DEVELOPING AND IMPLEMENTING CULTURE OF SAFETY INTO AN ORGANIZATION IN PREPARATION TO A NPP BUILD PROJECT

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Abstract

Implementing a nuclear safety culture into an organization that until now has had no experience in the area requires a variety of actions to be carried out: starting with an in-depth analysis of the organization, through the development of relevant regulatory framework and ending with promoting the appropriate attitudes and approaches. The key element of the whole system are the managers whose attitudes, approaches and behaviors should encourage workers to abide by procedures and perform high quality work, which constitutes the backbone of the nuclear safety concept. In the case of new builds, where the future operating organization has no operational experience and the personnel employed to run the project comes from a variety of backgrounds and industries where organizational cultures and behaviors vary, implementing such an approach is a major challenge. At the preliminary stage of the project, it requires an in-depth analysis of the organization to be performed, especially from the perspective of behaviors and attitudes workers brought with them from former employments as well as from the perspective of competencies the workers hold. Implementation of nuclear safety culture in an organization that is an amalgam of cultures and organizational experiences calls for an integrated, holistic approach as well as for the use of external standards and models. Such models could come in the form of really experienced people who will serve as an example and allow for gradual implementation of the safety culture within the organization. The paper presents the methodology for the preliminary phase of the culture of safety implementation within the new NPP build project organization and covers the phase until the competencies’ model is ready and nuclear safety culture implemented as the standard of work within the organization.

1. INTRODUCTION

PGE nuclear is a new organization dedicated to build a nuclear power plant in Poland. Since the earliest 90’s, just after Chernobyl accident there has not been any civil nuclear power project developed in Poland. First nuclear project in Poland with Russian technology, has been started in late 70’s and stopped in 90’s. The project was in a very advanced stage. Reactors were sold, but some infrastructure stayed not used. Unfortunately, all the education and research programs have been closed and the resources previously dedicated to the first nuclear project left the country or stayed in the research and medicine areas. After all these years in 2009 the new nuclear program started but there is no experience from the civil power production organization, quality and management systems which could be the foundation for implementation a safety culture. The new personnel has been collected from a different industry's areas and business environment. Employees as well as managers represent different organizational cultures and present the previous organizational models and attitudes which creates a special multi-cultural environment. Such an organization needs an in-depth analyses and knowledge to start to develop and implement a new culture which will create a basis for the strong safety culture with an appropriate education background, training and competencies as well as attitudes and behaviors of workers with a strong support of leadership leads to the nuclear safety and public trust for the future NPP operator. That is why the organization decided to implement a safety culture starting from the organization’s analyses and implementing a competency model.

1.1 Analysis of the organization from the perspective of procedures, organizational culture applied and competencies

1.1.1 Goal of the analysis

- Analyze and review the human resource management strategies applied to date,
- Identify the potential bottlenecks as well as strong points and weaknesses of the HR system,
Identify the key competencies necessary to meet the strategic goals set to the organization.

As the result of the in-depth analysis performed, the HR Strategy has been developed with the aim to support the realization of the strategic goals of the company. The Strategy encompasses suggestions of actions to be taken in order to improve the HR management within the company as well as to:

- boost the effectiveness of works performed by the workers of the nuclear companies through an appropriate design and implementation of the competencies model;
- increase in the workers’ motivation as well as the degree to which they identify with the organization so as to render the HR policies more effective;
- improve the internal and external information exchange system.

1.1.2 Scope of the analysis

The scope of analysis has encompassed all issues related to HR management within the company. The following were analyzed:

- internal documents: codes and organizational structure, code of ethics (abstract);
- draft job descriptions;
- international guidelines and regulations referring to HR management within civil nuclear organizations;
- interviews with employees and management.

1.1.3 Methodology

In order to assess the situation the following approach has been adopted:

- Preparations for the analysis - the scenario of interviews with employees and management has been developed
- Data analysis (relevant internal documents and guidelines)
- Individual In-Depth Interviews

IDIs came in the form of an in-depth conversation led by the person responsible for the project. The data gathered is of high quality and allows for reconstruction of the respondents’ opinion on key competencies. The IDI method allows to gain a detailed knowledge on views the personnel hold of the HR management system and its context. IDIs were based on the previously prepared scenario and came in an organized and structured form. IDIs with 50% of the personnel, including management, were performed.

2. Results of the analysis

Below there is a list of the key problems identified during the IDIs:

- inconsistent HR management strategies applied by the management towards the personnel
- lack of/inconsistent flow down of the company's goals towards the departments and individual positions.
- lack of/inconsistent “top-to-bottom” knowledge transfer and information exchange
- lack of clear, objective and widely known criteria for job quality and effectiveness assessment
- decision making and authorizations to perform actions are highly centralized
wide gap between the code of organization and the real structure of the organization

Relationships and communication are inconsistent throughout the organization, which most likely stems from the fact that the personnel comes from a variety of backgrounds and there exists no common organizational culture for the PGE nuclear companies.

The corporate code of ethics is considered a standard, obligatory document, detached from the company’s core values.

No technical competencies with regards to nuclear technologies. General need to gather, build and increase capacities and competencies with regards to basic knowledge of nuclear technologies and radioactivity.

2.1. Conclusions

The analysis of the organization from the perspective of the competencies’ model has led to the nuclear safety culture being implemented as the standard for behavior and work. Culture of nuclear safety has been defined as the overall of characteristics and attitudes displayed by workers which allow to see the nuclear safety issues as an overriding priority in the program and which guarantee these issues be treated with due attention in line with the weight they carry. Principle: “safety first”

2.1.1. Detailed competencies in this area:

2.1.1.1. Full awareness of the conditions of work and principles ruling the work performed - full awareness of dangers in the working environment (esp. in the context of nuclear safety) as well as knowledge of procedures necessary to ensure the working environment stays safe and healthy. In-depth and detailed preparations to embark on the performance of the task.

2.1.1.2. Rigorous and cautious approach to work - abiding by regulations, codes and procedures while staying alert to any warning signals with regards to nuclear safety.

2.1.1.3. Questioning attitude towards all issues related to nuclear safety - keeping the questioning attitude to issues related to nuclear safety and raising questions without fear of repercussions.

2.1.1.4. Communications on nuclear safety issues - maintaining the right communications, including issuance of warnings to others on existing dangers as well as documenting the results of work performed.

2.1.1.5. Abiding by the information security policy (ie. non-disclosure principle) - ability to keep the information secret and work with sensitive material.

2.1.1.6. Developing and maintaining the culture of nuclear safety - development and implementation of the safety policy; maintenance of the role model’s status in this particular area. Creation and maintenance of the environment that supports and encourages questioning attitude towards the nuclear safety related issues. Safety first as the overriding priority also in the decision making processes.