# NUCLEAR SECURITY CULTURE

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**Annotation**

*The main purpose of this work is determination of «security culture», main ideas of this object, what and who contributes to form it. This article shows researching field, scales, importance of security culture».* It describes factors which influence security, such as professional and personal qualities of the employee, relations of workers, political situation, organization history, economical situation, technological characteristics and so on.

The present paper shows the topicality of this questions and the organization which takes part in *development of this concept. We consider the methods of rising «Nuclear Security culture»: international* cooperation and assistance, public policy, technical equipment, rules and regulations, enforcement and punishment for preventing violations of rules and norms, informing the public and outreach,

Key words: nuclear security culture, social engineer, responsibility

Research field: nuclear industry

Related sciences: psychology, nuclear physics,

The beginning of the 21 century is the main period in understanding of the security of the nation, country and world. Accidents of the September 11, 2011 year in USA, and a string of terror attacks in Russia shows us there is no limit of terrorism, so people need to input conception of «Nuclear Security Culture», which have become the most important problem of nuclear power in our days. This way man can protect themselves from this danger.

The main objective of this research is to understand who real nuclear engineer is, which characteristics, responsibilities he should have for providing security.

In this article we will give definition, main ideas of «Nuclear Security Culture», influencing factors, relevance and importance of this problem, the ways of reaching maximum level of «Nuclear Security Culture».

First of all that needs to be said is what «Nuclear Security Culture» is. International Nuclear Safety Group (INSAG) «Nuclear Security Culture» is defined as: «The assembly of characteristics, attitudes and behavior of individuals, organizations and institutions which serves as a means to support and enhance nuclear security».[6]

Follow this definition, «Nuclear Security Culture» covers all activities of nuclear power station, not just operation of equipment, so it is the most important clause of safety.

It is vital to note that «Nuclear Security Culture» has more moral character, it covers legislative control. Moreover level of system efficiency depends on motivation, professionalism and understanding of responsibility which worker should have.

Foundation of «Nuclear Security Culture»

«Nuclear Security Culture» implies:

-compliance with rules and regulations of the security regime, from the Head to employee

-correct use of the technological protection, keeping operative condition and modernization

-keeping security regime at manufacture

-staff motivation

-awareness and understanding of responsibility for all kinds of activities on the nuclear power station,

- awareness of staff confidence in the necessity and effectiveness of activities related to this issue. [1]

Skills of professional working with nuclear material is absolutely one of the most important factors of security of enterprise. But all of these criterions are impossible without strict rules, norms, procedures which everyone should follow. «Nuclear Security Culture» is one of the main conception of International Atomic Energy Agency(IAEA). There is vigorous activity in extension of this problem and giving publicity and topicality in the world. In 2004 year IAEA has published the «Code of Conduct on the Safety of Radiation Sources». This document is a guide for nuclear countries, for purposes of development and agreement of political question in sphere of safety and security of radioactive sources; this code determines behaviors, norms, questions which participating countries should follow for security. [5]

Factors affecting Nuclear Security Culture

There are some factors which influence the efficiency of «Nuclear Security Culture»:

Professional and personal qualities of the employee: it is supposed to be, that employee actively takes part in eliminating the threat of safety nuclear material. Men should understand all responsibility which he has, understand the scale of the threat, result and repercussion of his behavior. He needs to follow all rules and strict security model in case of threat. Trying to use all equipment in the right way and keep it in work condition. Having all this points base the platform for forming strong mechanism of security culture, which consists of four components: leadership of head; effective policies and procedures, personnel quality, improving of professional training.

Relations between workers: the most serious problem of nuclear power stations, facilities of nuclear fuel cycle, research reactors misses insider threat. People who work and trust each other can easy have a conspiracy with terrorists and steal some nuclear materials. This problem is typical for countryside inside of a country, where people know each other for a many years and work together all their life
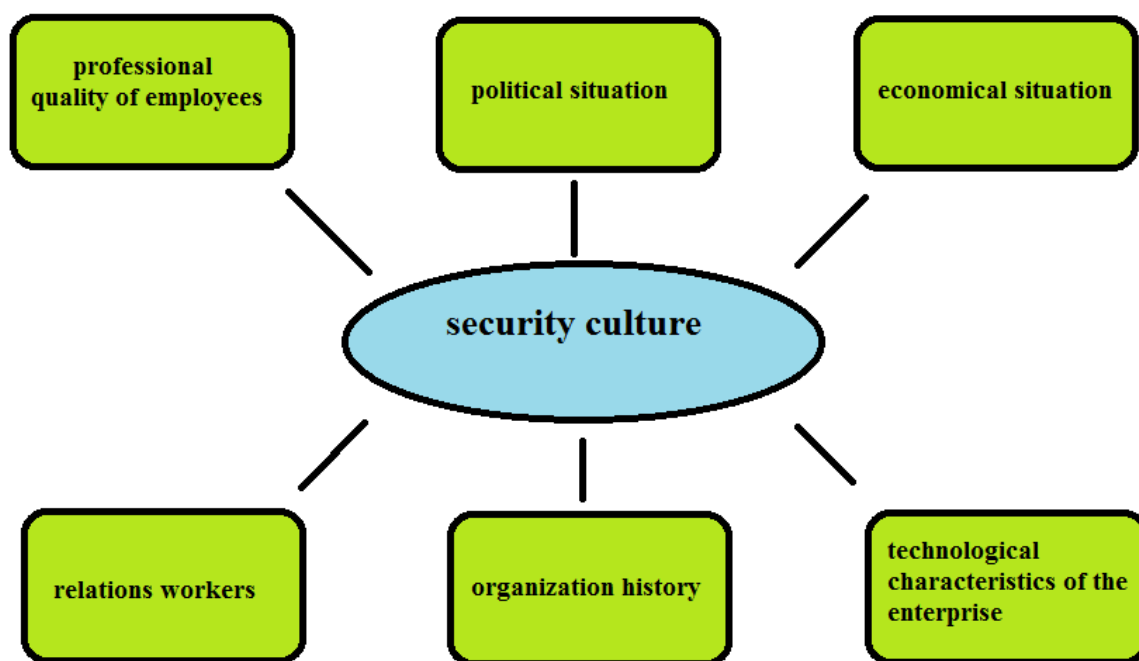
Political situation: the most important role in development of nuclear security culture is played by political situation as inside of country as in the world. The government should be the most interesting in questions of safety of nuclear materials. Government needs to be demanding and give motivation for head of power station and employee too. There must be rules and norms and if it is a break, the breaker will have the strict penalty. As for this question in the world scale, there should be such a concept as global cooperation. Only after uniting countries can overcome the terrorism and as a result the level of security increases. Basic standards and criteria are needed to be understood in each country in the same way, independently of social and economical and political differences.

Organization history: realization of criteria of security depends on common professional culture and

events during all existence of enterprises; it means the number of violations, theft of nuclear materials, number of internal violations and so on.

Economical situation: financing of nuclear security program helps employee of this sphere both materially and morally. It determines the importance of security questions and increases motivation of young specialists.

Technological characteristics of the enterprise: for having maximum level of effective security system not just professionalism of employees must be considered, but equipping too. Just interaction of this two points helps to reach maximum results. A technological characteristic includes sensors and instrumentation which signal about penetration into the protected area, surveillance cameras, checkpoints, access control system and so on.

Pic. 1. Factors affecting the nuclear security culture

Topicality of «Nuclear security culture».

The topicality of security problems in our days needs to be noticed. 20 century is a century of progress, development of innovation technologies, including nuclear energy. That's why people can`t miss terrorist movements, trying to get nuclear weapon. So because of this reasons «Nuclear security culture» needs to be developed on a line with progress. As a result people can find the solutions for such problem as high probability of nuclear terrorism, high probability of nuclear terrorism, understanding of responsibility for work from workers of nuclear power station, prevention accidents on nuclear power station, maximum level of safety, reliability and efficiency of using technological and human resources.

In the report «Basic Safety Principles for Nuclear Power Plants» the concept «security culture» was named like decisive for getting perfection of nuclear safety and also one of the fundamental principles of control.[4]

Rising of «Nuclear security culture»

There are some ways of working for rising of security culture which need to be distinguished.

1. International cooperation and assistance.

Cooperation of countries with each other helps to get experience and make the common concept. In addition International Atomic Energy Agency is carrying out vigorous activity in this sphere. Since 2001 year it has been more than 60 training seminars and conferences for security of European, Asian, countries, Latin America and Africa. Also International Physical Protection Advisory Service (IPPAS) was created.

2. Public policy.

The Head and employees of nuclear power plant will not be interested in questions of security, if the government of country will be loyal to the problem of non-proliferation of nuclear materials and security in general. First of all the government must have this questions like foreground.

3. Technical equipment

Equipment of this area needs to be available for enterprises, corresponds with national and international standards. If people provide automation systems it will help to lower percent errors of workers.

4. Rules and regulations

There should be strict texts of rules, norms, guidelines and instructions. Moreover, legislation is also important.

5. Enforcement and punishment for preventing violations of rules and norms

Violations must be strictly punished, responsibilities must be strictly defined. This will reduce the percentage of potential violators.

6. Informing the public and outreach

Government should inform society about nuclear energy. As a result people will contact with government and give all information which they have, for instance strange person which they saw on the territory of their place of living.

**Results**

The result of this research is inference as «social engineer». Social engineer is some sample, image of a man, who has personal qualities such as sense of responsibility for all activities. World needs the development concept of social engineering, with purpose to get progress and strengthening of «Nuclear security culture».

Conclusion

The concept of «Nuclear security culture» follows from the process of security and represents the efficiency of each element and all process in general and readiness of the process to detect threats and control the risks. All these aspects show the level of security in the world.

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