Development of the Personnel Training and Qualification System of the Russian Federation Nuclear Regulatory Authority

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ABSTRACT

The new personnel training and qualification system is being developed for Russian regulatory body, having a very big number of employees and invited experts and widely territorially distributed structure.

1 INTRODUCTION

As a result of an administrative reform effected in Russia in 2004-2005 the strength of personnel of the Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor) amounts to more than 20,000 people including staff of HQ, regional and territorial subdivisions, invited experts. New conditions of the regulatory body activity in the field of nuclear, radiation, environmental and industrial safety dictate the necessity to develop the personnel training and qualification system to provide for a high level of its staff competency. Definitely, this training is one of the most important factors of safety assurance in respective industry sectors including atomic energy branch.

The paper describes the concept of such training being developed and implemented by the regulatory body technical support organisations.

2 TRAINING SYSTEM AS A LIFECYCLE

The most sustainable form of representing all the required stages of personnel training is a lifecycle, because all its stages are repeated periodically with some time lag. Personnel training system should be based on the principle of closed cycle (lifecycle) made up of 4 elements:

- Educating;
- On-the-job training (hereinafter called OJT);
- Examination and certification;
- Basic job.

The personnel training lifecycle is presented on the Fig.1.
2.1 Educating

Educating should incorporate all available kinds including induction training of newcomers, specialized induction training and periodical personnel refresher training in accordance with IAEA recommendations [1] including Systematic Approach to Training methodology based on the Competency Model training program development. In accordance with a system approach to training it should be finished with testing aimed at determination of obtained knowledge depth and quality.

The induction training of newcomers supposed to be recruited by the regulatory body contains nuclear university education as well as non-nuclear university graduates training, providing them with the necessary nuclear knowledge background.

The specialized induction training is implemented to provide nuclear oriented university graduates with the initial knowledge of regulatory body structure, functions, national and international nuclear legislation, rules and regulations. Such kind of training is usually provided by special training centres accredited by regulatory body [2].

2.2 On-the-Job Training

OJT includes practicing the skills of application of received during the previous stage theoretical knowledge and getting practical experience. The trainee usually gets a mentor or supervisor who assists him with some new activities. After a certain period of time the supervisor generates a trainee OJT report allowing management to assess the training effectiveness.

Depending on training kind OJT may be arranged in different forms and take different time. Under the unfavourable OJT results it may be continued or repeated.

2.3 Examination and Certification

After OJT coordinated by a regulatory body personnel department, staff shall be sent for certification to certification centres accredited by regulatory body and located in regions, therefore the regional and local offices personnel doesn’t have to spend much time travelling to HQ or the central certification office.
The certification centres submit the certification results to the Registry of Trust that contains all the information about the trainee being certified: his educational and OJT achievements, training programs completed, professional dossier, etc. Registration in the Registry makes it possible for the specialists to work in the regulatory body or to participate in audits conducted in the interests of the regulatory body.

2.4 Basic Job

Basic job is the longest stage of the lifecycle discussed. The most outstanding professional achievements of an employee should be fixed by his management and submitted to the Registry of Experts as a part of his professional dossier. This would help to determine the proper training program selection for him on the next cycle.

2.5 Registry of Trust Maintenance

Registry of Trust should be maintained by the regulatory body technical support organisation. Full access to the Registry data should be provided to the regulatory body personnel department. Restricted access may be granted to the regulatory body technical support organisations inviting experts to perform safety analyses and licensing expertise.

The Registry is supposed to be implemented as an electronic information system following all the requirements of information security and access control.

3 ISSUES AND WAYS OUT

High intensity of job of personnel at all levels and territorial distribution make impossible the personnel refresher training (duration of not less than 72 hours), and problematic workshops in a unified training centre. Under such conditions the most reasonable way of the training system arrangement is to organise a distributed structure of specialists distant learning and knowledge control.

Distant learning is based on the application of computer technologies in Internet. Respective training courses are being developed by the Training Centre of Refresher Training in Nuclear and Radiation Safety together with Federal State Unitary Enterprise VO “Safety”. They are arranged in electronic form (in the form of Integrated Electronic Manuals) and provided for personnel training at distant sites. This approach provides a unified methodology and harmonization of training programs contents. Qualification shall be performed with the use of a distributed system of knowledge testing, that provides on-line computer testing at a specialized web-portal.

4 CONCLUSION

Presented approach makes it possible to provide a flexible and effective model of personnel training and qualification system of the nuclear and radiation safety regulatory authority, having a significant number of widely territorially distributed staff, and then to integrate it into a knowledge management system being formed.

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REFERENCES
