HUMAN AND ORGANIZATIONAL FACTORS.

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1.   INTRODUCTION

Where industrial safety is concerned, what we are aiming for is an absence. The objective is to prevent events with unacceptable potential consequences from occurring. However, this absence can never be considered to be definitively acquired. Safety is "a dynamic non-event". A system only acquires a degree of safety through the initial work of those who designed it and the daily work of the many people who seek to prevent undesirable events, limit their consequences and draw lessons from them. In the same way that the system undergoes internal and external developments over time, safety also requires a periodic reassessment of previously held assumptions and possibly adaptation. However, the people who contribute to this production of safety do not have only that aspect to manage: most must also contribute to ensuring levels of productivity and production quality that are satisfactory for clients and shareholders. A human and organizational factors approach to safety consists of considering this safety production work as one of the aspects of general production, supporting those who encourage it and dealing with contradictions that may hinder it [1].

2.   CHARACTERISTICS OF HUMANS

The characteristics of the human body and human behaviour have been described by a number of scientific disciplines (physiology, psychology, etc.). The way human groups operate also obeys laws which have been studied by other disciplines (sociology, anthropology, social psychology, etc.). We can describe these individual and collective characteristics in order to include them in the design of technical and organizational systems that facilitate human activity.

As physiological condition changes, the human brain is not in the same biological state at 3 am and 3 pm. Fatigue requires it to draw on more resources (muscular, for example) to obtain the same result , therefore calling for the adapting the working environment to the human being. However, except for certain areas, these characteristics are mostly immutable; it is only possible to bring about limited changes, through training. No procedure or training course will allow a night worker's brain to operate in its daytime state. Of course, the use that will be made of these characteristics is itself influenced by a number offactors: characteristics of the working environment, the person's background, the way work groups operate, the company culture, etc. Technical and organizational systems can be designed in a manner which is more or less compatible with the characteristics of humans, and either facilitates or hinders effective performance. When we place human beings in situations that are not compatible with their individual and collective characteristics:

➢ We reduce their detection capabilities and the effectiveness of their actions;
➢ We increase the probability of uncorrected errors;
➢ We can generate a health risk [1].

3.   INTEGRATED APPROACH TO SAFETY

Research on industrial accidents shows that they rarely happen as a result of a single event, but rather emerge from the accumulation of several, often seemingly trivial, malfunctions, misunderstandings, incorrect assumptions and other issues. The nuclear community has established rigorous international safety standards and concepts to ensure the protection of people and the environment from harmful effects of ionizing radiation [2].

A review of major human induced disasters in a number of countries and in different industries yields insights into several of the human and organizational factors involved in their occurrence. Some of these factors relate to failures in: design or technology; training; decision making; communication; preparation for the unexpected and understanding of organizational interdependencies. Individually, any of these failures can prevent an organization from being proactive in trying to continuously improve nuclear safety. When occurring together in some combination, they become the root causes of accidents. The root causes of nuclear accidents

share much in common with the causes of accidents experienced in other industries, and the nuclear community can draw on this experience as a source of lessons learned [2].

4. SAFETY CULTURE

The term safety culture is used to designate that part of the company culture that relates to matters of safety in high-risk working environments. More precisely, safety culture can be defined as the set of practices that are developed and learned by the principal parties involved, to manage the risks of their occupation. Within a company, it is often said that "safety is everyone's business" [1].

Nevertheless, some people are more directly affected by issues of occupational or company safety, namely the management teams and the employees working in operations. In fact, management practices with regards to safety often have a greater influence on the culture, because management has the authority and broader decision-making powers to influence the various factors at play in risk management. Human and Organizational Factors of Industrial Safety are not only the preserve of the Safety Department. Like safety in general, they need to be integrated into each of the company's Policies [1].

5. CONCLUSION

Industrial safety can be achieved by anticipating undesirable situations and defining rules to avoid and manage them, by developing a safety culture that influences daily practices, by implementing technical and organizational conditions that facilitate safe operations in real conditions, and by upward reporting of the operational realities. The idea of "critical tasks" forms the common factor in the structure of an SMS and the HOFS approach. Emphasis is placed on the tasks to be performed (and not just on behaviour), on the variabilities that are likely to appear, on the human and material resources and the rules that facilitate the completion of the task, and on the necessity of staff involvement in the deliberation process. Companies that embark on both an HOFS process and International Safety Rating System audits can make this element a guarantee of overall coherence. The members of staff, the occupational groups, the representative bodies and the contractors all have an essential role to play in the safety policy, because of their capacity to detect high risk situations on the front line and to suggest changes. Their contribution is recognized, as are the difficulties they encounter in using the system. Compatibility between objectives and resources is periodically reassessed directly in the field. Management plays an essential role in the coordination of "regulated safety" and "managed safety". Its preparation for this role and the support it receives to perform it are major elements of the Safety Management System [1].

REFERENCES

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