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# Summaries

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M. Gashev, O. Ligotsky, L. Pecherytsa, A. Nosovsky

## **Analysis of operational events of Ukrainian NPP in 2008**

*The work presents analysis of the operational events occurred at Ukrainian NPPs in 2008 on a number of the directions characterizing operational safety.*

A. Pecherytsa, O. Zeleny, A. Dybach

## **Correlation of deterministic and probabilistic approaches at solving the problems related with the NPP safety**

*The main elements of deterministic and probabilistic approaches to the investigation of the NPP safety issues are presented with the indication of their benefits and drawbacks. These approaches are compared, and the advantage of the integrated approach to solving the issues influencing the safety is demonstrated. The integrated approach gives the possibility to take into account both deterministic and probabilistic aspects of the problem.*

D. Ryzhov, O-y Shugaylo, O-r Shugaylo,  
V. Krytskyy, V. Boychuk, R. Buryak

## **Analysis of Reasonability of Revision of National Regulatory Standards Related to NPP's Localizing Safety Systems Based on their Comparative Analysis with European Standards**

*The article presents main results of the comparative analysis of the provisions of acting Ukrainian standards related to NPP localized safety systems with the contemporary IAEA recommendations, and EU and Russian Federation standards. Reasonability to revise acting Ukrainian rules and standards, and develop new standards is analyzed and corresponding recommendations are made concerning improvement of the contemporary national regulatory basis related to designing, manufacturing, constructing (mounting), and operating the NPP localizing safety systems.*

A. Lygotsky, A. Nosovsky, I. Chemeris

## **Comparative Analysis of International Standards and Ukrainian Regulations on the Safety of Nuclear Research Reactors**

*Regulatory requirements and recommendations of international documents regarding the safety of nuclear research reactors were analyzed in comparison with the respective provisions of national regulations that require revision and additional incorporation into new regulatory documents with taking into account international practice and contemporary*

*level of science and technology. The approaches were determined to the improvement of regulatory basis of Ukraine in the area of nuclear and radiation safety of nuclear research reactors.*

A. Kostromin, A. Abdullaev, S. Maryokhin, S. Slyeptsov

## **Steamline Break Analysis for VVER-1000/V320 reactor**

*Comparative analysis of the spectrum of steamline breaks scenarios has been performed in order to determine the limiting case for the Safety Substantiation for the use of reload batch of Westinghouse fuel in the SU NPP, Unit 3.*

I. Prokhorets, S. Prokhorets, E. Rudichev,  
D. Fedorchenko, M. Khazhmuradov

## **Safety Investigations of Nuclear Items by Monte-Carlo methods**

*Results of the safety investigations of the objects that contain the fuel assemblies of the WVER-1000 reactor in transport container and target of the electron accelerator driven neutron source are given. Investigation method was mathematical modeling and program codes MCNP4C and MCNPX were used for these purposes.*

S. Sayenko, Zh. Azhazha, G. Kholomyeyev,  
A. Pilipenko, S. Gabelkov, R. Tarasov

## **Encapsulation by hot isostatic pressing of the damaged fuel elements: technological approach and model experiments**

*The basic results of model researches and experimental improvement of a method of hot isostatic pressing for manufacture of the long-length non-curved protective capsule, containing a spent fuel assembly or a damaged fuel elements of RBMK-type inside the corrosive- and radiation-resistant monolithic thick-walled glass-ceramic protective shell.*

A. Berezhnyy, A. Sevbo, I. Semenjuk

## **Development of requirements to application of probabilistic methods for optimisation of maintenance and equipment repairs**

*Object of research is application of approaches of the risk-informed regulations (RIR) in the national regulatory activity and in NPP operational practice, and in particular in optimisation of maintenance and repairs (M&R) with the use of probabilistic methods. The article presents main principles and requirements to M&R optimisation with the use of RIR.*

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Yu. Lobach, M. Lysenko, V. Makarovskiy

## **Substantiation of the Decommissioning Strategy Selection for the Research Nuclear Reactor WWR-M**

*Analysis of factors affecting the decommissioning strategy selection is presented for the research nuclear reactor WWR-M of the Institute for Nuclear Researches of the National Academy of Sciences of Ukraine. Consistency of the decommissioning stages as well as the scope of work at these stages is established in accordance with the selected strategy; the required conditions and infrastructure providing timely and effective execution for the planned activity are considered as well.*

V. Gavrish, D. Tkachov

## **Evaluation of Cost of Radioactive Waste Management During the Chernobyl NPP Decommissioning**

*The article presents the results of calculations on evaluation of radioactive waste volumes, the required financing, and the*

*labor expenses for management of radioactive waste that may arise during the decommissioning of Chernobyl NPP Units 1, 2, 3.*

S. Klevtsov, N. Valigun,  
A. Nosovsky, I. Komarov

## **Safety Culture in the Use of Nuclear Energy**

*The article presents brief description of origination and evaluation of the safety culture concept in Ukraine based on the safety standards of IAEA and other international organizations, as well as the international experience of application of the safety culture management system in the area of nuclear energy use. The timeliness of this work is caused by the necessity to develop acting nuclear and radiation safety rules and standards of Ukraine and harmonize them with the international approaches. The results of this work can be used for improvement of the legislative and regulatory basis of Ukraine on nuclear and radiation safety.*