
PERSPECTIVES OF DEVELOPING AND USING OF KNOWLEDGE BASE ON NPP'S I&C FOR EXPERT ACTIVITY SUPPORT

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The development of knowledge base is very essential in field of NPP's I&C because of high rate of progress in hardware and software technologies, wide-ranging modernization of I&C concerned with this progress and existence and regular renovation of large amount of different standards and regulations concerning to I&C systems and their components.

Experts have to work with large amount of different information during the analysis and assessment of documents, which substantiate safety under NPP's I&C implementation (modernization). In addition to analysis of documents, which was sent on expertise, specialists also have to:

- assess different substantiating and additional documents of designers and NPP's;
- obtain as much as possible complete information about implemented (modernized) I&C;
- get the information about results of expert reviews, which were fulfilled before;
- choose the methods of assessment;
- work with different standards, guides and rules;
- assess the compliance of assessed document with large amount of regulatory requirements to NPP's I&C safety;
- use national and international publications in field of I&C.

High quality of NPP's I&C analysis and assessment is ensure thanks to such complex and comprehensive approach.

It is obvious that such approach requires the effective information support of expert activity. Therefore development of knowledge base on NPP's I&C for expert organizations (such as State Scientific-Technical Center on Nuclear and Radiation Safety – SSTC NRS) is very actual and important task. This knowledge base will allow to regulate the information flows in enterprise, to organize common centralized and neatly structured data warehouse and to make easier the searching of necessary information for the work. It means that effectiveness of work and quality of expert reviews will be raised.

It is necessary to note that using of knowledge base is not confined only the carrying out of expert reviews (although it is most important task). Knowledge base could be used also for help in current work (elaboration of standards, support of NPP, fulfillment of research scientific work, international collaboration, preparing of publication and so on) and for transfer knowledge and experience to young specialists.

Actually, proposed knowledge base of SSTC NRS will be the complex of databases and other information sources (documents in electronic and printed view, compact disks and so on) with common software shell, which allow quickly to find and to get complete, authentic, well-ordered and structured data, which are contained in different information sources. Such

structuring is intended to ensure the maximum complete end easy searching of necessary information and to formalize the expertise process in SSTC NRS.

Common structure of NPP's I&C knowledge base is presented in Fig. 1. Proposed internal structure of each mentioned knowledge base components [1] is determined on the base of experience in safety regulation and assessment and is appropriate during developing and practical using this knowledge base by experts.

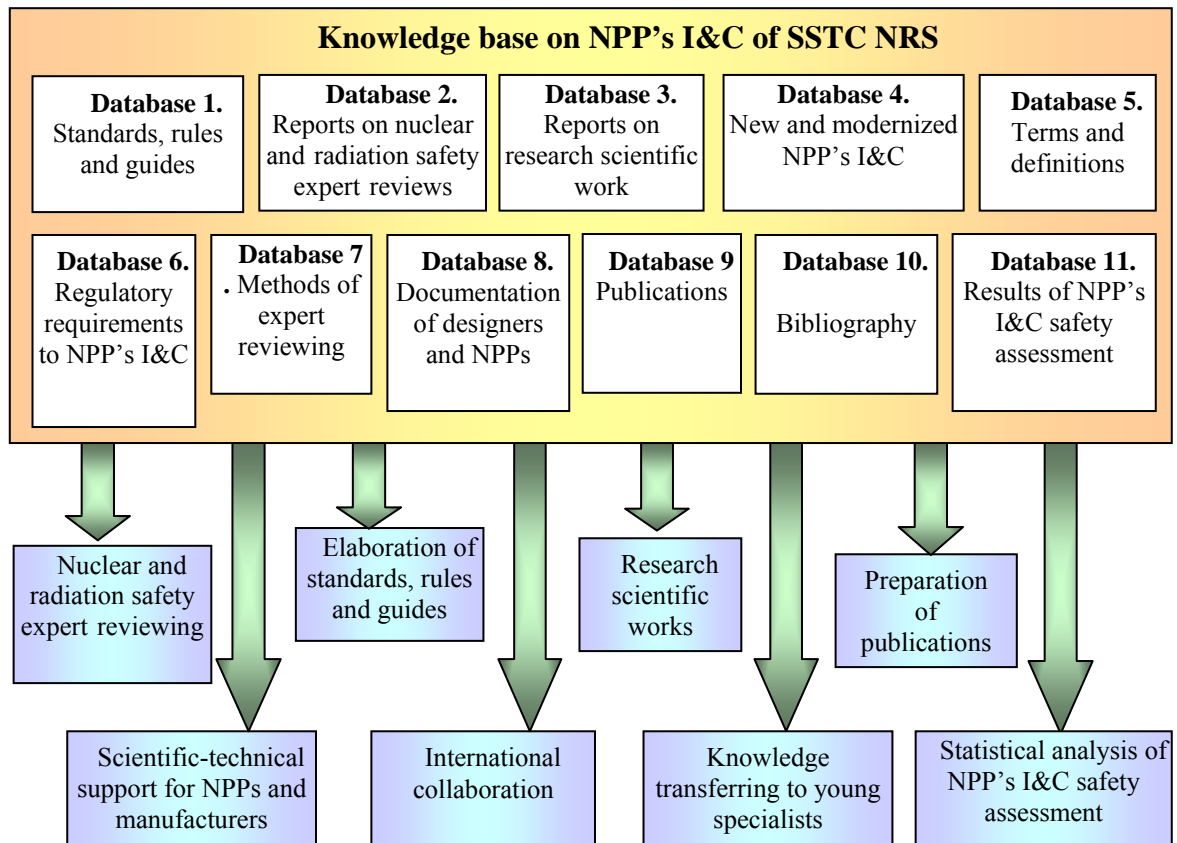


FIG. 1. Common structure of NPP's I&C knowledge base, which is developing in SSTC NRS

REFERENCES

- [3] KLEVTSOV A., Yastrebenetsky M. Perspectives of development of knowledge management system in SSTC NRS // Nuclear and Radiation Safety. Ukraine. Kyiv. No. 3, 2006. pp. 21-30 (in Russian).