

REPORT

The activities of the European Center for Risk Prevention (ECRP), Sofia in 2018 how Partner-1 in the Activity 1 (Grant agreement – Appendix I A) – Project: **"Identification of good governance practices in the management on nuclear disasters and cross-border technology"**. (Coordinated TESEC, Ukraine)

PRIORITY FOR ACTION OF THE MEDIUM TERM PLAN:

- Developing cooperation among all decision-makers to better define authorities' adequate role in DRR.

1. Background

In 2011, after Fukushima nuclear accident, the meeting of the EUR-OPA Permanent Correspondents requested the network of scientific centers to develop a booklet "Basic Knowledge of Nuclear Hazards: Lessons from CHERNOBYL and FUKUSHIMA" in order to better inform and protect people against nuclear or radiation disasters. The Booklet has been developed, translated in 12 languages, successfully presented in more than 20 countries and became an information tool for better protection of people. This is a good basis for harmonising the response of nuclear hazards in case of an accident involving different countries, which is extremely important for cross-border cooperation. Unfortunately, in case of nuclear accident people do not feel directly the radiation and has to trust information, which could be different in neighbouring countries and need to be harmonised, as well as early warning and other implemented countermeasures.

2. Specific objectives

We continue collecting and distributing best international experience for the protection of people against nuclear disasters, also using good governance practices in the management of nuclear disasters and cross-border technology. National and international regulation (like IAEA conventions) defined some key points in cross-border cooperation in case of nuclear accident but precise studies of Chernobyl and Fukushima disasters on international exercises in neighbour countries, demonstrated that some important issues for better protection of people still need improvement. Like the harmonisation of early warning systems, effective channels for communication, take into account different levels of emergency management (state, local), communication with mass media and public, radio-monitoring procedures and forecasting of the radiological situation, intervention levels for different countermeasures and others. The aim is to develop a questionnaire on all these issues - for defining good governance practices for better protection of people against nuclear disasters, taking into account cross-border cooperation. It will be distributed to member states and neighbouring countries for collecting different

practices and problems, and be analysed by experts. On this basis, recommendations for better protection of people in case of nuclear disasters will be developed and adopted by EUR-OPA. As Chernobyl and Fukushima demonstrated that citizens of countries far away from Chernobyl or Fukushima also worry about health effects of disasters, such system of governance and information is of interest to many countries.

2018

Develop a questionnaire about the governance of cross-border collaboration in case of nuclear disasters. Reflect on such issues to better harmonise early warning systems, effective channels for communication, take into account different levels of emergency management (state, local), communication with mass media and public, radio-monitoring procedures and forecasting of the radiological situation, intervention levels for different countermeasures and others. Distribute the questionnaire to member states. Collect information from the replies to the questionnaire and analyse it. Develop proposals for good governance practices. Prepare document for adopting by EUR-OPA and distribution to member States.

3. Activities

Partner 1: ECRP Bulgaria

Contribute to developing the questionnaire about the governance of trans-border collaboration in case of nuclear disasters.

Help national authority to reply to the questionnaire.

Contribute to developing proposals for good governance practices.

4. Expected Results

Better protection of people against nuclear disasters using good governance practices in the management of nuclear disasters and cross-border technology. A questionnaire will be developed for defining good governance practices for better protection of people against nuclear disasters, taking into account cross-border cooperation. It will be distributed to member states for collecting data on different practice and problems, and will be analysed by experts. On this basis, recommendations for better protection of people in case of nuclear disasters will be developed and adopted by EUR-OPA.

2018

A questionnaire about the governance of cross-border collaboration in case of nuclear disasters, reflect on such issues to better harmonise early warning systems, effective channels for communication, take into account different levels of emergency management (state, local), communication with mass media and public, radiomonitoring procedures and forecasting of the radiological situation, intervention levels for different countermeasures and others will be developed. A recommendation for better protection of people in case of nuclear disasters will be developed and adopted by EUR-OPA.

5. Deliverables

Development of a questionnaire, distribution of the questionnaire to the member states, report on replies obtained, drafting of Recommendations to be addressed to EUR-OPA member states.

2018

Partner 1: ECRP Bulgaria

Contribution to the questionnaire about the governance of cross-border collaboration in case of nuclear disasters, reflect on such issues to better harmonies early warning systems, effective channels for communication, take into account different levels of emergency management (state, local), communication with mass media and public, radio-monitoring procedures and forecasting of the radiological situation, intervention levels for different countermeasures and others. Contribution to a recommendation for better protection of people in case of nuclear disasters.

The planned activities under this project in 2018 are fulfilled.

APPENDIX: 1. Questionnaire on radiological emergency management.

2. Answer of the questionnaire on radiological emergency management.

3. National Data protection plan Part III. External average Plan of Kozloduy NPP 2012

4. Ordinance for order for the Constitution, storage, renewal, maintenance, provision and reporting of stocks of individual protective means (Iodine prophylactic).

European Center for Risk Prevention (ECRP), Sofia, Bulgaria

APPENDIX 1

Questionnaire on radiological emergency management

1. Do you have in your country risk of nuclear (including transboundary impact) or radiological (lost radioactive sources, etc.) emergency?
2. Do you have agreement with neighbors countries about early warning in the case of nuclear accident, where defined certain channels of communication, most important issues of notification text, draft message for mass-media, recommended argent countermeasures and other?
3. Do you have free available resources for public awareness (like booklets, web sites, others) about the nature of nuclear or radiological risk and main protection measures in the case of nuclear or radiological emergency?
4. Do you have computer simulation for forecasting of radiation risk zone in the case of nuclear or radiological emergency?
5. Do you have radiomonitoring techniques, procedures and equipment for large scale monitoring (including inter-calibration, date assessment techniques, mobile laboratories, etc.) in the case of nuclear or radiological emergency?
6. Do you harmonize your radiomonitoring techniques with neighbors counties for harmonized presentation results of radioactive contamination for public? Different data about contamination in neighbors counties, presented to public, could initiate panic and misunderstanding.
7. Do you have harmonized with neighbors counties clear (which can be measure promptly in the case of emergency) radiological intervention levels for implementation of protection measures in the case of nuclear or radiological emergency?
8. Do you have procedures and means for public evacuation (taking to account people with disability, migrants, and other people do not understanding local languages), including means for respiratory protection and decontamination in the case of nuclear or radiological emergency?
9. Do you have procedures and means for decontamination of evacuated people, equipment, used in the contaminated area, houses and facilities in contaminated area?
10. Do you have procedures and means of iodine prophylaxis for public (taking to account people with disability, migrants, and other people do not understanding local languages) in the case of nuclear or radiological emergency?

11. Do you have procedures and means for public sheltering (taking to account people with disability, migrants, and other people do not understanding local languages) in the case of nuclear or radiological emergency?
12. Do you have procedures for general public resettlement (taking to account people with disability, migrants, and other people do not understanding local languages) in the case of nuclear or radiological emergency?
13. Do you have equipment and medicine staff professional on radiation sickness treatment?
14. Do you have procedures for rehabilitation of affected area in the case of nuclear or radiological emergency?
15. Do you have legal basis for nuclear accident consequences rehabilitation?
16. Are you interesting to participate in EUR-OPA projects for developing of benchmark (model) listed emergency measures in the case of nuclear or radiological emergency?
17. What are the procedures you would like to have from those projects first?
18. Good practice. Do you have national procedures, which you could propose as basis for recommended procedures?

Answer of the Questionnaire on radiological emergency management

(Bulgarian answers)

1. Do you have in your country risk of nuclear (including transboundary impact) or radiological (lost radioactive sources, etc.) emergency?

Yes, we have risk of nuclear and radiological emergency (from Nuclear Power Plant – NPP Kozloduy, nuclear transboundary impact from neighboring country and lost radioactive sources).

The National Disaster Protection Plan specifically addresses the possibilities of radioactive contamination and other emergencies with possible radiation consequences for the population and the environment. Radioactive contamination could occur when:

- *Emergency at Kozloduy NPP, accompanied by the disposal of radioactive substances in the environment;*
- *Cross-border transport of radioactive substances;*
- *Accidents with land, vessels and aircraft / vehicles, railway wagons, ships, aircraft / carrying radioactive materials;*
- *Accident in other sites with nuclear and radioactive materials.*

In the General part of the National disaster protection plan the possible radiological consequences of transboundary transport of radioactive substances in an accident at the “Cherna voda” NPP (Romania) have been developed.

2. Do you have agreement with neighbors countries about early warning in the case of nuclear accident, where defined certain channels of communication, most important issues of notification text, draft message for mass-media, recommended argent countermeasures and other?

Yes we have bilateral agreements with neighboring countries about early warning in case of nuclear accident, where defined certain channels of communication. Agreements with Romania, Greece, Turkey and Russian Federation.

3. Do you have free available resources for public awareness (like booklets, web sites, others) about the nature of nuclear or radiological risk and main protection measures in the case of nuclear or radiological emergency?

Yes, we have free available resources for public awareness (like booklets and web sites) about the nature of nuclear or radiological risk and main

protection measures in the case of nuclear or radiological emergency.

Web sites: <https://www.mvr.bg/gdpcbzn/info-center/pravila-povedenie/pri-radiac-avarii> ;

<http://www.bnra.bg/bg/emergency>; <https://www.sofia.bg/survival> .

4. Do you have computer simulation for forecasting of radiation risk zone in the case of nuclear or radiological emergency?

We have two systems that use in case of nuclear and radiological accident –Real-Time On-line Decision Support system JRODOS and Emergency Source Term Evaluation ESTE. These systems forecasting radiological consequences in case of nuclear or radiological emergency. The HQ used them to take decisions to implement protective measures for the population. These are decision support systems.

5. Do you have radio monitoring techniques, procedures and equipment for large scale monitoring (including inter-calibration, data assessment techniques, mobile laboratories, etc.) in the case of nuclear or radiological emergency?

Yes we have : National Radiation monitoring System RaMo System with 29 station on the Bulgarian territory; Radiation Monitoring Information System “Katrin” These systems measures the gamma dose rate - background and online submit data to the National Operation center in DG Fire Safety and Civil Protection (GDFSCP) – Ministry of Interior and to the Bulgarian Nuclear Regulatory Agency.

1 Mobile laboratories – GDFSCP - Vratza– one CBRN mobile laboratory for detection and analysis of radionuclides in the air, sampling and analysis of water samples. 29 vehicles for chemical and radiation surveillance.

1 Mobile laboratory – INRNE –Institute for Nuclear research and nuclear energy (EMERSYS project).

29 vehicles with portable RN measurement devices /equipment/.

6. Do you harmonize your radio monitoring techniques with neighbors counties for harmonized presentation results of radioactive contamination for public? Different data about contamination in neighbors counties, presented to public, could initiate panic and misunderstanding.

No, we have not.

7. Do you have harmonized with neighbors counties clear (which can be measure promptly in the case of emergency) radiological intervention levels for implementation of protection measures in the case of nuclear or radiological emergency?

No, we have not yet. We are planning a meeting with Romania to discuss it.

8. Do you have procedures and means for public evacuation (taking to account people with disability, migrants, and other people do not understanding local languages), including means for respiratory protection and decontamination in the case of nuclear or radiological emergency?

Yes, we have in our Emergency Plans.

9. Do you have procedures and means for decontamination of evacuated people, equipment, used in the contaminated area, houses and facilities in contaminated area?

Yes, we have in our Emergency Plans.

10. Do you have procedures and means of iodine prophylaxis for public (taking to account people with disability, migrants, and other people do not understanding local languages) in the case of nuclear or radiological emergency?

Yes, we have in our Emergency Plans.

11. Do you have procedures and means for public sheltering (taking to account people with disability, migrants, and other people do not understanding local languages) in the case of nuclear or radiological emergency?

Yes, we have in our Emergency Plans.

12. Do you have procedures for general public resettlement (taking to account people with disability, migrants, and other people do not understanding local languages) in the case of nuclear or radiological emergency?

Yes, we have in our Emergency Plans.

13. Do you have equipment and medicine staff professional on radiation sickness treatment?

No, we have not.

14. Do you have procedures for rehabilitation of affected area in the case of nuclear or radiological emergency?

No, we have not.

Partly - Agrarian University of Plovdiv / immediately after the Chernobyl accident / developed procedures for rehabilitation in the field of agriculture.

15. Do you have legal basis for nuclear accident consequences rehabilitation?

We have a plan for long-term protective measures /part of off-site emergency plan for NPP Kozloduy/. The requirements for the plan are defined in the Regulation for Emergency Planning and preparedness.

16. Are you interesting to participate in EUR-OPA projects for developing of benchmark (model) listed emergency measures in the case of nuclear or radiological emergency?

Yes, we are. It will be very useful to exchange experience and good practices and developing.

17. What are the procedures you would like to have from those projects first?

- ***Procedure for carrying out radiation reconnaissance in polluted areas in case of emergency – measurements; sampling; data evaluation and harmonization with neighboring countries.***
- ***Procedure for rehabilitation of affected area in the case of nuclear or radiological emergency .***

18. Good practice. Do you have national procedures, which you could propose as basis for recommended procedures?

Procedure for Emergency Response in Case of Illicit Trafficking of Radioactive Materials in Border Check Points Areas of the Republic of Bulgaria

Procedure for Actions in case of Case of Illicit Trafficking of Nuclear or Radioactive Materials.

NATIONAL DATA PROTECTION PLAN
PART III
EXTERNAL AVERAGE PLAN OF KOZLODUY NPP
2012

1. GENERAL PROVISIONS

1.1. Grounds for development

The external emergency plan was developed on the basis of the Safe Use Act of nuclear energy (Official Gazette, issue 63 / 28.06.2002), the Emergency Planning

Emergency Preparedness for Nuclear and Radiation Accidents, adopted by Decree No 313 of

The Council of Ministers 22.11.2011 (Promulgated in State Gazette, issue 94 of 2011), the Protection Act of the Republic of Bulgaria disasters (Official Gazette, issue 102 / 19.12.2006), Ordinance No 28 on the conditions and procedure for medical

provision and health standards for the protection of the persons in the event of a radiological emergency issued

by the Minister of Health (promulgated in the State Gazette No. 84 / 17.10.2006) and other normative acts.

The recommendations of the International Agency were used to develop the plan Atomic Energy (IAEA), own and foreign experience in incident management, accidents and teachings, and the conclusions and recommendations based on the liquidation of accidents at the NPP "Three May Island" - USA, Chernobyl NPP - Ukraine and Fukushima Japan Nuclear Power Plant.

The Kozloduy Nuclear Power Action Plan defines:

- organizational, localization, protective, radiation-hygienic, healing-preventive and other measures for the protection of the population, cultural values, food, water, animals, agricultural production and the environment environment;
- the emergency planning zones of the nuclear power plant in the event of nuclear or radiological emergencies accident.

District governors and mayors of municipalities located in the emergency area Planning of Kozloduy NPP, develop part "Nuclear and Radiation Accident" respectively

in regional and municipal disaster protection plans for the implementation of their assigned tasks with this plan tasks.

1.2. Objectives of the Emergency Plan

The objectives of the Emergency Plan are:

- to create an optimal organization of the interaction between the authorities the executive to react effectively and timely in the early phase of the accident, warning and disclosure, giving instructions, predicting and clarifying the character the possible consequences for the population and the environment from nuclear or radiation accident at Kozloduy NPP;
- Identify responsibilities and allocate tasks to executive bodies power;
- Provide conditions for conducting localization, rescue and emergency repairs in the emergency planning zones.

1.3. Basic tasks

The objectives under 1.2 are achieved through the following main tasks:

1.3.1. Maintaining a National Early Warning and Disclosure System (NSRF) and management of the Unified Rescue System;

1.3.2. Creation of a group of forces and means for conducting the SASR in the zones for emergency planning on the territory of the country and the order for their notification and management;

1.3.3. Informing the population in case of accident;

1.3.4. Providing:

a) means of protection of forces intended to operate in emergency areas planning;

(b) a system for protecting the population and ensuring its vital activity in case of accident;

1.3.5. Reduce risk by limiting and eliminating the consequences of a radiation accident for the population and the environment.

1.4. Scope

The external emergency plan is part of the National Disaster Protection Plan, adopted by the

Decision No. 973 of the Council of Ministers of 29.12.2010, which is activated upon occurrence

of a general accident at Kozloduy NPP. On its basis, the bodies of the executive,

municipalities and legal entities develop part of their disaster protection plans nuclear and radiation accidents.

4.6. Measures to protect the population

In case of a general accident at Kozloduy NPP, a differentiated is organized and implemented

protection of the population by applying the following basic safeguards:

- hiding;
- iodine prophylaxis;
- use of PES;
- evacuation;
- Radiation monitoring;
- decontamination and additional requirements for general and personal hygiene;
- protection of farm animals and plants;
- protection of water sources and water supply systems;
- Elimination of the consequences of the accident.

Security activities also cover foreign citizens on the the territory of the country at the time of the accident.

4.6.2. Iodine prophylaxis

Iodine prophylaxis, as a safety measure, is performed according to the criteria for implementation of protective measures laid down in the Emergency Planning and Emergency Ordinance

readiness for nuclear and radiation accident and Ordinance No. 28 on the conditions and procedure for

medical insurance and health standards for the protection of individuals in case of radiation

accident, issued by the Minister of Health.

The dosage of potassium iodide for iodine prophylaxis is given in Annex 18.

Potassium iodide tablets are taken according to the instructions for use manufacturer enclosed in the package.

Iodine prophylaxis is performed at least two hours before the onset of contamination reaching criteria for the application of iodine prophylaxis.

If the situation so requires, iodine prophylaxis is also done for the population in the whole country, with priority for critical groups.

The required amount of potassium iodide tablets is formed as follows:

- at the municipal level - according to the dose indicated in the package leaflet, for the time of announcement

the accident to the arrival of the person undergoing iodine prophylaxis in the place of the evacuation envisaged in the municipal plan;

at district level - according to the aggregated data from the municipalities;

- at national level - on the basis of the summarized data from the districts.

The availability of potassium iodide is currently 1,168,070 packages distributed in areas according to the appendix no. 19. The tablets are kept in the mayoralties of settlements under certain conditions and will be distributed to the population by order of the head of the National Assembly for the application of iodine prophylaxis on a proposal by the Minister of health care

Establishing an organization for tablet delivery is subject to municipalities plans for disaster protection, the planning of which is carried out under the control of competent medical practitioner.

For the population in the 12-kilometer zone, tablets are given in advance.

In fulfillment of its obligations under Art. 65, para. 1 of the Labor Protection Act, mayors of municipalities plan and provide information to the regional governor of planned estimates and implementation the procedure for giving potassium iodide. The regional governors in pursuance of Art. 64, para. 1 of the LAB provide information about the calculations and the implementation of the procedure for giving potassium iodide to the competent state authorities.

APPENDIX 4

ORDINANCE FOR ORDER FOR THE CONSTITUTION, STORAGE, RENEWAL, MAINTENANCE, PROVISION AND REPORTING OF STOCKS OF INDIVIDUAL PROTECTIVE MEANS

In force since 20.01.2009

Adopted by the Cabinet of Ministers

Chapter One.

GENERAL

Art. 1. The Ordinance shall establish the procedure for creating, storing, updating, maintaining, providing and reporting the stocks of the individual means of protection of the population from:

1. the mayors of the municipalities;
2. the bodies of the executive power;
3. the owners, managers or executive members of commercial companies and sole traders.

Art. 2. Individual remedies are:

1. respiratory protection devices - filtering and insulating gas masks, child gas masks, child protection chambers, respirators and anti-dust masks;
2. Skin protection - protective gloves, protective socks, protective shields, protective clothing;
3. specialized filters for hazardous chemical and radioactive substances;
- 4. iodine prophylaxis;**
5. other individual means of protection intended to protect the respiratory organs, eyes and skin from dangerous chemical or radioactive substances or biological agents.

Art. 4. (1) For providing with individual means of defense:

1. The Ministry of the Interior shall establish an operational reserve for the main components of the single rescue system; the individual means of iodine prophylaxis of the population are planned, purchased, renewed and delivered to the municipalities by the Ministry of Interior;
2. the mayors of the municipalities:
 - a) may acquire title to the State Ownership Act on the individual means of protection of the population intended for the respective municipality, managed by the Ministry of Interior;
 - b) Provide the necessary individual means of protection for children and students in kindergartens and schools, in homes for children deprived of parental care, for employees and employees of the municipal administration, for voluntary disaster

squads on the territory of the municipality and for the other structures funded by the municipal budget, as well as for the non-working population and for the employees of the foreign diplomatic representations on the territory of the municipality;

c) have the obligation to preserve, renew, maintain, provide and report the individual remedies in accordance with the procedures and requirements of the Municipal Property Act, the Accountancy Act, this Ordinance and the relevant ordinances of the municipality;

3. the executive bodies provide the necessary individual means of protection of the employees of the respective administration;

4. the management bodies of commercial companies and sole traders provide the necessary individual means of protection for their employees.

(2) The bodies under art. 1 by an order designate the persons who will manage, control and be responsible for securing with individual remedies.

Art. 6. (1) The type of individual remedies shall be determined in accordance with the potential risk to the population living in the respective territory and shall be specified with the territorial unit of the General Directorate "Fire Safety and Protection of the Population" - Ministry of Interior.

Art. 44. (1) The tablets iodine prophylaxis shall be stored in its original packaging in cartons of 480 pcs. packaging.

(2) tablets of iodine prophylaxis shall be stored in a dry and unlit place at a temperature below 25 ° C in places inaccessible to children.

(3) The shelf life of the iodine prophylactic agents is indicated on the package.

(4) Instructions for the use of tablets iodine prophylaxis agents are provided in the package.

(5) It is forbidden to accept tablets iodine prophylaxis after expiration of their shelf life.

Chapter six.

PROVISION OF INDIVIDUAL PROTECTIVE MEANS

Art. 49. The bodies and persons under Art. 1 draw up logistic schemes for the provision of individual means of protection of the population if necessary.

Art. 50. Logistic schemes for the provision of individual means of protection of the population shall be updated on an annual basis.

Art. 51. The creation of the individual means of protection from the warehouses and their provision to the population, if necessary, shall be carried out by the bodies and persons under Art. 1 in accordance with the logistic schemes under Art. 49, in which case the respective territorial unit of the Ministry of Interior is notified.

Art. 52. Individual protection devices handed over to responsible home storage shall be used on their own when a hazard alert or a disaster occurs.

Chapter Eight.

FINANCING AND CONTROL OF ACTIVITIES CONCERNING THE
ESTABLISHMENT, STORAGE, RENEWAL AND MAINTENANCE OF STOCKS OF
INDIVIDUAL PROTECTIVE MEANS

Art. 56. The bodies and persons under Art. 1 shall be obliged to plan and allocate financial resources for the creation, preservation, renewal and maintenance of the stock of individual remedies on a yearly basis.

Art. 57. The necessary funds for creating, storing, renovating and maintaining the reserves of individual remedies are provided by the state budget, municipal budgets, commercial companies and sole traders and donors.

Art. 58. The control over the implementation of the provisions of the Ordinance shall be carried out by its territorial units designated by an order of the Minister of the Interior.