

**THE DECREE OF THE MINISTRY OF EMERGENCY SITUATIONS
OF THE REPUBLIC OF BELARUS OF DECEMBER 30, 2011, NO 73.
ON APPROVING RULES AND GUIDELINES ON NUCLEAR AND
RADIATION SAFETY ASSURANCE**

**«REQUIREMENTS TO THE STRUCTURE AND CONTENT OF THE
SAFETY ANALYSIS REPORT FOR RADIATION OBJECTS »**

According to article 6-2 of the Law of the Republic of Belarus of January 5, 1998 «On Radiation Safety of the Population» and second subparagraph in subparagraph 128.3 of paragraph 128 of the Provision on Licensing certain types of activity approved by the Edict No. 450 as of September 01, 2010 of the President of the Republic of Belarus “On licensing certain types of activity”, the Ministry of emergency situations of the Republic of Belarus DECREES:

1. Approve the attached rules and guidelines on nuclear and radiation safety assurance «Requirements to the structure and content of the safety analysis report for radiation objects »
2. This regulation shall come into effect on 1 March 2012.

Minister V. A. Vashhenko

Agreed

By the letter of

National Academy of Sciences of Belarus

10.25,2011 No 26-11/5700

Agreed

By the letter of the Ministry of

natural resources and environmental protection

of the Republic of Belarus

11.28, 2011 No 09-11/5242

Agreed

By the letter of the

Ministry of Healthcare

of the Republic of Belarus

10.21, 2011 No 10-27/10-1390

Approved

By the decree of the Ministry

of emergency situations

of the Republic of Belarus

12.30.2011 No 73.

RULES AND GUIDELINES ON NUCLEAR AND RADIATION SAFETY ASSURANCE «REQUIREMENTS TO THE STRUCTURE AND CONTENT OF THE SAFETY ANALYSIS REPORT FOR RADIATION OBJECTS »

SECTION 1

GENERAL PROVISIONS

CHAPTER 1

PURPOSE AND SCOPE OF REGULATION

1. These rules and guidelines on nuclear and radiation safety protection «Requirements to the structure and content of the safety analysis report for radiation objects » (further – Guidelines) set out requirements to the safety analysis report for radiation objects (further SAR RO): the structure, the content, the order of preparation and updating.

2. Requirements of these guidelines are binding on the territory of the Republic of Belarus upon all individuals and legal entities, irrespective of their status and form of ownership on the managing of sources of ionizing radiation (further – SIR)

3. Requirements of these guidelines do not apply to nuclear facilities and radioactive waste handling facilities.

4. In these Guidelines terms and definitions shall apply, defined by No. 450 as of September 01, 2010 of the President of the Republic of Belarus “On licensing certain types of activity” (The national register of legal acts of the Republic of Belarus, 2010, No. 212, 1/11914), Law of the Republic of Belarus of January 5, 1998 "On Radiation Safety of the Population" (Bulletin of the National Assembly of the Republic of Belarus, 1998, issue 5 p 25), rules and guidelines on nuclear and radiation safety assurance «Safe Management of Ionizing Radiation Sources. General provisions» approved by the decree of the Ministry of emergency situations of the Republic of Belarus of May 31, 2010, No 22.

CHAPTER 2

THE ORDER OF PREPARATION AND UPDATING OF THE SAFETY ANALYSIS REPORT

5. The preparation of SAR RO is obligatory for radiation objects with SIR belonging to radiation hazard category I, 2

The list of SIR categories by the degree of radiation hazard is given in annex 1 to rules and guidelines on nuclear and radiation safety assurance «Safe Management of Ionizing Radiation Sources. General provisions».

6. SAR RO must be based on the results of a safety assessment, carried out by SIR users with a view to provide evidence of achieving adequate level of reliability of organizational and engineering measures to ensure radiation safety.

The responsibility for radiation objects (further – RO) safety assessment rests with SIR users.

7. While carrying out a safety assessment, radiation risks, related to the normal SIR operation and expected operation developments and abnormal conditions (where SIR system and elements failure, internal and external SIR developments occurred) and also their consequences must be considered.

8. Preparation, formulation and updating of SAR RO must be provided at all stages of RO existence.

Information, contained in SAR RO, should be sufficient for radiation safety assurance assessment when siting, construction, operation and decommissioning of a radiation object, as well as for the assessment of the effectiveness of organizational and technical security measures.

9. A safety assessment should be carried out on the basis of project, maintenance and other technical documentation and take into account the results of research and development works.

Amount of information, included in SAR RO, should be commensurate with radiation risks and uncertainties while using SIR.

10. SAR RO should be updated taking into account changes in radiation object status. SIR users should carry out the analysis of information included in SAR RO at least once a year.

Any changes, affecting the RO or SIR safety (SIR structure changes, conditions of its operation, introduction of new equipment, reconstruction conduct of SIR or its system and elements and so on) must be immediately added to SAR RO.

SIR user takes responsibility for making timely necessary additions and amendments to SAR RO in case of deviation from project documentation during SIR operation, maintaining compliance of SAR RO with actual situation with respect to safety analysis of radiation objects.

11. SAR RO should include information on methods, models, calculation programs that are used in safety analysis.

12. SIR users develop SAR RO before putting the RO into operation. In terms of operating RO, SIR users should assure the development of SAR RO in the course of a calendar year from the date of coming into effect of these Guidelines.

SAR RO should be approved by the head of the SIR user organization.

13. SAR RO should be written in triplicate.

One copy, that is available to SIR user, is updated in accordance with the requirements of paragraph 10 of these Guidelines. The SIR user should provide the copy of the updated SAR RO at the request of the bodies of state supervision of radiation safety assurance within 14 calendar days.

Two copies of SAR RO are provided to the Department of nuclear and radiation safety of the Ministry of Emergency Situations of the Republic of Belarus when applying for introduction of amendments and (or) additions to a special permission (license) for carrying out activities in the field of nuclear energy and sources of ionizing radiation use as part of the documents, supporting nuclear and radiation safety assurance.

SECTION 2

REQUIREMENTS TO THE STRUCTURE AND CONTENTS OF THE SAFETY ANALYSIS REPORT FOR RADIATION OBJECTS

CHAPTER 3

THE STRUCTURE OF THE SAFETY ANALYSIS REPORT

14. SAR RO should include following sections:

general provisions;

characteristics of RO deployment conditions (only for RO with radionuclide SIR);

basic information on RO;

RO safety assurance;

organization of radiation survey;

organization and ensuring the physical protection;

analysis of possible radiation accidents;

decommissioning of RO;

assurance of operating quality system;

conclusion.

The structure of the safety analysis report for radiation objects is given in annex of these Guidance.

15. In case of using safety review results while preparing SAR RO, carried out by independent organization that has a license for carrying out the above activities, information on carried out assessment and its results should be included in an additional section or presented as annexes to the SAR RO.

CHAPTER 4

REQUIREMENTS TO THE CONTENTS OF SECTION

«GENERAL PROVISIONS»

16. Section should include SIR user information:

long and short title;

departmental affiliation;

- postal address of the legal entity;
 - tax identification number;
 - basic activities.
17. Section should include information on necessary staff that is to be involved in work with SIR. Information on necessary and actual staff structure should be given for operation RO.
18. Section should include the list of normative legal acts (further – NLA), as well as technical normative legal acts (further – TNLA), on which requirements the SAR RO drafters were guided by.

CHAPTER 5

REQUIREMENTS TO THE CONTENTS OF SECTION «CHARACTERISTICS OF RADIATION OBJECT DEPLOYMENT CONDITIONS»

19. Requirements of this section shall apply fully to RO with radionuclide SIR belonging to radiation hazard category I.
20. Section should contain information on RO location, including the list, features and characteristics of possible external influences of natural and anthropogenic origin, taken into account in the course of engineering of structures, systems and RO equipment.
21. Section should contain the following subsections:
- RO location;
 - meteorological, hydrogeological and seismic conditions of the RO location area;
 - the list of dangerous geological processes.
22. Subsection «RO location» should include the following information:
- RO location with respect to natural and artificial landmarks within the RO surveillance area and (or) within the distance of potential radiation effect of accident (populated areas, water objects and watersheds, airports, railway stations, river ports and so on);
 - the distance from RO to military and industrious explosive and fire-hazardous facilities;
 - the distance from RO to recreation areas, nature conservation areas, closed areas;
 - the distance from RO to transport facilities, routes of communication.
- If a surveillance area for RO is set up, paragraph should provide information on population distribution in RO location area within the controlling area including average population density with accounting for the possibility of its increase.
23. Subsection «Meteorological, hydrological and seismic conditions of RO location area» should contain the following information:
- seismic condition of the RO location area;
 - average and maximum registered value of meteorological parameters based on the results of observations of processes and phenomena, that can influence safe RO operation (wind, whirlwind, extreme snowfall and snowstorm, the rise of the groundwater, collapses of storage dams and other);

- average and extreme values of air and earth temperature;
analysis of dangerous hydrological and meteorological phenomena;
the list of the hydro- meteorological processes and phenomena, identified in RO location area.
24. Subsection « The list of dangerous geological processes» should provide forecast data of those adverse changes of geological, hydrological and seismic conditions, that can activate one or another dangerous geological process during the construction and operation phases of RO, give the list of dangerous geological processes and phenomena.
25. On the basis of the data presented a rationale is carried out on the admissibility of RO location area and defining of parameters and characteristics of RO external influence.

CHAPTER 6

REQUIREMENTS TO THE CONTENTS OF SECTION «BASIC INFORMATION ON RADIATION OBJECT »

26. Section should include the following subsections:
RO structure and functions;
the list of SIR and their location;
description of radioactively hazardous works;
SIR radioactive effect on staff, population and environment.
27. Subsection «RO structure and functions» should briefly describe the RO structure and its industrial purpose. When RO includes several self-maintained SIR not connected with each other and of various purposes, the list of brief information on their purposes should be provided.
Description of RO industrial purpose should give brief information on RO function and process description in general when using SIR for conducting different works (including production processes, medical procedures and investigations, scientific investigations).
A part of the process (a phase, an operation, a procedure) that is directly related to the use of SIR, should be described more detail.
28. Subsection «the list of SIR and their location» provides the list of available SIR, description of technical characteristics and operational modes indicating limits and conditions of safe operation according to constructing, technical and operation documentation. It should provide data on all SIR, that are taken into account while estimating and constructing biological protection.
Subsection includes a separate annex with:
The list of RO premises, where listed SIR are placed, including potential temporary locations (during storage and works);
location of all SIR specified on premises plans;
description of SIR radiation characteristics. The following information should be provided for radionuclide sources: the marking of source, radionuclide spectrum, activity, aggregative state, release date, design life. The following information

should be provided for appliances generating ionizing radiation: SIR type, maximum radiation density (or maximum accelerating voltage), release date. Both design and actual (at the moment of developing SAR RO) data should be presented for operating RO.

RO with radionuclide SIR belonging to radioactive hazard category I should be presented in convenient scale for reading plans of buildings, premises and (or) facilities with arrangement of equipment inside them and external systems in relation to the part of devices and facilities, that contain radionuclide sources.

The following information should be marked on a plan (plans):

RO premises with the view of their division into non-working, periodically working areas and premises with permanent staff occupancy;

premises, with bare radioactive source works undertaken (further – BRS);

radioactive source storages;

personnel access hatches and clean rooms;

places for storage contaminated with radioactive components equipment and materials, assembly areas and temporary storage rooms of radioactive waste;

premises of free access, including administration and amenity facilities.

29. Subsection «Characteristics of radiation hazardous works» should include the following information:

the list of SIR works, including works with radionuclide sources (indicating the type of works for RO with BRS);

location of premises plans with workplaces, describing the characteristics of works undertaken (operations) and supporting of their safe work performances on each workplace;

the list of applied personal protective equipment at workplaces.

30. Subsection «SIR radiation effect on staff, population and environment» should describe factors of potential SIR radiation effect on staff, population and environment during normal RO operation and potential radiation accidents.

If surveillance area and radiation control area are established for RO, borders and characteristics should be indicated for each of these zones.

CHAPTER 7

REQUIREMENTS TO THE CONTENT OF SECTION «RADIATION OBJECT SAFETY ASSURANCE »

31. Section provides the information on radiation safety assurance, including radiation protection of staff and population in normal RO operation conditions, and in case of radiation accident.

Section should include the following subsections:

methods and tools of radiation safety assurance;
staff and population dose assessment;
plan fire protection systems.

32. Subsection «methods and tools of radiation safety assurance» should depict information on concept of implementation of safety radiation assurance. The information should include:

short description of systems, that influence SIR safety;

description of technical means and organizational arrangements, assuring protection of staff, population and environment from potential RO radiation effect;

description and characteristics of the system of physical barriers, provided by construction and other technical documentation on the way of propagation of ionizing radiation on RO premises and environment;

methods and tools description and periodical inspection of integrity and efficiency of SIR physical barriers;

short information on the construction, layout and materials of biological defense for each of radionuclide sources, constituting SIR, including geometrical parameters and relative location plan of fragments of biological defense, short characteristics of barrier materials used for biological defense, design levels of ionizing radiation attenuation in the defense, data on special protective devices and equipment (protective containers, stationary and mobile screens, hermetical compartments and others), applied during works with radionuclide sources at workplaces;

the description of SIR system and elements with their separation into systems and elements that are of importance for SIR safety, and systems and elements having no impact on SIR safety. The description of important for SIR safety systems and elements should include information on principles and criteria that form the basis of system and elements project, acceptable limit value of principal characteristics (mechanical, strength and other), as well as reliability index of systems and elements;

the description of arrangements on radioactive waste management and decommissioned equipment and materials, contaminated with radioactive substances.

For operating RO section should depict safety operation level condition, including systems and elements condition that can influence SIR safety.

33. Subsection «staff and population dose assessment» should include:

staff dose assessment during normal SIR operation (including repairs, system balance and technical support of SIR systems and equipment) and in case of potential radiation accidents;

levels of annual individual personnel dose exposure during normal RO operation (for operating RO);

collective annual dose exposure assessment of population during normal RO operation and in case of radiation accident (for RO with radionuclide SIR belonging to radiation hazard category I).

In the section should be justified, that during normal RO operating as well as in case of accidents individual personnel dose exposure shall not exceed established acceptable dose limits, collective dose shall be minimized and radiation intake to the environment by release and dispersion shall not exceed prescribed levels for this RO value and not cause to further population exposure.

34. Subsection «fire protection systems» should include:

short information on available fire prevention systems, including build-up principle of such systems, their safety level, analysis of system operation capacity in case of failure;

The results of consequence analysis of false alarm fire prevent system and their influence system operation capacity, important for the SIR safety;

the justification for having no impact on systems conditions important for the SIR safety in case of external fire on the territory around SIR;

short description of arrangements, provided by the project, of assuring personnel evacuation during the fire and assuring building smoke protection system;

the description of firefighting water supply of RO buildings and constructions and equipping them with internal firefighting main. At the same time fires should be listed for estimating fire flow;

the list of ponds and basins, that can be used by firefighting equipment for water withdrawal;

prediction of fire effects through a radiation security perspective, including prediction of fire effects during buildings and structures collapse due to external effects of natural and anthropogenic origin.

Radiation fire effect assessment should be carried out for RO with radionuclide SIR by reference to potential failures in fire-extinguishing system.

CHAPTER 8

REQUIREMENTS TO THE CONTENTS OF SECTION «RADIATION SECURITY ARRANGEMENT»

35. Section should include the following subsections:

RCS design basis and engineering tools;

radiation dosimetry monitoring;

process radiation monitoring;

radiation monitoring of non-proliferation radiation contaminations;

environment radiation monitoring.

36. Subsection «RCS design basis and engineering tools» should describe (listing basic technical and metrological characteristics) RSC, provided by design, operation and other technical SIR documentation.

37. RCS engineering tools should be described, ensuring:

continuous monitoring on the basis of stationary automotive engineering tools;

operative monitoring on the basis of portable and mobile tools;

laboratory analysis on the basis of fixed laboratory facility including means of sampling selection and preparation.

The sufficiency and reliability of RCS engineering tools for radiation monitoring to the extent required by operation and other technical documentation scope should be substantiated;

Information on metrological radiation monitoring validation;

Information on accreditation by the System of verification and testing laboratories of the Republic of Belarus (if they are provided for this RO), including:

radiation dosimetry monitoring;

process radiation monitoring;

radiation monitoring of non-proliferation of radiation contaminations;

environment radiation monitoring.

38. Subsection «radiation dosimetry monitoring» should describe radiation situation monitoring arrangements on workplaces and in areas of potential staff presence, as well as individual dosimetry monitoring.

39. Subsection «process radiation monitoring» should describe shortly arrangements and justify sufficiency of its assessment:

Integrity and effectiveness of physical barriers;

Conditions and working capacities of SIR systems and elements.

40. Subsection “radiation monitoring of non-proliferation of radiation contaminations” should briefly describe radiation monitoring arrangements of potential radiation proliferation in the environment and justify its sufficiency for pollution level estimation of surfaces of working areas and equipment; skin covers, footwear, individual overcoat, personal protection means for personnel, used transport facilities.

41. Subsection «environment radiation monitoring» is mandatory to be included in SAR RO when control area and (or) radiation control area is established for RO.

Subsection should describe environment radiation monitoring, including radiation monitoring arrangements in control area, radiation control area for natural environments with radiation contamination and potential population exposure during RO radiation accidents.

CHAPTER 9

REQUIREMENTS TO THE CONTENTS OF SECTION «ORGANIZATION AND PROVISION OF PHYSICAL PROTECTION»

42. Section should include basic organizational and technical arrangements for the prevention of unauthorized personnel activity in relation to SIR or systems, important for RO safety.

Description of organization and provision for maintaining of physical protection (further – PPS) should include:

engineering subsystems;

- organizational arrangements;
 - PPS basic structure;
 - procedure for cooperation with the local internal affairs bodies;
 - the list of arrangements, aimed at efficiency improvement of RO physical protection.
43. Subsection «engineering subsystems» should include the list and short description of engineering subsystems, being the part of physical protection system, including intruder alarm subsystems, access control, operative communication, engineering protection techniques, supporting systems and means that provide the PPS operation.
44. Subsection «organizational arrangements» should depict arrangements for the RO and SIR protection, access and personnel presence on RO.
45. Subsection «PPS basic structure» should describe essential PPS RO structural construction, withholding placing of control panels, alarm and control stations.
46. Subsection «procedure of cooperation with the local internal affairs bodies» should include the description of established procedure for cooperation with the local internal affairs bodies in regular and emergency situations.
47. Subsection «the list of arrangements, aimed at efficiency improvement of RO physical protection» should include the list of organizational and technical arrangements, including:
- practice plans (training) to provide RO physical protection (safety);
 - plans of the maintenance of technical conditions and working capacity of PPS engineering tools;
 - other organizationally technical arrangements, aiming to improve effectiveness of RO physical protection.

CHAPTER 10

REQUIREMENTS TO THE CONTENTS OF SECTION «POSSIBLE RADIATION ACCIDENTS ANALYSIS»

48. Structurally section should contain the following subsections:
- the list of potential radiation accidents;
 - radiation accident consequences summary;
 - preparedness and response for radiation accident.
49. Subsection «the list of potential radiation accidents» should include the list of potential radiation accident summary and the list of the following basic types of initial events:
- external effects of anthropogenic origin;
 - external effects of natural origin;
 - SIR system and element failures;
 - RO personnel errors.

Subsection should provide the results of possible radiation accidents analysis, taken into account during RO designing (of SIR), with the description of radiation consequences.

The analysis results should include:

the description of initial event;

systems and elements initial condition, important for SIR safety;

the value of the effect parameters, taken into account in the course of analysis;

adopted accident development scenario;

systems and elements operation (with possible failure), important for the SIR safety;

RO personnel actions, taking into account potential errors.

Subsection should include the results of impact assessment of industrial, transport and other possible industries (chemical and petrochemical refiner plants, manufactures of explosive and other hazardous substances, runways, petroleum- and gas pipelines, subsurface fuel- and gas reservoirs).

Of all considered objects those objects should be marked which influence is considered in the RO project, and characteristics of potential impact on RO should be given.

Results of the analysis of consequences of external impact should be provided in short for RO with radionuclide SIR belonging to radiation hazard category I for the following cases:

aircraft crash;

fire due to external reasons;

explosions at adjacent objects;

discharge of explosive, flammable and toxic vapor, gases and aerosols into the atmosphere;

break of storage dam.

For RO with portable and mobile SIR all possible types of radiation accidents should be considered during the process of SIR transportation (moving) to the work areas.

50. Subsection «radiation accident consequence summary» should contain consequence summary for each potential radiation accidents, including radiation situation summary.

If the possibility of radiation accidents with emission of radionuclides into the environment has been analysed, the following information should be presented:

collective and maximum individual RO personnel exposure dose assessment;

effective collective population exposure dose assessment;

assessment of the area of environmental radiation pollution with indication of potential radiation pollution level.

Based on the analysis of potential radiation accidents and their consequence summary RO safety in particular operating conditions should be affirmed.

51. For confirmation of SIR user preparedness for radiation safety assurance during radiation accident, subsection «Preparedness and response for radiation accident» should include the following information:
- arrangement plan for protection of personnel (staff) and population from a radiation accident and its consequence, in accordance with the requirements, established under article 17 of the Law of the Republic of Belarus «On Radiation Safety of the Population»;
 - personnel emergency instruction;
 - information on the availability of the necessary equipment and its maintenance, including appliances, communication means, decontamination means, means of individual protection, required for carrying out the arrangement plan for personnel and population defense in case of radiation accident;
 - availability of personnel training programmes for carrying out actions in radiation accident conditions;
 - information on carried out emergency respond drill.

CHAPTER 11

REQUIREMENTS TO THE CONTENTS OF SECTION «RADIATION OBJECT DECOMMISSIONING »

52. Requirements of this section are fully applied to RO with radionuclide SIR belonging to radiation hazard category I, 2.
- For other RO the scope of presented information is defined by SIR users with the view of RO specificity.
53. Section should include the following information:
- The results of engineering and radiation safety investigation to the extent covering selection and justification of RO final state after decommissioning works;
 - description of the selected RO final state after decommissioning;
 - RO decommissioning sequence provided by the RO decommissioning project and the list of organization and technical radiation security arrangements while operating these actions;
 - the list of RO decommissioning basic stages with indication of approximate duration and certain executors (institutions) taking part in these actions;
 - the scope of radiation survey (justifying its sufficiency) on different stages of RO decommissioning;
 - the sequence of integrity damage of physical barriers during RO decommissioning provided by RO decommissioning project with justification of safety measures on each of RO decommissioning stages;
 - information on availability of sufficient funds and material and technical resources to fully supply all works, covered by RO decommissioning project.
54. The section should depict how the following is assured at all stages of RO decommissioning:

the removal of radionuclide sources related to the present SIR and further storage (burial) or for reuse of specialized organizations;
physical RO defense while decommissioning (including safety assurance of formed radioactive waste while decommissioning, contaminated equipment, appliances, fragments of biological defense, etc.);
receiving minimum amount (volume) of radiation waste, formed while decommissioning the RO, its temporary storage and further timely storage or burial by specialized organizations;
decrease of radiation dose on personnel and population and radionuclide intake to the environment to the lowest level.

CHAPTER 12

REQUIREMENTS TO THE CONTENTS OF SECTION «QUALITY CONTROL OPERATING SYSTEM »

55. Section should include quality assurance programs. The following information should be presented:
- availability and operation of the quality system management;
 - characteristics of the quality level of RO systems (elements);
 - methods of assurance and support of quality level;
 - control over its assurance and support;
 - analysis and remedy of any potential deviations;
 - report of the control results and report form;
 - necessary personnel and its qualification;
 - necessary technical features for quality assurance.
56. Section should present information on internal audits of quality system, results of external independent audit or periodicity should be defined.

CHAPTER 13

REQUIREMENTS TO THE CONTENTS OF SECTION «CONCLUSION»

57. The section should contain conclusions on the eligibility of reached RO safety level for population, personnel and environment at all stages of its operation and decommissioning.
58. Section should include information on extra measures required for further improvement of radiation security performance.

Annex
to the rules and guidelines
on nuclear and radiation safety protection
«Requirements to the structure and
content of the safety analysis report for radiation object»

**STRUCTURE OF THE SAFETY ANALYSIS
REPORT FOR RADIATION OBJECTS**

Chapter 1. General provisions

- 1.1. SIR user information.
- 1.2. Personnel information.
- 1.3. List of regulatory legal acts.

Chapter 2. Characteristics of RO location conditions.

- 2.1. RO location.
- 2.2. Meteorological, hydrological and seismic RO location area conditions.
- 2.3. List of dangerous geological processes.

Chapter 3. RO base information.

- 3.1. RO structure and functions.
- 3.2. List of SIR and its location.
- 3.3. Characteristics of radiation hazardous works.
- 3.4. SIR radiation effect on staff, population and environment.

Chapter 4. RO safety assurance.

- 4.1. Methods and tools of radiation safety assurance
- 4.2. Staff and population dose assessment
- 4.3. plan fire protection systems

Chapter 5. RADIATION SECURITY ARRANGEMENT

- 5.1. RCS design basis and engineering tools.
- 5.2. radiation dosimetry monitoring.
- 5.3 process radiation monitoring.
- 5.4. radiation monitoring of non-proliferation radiation contaminations.
- 5.5. environment radiation monitoring.

Chapter 6. Organization and provision of physical protection

6.1. engineering subsystems.

6.2. organizational arrangements.

6.3. PPS basic structure.

6.4. Procedure for cooperation with the local internal affairs bodies.

6.5. List of arrangements, aimed at efficiency improvement of RO physical protection.

Chapter 7. Possible radiation accidents analysis

List of potential radiation accidents.

Radiation accident consequences summary.

Preparedness and response for radiation accident.

Chapter 8. RO decommissioning

Chapter 9. Quality control operating system

Chapter 10. Conclusion
