



## THE FOUNDATION OF COMPUTER BASED CLOSED RADIONUCLIDE SOURCES TURNOVER CONTROL SYSTEM IN MOSCOW CITY REGION

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### Abstract.

*This paper concerns the problem of Closed Radionuclide Sources (CRS) automated account and control in Moscow city and Moscow region. Information relations structure between authorities and enterprises is shown. Special computer oriented system of CRS turnover monitoring is used for this purposes. Its possibilities and numeric characteristics of database are mentioned. This system benefit and application aspects are discussed in detail.*

### 1. Introduction.

The problem of radioactive materials (RAM) and radioactive wastes (RAW) turnover control is of a great importance. Now federal system of them account and control in Russia still is creating. But Moscow metropolitan district (Moscow city and Moscow region) with population near 15 millions peoples has own program of Closed Radionuclide Sources (CRS) account and control which is the main part of RAM and RAW turnover monitoring system.

### 2. The base of the CRS turnover control system.

According to Moscow city and Moscow region administrations decisions Moscow Science and Production Association (MSPA) «Radon» has a commission to solve a problem of Closed Radionuclide Sources regional account and control. For this reasons the typical automated computer oriented system of CRS turnover monitoring was developed and realized in MSPA «Radon». Since 1991 this system provides the closed-loop CRS turnover control from the moment of their receipt by enterprises (from the «birth-day») till the final localization (till «death»), by means of it's main parts: system of CRS and CRS-based devices accounting and there's owners control, radioactive wastes suppliers accounting with radioactive wastes generation process analysis and, finally, radioactive pollution sources monitoring system, including account and analysis of illicit CRS manipulation accidents.

Now this system provides the work of Regional Information Analytic Center, which is in close connection with State Atom-Inspection Depts., Sanitary and Epidemiological Inspection Depts., Civil Defense and Emergency Affairs Headquarters, Federal Security Service, Ministry of Internal Affairs Depts., Moscow Ecological Police etc. Information relations structure is shown at Fig.1.

### 3. System characteristics and possibilities.

At present the databases of the system contains the information about more then 700 Moscow city and Moscow region enterprises, possessing more then 200 000 CRS, and more then 2000 RAW suppliers under service of MSPA «Radon» including enterprises from 10 other regions of the Russia centre area..

The information system permits to conduct the data analysis, concerning the various aspects of CRS storage and operation at enterprises of the city and region. The joint data processing about localized and maintained CRS identifies «out of date», lost or «conditionally lost» sources. It enables authorities to conduct the operative control at correctness of CRS use, as well as to accept regular decisions about «out of date» CRS replacement and localization planning.

The CRS turnover monitoring system is realised in Microsoft Access and is counted on unprepared users. This system operation experience is proved its high effectivity.

The great amount of detailed and generalized information is available additionally.

#### 4. Conclusion.

The automated computer oriented system of CRS turnover monitoring was created in MSPA «Radon» and is exploiting since 1991 for Moscow city and Moscow region. It provides the work of Regional Information Analytic Center. Having information about more than 200 000 CRS, this system gives possibilities both for autoriries to control the CRS use and for enterprises to plan CRS replacement and localization. The system exploitation experience is proved its high effectivity.

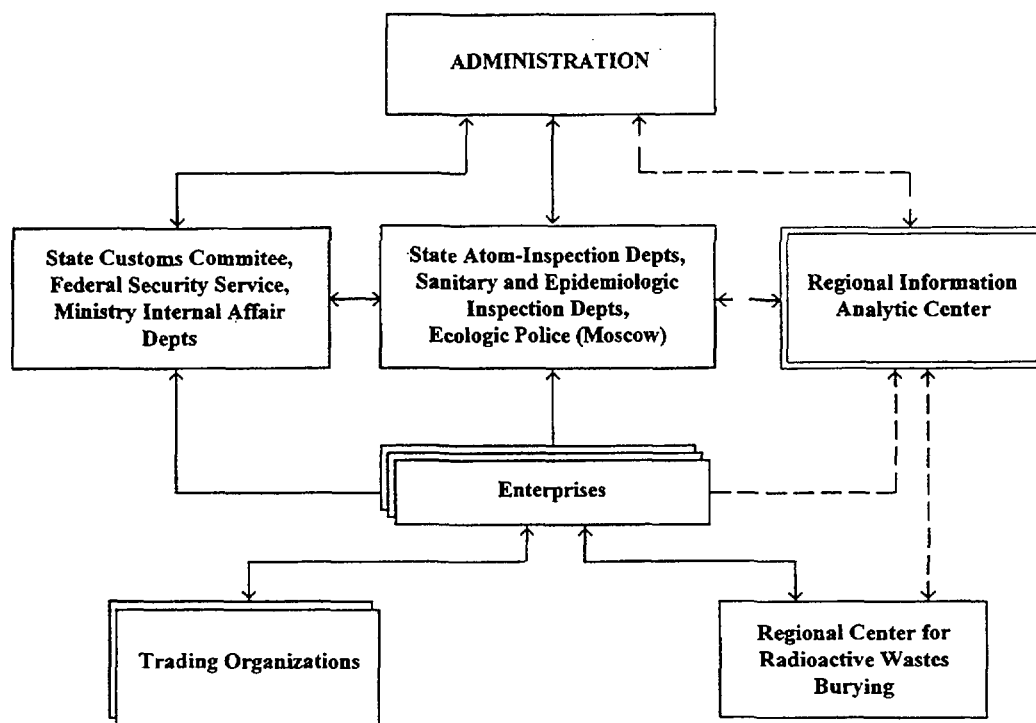


Fig.1. Structure of information relations.