values accepted by the society in which we live

3) TO REALIZE THE CONTROL: The authorities are designated, there are established measures of control and mitigation.

BUT FULFILLED THESE THREE STAGES IF THE PERCEPTION OF THE RISK DOES NOT ANSWER TO THE REALITY THE SITUATION IS HIGHLY UNSTABLE ..!

There can appear conflicts that disturb the suitable control of the situation and it increases the probability of accidents

In synthesis, THE SITUATION IS NOT DUE CONTROLLED.

In order that the Radiological Protection is effective it is necessary to achieve a certain consensus in the society so that the perception of the risk on the part of " the affected groups " is compatible with the scientific hypotheses and with the criteria established by the competent authorities for his control.

Of this unique form it is possible to achieve a harmonic process of control and apply regulations that agree to all the affected groups.

The perception of the alone risk only can be modified across a suitable COMMUNICATION during all the stages of the process of design, construction and operation of the activity or element that determines the risk.

PERCEPTION OF BENEFITS

The perception of benefits cannot be analyzed separately from risk perception. The acceptance of a given risk by part of the population is closely related to the benefits expected, whether consciously or unconsciously, from the activity producing the risk.

The concept of "perceiving the benefits" is also of a subjective nature and is strongly related to the nature of the practice involved.

This is why identical risks are considered as opposite, depending on the origin of radiation: resulting from medical applications or from nuclear facilities... caused by natural radiation or by artificial radiation.

As an example, the public appreciates the neat benefits of medical practices, while the benefits arising from the production of nuclear energy are not acknowledged likewise. When asked if nuclear power actually needed, many people might give a negative answer.

The particular case of the Medical practice: The perception of the benefits involved in medical practice leads patients —with full confidence— to allow physicians make any decisions concerning the technique to be used, whether in diagnosis or therapy, without any inquiries. The message is **“if the doctor says so, it must be justified”**. This circumstance does not occur in other practices in which the decisions made by radiation protection specialists may generate fear or mistrust within the public and, thus, generate questioning.

During the survey performed in the hospital environment, in Argentine, the public showed greater confidence in the information supplied by the hospital experts in radiation protection (80%) than in that provided by the media (60%), ecologists (12%) and even regulatory authorities (60%).

Consequently, risks are not accepted in an absolute condition but as related to the perceived benefits, including the context and, especially, confidence in those responsible for the practice.

Therefore, an analysis of the factors influencing the eventual rejection of a practice must not only explore fears, but what is the prestige of those responsible and what are the expectations regarding the benefits to be obtained...!

HOW MUST BE THE COMMUNICATION

In order that THE COMMUNICATION is effective it is necessary:

- a) To know and to consider all the Factors that affect the perception of risk.
- b) To identify to all the Groups affected and involved by the risks of the activity that it is necessary to control.
- c) It is necessary to use a language adapted to the formation of the affected group.
- d) The person or organization that realizes the communication must rely on attributes that they should assure a proven suitability and fundamentally honesty.
- e) It is necessary to plan the communication, to define what is going to communicate, how it is going to communicate, whom one is going to communicate and in what place and circumstances and using which mass media.

Factors that affect the perception of the risk:

The factors that affect the perception of the risk, (using the criteria defined initially by Lennart Sjöberg and nowadays used by the WHO, are from three types:

- a) The internal factors inherent in the own risk and in his particularities
- b) The personal factors related to the characteristics of the individuals who are exposed to the risk
- c) The external factors that relate to the environment in which they develops the activity that produces the risk.

a) The internal factors inherent in the own risk and in his particularities

- If one is exposed voluntarily or are obliged to be exposed.
- If it is a technology known and familiar or on the other hand it is a rare and strange technology to the daily life.
- If the risks are catastrophic and lethal and affect several generations and the children.
- If they are perceived or not the benefits that the persons receive.
- If it thinks that the technology is of benefit only to a certain social group or presents inequities.
- If it is a risk easily controllable or very difficult to control.

b) The personal factors related to the characteristics of the individuals

- The sex (the women are habitually more sensitive).
- Level of education (the least polite are more sensitive)
- For the age (those of major age are more sensitive)
- For level of income (more poor are more sensitive)
- For the psychological profile (the anxious persons are more sensitive to the risks) If the exposed persons are known or relatives.
- If there has been had a personal negative experience.

c) The external factors that relate to the environment in which the activity develops.

- The attitudes of the mass media (if a fact is presented in emotional and massive form it has more repercussion)
- If there exist sectorial interests (lobies) to favor an activity in decline of other one that is competitive.
- The existing confidence in the management of the competent authorities and of the regulatory bodies.
- If the situation favors the political or economic interests of a party or a group of opinion.

With whom to communicate.?

- The governmental authorities.
- The Health authorities.
- The mass media.
- The scientific community.
- The associations environmentalists and consumers.
- To the judicial power and the attorneys.
- The general public.

Characteristics of the messages that must be given:

- The message must be simple in the appropriate language.
- It is necessary to demonstrate competence, and especially honesty across the own values of the one that speaks or writes.
- Examples must be given in known scenarios.
- The consequences of the actions that should be taken and should not be taken must be clearly explained.
- The emotions must be controlled and avoid the vehemence.
- It is necessary to support the dialog across the time.
- It is necessary to offer the opportunity and the means in order that they could perform the checkings needed.

There are some concepts which communication to the public represents an important challenge and it is necessary to elaborate a suitable methodology:

- The " scientific uncertainty " produced by the lack of sufficient information that does not allow to affirm or to deny a fact or circumstance.
- The "causality" of a disorder or disease when the same one can be produced by different agents or circumstances.
- The statistical limitations produced by the lack of an adequate population of study.
- The risks estocásticos and the reasons that base the linear hypothesis without threshold.

- The meaning of the values of "screening" that are used as limit of investigation and they are in the habit of confusing with the values limits.
- The criterion of " optimization of the practices " across an analysis cost-benefit.

Influence of "PRESSURE GROUPS":

A realistic analysis of the causes originating a given perception of risk by the public must include, among the significant factors to be considered, the eventual presence of groups liable to exert an influence on public opinion.

Currently, pressure groups are named lobbies and they have become an alternative power structure using different persuasive methods to attain prevalence of the individual interests of the sectors they represent.

In the early stages of modern society, an ideal paradigmatic model was postulated by which all individuals struggled for "common interest", while disregarding their personal interests. This paradigmatic model, which was in force soon after the French Revolution, had attained sufficient legal force to "prevent individuals from gathering in associations for common interest".

Some analysts criticize the role played by pressure groups, which is detrimental to general interests. A. Borón says: "... the performance of lobbies is designed to impose their sectorial preferences, leaving out democratic control and participation, where conflicting specific interests hinder the development of an authentically collective and national will... while they conspire against general interest and justice...".

It appears as if, in a real world, the analysis of the relevant factors involved in risk perception by the population must necessarily consider the existence of organized pressure groups, representing a given sectorial interest and using information means to satisfy the interest of the sector they represent.

One of the methods used by pressure groups in order to influence public opinion is the so-called "free riding"; that is, profiting from some transcendental social or economic event, not originated by the group, for self benefit.

Any information campaign aimed at improving communication between technicians and the public must be designed taking into account the existence of pressure groups that, in some cases, may have access to important financial resources.

CONCLUSIONS:

The task of communication is so complex and difficult as the proper task of controlling but:

" ONE IS SO IMPORTANT AS THE OTHER ONE ...!

The communication demands obviously economic resources but the consequences that an inadequate perception of the risks has can cause both accidents (in case of the operators) and costly conflicts (in case of the resistance of the public) as dilapidation of resources (when inappropriate measurements of safety are taken) as psychological severe hurts.

Therefore, it is not suitable saves efforts in the task of communication..!!

It is so important to control the risks as communicating the mentioned risks ...!!

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