



Experience in implementing a safety culture in the National company "Energoatom".

Anatoliy Varbanets

*National Energy Generating Company NEGC «Energoatom»,
Kyiv, Ukraine*

Contact: a.varbanets@direkcy.atom.gov.ua

+ 380442777834

Nuclear power in Ukraine

- **15 nuclear reactor units located at 4 nuclear power plants (NPPs)**
 - 13 VVER 1000
 - 2 VVER 440
 - 2 VVER 1000 units are in construction



- **All NPPs are managed by Nuclear Energy Generating Company «Energoatom»**

History of safety culture at NEGC «Energoatom»

- The Company was founded in 1997
- 1998 - First assessments of safety culture on all NNPs by the Directorate of Surveillance



- 2002: First international conference: “Safety Culture at Ukrainian Nuclear Power Plants”
- 2008: Introduction of the “General guidelines of the NPP safety”
- 2009-2012 “Safety culture level enhancement program” I and II



The Safety culture level enhancement program

In the framework defined by this program, the following documents were prepared and implemented:

- Evaluation criteria and procedures for assessment of safety culture at “Energoatom”
- Guidelines for monitoring of the state of the safety culture at the divisions of Energoatom
- Guidelines for monitoring of self-assessment of the safety culture in the directorates of “Energoatom”
- Guidelines for self-assessment of the safety culture in the directorates and divisions of “Energoatom”.

History of safety culture at NEGC «Energoatom»

- The experience gathered during the implementation of “the 2009-2010 Safety culture enhancement program” has been considered during development of the second “Safety culture enhancement program for 2011-2012”. Accordingly, the “Guidelines for monitoring of the safety culture at the divisions of Energoatom” has been adapted and implemented.
- Currently, the Headquarters of “Energoatom” do not have special division responsible for implementation activities related to safety culture. Major activities are distributed between 4 directorates: Directorates of Quality, Directorate of Surveillance, Directorate of Production and Research and Development Center.

“Guidelines for monitoring of the state of the safety culture at the divisions of Energoatom”.

- This program was developed on the basis of the guidelines developed by IAEA (INSAG-4, IAEA-TECDOC-743/R ,744, 1321, 1329), guidelines „SCART“ ((IAEA Services Series number 16),) and considering the long time experience gathered during official monitoring of safety culture starting from 1998.
- The integrated approach to the evaluation of safety culture has been introduced on Ukrainian NNPs and included besides traditional safety parameters also safety evaluations based on self-assessments of personnel via questionnaires and general attitude of the personnel of NPPS to the safety culture.

“Guidelines for monitoring of the state of the safety culture at the divisions of Energoatom”.

The following factors were considered during monitoring of the documentation:

- Management
- Support of the safety culture level
- Operation
- Technical service and repairs
- Training of the personnel of NPPs as well as personnel of contractors
- Quality assurance

Monitoring of the safety culture at the divisions of Energoatom” in 2012

- The major objectives of such inspections include support of the correct (positive) behavior and correction of the behaviors which do not correspond to the guidelines. During the last monitoring in April 2012 we have observed 126 examples of positive behaviors 221 cases of violation of the guidelines, and 60 recommendations to improve the situation.
- Additionally to the monitoring guidelines, in comparison to the previous monitoring guidelines, the analysis of the statements in different areas such as area on nuclear safety, of quality assurance, of ecology, of radiation safety, radiation wastes, of information technologies, human resources and others.

The questionnaires

- During monitoring of 2012, the questionnaires have been developed according to the methods of SCART and adapted considering the requirements of “Energoatom”.
- As a result of self-assessment each plant provided the results of the analysis of answers and conclusions.
- In 2010 and 2012, the survey has been conducted not only on NPPs but also in the other structural units of the “Energoatom” such as Directorates of Headquarters, Service centers, Research and Development Center, the division focusing on the construction of the two new reactors. Some of the SCART questions had to be adapted for those surveys.

Major conclusions of the questionnaires conducted at KhNPP.

- In general 83.2 % of the respondents found safety culture conditions as good.
- Some of the factors of the safety culture were assessed by the personnel worse than others.
- For example only 64 % agreed that the resources available to achieve good safety culture were sufficient. Only 67% agreed that the performance based assessment helps to improve responsible attitude to safety.
- Some of the questions were assessed as difficult to answer and additional analysis of the reasons will be conducted in the near future. As the result of this analysis the questions will be simplified and adapted.

Our influence on safety culture in the future

The following norms will be revised in the near future:

- norm for organizing activities in the field of safety culture;
- norm for the self-assessment of the safety culture conditions on the divisions of NPPs;
- norm for monitoring of the state of the safety culture at the NPPs.
- framework of action and activity plans to improve the management of the safety culture
- norm for the assessment of the activities of the operating organizations in improving safety culture
- training materials for different structural levels of the NPPs to support safety culture approach.

These revisions will be done during the service contract of European Union Commission U1.05/09T5 “Improvement of the management of the safety culture at NAEC “Energoatom””.

- Thank you for attention