

Building ALARA culture as a tool for effective risk communication

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The management of radiation risk is the main issue, when nuclear, radiological, as well as existing exposure situations are concerned. Moreover, risk communication is an important challenge under either normal or emergency exposure situations.

The communication procedures applied are crucial for the successful implementation of the required protective actions and measures by people at risk. Effective communication may reassure individuals who are not directly at risk by reducing rumors and fears and facilitate relief efforts. Furthermore, it is suggested to the organizations involved as a safe path towards public trust and confidence.

The special characteristics of existing exposure situations should be considered when relative risk communication procedures are developed. In order a proactive role in decision making to be ensured for the public, the dissemination of reliable information regarding the potential health risks and the means available for reducing the exposures as low as reasonably achievable is necessary.

Risk communication process can be easily described by the Shannon - Weaver communication model, which includes the following elements:

- A source: The initiator that puts the model into action. It is an individual or group that has a specific reason (message) to begin the communication process.
- An encoder: It takes the message that the source of information wants to send, and puts it into a suitable format for later interpretation.
- A channel: It is the route that the message (verbal, written, electronic, etc) travels on.
- A message: The information, idea or concept that is communicated from one end of the model to the other.
- A decoder: It is where the message is decoded or interpreted from its original form into one that the receiver understands.
- A receiver: A second party at the end of the channel which receives the decoded message.

In many cases the message does not reach the receiver in the original form due to the existence of noise. Noise may be an interference or distortion which alters the initial message either partially or fully. It can be physical (a sound) or semantic, like the vocabulary used in the message is beyond the knowledge spectrum of its recipient. However, the potential effects of noise on the message can be prevented or limited by putting in place an appropriate feedback mechanism. Feedback relates to the source whether the message has been received, and most importantly, if it has been interpreted accurately.

Since, risk communication is considered as a two-way, interactive and long term process, where the public and risk communicators are engaged in a dialog, rather than acting as senders and receivers it is expected to be strongly facilitated by ALARA culture, independently of the type of exposure addressed. ALARA culture is a reference framework, a state of mind and attitude which among others allows an individual and/or an organization to act in a responsible way in order to manage radiation risks and giving radiation protection the priority it should have. Additionally, it is characterized by risk awareness, balanced judgment of risks and benefit, and the capability to develop and use required skills and tools for risk assessment and management, balance of resources and economic and social considerations.

Taking in to account that the practical implementation of radiation protection is relatively complex in the case of existing exposure situations, it needs the involvement of new stakeholders for which the first step is to be informed about radiation risk and ALARA philosophy. Therefore, elements contributing to ALARA culture, such as attitudes and behaviors, education and training, engagement and participation of stakeholders, dissemination of information and lessons learnt, should always be taken into account when risk communication strategies regarding existing exposure situations are developed and applied.

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