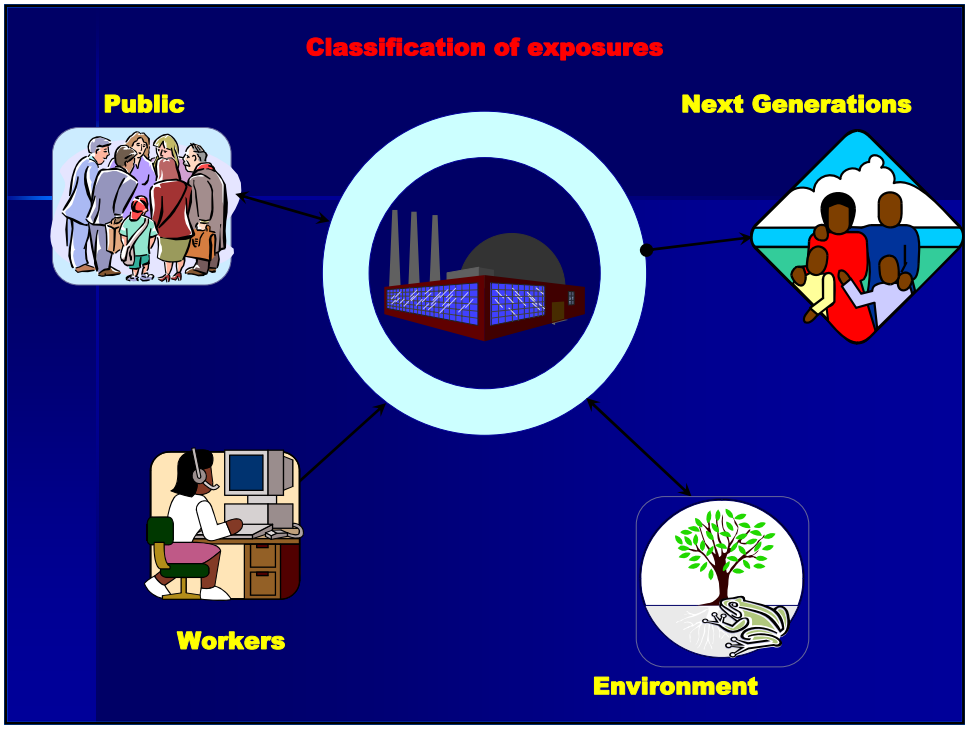
State research centre – Institute biophysics

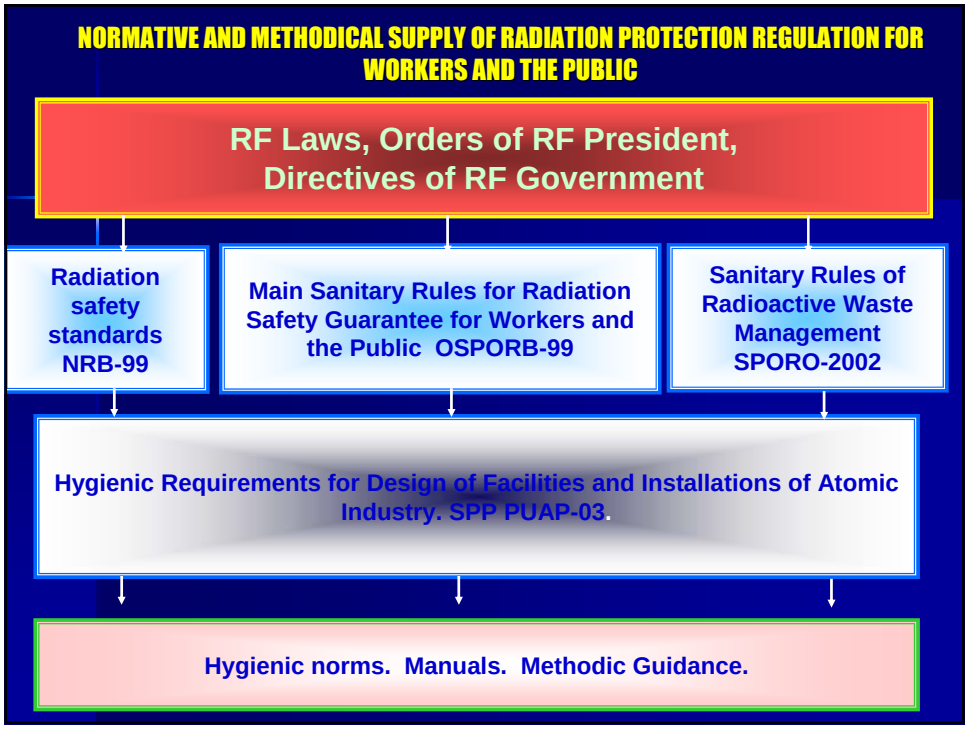
Federal medical-biological agency

Special Features of radiation protection regulation at FSUE «SevRAO» Facilities

(Andreeva bay)

Chief of laboratory A. Simakov




NORMATIVE AND METHODICAL SUPPLY OF RADIATION PROTECTION REGULATION FOR WORKERS AND THE PUBLIC
RF Laws, Orders of RF President, Directives of RF Government
Radiation safety standards NRB-99
Main Sanitary Rules for Radiation Safety Guarantee for Workers and the Public OSPORB-99
Sanitary Rules of Radioactive Waste Management SPORO-2002
Hygienic Requirements for Design of Facilities and Installations of Atomic Industry. SPP PUAP-03.
Hygienic norms. Manuals. Methodic Guidance.


State research centre – Institute biophysics
Federal medical-biological agency
One of the main objectives of the regulatory authority with respect to radiation safety is the public and personnel protection in at working with man-made sources of ionizing radiation
This task has been and is successfully solving with respect to radiation facilities (RF), operation of which complies strictly with the design without any violations of established limits of safe operation.

State research centre – Institute of biophysics

Federal medical-biological agency

Certain problems can arise during protection guarantee for the public and workers in the case of forced deviations from the designed solutions following radiological accidents, breaching of the protective barrier integrity and other reasons resulting in violation of standard conditions of Radiation facility (RF) operation.

Typical example of RF operation under abnormal conditions is those on the sites of temporary storage (STS) of spent nuclear fuel (SNF) from nuclear submarines and radioactive waste (RW) belonging FSUE "SevRAO".

State research centre – Institute of biophysics

Federal medical-biological agency

In the course of long-term operation protective barriers of SNF and RW storage facilities in FSUE "SevRAO" Branch № 1 were damaged and lost partially their containment effectiveness. This caused radionuclide migration into the environment and industrial rooms and the site became contaminated with radioactive substances.

State research centre – Institute of biophysics

Federal medical-biological agency

At the present time special Combines are planned on-site STS for SNF and RW management, SNF removal to processing (during 10 years, by prognosis) and longer-term storage (during 50 years, by prognosis) of conditioned RW, together with subsequent remediation of the STS site.

State research centre – Institute of biophysics

Federal medical-biological agency

Special conditions of STS and work planning relating to SNF and RW management:

- **Insufficient information volume regarding radiation - hygienic and physical conditions of SNF; this requires implementation of additional examinations;**
- **Forced SNF and RW allocation in BDS – buildings designed with other purposes;**
- **Availability of damaged assemblies with SNF (according to NIKIET prediction, 20-30%)**
- **Registration of increased levels of man-made radionuclide contents and external gamma radiation on-site STS, in the industrial buildings and constructions;**

State research centre – Institute of biophysics

Federal medical-biological agency

- Unique nature of technologies and equipment designed for SNF and RW management;
- Necessity of practically simultaneous implementation of operations on contaminated sites directed at decommissioning some buildings and structures or their reconstruction and construction of new industrial buildings for work implementation of SNF management and RW treatment;
- Relatively short operation life of new buildings and construction forming the necessary infrastructure for SNF removal, and their following decommissioning at one time with operation of the Combine for RW processing;
- Emergency conditions of construction structures in some buildings, including building № 5;

State research centre – Institute of biophysics

Federal medical-biological agency

- implementation of some radiation-hazardous operations under unfavorable meteorological conditions;
- A lack of sufficient staff of qualified personnel ;
- Necessity of application of special individual protective equipment for workers at SNF management, wide application of robotics.

State research centre – Institute of biophysics

Federal medical-biological агентство

Contracts with NRPA and DDNRF of Rosatom

Contract with NRPA – development of a set of normative and methodic documents for RP regulation when design and planning of radiation-hazardous operations (2005-2007)

Contract DDNRF:

- Parameter evaluations of the radiation situation;
- Analysis and assessment of the design materials;

development of a set of normative and methodic documents for RP regulation in the course of the Combines operation for SNF and RW management (program up to 2010).

State research centre – Institute of biophysics

Federal medical-biological agency

DDNRF Rosatom Contract FSUE «DalRAO» (2007-2010)

- Parameter evaluations of the radiation situation;
- Analysis of system organization of sanitary admission regime and personal protection of workers;
- Analysis and assessment of the design materials;
- Development of a set of normative and methodic documents for RP regulation at SNF and RW management;
- Analysis of existing systems of RM and PDM;
- Guidance «Radiation protection guarantee for workers of FSUE «DalRAO» at SNF and RW management»

State research centre – Institute of biophysics

Federal medical-biological agency

HYGIENIC REQUIREMENTS FOR GUARANTEE RADIATION PROTECTION OF WORKERS AND THE PUBLIC IN THE COURSE OF DESIGN AND ARRANGEMENT OF SNFAND RA MANAGEMENT IN FSUE "SEVRAO" BRANCH № 1

(final Guidance within the contract with NRPA)

Objective of development – generation of the regulatory document including mandatory sanitary-hygienic and organizational requirements to guarantee radiation protection when designing of work implementation directed to SNF removal, RW processing and long-term storage and remediation of the STS site in Andreeva bay.

The Guidance encloses requirements on the following issues:

- Radiation protection guarantee for workers at SNF and RW management;
- Radiation protection guarantee for the public at operations on – site STSX;
- Ensure emergency preparedness of the STS.

The report is over. Thanks for your attention !