

**National Report of the Czech
Republic
On Emergency Preparedness
And
Response**

April 2014

Introduction

The National Report of the Czech Republic on Emergency Preparedness and Response was prepared on the basis of the requirement of the International Atomic Energy Agency for its preparation as the basis for the negotiations of representatives of the States, which are members of the Convention on Early Notification of a Nuclear Accident and of the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. In this report, the Czech Republic provides information concerning the emergency preparedness and response to radiation incident and radiation accidents, as corresponding to the state as of 31 December 2013.

This report was prepared by the State Office for Nuclear Safety in cooperation with the Ministry of Interior - General Directorate of Fire Rescue Service of the Czech Republic, and the operator of nuclear power plants, i.e. ČEZ, a.s.

Table of Contents

INTRODUCTION	2
A. INTRODUCTION	6
A.1. National Emergency Preparedness Policy	6
A.1.1. Czech Legislation in the Area of Emergency Preparedness and Emergency Response	7
A.2. Overview of National Emergency Preparedness and Emergency Response System	7
A.2.1. On-site and Off-site Emergency Plans of Nuclear Installations	12
A.2.2. Warning of the Population within Emergency Planning Zones	13
B. SUMMARY	15
B.1. Overview of Important Problems Identified in the Area of Emergency Preparedness and Emergency Response	15
B.1.1. Conclusions of National Emergency Exercise “ZÓNA 2013”	15
B.1.2. National Action Plan	15
B.1.3. Conclusions of IRRS Mission	16
B.2. Overview of Significant Changes and Improvement in the National Emergency Preparedness and Emergency Response System, if any	16
B.2.1. Changes and Improvement Resulting from Conclusions of the National Emergency Exercise “ZÓNA 2013”	16
B.2.2. Changes and Improvements Resulting from the National Action Plan	16
B.2.3. Changes and Improvements Resulting from Conclusions of the IRRS Mission	17
B.3. Experience, Lessons and Measures Adopted in Response to Radiation Incident or Radiation Accident or to Problems Identified in Emergency Exercises	17
B.3.1. Experience, Lessons and Measures Adopted in Response to Radiation Incident or Radiation Accident	17
B.3.2. Experience, Lessons and Measures Adopted in Response to Problems Identified in Emergency Exercises	18
B.4. Measures Adopted to Improve Transparency and Communication with the Public	18
C. OVERVIEW OF NUCLEAR INSTALLATIONS, WORKPLACES WITH IONISING RADIATION SOURCES, ACTIVITIES RELATED TO NUCLEAR ENERGY UTILISATION AND RADIATION ACTIVITIES	21
C.1. Overview of National Threat Categories	21
C.2. Overview of Major Nuclear Installations, Workplaces with Ionising Radiation Sources, Activities Related to Nuclear Energy Utilisation and Radiation Activities	22
C.2.1. Dukovany NPP and Temelín NPP	22
C.2.2. Research Reactors in the Research Centre Rez	23
C.2.3. Training Reactor VR-1 at the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague	24
C.2.4. Radioactive Waste Repository and Spent Nuclear Fuel Storage	24
C.2.5. Workplaces with Ionising Radiation Sources	25
D. OVERVIEW OF EMERGENCY PREPAREDNESS ELEMENTS	27
D.1. Overview of Acts, Regulations and Rules and Requirements	27
D.2. Responsibilities of Key Organisations and Other Entities Involved in the Emergency Preparedness and Emergency Response System	27
D.2.1. National Security Council	27
D.2.2. Civil Emergency Planning Committee	27
D.2.3. Central Crisis Staff	28
D.2.4. Ministries and Other Central Administration Offices	28
D.2.5. Ministry of Interior – General Directorate of Fire Rescue Service of the Czech Republic	29
D.2.6. State Office for Nuclear Safety	30
D.2.7. Regional Office	30
D.2.8. Regional Security Council	31
D.2.9. Municipality with Extended Competences	31
D.2.10. Security Council of the Municipality with Extended Competences	31

D.2.11.	Municipal Office	32
D.2.12.	Regional Fire Rescue Service	32
D.2.13.	Police of the Czech Republic	32
D.2.14.	Transportation Authorities	33
D.2.15.	Environmental Authorities	33
D.2.16.	Operator	33
D.3.	Response Coordination Mechanisms for Radiation Extraordinary Event	35
D.3.1.	Integrated Rescue System	36
D.3.2.	Method for Coordinating Response to Radiation Accident at NPP Located on the Territory of the Czech Republic	37
D.3.3.	Preparation and Implementation of Protective Measures in Emergency Planning Zones	37
D.4.	Logistic Measures and Equipment for Implementation of Effective Emergency Response	38
D.4.1.	Nuclear Power Plant Operator	39
D.5.	Plans and Procedures	42
D.5.1.	Documents of the Czech Republic Elaborated by the State Administration	42
D.5.2.	Documents Elaborated by NPP Operator	44
D.6.	Trainings, Drills, Emergency Exercises	46
D.6.1.	Trainings	46
D.6.2.	Emergency Exercises	48
D.7.	Quality Control Programs	50
E.	OVERVIEW OF EMERGENCY RESPONSE ELEMENTS	51
E.1.	Emergency Response Management	51
E.1.1.	Central Administration Offices	52
E.1.2.	SÚJB	52
E.1.3.	Regional Authorities	52
E.1.4.	Emergency Response Management on Occurrence of Radiation Incident or Radiation Accident at Dukovany NPP or Temelín NPP	53
E.2.	Identification, Notification and Activation	59
E.2.1.	Activities Carried Out on Receipt of Notification of the Occurrence of a Radiation Accident from Abroad	61
E.3.	Adoption of Measures to Mitigate the Consequences of Radiation Extraordinary Events	61
E.4.	Adoption of Measures to Protect the Population and Emergency Workers	62
E.4.1.	Adoption of Measures to Protect the Population In Case of Radiation Accident at Nuclear Power Plant	63
E.5.	Provision of Information and Instructions to the Public	65
E.5.1.	Government Level:	65
E.5.2.	Central Administration Offices:	66
E.5.3.	Regional Offices and Municipalities with Extended Competences:	66
E.5.4.	NPP Operator	66
E.5.5.	Population Warning in the Emergency Planning Zone	67
E.5.6.	Education of Experts	68
E.5.7.	Education and Information of Population	69
E.5.8.	Warning and Information in the Case of the Occurrence of a Radiation Accident	69
E.6.	Medical Assistance Management	69
E.7.	Measures to Mitigate Non-radiation Effects	70
E.7.1.	Psychosocial Support to Persons Affected by Extraordinary Event	70
E.7.2.	Population Supply	71
E.8.	Radioactive Waste Management	71
E.9.	System of Requesting, Delivering and Receiving International Assistance	72
E.10.	Taking Decision to End the Emergency Response	74
F.	EARLY NOTIFICATION AND ASSISTANCE CONVENTIONS	75
F.1.	Implementation of Obligations Resulting from Both Conventions for the Czech Republic	75
G.	LIMITS AND GUIDANCE LEVELS FOR REDUCED EMERGENCY EXPOSURE	76

G.1.	Protective Measures and Other Activities within Emergency Response, Expected to Be Always Implemented In Order to Prevent or to Mitigate Severe Deterministic Effects	76
G.2.	Protective Measures and Other Activities within Emergency Response, which Should Be Implemented, If They Could Be Implemented in Safe Manner, In Order to Reasonably Mitigate (Probabilistic) Stochastic Effects	76
G.3.	Trade Regulation Ensured While Taking into Account Non-radiation Consequences of Radiation Extraordinary Event	77
G.4.	Transition from Emergency to Existing Exposure Situation	77
G.5.	Overview of Determined Operation Intervention Levels for Each Exposure Situation	78
G.6.	Guidance Levels to Reduce Exposure of Emergency Workers	78
H.	CHALLENGES IN THE AREA OF EMERGENCY PREPAREDNESS AND EMERGENCY RESPONSE	80
H.1.	Identification of Deficiencies in the Existing Measures and in the Emergency Preparedness and Emergency Response System. Summary of Problems and Recommendations for the IAEA Secretariat as to which Further Standards, Guidelines and Tools Should Be Adopted to Improve the International and National of Emergency Preparedness and Emergency Response Systems.	80
H.1.1.	Findings of IRSS Mission	80
H.1.2.	Findings from Emergency Exercises	80
H.1.3.	Findings According to the National Action Plan	80
ANNEX 1	LIST OF LEGISLATION	82
ANNEX 2	DOCUMENTS OF NON-LEGISLATIVE NATURE	86
ANNEX 3	ADDITIONAL DESCRIPTION OF NUCLEAR INSTALLATIONS	87
ANNEX 4	CONTENT OF OFF-SITE EMERGENCY PLANS	88
ANNEX 5	CONTENT OF THE REGIONAL EMERGENCY PLAN	93
ANNEX 6	TYPE PLAN – RADIATION ACCIDENT	95
ANNEX 7	EDUCATION AND INFORMATION OF POPULATION	96
ANNEX 8	UNIFORM SYSTEM OF WARNING AND INFORMATION	102
ANNEX 9	HUMANITARIAN AID	103
ANNEX 10	LIST OF BILATERAL AGREEMENTS	104
ANNEX 11	EU LEGISLATION FOR TRADE REGULATION	106
ANNEX 12	LIST OF REFERENCES	106
ANNEX 13	LIST OF FIGURES	107
ANNEX 14	LIST OF ABBREVIATIONS	107

A. Introduction

A.1. National Emergency Preparedness Policy

A crisis management system is implemented in the Czech Republic. This system includes the system of (radiation) emergency preparedness, the foundations of which were implemented in 1997, when emergency preparedness in the Czech Republic was established by Act No. 18/1997 Coll.¹ This Act defined emergency preparedness, on-site and off-site emergency plan, and the emergency planning zone. In addition, the Act defined obligations of licensees, i.e. operators of nuclear power plants (hereinafter referred to as “NPP”) or workplaces with ionising radiation sources, in terms of emergency preparedness and in case of a radiation incident or a radiation accident resulting from activities carried out by a licensee under the licence issued. In addition, Act No. 18/1997 Coll., defines that:

- a) The State Office for Nuclear Safety (hereinafter referred to as “SÚJB”) approves on-site emergency plan and any modifications thereof (where relevant, this approval must be preceded by a consideration of links between on-site and off-site emergency plans), issues the relevant licences on the basis of the approved on-site emergency plan, and establishes the emergency planning zone,
- b) The operator shall notify SÚJB and the competent local bodies of state administration of the occurrence of a radiation incident or a radiation accident (through the competent Operation Information Centre of the Regional Fire Rescue Service) and shall provide the specified data and information to SÚJB,
- c) SÚJB manages the activity of the Radiation Monitoring Network. SÚJB ensures, by means of this network and based on assessment of a radiation situation, the availability of background information necessary to take decisions on measures aimed at reducing or averting exposure in the case of a radiation accident.

Another act applicable in the emergency response system is the Constitutional Act No. 110/1998 Coll., under which the Government ensures safety of the citizens of the Czech Republic. Under this Act, the National Security Council is established as a standing working body of the Government, preparing to the Government proposals for measures to ensure security of the Czech Republic. The National Security Council has a number of permanent working committees, one of which is the Civil Emergency Planning Committee. This committee was established in 1998 and its activities aim at coordination and planning of measures for internal security of the state. The chairperson of SÚJB is a member of the Civil Emergency Planning Committee and is called upon to attend meetings of the National Security Council.

The fundamental acts for the needs of crisis management in the Czech Republic were adopted in 2000. These include Act No. 238/2000 Coll., Act No. 239/2000 Coll., Act No. 240/2000 Coll., and Act No. 241/2000 Coll., of which the most important for the needs of describing the system of radiation emergency preparedness and response are Act No. 239/2000 Coll., and Act No. 240/2000 Coll.

Act No. 239/2000 Coll., defines the Integrated Rescue System, its components and their scope of competence. Furthermore, for the needs of preparation for extraordinary events and for the performance of rescue and remedy works, the scope and competences of state and local

¹ All acts referred to in this report are acts as amended. For an overview of all acts with their full titles and possible amendments see Annex 1.

authorities, rights and obligations of natural and legal persons in preparing for extraordinary events and carrying out rescue and remedy works are set out in Act No. 239/2000 Coll. Under the provisions of this Act, the regional authorities are required to elaborate a plan of rescue and remedy works in the region (“Regional Emergency Plan”) and the authorities of municipalities with extended competences are required to elaborate the off-site emergency plan, provided they are subject to this obligation under the provisions of Act No. 18/1997 Coll. If the emergency planning zone goes beyond the administrative district of an authority of municipality with extended competences, the obligation to elaborate the off-site emergency plan is imposed upon the competent regional authority.

Preparation for crisis situations, other than situations related to defence of the Czech Republic against external attack, is governed by the provisions of Act No. 240/2000 Coll. The act defines crisis situations and sets out responsibilities of the Government, the ministries and other central administration offices while the Ministry of Interior unifies procedures in the field of crisis management. Provisions of this act establish the Central Crisis Staff as a working body of the Government to deal with crisis situations. The main task of the Central Crisis Staff is to coordinate the activities of ministries and other offices during crisis situation. Pursuant to the provisions of this act, the underlying obligation of ministries and other central administration offices is to establish crisis management workplaces, elaborate a crisis plan, and establish a crisis staff. This act furthermore imposes obligations upon the regional authorities and other authorities with competences on the territory of the region, determines obligations and powers of the head of the region, regional office and regional Fire rescue services and requires to establish a regional Security Council and regional crisis staff and elaborate a regional crisis plan. Similarly, the act imposes obligations upon municipalities with extended competences, mayors and municipal offices.

Obligations of SÚJB, which is one of the other central administration offices, in preparing for and dealing with extraordinary events or crisis situations arise from the provisions of Act No. 239/2000 Coll., and Act No. 240/2000 Coll., just like in case of other central administration offices. Other special obligations of SÚJB are given by provisions of Act No. 18/1997 Coll. For the case of a radiation accident, which would be dealt with at central level, this means that pursuant to Act No. 18/1997 Coll., SÚJB receives data from the operator of NPP, whose installation experienced an emergency, and has available data from monitoring of the radiation situation on the territory of the Czech Republic. Based on this data and information, SÚJB prepares recommendations for evacuation or, if necessary, other protective measures, and in the event at least two regions are affected, such recommendations are forwarded through the Central Crisis Staff to the Government of the Czech Republic or through the Crisis Staff to the head of the region affected by a radiation accident.

A.1.1. Czech Legislation in the Area of Emergency Preparedness and Emergency Response

An overview of legislation of the Czech Republic from the area of emergency preparedness and response including a brief description of the content of the most important legislation is included in Annex 1.

A.2. Overview of National Emergency Preparedness and Emergency Response System

In accordance with the legislation, in particular from the area of crisis management, an emergency preparedness system is established in the Czech Republic for cases of occurrence of various crisis situations.

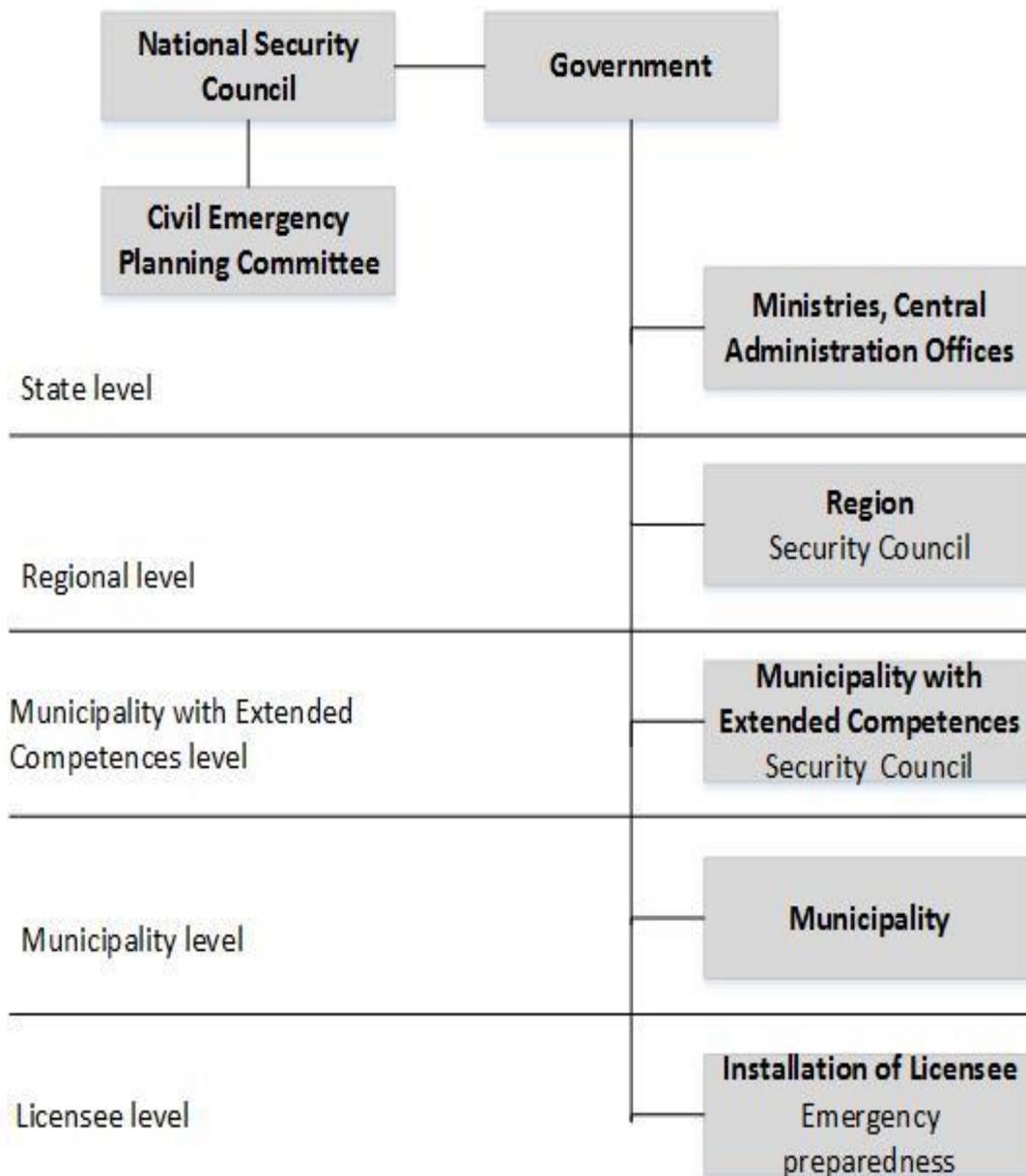


Figure A-1: Basic scheme of the structure of crisis preparedness of the Czech Republic for the case of occurrence of extraordinary event

Figure A-1 shows a basic scheme for the structure of crisis preparedness of the Czech Republic for the case of occurrence of extraordinary event, which is applicable also to the case of “radiation” emergency preparedness for the case of occurrence of radiation extraordinary event.

For completeness, it should be noted to the above that

- a) “Radiation” emergency preparedness shall mean an ability to recognise occurrence of a radiation incident or a radiation accident, and upon its occurrence, implement measures defined by emergency plans,
- b) Radiation extraordinary event shall mean an event important from the viewpoint of nuclear safety or radiation protection, which results or may result in inadmissible exposure of employees or, where appropriate, other persons, or inadmissible release of radioactive substances or ionising radiation at a nuclear installation or workplace or

into the environment, or in a radiation incident or a radiation accident and thus also in a radiation extraordinary situation,

- c) Radiation incident shall mean an event, which results in inadmissible release of radioactive substances or ionising radiation, or in inadmissible exposure of individuals,
- d) Radiation accident shall mean a radiation incident, the consequences of which require urgent actions to protect the population and the environment,
- e) To assess the severity of extraordinary events, the extraordinary events shall be classified into three degrees (Regulation No. 318/2002 Coll.):
 - i. the first degree shall include extraordinary event, which results or may result in an inadmissible exposure of employees and other persons, or in inadmissible release of radioactive substances into the premises of a nuclear installation or workplace; it has a limited and local character, and may be sufficiently addressed with human and material resources available to the operating personnel or shift personnel, and no release of radioactive substances into the environment occurs during transport,
 - ii. the second degree shall include extraordinary event, which results or may result in inadmissible serious exposure of the employees and other persons, or in an inadmissible release of radioactive substances into the environment, which do not require introduction of urgent countermeasures to protect the population and the environment. A second degree event is a radiation incident requiring mobilisation of operator's emergency workers and which may be sufficiently addressed with human and material resources available to the licensee, or human and material resources contracted by the licensees,
 - iii. the third degree shall include extraordinary event, which results or may result in an inadmissible serious release of radioactive substances into the environment, requiring introduction of urgent countermeasures to protect the population and the environment, as specified in the off-site emergency plan and regional emergency plan. A third degree event is a radiation accident requiring, in addition to mobilisation of operator's emergency workers and emergency workers under the off-site or regional emergency plans, involvement of the other authorities concerned.

A National Radiation Monitoring Network (hereinafter referred to as "RMN"), which was established in April 1986, is a part of emergency preparedness of the Czech Republic for possible occurrence of a radiation incident or a radiation accident. A legal framework for RMN is defined by Act No. 18/1997 Coll., and Regulation No. 319/2002 Coll. The process of systematic provision of its activities and equipment was launched in 2001.

The network operates under the control of SÚJB. In addition to SÚJB, the Ministry of Finance, Ministry of Defence, Ministry of Interior, Ministry of Agriculture, and the Ministry of Environment participate in the activities of the network to the defined extent. Framework agreements are entered into between SÚJB and the above listed ministries, which are completed by implementing contracts concluded with the individual institutions of the above mentioned departments, participating directly in the activities of RMN.

In addition to continuous radiation situation monitoring, emergency exercises and comparison measurements are organised within RMN, which are primarily attended by mobile groups or laboratory groups.

The results of radiation situation monitoring on the territory of the Czech Republic obtained from RMN are continuously published at SÚJB website (<http://www.sujb.cz/en/radiation-situation-monitoring>).

A backbone system of RMN is the Early Warning Network (hereinafter referred to as “EWN”), which serves for the quick identification of deviations from normal radiation situation, whether they are caused by event within or outside the territory of the Czech Republic. The monitoring points of EWN are equipped with dose-equivalent rate detectors, with continual recording, and with data transfer. EWN includes teledosimetry systems located in the vicinity of both NPPs. Eight monitoring points of EWN are also the monitoring points of air contamination, where large samples of aerial mass are continuously taken and radioactive substances are captured by a filter. Sensitive filter measurements enable to determine even trace amounts of radioactive substances in the air.

In case of a radiation accident on the territory of the Czech Republic or abroad with possible impact on the territory of the Czech Republic, the crisis situation occurred is addressed within the emergency response system. Figure A-2 shows a basic scheme for the structure of emergency response of the Czech Republic for the case of occurrence of radiation accident.

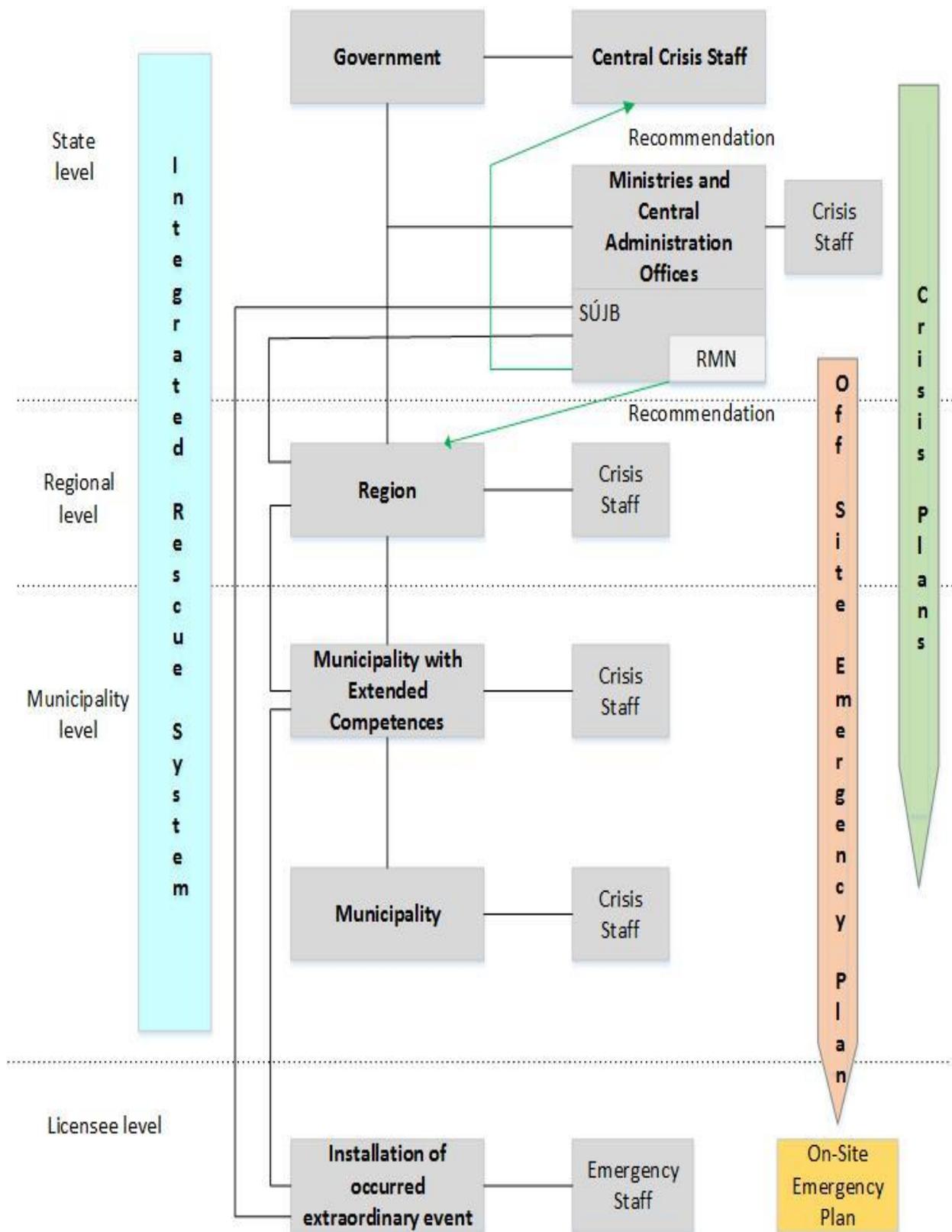


Figure A-2: Basic scheme of the structure of emergency response of the Czech Republic for the case of occurrence of radiation accident

For completeness, it should be noted to Figure A-2 that response to radiation extraordinary event shall mean an application of a set of countermeasures to manage the situation related to the occurrence of radiation extraordinary event in order to regain control of the situation

occurred and to prevent or mitigate the consequences of radiation extraordinary event including non-radiation consequences.

In the case of occurrence of radiation accident abroad, which would affect the territory of the Czech Republic, the above mentioned emergency response system will respond either on the basis of the identification of changed radiation situation indicated by EWN or on the basis of information concerning such accident.

A.2.1. On-site and Off-site Emergency Plans of Nuclear Installations

On-site and off-site emergency plans are the important documents in the emergency preparedness and emergency response system in the Czech Republic for the case of radiation extraordinary events.

On-site emergency plans - in accordance with Regulation No. 318/2002 Coll., the operator of NPP or workplace with ionising radiation sources is obliged, in order to ensure emergency preparedness, to create adequate organisational and staffing conditions so that in the case of the occurrence of extraordinary events, NPP personnel are prepared to immediately respond to the situation occurred and take up the pre-planned activities aimed at suppressing the negative effects and consequences, and at ensuring the radiation protection of individuals.

On-site emergency plans determine the following:

- a) Organisational structure of the operator and principles for intervention management and implementation upon occurrence of extraordinary events,
- b) Means of notifying all individuals and authorities, who should be called to intervene on the premises of a nuclear installation or workplace with ionising radiation sources,
- c) Means of announcing the occurrence of extraordinary event to SÚJB and administrative authorities, and in the case of the occurrence of radiation accident, methods of notifying them and method of warning the population within the emergency planning zone,
- d) Requirements for radiation situation monitoring upon occurrence of extraordinary events, both on the premises of a nuclear installation or workplace, and in its vicinity,
- e) Means of notifying and warning the employees and individuals at installations or workplaces for the individual degrees of extraordinary events, including determination of necessary countermeasures to protect their health and lives, to limit and reduce their exposure,
- f) Principles and procedures for assembling, sheltering, evacuating, providing first aid to affected employees and individuals, including provision of medical equipment up to provision of specialised medical care,
- g) Procedures applicable to the end of extraordinary events,
- h) Procedures for controlling and carrying out interventions for emergency workers; intervention procedures are subsequently incorporated in detail in intervention instructions.

Off-site emergency plans are elaborated for the established emergency planning zone by territorially competent Regional Fire Rescue Service in accordance with the requirements laid down by Act No. 239/2000 Coll., and Regulation No. 328/2001 Coll. The off-site emergency plan is elaborated on the basis of underlying information provided by NPP operator and on the basis of partial underlying documents prepared by competent regional offices, Integrated Rescue System and municipalities. The elaborated off-site emergency plans are discussed with NPP operator and with SÚJB and the Ministry of Interior – General Directorate of Fire Rescue Service of the Czech Republic (hereinafter referred to as “MV – GR HZS ČR”).

Off-site emergency plans determine the objectives and methods of ensuring the individual types of protective measures such as:

- a) Notification of authorities and organisations,
- b) Population warning,
- c) Population sheltering,
- d) Iodine prophylaxis,
- e) Evacuation of the population including dosimetry monitoring and decontamination on exits from the affected area,
- f) Regulation of the movement of individuals within the affected area,
- g) Health care.

A.2.2. Warning of the Population within Emergency Planning Zones

Warning of the population is ensured within the emergency planning zone, which includes a 20 km zone around Dukovany NPP and a 13 km zone around Temelín NPP, by means of sirens with subsequent radio and television broadcasting of prepared information concerning the occurrence of radiation accident and concerning the countermeasures to be implemented (sheltering, iodine prophylaxis – ingestion of antidotes), and the recommendation on the preparation and evacuation of the population living within a 5 km inner zone of Temelín NPP and within a 10 km inner zone of Dukovany NPP.

Chyba! Nenalezen zdroj odkazů. shows a schematic representation of population warning system within the emergency planning zone. Solid lines indicate the basic warning system and dashed lines indicate the backup system.

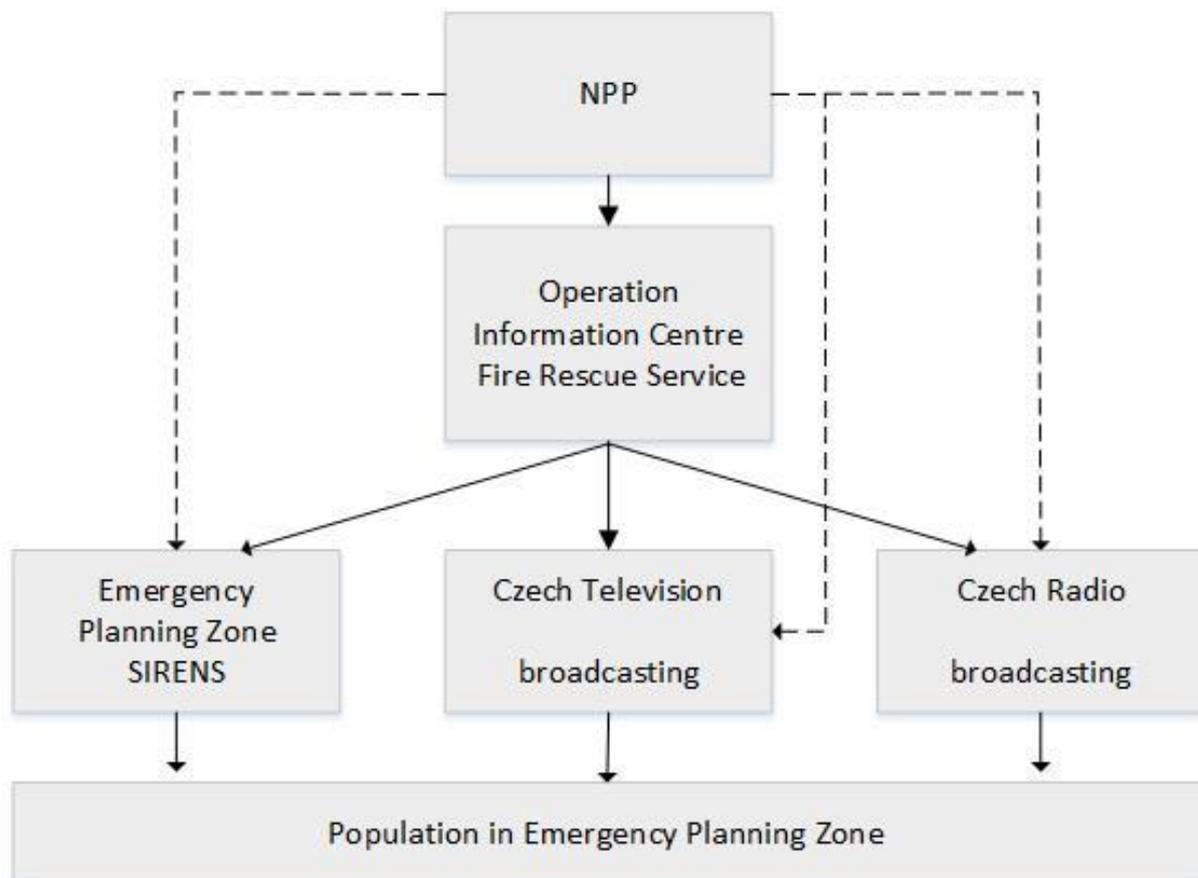


Figure A-3: Schematic representation of population warning system within Emergency Planning Zone

Tablets for iodine prophylaxis (potassium iodine – KI) are pre-distributed to the population within the emergency planning zone (families, schools, hospitals, workplaces) with that the regional office have approximately 10% reserve of KI doses and the population can also buy these preparations in pharmacies. Antidotes provided to the population in the emergency planning zone are changed by NPP operator prior to the expiration date.

B. Summary

B.1. Overview of Important Problems Identified in the Area of Emergency Preparedness and Emergency Response

Whereas this National Report has been drawn up for the first time, the Czech Republic decided to report in this Chapter particularly on activities for a period from the accident at the Fukushima Daiichi NPP, Japan. The problems identified from 2011 to 2013 are referred hereinafter.

B.1.1. Conclusions of National Emergency Exercise “ZÓNA 2013”

Deficiencies were identified within the emergency exercise “ZÓNA 2013” (for details see Chapter B.2.1). The need for an analysis of existing off-site emergency plans and the optimisation thereof or for making the content of plans for individual activities more effective was the most important identified conclusion.

B.1.2. National Action Plan

The National Action Plan for the enhancement of nuclear safety in the Czech Republic follows the National Report on Stress Tests of Nuclear Power Plants in the Czech Republic [1], drawn up at the initiative of the European Commission in response to the accident at the Fukushima NPP.

The National Action Plan summarizes the requirements for the measures to improve the level of nuclear safety, radiation protection, emergency preparedness and emergency response defined as part of the implemented process of periodic nuclear safety assessment (according to the IAEA documents) as well as for the measures defined in the stress test review report.

Actions from the area of emergency preparedness and emergency response are summarised in Table B-1 and details on actions completed are referred to in point B. 2.2.

Table B-1: Overview of actions under the National Action Plan in the area of emergency preparedness and emergency response

Action	Performance	Date
Alternative replenishment of diesel fuel for long-term operation of diesel generators	Completed	
Regional meteorological warning	Completed	
Availability of personnel for long-term off-site support in addressing complex technology-related extraordinary events	Completed	
Sufficient capacities and expertise of personnel for on-site support for more unit-related accidents and when the entire site is affected	In progress	31/12/2014
Alternative means for on-site and off-site communication, notification and warning of personnel as well as the population on loss of existing infrastructure	Completed	
Replacement methods of extraordinary event management on loss of basic control centres (Emergency Control Centre, Physical Protection Control Centre, Fire Protection Control Centre)	In progress	31/12/2014
Necessary technical facilities, personnel protection and technology, and background in a period outside the performance of interventions (24 hours / 7 days)	Completed	
Regular update of emergency plans		Continuously

B.1.3. Conclusions of IRRS Mission

On 18 – 29 November 2013, a review was undertaken at SÚJB by the International Atomic Energy Agency (hereinafter referred to as “IAEA”), so-called “Integrated Regulatory Review Service” (hereinafter referred to as “IRRS”), which aimed at assessing and, where appropriate, at improving the infrastructure of state supervision in the Czech Republic. In the area of emergency preparedness and response, which was subject to the verification of compliance of the legislation of the Czech Republic and the IAEA standard “Preparedness and Response for a Nuclear or Radiological Emergency”, Safety Standards Series No. GS-R-2 [2], the Czech Republic was suggested two recommendations and two initiatives for improvement.

The first recommendation is the recommendation for the Government of the Czech Republic to ensure that threat categorization, national emergency plans and recovery actions in the Czech legislation will be in line with GS-R-2 requirements. [2].

The second recommendation is the recommendation for SÚJB to establish requirements for emergency action levels in the Czech regulatory framework.

In the area of suggestions, SÚJB was proposed to consider:

- a) Having an inspector present on site in the Emergency Control Centre in emergency situations, in order to provide independent oversight and to communicate with the SÚJB Crisis Staff.
- b) Improving its arrangements to provide information to the public and to the media during a radiation emergency, by establishing a comprehensive strategy in this regard. The improvement of its measures to provide information to the public and to the press in the course of radiation incident or radiation accident, and to try to create a comprehensive strategy in this area.

B.2. Overview of Significant Changes and Improvement in the National Emergency Preparedness and Emergency Response System, if any

B.2.1. Changes and Improvement Resulting from Conclusions of the National Emergency Exercise “ZÓNA 2013”

The conclusions of the exercise “ZÓNA 2013” resulted in the need for optimisation of the off-site emergency plans and for update of the off-site emergency plan of Dukovany NPP. On the basis of the above conclusions, individual steps were taken to “make narrow” and clarify the plans. In 2013, a working group was established to solve problems related to the modification of off-site emergency plans for the emergency planning zone of NPP. The working group is composed of members of the Fire Rescue Service of the Vysočina Region, the Fire Rescue Service of the South Bohemian Region, the Fire Rescue Service of the South Moravian Region and MV – GŘ HZS ČR. Action taken by the working group is aimed at improving the individual plans for particular activities and at revising gradually the off-site emergency plans, taking into account the need to update Regulation No. 328/2001 Coll. The date of update of the off-site emergency plan of Dukovany NPP is 31 December 2014.

B.2.2. Changes and Improvements Resulting from the National Action Plan

Warning service for NPP

NPP operator, i.e. ČEZ, a.s., concluded a contract with the Czech Hydrometeorological Institute on sending regional meteorological forecasts to shift engineer workplaces. In the event of warning issued by the Czech Hydrometeorological Institute (e.g. extreme

temperatures, extreme wind, extreme precipitation), a shift engineer receives information on warning and decides on further operation and activities at NPP.

Alternative means for on-site and off-site communication

For the case of long-term power failure of or damage to standard communication means, alternative means for on-site and off-site communication (satellite phones, field phones) were additionally installed at NPP. Such means are planned for the use for communication between the selected workplaces at NPP and for communication with the organisations involved in the national emergency preparedness and response system.

Sufficient capacities and expertise of personnel for multiple-unit accidents and when the entire site is affected

The number of members of the Technical Support Centre for effective solutions to events with an impact on more NPP units was increased at each NPP. Key power plant workers, who have knowledge of each individual equipment, were selected for internal assistance. A list of key employees including specification of their knowledge and skills was incorporated into the emergency preparedness and response documentation of both NPPs. An external professional support is provided via a database of contacts to experts and specialists from external organisations and companies. Furthermore, cooperation with the Moscow RCC WANO was set up.

Update of on-site and off-site emergency plans

The NPP on-site emergency plan was updated in 2013 and will be updated also in 2014. The Temelín NPP off-site emergency plan was updated in 2013. The update of the Dukovany NPP off-site emergency plan is currently in progress, see Chapter B.1.1.

B.2.3. Changes and Improvements Resulting from Conclusions of the IRRS Mission

Threat category system, obligation to prepare the national emergency plan, emergency intervention levels as well as system of recovery after a radiation accident SÚJB intends to introduce in the new Atomic Act, which is under preparation. The solution to remaining recommendations and initiatives is scheduled to start in 2014.

B.3. Experience, Lessons and Measures Adopted in Response to Radiation Incident or Radiation Accident or to Problems Identified in Emergency Exercises

B.3.1. Experience, Lessons and Measures Adopted in Response to Radiation Incident or Radiation Accident

In the reference period from Fukushima accident, i.e. from 2011 to 31 December 2013, no radiation incident and radiation accident occurred on the territory of the Czech Republic, while the definitions of radiation incident and radiation accident are referred to in Chapter A.2.

For the sake of completeness, it should be noted that a number of extraordinary cases occurred on the territory of the Czech Republic, an overview of which was published in [3].

The extraordinary cases are recorded and an adequate response to them was provided in terms of radiation protection. However, these were not the cases which would require activation of the national emergency response system on the territory of the Czech Republic.

B.3.2. Experience, Lessons and Measures Adopted in Response to Problems Identified in Emergency Exercises

The exercise “INEX 3” was held in 2005. This exercise was at the staff level and all components of the crisis management system of the Czech Republic participated therein. An assumption that the emergency response to radiation accident would be controlled from the regional level was the deficiency identified. It was therefore decided to prepare other exercises so as to involve the whole national crisis management system in the emergency response. Consequently, other exercises in emergency planning zone of both NPPs were held at national level, i.e. on the basis of the exercise plan of crisis management bodies of the Czech Republic, which is approved by the National Security Council.

On the basis of this plan, the exercise “ZÓNA” is held once in 2-3 years to practise the response to a radiation accident in one of the emergency planning zones of nuclear power plants. This exercise verifies the off-site emergency plan for the relevant emergency planning zone and examines the emergency response to a radiation accident at all levels of crisis management (state, region, municipality with extended competences, municipalities, NPP operator). Each exercise is evaluated and information regarding the course of the exercise, its evaluation and the assignment of tasks to remove the deficiencies identified is submitted in the form of a report to the Civil Emergency Planning Committee.

The exercises “ZÓNA 2008” (Dukovany NPP), “ZÓNA 2010” (Temelín NPP) and “ZÓNA 2013” (Dukovany NPP) were held at national level. The exercises held from 2008 clearly confirmed that any response to a radiation accident in the Czech Republic must be a response, which involves all levels of crisis management and that response management and coordination must be implemented by the Central Crisis Staff as a working body of the Government of the Czech Republic.

As a decisive measure after each exercise “ZÓNA”, the off-site emergency plans are updated in accordance with the particular situation identified. Furthermore, measures are implemented to improve the quality of communication between crisis management bodies and measures to improve the quality of communication with the public, even via modern communication tools (web, facebook, etc.).

From SÚJB point of view, the most important knowledge and experience are those obtained during exercises held in 2010 and 2013 in connection with the practice of real radiation situation monitoring in real field using mobile monitoring groups and airborne monitoring group. Other important knowledge is this related to the establishment of a Regional Crisis Staff of SÚJB (measure implemented on the basis of knowledge obtained during the exercise “ZÓNA 2008”) as a forward control workplace of SÚJB Crisis Staff for radiation situation monitoring. All that knowledge was reflected in the internal regulations of SÚJB, when the necessary adaptations to these regulations were made.

B.4. Measures Adopted to Improve Transparency and Communication with the Public

On the basis of knowledge collected during regular exercises at NPP and during exercises of crisis management bodies of the “ZÓNA” type over the years, the communication between individual exercising entities and the public was improved. In order to avoid situation misinterpretation, the basic communication rules were set up under the preparations for “ZÓNA” exercises:

- a) Press releases are issued by spokespersons of individual exercising entities on a coordinated and regular basis, and are submitted to the press officer of MV – GŘ HZS ČR,
- b) An information helpline was established for the public, which is operated by trained members of the Fire Rescue Service of the Czech Republic,
- c) Each exercising entity issues information (for the public, media) only within its competences and informs on its activities,
- d) Each exercising entity holds its own press conferences,
- e) Each exercising entity informs on its activity in addressing an extraordinary event on its website.

During last two “ZÓNA” exercises, SÚJB reported additionally on its website and facebook on activities carried out by its exercising crisis staff.

Because there is no document in the Czech Republic, which defines the above mentioned communication strategy to inform the public in the case of a radiation accident, the IRRS mission suggested to SÚJB to consider drawing up a general communication strategy for this communication.

In 2013, the communication departments of nuclear power plants of the ČEZ Group (in connection with the exercise “ZÓNA 2013”) were organisationally included under the Communication and Marketing Department of the ČEZ Group, which reports directly to the Chief Executive Office of ČEZ, a.s. The condition of organisational change was the maintenance and strengthening in the area of crisis communication in the area of nuclear energy.

Responsibility of individual managers is governed by the Crisis Communication methodology in the ČEZ Group. Emphasis is mainly placed on fast, effective and transparent crisis communication, which uses the possibilities and communication channels of all departments of the Group to the maximum extent.

The negotiations on the cooperation between ČEZ communicators and Integrated Rescue System components were also held in order to set a new and simple crisis communication in case of extraordinary events, connected with the convocation of the regional crisis staff. A pilot proposal of a new concept of crisis communication was tested in practice in the form of the exercise “ZÓNA MÉDIA 2013” in September 2013. The findings of this communication exercise are incorporated into the control documentation of NPP operator.

New communication means and intervention materials for the communicators of ČEZ, a.s. and Integrated Rescue System components were also prepared within the consolidation of crisis communication plans, taking into account the findings from events at Fukushima NPP and IAEA recommendations. These are:

- a) Intervention cards ETE and intervention cards EDU, which contain basic terminology, information and contact data for the case of extraordinary events at Temelín NPP and Dukovany NPP.
- b) Dark Web – a “hidden” microsite prepared, including version for mobile phones and tablets, containing the instructions to the public for an extraordinary event at NPP, including room for current messages and instructions.
- c) Dark Facebook profile “Nuclear Event” prepared non-public website for social networking service “Facebook”, which can be activated and interconnected with the existing profile “For Nucleus” in the case of an extraordinary event at Temelín NPP.

The employees of the ČEZ Group, who are members of an on stand-by organisation of emergency response, were also trained in the control of such communication means.

The basic emergency staff of ČEZ, a.s. also approved a concept of partial substitutability of spokespersons of Temelín NPP and Dukovany NPP for the case of an extraordinary event. The concept assumes the possibility of strengthening the communication team with trained and experienced communicators from the other NPP, who have access to information channels. A training program for selected spokespersons (in 2014, at least 2 for each power plant) is adopted under this concept to clarify basic differences and differences in safety-relevant areas to them.

C. Overview of Nuclear Installations, Workplaces with Ionising Radiation Sources, Activities Related to Nuclear Energy Utilisation and Radiation Activities

C.1. Overview of National Threat Categories

The system of threat categories, as introduced in GS-R-2 [2], has not been implemented in the Czech Republic because it is not defined in any of the binding legal regulation of the Czech Republic. Nevertheless, it is possible to classify the existing nuclear installations, workplaces with ionising radiation sources and activities related to nuclear energy utilisation and radiation activities in threat categories as defined in GS-R-2.

Threat category system shall mean an evaluation of possible impacts of radiation extraordinary events on the territory of the country concerned, which may occur at nuclear installations or workplaces with ionising radiation sources and at activities related to nuclear energy utilisation or radiation activities. In fact, the evaluation of potential impacts of radiation extraordinary events considered within the licensed activities is currently in progress in the Czech Republic. Each applicant for licence or licensee who may be subject to a radiation extraordinary event, is required to provide its analysis, classification (for description see point A.2) and list such events in the on-site emergency plan.

SÚJB approves the on-site emergency plans, so it has an overview of all activities carried out, or nuclear installations or workplaces with ionising radiation sources where radiation extraordinary events may occur. In terms of threat categories, the radiation extraordinary events of degree 2 with possible release of radioactive substances into the environment and the radiation extraordinary events of degree 3 are important, because these are the degrees of radiation extraordinary events, for which the impact of event on the territory of the Czech Republic is not excluded. In case of the possibility of the occurrence of radiation extraordinary event of degree 3, the NPP operator shall also provide necessary documentation for provision of a response to this radiation extraordinary event to the author of the off-site emergency plan. The off-site emergency plan is prepared for the emergency planning zone, i.e. for the area in the vicinity of a nuclear installation, where measures to protect the population may be imposed.

Taking into account the philosophy of threat category system defined by IAEA in GS-R-2 and radiation extraordinary event classification system defined in the Czech Republic in Regulation No. 318/2002 Coll., it may be stated that there are all threat categories in the Czech Republic, except for threat category II. Therefore, the following applies to the classification of nuclear installations and workplaces with ionising radiation sources in threat categories I and III:

Threat category I:

Nuclear installation – nuclear energy reactor:

- a) Dukovany NPP,
- b) Temelín NPP.

Threat category III:

- 1) Nuclear installations – research reactors:
 - a) Research Centre Rez (research reactors),
 - b) Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague (training reactor),
- 2) Spent fuel interim storage facility, spent fuel storage facility and the radioactive waste repository at the Dukovany NPP,

- 3) Spent fuel storage facility at the Temelín NPP,
- 4) Radioactive waste repository in Richard Mine near Litoměřice and in Bratrství Mine near Jáchymov,
- 5) High-level waste storage facility at ÚJV Řež, a.s.,
- 6) Fuel cycle workplaces of Diamo, s.p.:
 - a) Uranium ore mining and processing, GEAM branch, Dolní Rožínka,
 - b) Mining cleanup, branch of the Administration of Uranium Deposits, Příbram,
 - c) Mining cleanup, branch of the Administration of Uranium Deposits, Mydlovary,
 - d) Chemical mining cleanup, branch of Uranium Mining and Treatment, Stráž pod Ralskem,
 - e) Operations of decontamination stations of mine waters (10 workplaces) in locations of the branches of DIAMO, s.p.,
- 7) Workplace in Svornost Mine, Léčebné lázně Jáchymov, a.s.,
- 8) Workplaces with large industrial irradiator (workplace for radiation sterilization of medical stores), BIOSTER, a.s., Veverská Bítýška,
- 9) Workplaces producing, or using unsealed and sealed radionuclide sources with a total high activity of the companies:
 - a) Eckert & Ziegler Cesio, s.r.o. Prague,
 - b) ISOTREND, s.r.o., Prague,
 - c) Czech Metrology Institute - Inspectorate for Ionising Radiations, Prague,
 - d) ÚJV Řež, a.s., Řež,
 - e) RadioMedic, s.r.o., Řež,
 - f) VF, a.s., Černá Hora,
 - g) LOMA, s.r.o, Dobřany
- 10) 20 workplaces with unsealed radionuclide sources of category III², namely at 13 operators throughout the territory of the Czech Republic.

C.2. Overview of Major Nuclear Installations, Workplaces with Ionising Radiation Sources, Activities Related to Nuclear Energy Utilisation and Radiation Activities

The Czech Republic operates a total of 6 energy generating units with VVER reactors at two NPPs (Dukovany and Temelín), owned and operated by ČEZ a.s., two research reactors in the Research Centre Rez and a training reactor at the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague.

C.2.1. Dukovany NPP and Temelín NPP

Four units VVER-440/213, the primary design electric power of which was 440 MW for each unit (total installed power 1760 MW), are operated at the Dukovany NPP. The maximum electric power of each unit is currently 500 MW. This value was achieved by modifying the design using design margins of units. The construction of all units of the Dukovany NPP was commenced in 1979. Unit 1 was put into operation in 1985 and the remaining three units between 1986 and 1987. An emergency planning zone with a radius of 20 km is established for the Dukovany NPP – for details see Chapter E.4.1.

Two mono-units with pressurised water reactors VVER-1000/V 320 are operated at the Temelín NPP. The construction of the power plant commenced in 1987 according to the design documentation for serial unit of 1984. In the early nineties, the design was modernised in cooperation with the WESTINGHOUSE Company. Both units were put into operation in

² Workplace categories – see Regulation No. 307/2002 Coll.

2002. The total installed electric power is 2000 MW; after design modifications, the power of each of the units was increased to 1050 MW in 2013. An emergency planning zone with a radius of 13 km is established for the Temelín NPP – for details see Chapter E.4.1.

All assessments of safety level of both NPPs carried out by international teams and their main conclusions are listed in the National Report of the Czech Republic for the purposes of the Convention on Nuclear Safety, Chapter 1.1.2 [4].

In 2011, the so-called Stress Tests were performed at both NPPs - a targeted review of safety margins of NPP in connection with the events occurred at Fukushima NPP. On the basis of the results of the Stress Tests, the Safety Improvement Action Plan was drawn up for both Czech NPPs [see Chapters B.1.2 and B.2.2].

C.2.2. Research Reactors in the Research Centre Rez

Research Reactor LVR-15

The construction of the reactor originally labelled VVR-S commenced in 1955 and the reactor was put into operation on 24 September 1957. Its thermal power was 2 MWt. It was used as multi-purpose equipment for the Czechoslovak Nuclear Programme and for the national economy. The reactor was used for producing isotopes, irradiating materials and for scientific research in the area of reactor physics. In 1964, its power level was increased to 4 MWt. In 1989, a major reconstruction was completed, which involved the replacement of all technological equipment including reactor vessel. Transition to highly enriched fuel IRT-2M was carried out and power level was increased to 8 MWt. In 1994, the maximum permitted power level was increased to 10 MWt. In the nineties, significant increase of the experimental capacities of the reactor LVR-15 involved the construction of several experimental loops, which model the conditions in PWR and BWR reactors, thus enabling to test the structural materials in real conditions. In 1995, the reactor transferred to low-enrichment fuel (36% of ^{235}U).

In addition to material research (irradiation of reactor pressure vessel materials, material corrosion tests of primary circuit and internals of NPP) and tests of water regime testing in the primary circuit, the reactor is used for neutron activation analysis, production and development of new radiopharmaceuticals, production of radiation-doped silicon for electrical industry, irradiation service and scientific research of material properties in horizontal channels.

Research Reactor LR-0

A critical assembly LR-0 was created by reconstructing the heavy-water critical assembly TR-0, which was constructed in ÚJV Řež a.s. and most of its equipment was manufactured in the former Czechoslovakia. It served for core research of energy generating reactor JE A-1 (HWGCR) in Jaslovské Bohunice. It was put into operation in 1972 and operated until 1979.

In connection with the transition of the Czechoslovak Nuclear Programme to NPP with VVER type pressurised water reactors, the assembly TR-0 was reconstructed to an experimental zero-power light-water reactor LR-0, which was put into continuous operation in 1983. The maximum permitted power of the reactor is 5 kWt and the reactor is operated with shortened fuel assemblies of reactors VVER-1000 and VVER-440. It serves for research of core physics (it has a variable pitch of rod lattice), storage racks and for modelling of neutron fields in power reactors. The reactor may be regulated by means of absorber rods, boric acid and moderator level.

C.2.3. Training Reactor VR-1 at the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague

In December 1990, the training nuclear reactor VR-1 was first put into operation at the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague. The fuel used in the reactor was the Russian fuel IRT-M and all other equipment of the reactor was manufactured in the former Czechoslovakia. The reactor is used in the training process of students under the study programmes of the Faculty of Nuclear Sciences and Physical Engineering, in scientific-research activities and for the needs of preparing the nuclear energy specialists of the Czech Republic. In October 2005, the fuel with enrichment of 36% ^{235}U (HEU) used in the reactor VR-1 was replaced with the fuel with enrichment of 20% ^{235}U (LEU). Thus, the reactor VR-1 became the first reactor with the Russian fuel of IRT type, which underwent this replacement.

C.2.4. Radioactive Waste Repository and Spent Nuclear Fuel Storage

There are three radioactive waste repositories, two spent nuclear fuel storage facilities, one spent nuclear fuel interim storage facility, and one high-level waste storage facility.

Radioactive Waste Repository Richard

The Radioactive Waste Repository Richard is located near the town of Litoměřice, in the complex of the former limestone mine Richard II (beneath the Bídnice Hill - 70 m below ground). The communication corridor is 6 - 8 m wide, with a height of 4 - 5 m. The individual disposal chambers are accessible from the communication corridor. Since 1964 the institutional waste (i.e. radioactive waste coming from the use of radioisotopes by institutions in the health sector, industry and research) has been disposed therein. The total volume of the modified underground area exceeds 17,000 m³, the capacity for waste disposal is approximately half the volume, and the rest comprises service corridors.

Radioactive Waste Repository Bratrství

This repository, which is located near the town of Jáchymov, is intended only to receive waste containing natural radionuclides. The repository was constructed by the adaptation of a mining shaft of the former uranium mine Bratrství, when 5 chambers were prepared for the disposal, with the total volume of nearly 1,200 m³. It was put into operation in 1974. The mine is situated in water-bearing crystalline complex and therefore, a drainage system with a central retention tank and continuous retention tanks is constructed in the vicinity of the disposal chambers.

Radioactive Waste Repository Dukovany

The Radioactive Waste Repository Dukovany was constructed on the premises of the Dukovany NPP for disposal of conditioned radioactive waste from nuclear energy sector. Any leakage of radionuclides into the biosphere is prevented by a system of barriers with long lifetime. It has been in continuous operation since 1995. The total volume of the disposal rooms of 55,000 m³ (approximately 180,000 drums with a capacity of 200 l) is sufficient for disposal of all radioactive waste from Dukovany NPP and Temelín NPP, which meets the conditions of acceptability for disposal, even in the case of a prolongation of their operational lifetimes to 40 years.

Spent Fuel Interim Storage Facility Dukovany

The Spent Fuel Interim Storage Facility Dukovany is situated on the premises of the Dukovany NPP and is used for storage of spent nuclear fuel from VVER-440 reactors operated at the Dukovany NPP.

Spent Nuclear Fuel Storage Facility Dukovany

The Spent Nuclear Fuel Storage Facility Dukovany is the second facility intended for storage of spent nuclear fuel from VVER-440 reactors operated at the Dukovany NPP. The storage facility is situated also on the premises of the Dukovany NPP.

Spent Nuclear Fuel Storage Facility Temelín

The Spent Nuclear Fuel Storage Facility Temelín, which is situated on the premises of the Temelín NPP, is used for storage of spent nuclear fuel from VVER-1000 reactors operated at the Temelín NPP.

High Level Waste Storage Facility

The High Level Waste Storage Facility on the premises of ÚJV Řež, a.s. is used for storage of high-level waste and can be used for wet and dry storage of spent nuclear fuel produced during the operation of research reactors.

C.2.5. Workplaces with Ionising Radiation Sources

In accordance with Act No. 18/1997 Coll., the ionising radiation sources are classified by the extent of threat to the health and to the environment as insignificant, minor, simple, significant and very significant. Workplaces, where such sources are used for radiation activities, are classified in accordance with Regulation No. 307/2002 Coll., in category I, II, III or IV.

Workplaces of category IV are:

- 1) workplaces with nuclear reactors and related process equipment, i.e. 4 operating power reactors in Dukovany NPP and 2 power reactors at Temelín NPP, 2 research reactors at the Research Centre Rez, and 1 training reactor operated at Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University in Prague.
- 2) Spent fuel interim storage facility, spent fuel storage facility and the radioactive waste repository at the Dukovany NPP, Spent fuel storage facility at the Temelín NPP, Radioactive waste repository in Richard Mine near Litoměřice and in Bratrství Mine near Jáchymov, High-level waste storage facility at ÚJV Řež, a.s.,

Most important workplaces of category III are:

- 1) Uranium-mining industry workplaces of Diamo, s.p.:
 - a) Uranium ore mining and processing, GEAM branch, Dolní Rožínka,
 - b) Mining cleanup, branch of the Administration of Uranium Deposits, Příbram,
 - c) Mining cleanup, branch of the Administration of Uranium Deposits, Mydlovary,
 - d) Chemical mining cleanup, branch of Uranium Mining and Treatment, Stráž pod Ralskem,
 - e) Operations of decontamination stations of mine waters (10 workplaces) in locations of the branches of DIAMO, s.p.,
- 2) workplace Svornost Mine, Léčebné lázně Jáchymov, a.s.,
- 3) Workplaces with large industrial irradiator (workplace for radiation sterilization of medical stores), BIOSTER, a.s., Veverská Bítýška,
- 4) Workplaces producing, or using sealed and unsealed radionuclide sources with a total high activity of the companies:
 - a) Eckert & Ziegler Cesio, s.r.o. Prague,
 - b) ISOTREND, s.r.o., Prague,
 - c) Czech Metrology Institute - Inspectorate for Ionising Radiations, Prague,
 - d) ÚJV Řež, a.s., Řež,

- e) RadioMedic, s.r.o., Řež,
 - f) VF, a.s., Černá Hora,
 - g) LOMA, s.r.o., Dobřany
- 5) 29 radiotherapeutic workplaces in health facilities throughout the territory of the Czech Republic.

D. Overview of Emergency Preparedness Elements

D.1. Overview of Acts, Regulations and Rules and Requirements

For an overview of legislation of the Czech Republic relating to the crisis management system, including the (radiation) emergency preparedness and response system see Annex 1. As there is a number of legally not binding regulations for this area in the Czech Republic, for the sake of completeness, these are listed in Annex 2.

D.2. Responsibilities of Key Organisations and Other Entities Involved in the Emergency Preparedness and Emergency Response System

D.2.1. National Security Council

The National Security Council is established as a standing working body of the Government for the coordination of security issues of the Czech Republic. The National Security Council comprises the Prime Minister and other members of the Government in accordance with a Government decision. The National Security Council, within the scope of authorisation set by the Government, prepares draft measures for the Government concerning the safeguarding of the Czech Republic's security. The standing working bodies of the National Security Council include also the Civil Emergency Planning Committee. The Chairperson of SÚJB may be invited to take part in the meetings of the National Security Council.

D.2.2. Civil Emergency Planning Committee

The Civil Emergency Planning Committee is a standing working body of the National Security Council for the area of civil emergency planning and for the coordination and planning of measures to protect the internal security of the state. The Committee coordinates the above issues aimed at planning the measures to protect the population and economy, to protect the critical infrastructure, including measures for the case of a radiation accident, preventive measures against the use of weapons of mass destruction including the elimination of the consequences of their use and the harmonisation of the requirements for civil resources necessary for ensuring the security of the Czech Republic. In addition, the Council deals with the area of security research of the Czech Republic. The Chairperson of SÚJB is a member of the Committee.

Within the scope of its competence, the Committee:

- a) Assesses and considers the objectives of preparatory, planning and conceptual measures and activities,
- b) Ensures operational interdepartmental coordination of preparatory, planning and conceptual measures and activities,
- c) Evaluates the implementation of preparatory, planning and conceptual measures and activities, and proposes the implementation of necessary preventive measures,
- d) Assesses, considers and coordinates the activities of representatives of the Czech Republic in bodies of the European Union (hereinafter referred to as "EU"), the North Atlantic Treaty Organisation (hereinafter referred to as "NATO") and other international entities,
- e) Considers the Plan for Creation of Civil Resources to Ensure the Security of the Czech Republic,
- f) Coordinates the implementation of security research of the Czech Republic.

D.2.3. Central Crisis Staff

The Central Crisis Staff is a working body of the Government that is responsible for crisis management in extraordinary events, including response to radiation accidents, at national level. The Chairman of the Central Crisis Staff is the Minister of the Interior or the Minister of Defence depending on the nature of the extraordinary event. In the case of a radiation accident, the Chairperson of SÚJB is also a member of the Central Crisis Staff. The main task of the Central Crisis Staff is to coordinate activities of the ministries and other central administration offices during the management of crisis situations. The roles and competence of the Central Crisis Staff are specified in its Statute.

The main task of the Central Crisis Staff is:

- a) To ensure operational cooperation with the international organisations' crisis management bodies,
- b) To ensure the assessment of the development of the situation, the content and adequacy of measures adopted by the administration offices and by the local authorities, and to inform the National Security Council,
- c) To ensure, consider and coordinate the adoption of measures of interdepartmental nature proposed by ministries,
- d) To prepare for the National Security Committee the draft measures to deal with the situation and the documents for the adoption of decisions subject to the approval by the Government or to the approval by the Parliament of the Czech Republic.

The Central Crisis Staff has the below listed expert working groups, which are activated whenever the Central Crisis Staff is activated:

- a) Working Group for coordination of in-kind resources, which is headed by an authorised employee of the Administration of State Material Reserves of the Czech Republic and members are authorised employees of ministries, whose deputies are members of the Central Crisis Staff;
- b) Media Group, which is headed by an authorised employee of the Ministry, whose Minister is the Chairman of the Central Crisis Staff and members are authorised workers of departments, whose representatives are members of the Central Crisis Staff.

D.2.4. Ministries and Other Central Administration Offices

In the scope of their competences, the ministries and other central administration offices (which include SÚJB) in the preparation for extraordinary events (including preparedness for radiation incidents and radiation accidents), in the performance of rescue and remedy works (including performance of such works in response to radiation incidents and radiation accidents) and in the protection of the population:

- a) Keep an overview of possible sources of risks, carry out threat analyses and, within the prevention pursuant to special legal regulations, rectify the facts and situations, which could cause occurrence of an extraordinary situation,
- b) Decide on activities to carry out rescue and remedy works and to mitigate their consequences, unless otherwise specified by special legal regulation,
- c) Organize immediate repairs of necessary public facilities for the protection of the population.

To ensure the preparedness for crisis management, the ministries and other central administration offices, in the scope of their competences:

- a) Establish Crisis Management Workplace,

- b) Elaborate a plan, which contains a set of crisis measures and procedures for crisis management (hereinafter referred to as the “crisis plan”); the crisis plan is subject to the approval by the minister or by the head of another central administration offices,
- c) Establish Crisis Staff as a working body to prepare for crisis situations and for crisis management, whose composition and tasks shall be defined and material, organisational and administrative conditions for its activity shall be ensured by the minister or by the head of another central administration offices.

D.2.5. Ministry of Interior – General Directorate of Fire Rescue Service of the Czech Republic

MV – GŘ HZS ČR performs tasks in the area of:

- a) Preparation for extraordinary events, Integrated Rescue System and protection of the population,
- b) Involvement of the Czech Republic in international rescue operations during extraordinary events abroad and provision of humanitarian aid abroad in cooperation with the Ministry of Foreign Affairs.

To accomplish the above listed tasks, MV – GŘ HZS ČR:

- a) Unifies procedures of ministries, central administration offices, regional offices, municipal offices, legal persons and natural persons carrying out business activities,
- b) Regulates the Integrated Rescue System,
- c) Reviews and coordinates alarm plans of the Integrated Rescue System of regions and elaborates a central alarm plan of the Integrated Rescue System,
- d) Manages the construction and operation of information and communication networks and services of the Integrated Rescue System,
- e) Elaborates the concept of protection of the population,
- f) Provides and operates a uniform system of warning and notification, defines the method for informing legal and natural persons on the nature of potential threat, prepared measures, and method and time for their implementation,
- g) Organizes briefing and training in the area of protection of the population and for the preparedness of components of the Integrated Rescue System aimed at their mutual collaboration; sets up educational establishments for this purpose,
- h) Ensures central coordination of rescue and remedy works, if:
 - An extraordinary event extends beyond the national border of the Czech Republic and the coordination of rescue and remedy works beyond the frontier traffic is required, or
 - An extraordinary event extends beyond the territory of the region and the leader of the intervention team declared the maximum level of alarm, or this coordination is required by the leader of the intervention team, mayor of the municipality with extended competences or head of the region,
- i) Organizes rescue and material aid abroad in cooperation with the Ministry of Foreign Affairs, components of the Integrated Rescue System or central administration offices,
- j) In accordance with the international treaties, which are binding upon the Czech Republic, ensures continuously the function of contact point to request humanitarian aid abroad by affected country or by international organisation; or the notification of serious extraordinary event abroad, which may also affect the territory of the Czech Republic,
- k) Informs the competent international organisations on forces and means of the Czech Republic predetermined for the provision of humanitarian aid abroad.

D.2.6. State Office for Nuclear Safety

Is a central administration office and fulfils all the above obligations listed for the central administration offices. In addition, to ensure response to radiation incidents or radiation accidents, SÚJB:

- a) Sets up and controls the Radiation Monitoring Network,
- b) Has software tools to evaluate NPP technology situation and radiation situation and to provide forecasts of radiation situation development and propose adequate protective measures.

D.2.7. Regional Office

The Regional Office:

- a) Organizes collaboration between the municipal offices of municipalities with extended competences and other administration offices and municipalities in the region, particularly in elaboration of an alarm plan of the Integrated Rescue System, ensures emergency preparedness and verifies it through exercises,
- b) Regulates the Integrated Rescue System at regional level,
- c) Unifies procedures of municipal offices of municipalities with extended competences and local administration offices with regional competence in the area of protection of the population,
- d) Elaborates a plan to carry out rescue and remedy works on the territory of the region (hereinafter referred to as the “regional emergency plan”),
- e) Concludes agreements with the relevant local unit of a neighbouring state, unless otherwise specified by an international treaty approved by the Parliament of the Czech Republic and published in the Collection of Laws or in the Collection of International Treaties,
- f) Elaborates a regional alarm plan of the Integrated Rescue System.

If the emergency planning zone extends to the territory of more than one administrative district of the municipality with extended competences of own region or extends to the territory of the region from the territory of another region, the regional office, in cooperation with the municipal offices concerned of the municipality with extended competences, elaborates a plan to carry out rescue and remedy works in the vicinity of the source of danger (hereinafter referred to as the “off-site emergency plan”). In the case that the emergency planning zone extends to the territory of more than one region, the elaboration of the off-site emergency plan and the common solution to an extraordinary event are coordinated by the regional office, on the territory of which the source of danger is located (hereinafter referred to as the “coordinating regional office”).

The coordinating regional office:

- a) Coordinates and directs the creation of the warning and notification system in the emergency planning zone,
- b) Coordinates the interdependence of measures according to on- and off-site emergency plan.
- c) Controls and evaluates the state of preparedness of forces and means earmarked for the implementation of measures according to the off-site emergency plan,
- d) Coordinates and controls the preparation of the population for the case of a radiation accident.

D.2.8. Regional Security Council

The Regional Security Council particularly considers and assesses the following:

- a) Overview of possible sources of risks and threat analysis,
- b) Regional crisis plan,
- c) Regional emergency plan,
- d) Regional off-site emergency plan, if approved by the head of the region,
- e) Financial means of preparedness of the region and components of the Integrated Rescue System for crisis situations and management on the territory of the region,
- f) Draft agreements with local units of a neighbouring state on cooperation with other regions in crisis management and in provision of aid,
- g) State of preparedness of the components of the Integrated Rescue System in the region,
- h) Final report on evaluation of crisis situation in the region,
- i) Draft annual plans for exercises of the components of the Integrated Rescue System and crisis management bodies in the region.

D.2.9. Municipality with Extended Competences

In particular, the municipality with extended competences:

- a) Performs tasks in carrying out rescue and remedy works assigned by the Ministry of Interior,
- b) Organizes collaboration between municipal office of the municipality with extended competences and local administration offices with competence in its administrative district and other municipalities,
- c) Informs other municipalities, legal and natural persons in its administrative district about the nature of possible threat to the population and about prepared rescue and remedy works,
- d) Cooperates on the elaboration of the off-site emergency plan and on coordinated management of an extraordinary event with the regional office, if the emergency planning zone extends beyond the territory of the administrative district of the municipality with extended competences,
- e) Ensures emergency preparedness defined by the regional emergency plan and by the off-site emergency plans, and verifies it through exercises.

D.2.10. Security Council of the Municipality with Extended Competences

The Security Council of the municipality with extended competences considers and assesses the following, among other things:

- a) Overview of possible sources of risks and threat analysis,
- b) Crisis plan of the municipality with extended competences,
- c) Off-site emergency plan, if approved by the mayor of the municipality with extended competences,
- d) Final report on evaluation of crisis situation within the administrative district of the municipality with extended competences,
- e) State of preparedness of the components of the Integrated Rescue System deployed within the administrative district of the municipality with extended competences,
- f) Method for informing municipalities, legal and natural persons about the nature of possible threat in the administrative district of the municipality with extended competences, about prepared crisis measures and about the method of their implementation.

D.2.11. Municipal Office

The municipal office in particular:

- a) Organizes preparedness of the municipality for extraordinary events,
- b) Participates in carrying out rescue and remedy work with the Integrated Rescue System,
- c) Ensures warning, evacuation and sheltering of persons from imminent danger, unless otherwise specified by special legal regulation,
- d) Provides the Regional Fire Rescue Service with documents and information necessary for elaborating a regional emergency plan or off-site emergency plan,
- e) Participates in ensuring emergency survival of inhabitants of the municipality
- f) Informs legal and natural persons in the municipality about the nature of possible threat, about prepared rescue and remedy works, and about the protection of the population. To this end, it organizes their training.

D.2.12. Regional Fire Rescue Service

The Regional Fire Rescue Service, among other things:

- a) Is responsible for the management of the construction and operation of information and communication networks and services of the Integrated Rescue System,
- b) Organizes briefing and training in the area of protection of the population,
- c) Elaborates a regional alarm plan of the Integrated Rescue System,
- d) Organizes identification and marking of dangerous areas, decontamination and other protective measures,
- e) Elaborates an off-site emergency plan,
- f) Organizes and coordinates the evacuation, and sheltering of exposed population, emergency accommodation, emergency supply of drinking water, foods as well as clothing, shoes, hygiene products, etc.,
- g) Is responsible for measures adopted to notify and warn, to distribute the means of individual protection of persons,
- h) Keeps an overview of state and implementation of urgent measures (sheltering, evacuation),
- i) Keeps an overview of forces and means earmarked for the remedy of consequences of emergency and for the decontamination of persons, transportation means and materials exported from the affected area,
- j) Uses the fire protection units to decontaminate persons and transportation means,
- k) Participates in measures adopted to remedy the consequences of emergency (deployment directly at NPP).

D.2.13. Police of the Czech Republic

Among other things, the Police of the Czech Republic:

- a) Elaborates a plan for regulation of the movement of persons and vehicles,
- b) Elaborates a plan for ensuring public order and security,
- c) Earmarks forces and means to ensure the regulation of the movement of persons and vehicles, and to ensure public order,
- d) Is responsible for measures to ensure peace and order in the emergency planning zone and in the places of receipt of evacuated population,
- e) Is responsible for measures to ensure the protection of property in the emergency planning zone.

D.2.14. Transportation Authorities

The transportation authorities, among other things:

- a) Are responsible for measures adopted to protect the drivers operating in the endangered area,
- b) Are responsible for stock level and organisation of fuel replenishment,
- c) Are responsible for marking of roads dedicated for evacuation (barriers, approach to decontamination equipment),
- d) Prepare marking of vehicles to be granted an access permit for the emergency planning zone,
- e) Are responsible for reorganisation of railway transport and for organisation of removal of travelling public and supplies,
- f) Are responsible for measure to mobilize transport capacities intended to carry out the evacuation of the population (calculation) and cost capacities for the transport of supplies and livestock.

D.2.15. Environmental Authorities

The environmental authorities, among other things:

- a) Define the possible extent of the threat to small water sources of drinking water,
- b) Define the extent of the spread of contaminated surface waters,
- c) Are responsible for monitoring of watercourses and water sources, and for the measures adopted,
- d) Organize alternative supply of drinking water,
- e) Provide meteorological services.

D.2.16. Operator

The operator in particular:

- a) Ensures emergency preparedness of its nuclear installation or workplace with ionising radiation sources pursuant to Act No. 18/1997 Coll.,
- b) Elaborates an on-site emergency plan, which includes intervention procedures and intervention instructions related thereto,
- c) Creates an emergency response system,
- d) Is responsible for classification of extraordinary events,
- e) Ensures radiation situation monitoring at its workplace, and if defined, also in the emergency planning zone,
- f) Participates in the operation of warning and notification system in the emergency planning zone, if defined.

In addition, the operator of NPP:

- a) Adopts measures to carry out notification and warning in the emergency planning zone,
- b) Keeps an overview of forces and means deployed to remedy the consequences of an emergency on the premises of NPP,
- c) Prepares a contact plan (names of institutions, addresses and method of contact),
- d) Submits the results of analyses of possible radiation accidents and the estimates of potential radiological effects on the population,
- e) Sends an “off-site support” specialist to the Regional Crisis Staff,
- f) Establishes an emergency control centre, which is the workplace of an emergency staff and technical support centre,
- g) Within the organisation of emergency response, creates a stand-by organisation of emergency response system (see Figure D-1).

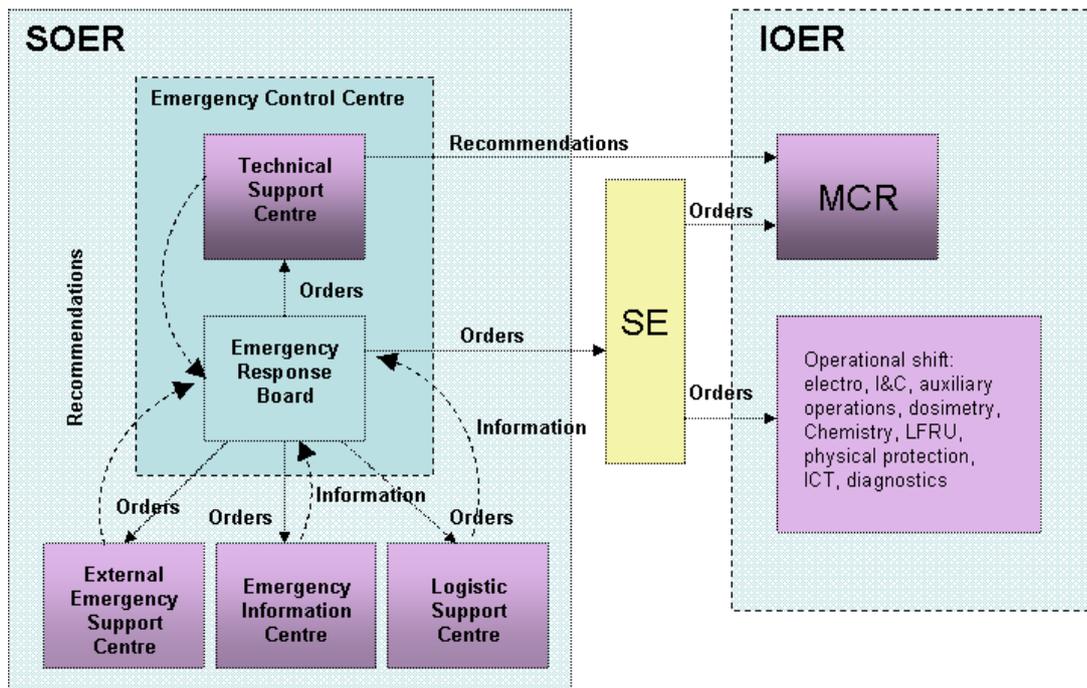


Figure D-1: Scheme of organisation of emergency response of NPP, with mutual links and information flow

Note: SOER – stand-by organisation of emergency response, IOER – internal organisation of emergency response, SE – shift engineer, MCR – main control room, I&C – instrumentation and control, , LFRU – local fire rescue unit, ICT – information and communication technology.

Upon the occurrence of an extraordinary event and subsequent management of this extraordinary event, the operator of NPP communicates with the below listed external authorities and organisations both at national and at local level.

Regional Office

The regional office ensures the coordination of emergency preparedness of all municipalities with extended competences, the territory of which extends to the emergency planning zone. The head of the relevant region, in cooperation with the mayors of the concerned municipalities with extended competences, manages all activities related to off-site emergency preparedness in the entire emergency planning zone and decides on announcement and implementation of measures to protect the population. The Regional crisis staff functions as its working body. Urgent protective measures are announced by the Regional Office on the basis of the SÚJB's recommendation. In the event of a radiation accident at NPP, the operator provides the regional office with the necessary cooperation, data and information needed to inform about the situation and its development. To ensure cooperation, the operator of NPP sends its representative to the Regional Crisis Staff.

Municipalities with Extended Competences

The mayors of the concerned municipalities with extended competences manage the announcement and implementation of protective measures on the relevant territory of the municipality with extended competences. These activities are managed on the basis of the off-site emergency plan. The protective measures are announced after prior discussion with the regional office, which ensures mutual coordination or reports and information exchanged between individual municipalities with extended competences, SÚJB and NPP. This procedure serves to ensure the coherence of the announced protective measures on the area falling under the administration of individual municipalities with extended competences.

Czech Hydrometeorological Institute

The Czech Hydrometeorological Institute ensures for NPP evaluation of current meteorological situation and elaboration of forecasts of further development. The outputs of the basic meteorological data necessary for evaluating the potential or actual spread of radioactive leakages in the vicinity of NPP are provided to the relevant information networks of NPP.

Integrated Rescue System

The Integrated Rescue System is established for the purpose of coordinated management and solution of extraordinary situations, without detailed specification whether it is an industrial accident, floods, earthquake or other natural disaster. Within the Integrated Rescue System, a central alarm plan of the Integrated Rescue System is elaborated to be used if needed due to an extraordinary event or crisis situation or security action and if all conditions defined by law for the central coordination of rescue and remedy works are met or if the head of the region, the mayor of the municipality with extended competences, the director of Regional Fire Rescue Service or the leader of the intervention team through the Operation Information Centre of the Regional Fire Rescue System ask for assistance and for forces and means, which are not available to the components of the Integrated Rescue System at regional level for carrying out rescue and remedy works in extraordinary event managed independently in the relevant region. Forces and means in central coordination of rescue and remedy works are called and deployed by MV – GR HZS ČR through its Operation Information Centre.

Fire Rescue Service of the Czech Republic

In the case of a radiation accident at NPP situated on the territory of the Czech Republic, the Fire Rescue Service of the Czech Republic ensures, on the basis of instructions from NPP, the warning of the population in the emergency planning zone by means of sirens operated via a uniform system of warning and notification. Furthermore, the Fire Rescue Service of the Czech Republic ensures the relevant radio and TV broadcastings through the Czech Television and the Czech Radio. For this case, the relevant Regional Fire Rescue Service ensures also the notification of the concerned municipalities with extended competences through Operation Information Centres of the Regional Fire Rescue Service.

Police of the Czech Republic, Armed Forces of the Czech Republic

Within the Integrated Rescue System, there are, among other things, six helicopters (1x Armed Forces of the Czech Republic and 5x Police of the Czech Republic) earmarked for rescue works with the possibility of transporting persons and load, when four crews are in a stand-by mode.

Emergency Medical Services

On the premises of NPP, an emergency medical service is (under a contract) established with round-the-clock duty, which is responsible for the performance of medical service and which follows a trauma plan, which forms a part of the on-site emergency plan of NPP.

D.3. Response Coordination Mechanisms for Radiation Extraordinary Event

The basic laws for the response to extraordinary events in the Czech Republic include Act No. 238/2000 Coll., Act No. 239/2000 Coll., Act No. 240/2000 Coll., and Act No. 241/2000 Coll.

MV – GR HZS ČR regulates the Integrated Rescue System and in specified cases, particularly if requested by authorised authorities (head of the region, mayor of the municipality with extended competences, leader of the intervention team) or with the consent of the Ministry of

Foreign Affairs when international cooperation is needed to the extent broader than that allowed by regional frontier agreements, carries out the central coordination of rescue and remedy works by calling and deploying forces and means, and by coordinating the aid delivered to the affected area from other regions, by other ministries, other central administration offices and from abroad.

The Regional Fire Rescue Service are obliged to draw up a plan to carry out rescue and remedy works on the territory of the region, and if there is an emergency planning zone on this territory, to draw up an off-site emergency plan. The preparation for extraordinary crisis situations, except for the situation related to the defence of the Czech Republic against external attacks, regulates Crisis Act, which defines crisis state and determines the responsibility crisis management bodies of different levels from the government to the municipal authorities. In preparation for crisis situations the Ministry of Interior unifies the procedures in the area of crisis management..

D.3.1. Integrated Rescue System

Within the Integrated Rescue System, there are basic and other components of the Integrated Rescue System.

Basic Components of the Integrated Rescue System

The basic components of the Integrated Rescue System are the backbone of the system because they ensure round-the-clock duty for the receipt of announcement of an extraordinary event (emergency phone numbers 150, 155, 158, 112), ensure the evaluation of an extraordinary event and immediate intervention in the place of an extraordinary event (for this purpose, the basic components of the Integrated Rescue System deploy their forces and means throughout the Czech Republic). The basic components of the Integrated Rescue System are: Fire Rescue Service of the Czech Republic and fire protection units included to cover the territory of the region, as well as Police of the Czech Republic and providers of emergency medical services.

Other Components of the Integrated Rescue System

Where the basic components are not sufficient in rescue and remedy works, the other components of the Integrated Rescue System are deployed. The integration of other components into the Integrated Rescue System is subject to the conclusion of an agreement on the planned assistance on request. Other components of the Integrated Rescue System, which may be used to carry out rescue and remedy works, are as follows:

- a) Earmarked forces and means of the armed forces (Armed Forces of the Czech Republic),
- b) Armed security forces (except for the Police of the Czech Republic),
- c) Other rescue forces (except for the Fire Rescue Service of the Czech Republic),
- d) Public health authorities (e.g. hygiene authorities); at the time of crisis situation, special health facilities at the level of university hospitals become the other components of the Integrated Rescue System in order to provide specialised care to the population,
- e) Emergency, stand-by, special and other services (which include radiation situation monitoring within RMN managed by SÚJB),
- f) Civil protection mechanism,
- g) Non-profit organisations and citizens' associations.

The component, which enters into an agreement on the planned assistance on request with the Fire Rescue Service of the Czech Republic, is included, together with the basic components, into a regional alarm plan of the Integrated Rescue System or into a central alarm plan.

D.3.2. Method for Coordinating Response to Radiation Accident at NPP Located on the Territory of the Czech Republic

The regional office of the region, on the territory of which the NPP is located, is in charge of coordinating emergency management. On the basis of documents provided by SÚJB, NPP operator and the actual situation on the territory of the region, the coordinating regional office proposes and recommends when and what protective measures will be adopted. On the basis of proposals, recommendations and decisions by the competent regional offices, the competent municipalities with extended competences ensure a coordinated procedure for rescue and remedy works. During a radiation accident, some protective measures may be specified or, where appropriate, imposed in another area. To impose the individual protective measures, the head of the region or the mayor of the municipality with extended competences uses specific activity plans, which form a part of the off-site emergency plan.

A number of authorities and organisations both at national and at local level take part in off-site emergency preparedness in the emergency planning zone (see Chapter D.2.).

Figure A-2 shows the way of how the NPP operator communicates with external authorities and organisations both at national and at local level in the case of a radiation extraordinary event and its subsequent management.

D.3.3. Preparation and Implementation of Protective Measures in Emergency Planning Zones

State Office for Nuclear Safety

Pursuant to Act No. 18/1997 Coll., SÚJB on the basis of the evaluation of radiation situation in case of radiation incident and radiation accidents provides documents for taking decisions on measures to reduce or avert exposure. These documents based on data provided by RMN and in the case of a radiation accident on the territory of the Czech Republic as well as on the basis of information obtained from the affected nuclear installation are prepared by SÚJB's Crisis Staff.

SÚJB's Crisis Staff:

- a) Evaluates the development of the state of technology in relation to the measures implemented by operating personnel of a nuclear installation,
- b) Evaluates the radiation situation at a nuclear installation and on the territory of the Czech Republic,
- c) On the basis of forecasts for the spread of radioactive substances from the place of origin of a radiation accident prepared by the Czech Hydrometeorological Institute according to the meteorological situation and its expected development, elaborates the forecasts for the development of radiation situation and the information on potential threat in the vicinity of nuclear installation,
- d) Specifies the extent of affected area.

Depending on the size of the affected area, the prepared documents in the form of recommendations for imposing or, where appropriate, specifying or cancelling protective measures are submitted to the central crisis staff or to the crisis staff of the region, on the territory of which the radiation incident or the radiation accident occurred.

Regional Office

The regional office ensures the coordination of emergency preparedness of all municipalities with extended competences, the territory of which extends to the emergency planning zone. The head of the relevant region, in cooperation with the mayors of the concerned municipalities with extended competences, manages all activities related to emergency preparedness in the entire emergency planning zone. In the event of a radiation accident, the head of the region decides on announcement and implementation of measures to protect the population. The regional crisis staff functions as its working body. To announce the protective measures, the SÚJB's recommendations are available.

Municipalities with Extended Competences

The mayors of the municipalities with extended competences decide on the convocation of the municipal crisis staff and manage the announcement and implementation of protective measures on the territory of the municipality with extended competences. These activities are managed on the basis of the off-site emergency plan. The protective measures are announced after prior discussion with the regional crisis staff, which ensures mutual coordination or reports and information exchanged between the region, individual municipalities with extended competences or, where appropriate, SÚJB and NPP. This procedure serves to ensure the coherence of the announced protective measures on the area falling under the administration of individual municipalities with extended competences.

Nuclear Power Plant Operator

In the case of a radiation incident or radiation accident at NPP, the NPP operator, through its emergency staff, provides the crisis staff of SÚJB and of the region with the necessary cooperation, data and information needed for assessing the severity of the situation occurred. To ensure cooperation, the operator of NPP sends its representative to the regional crisis staff.

D.4. Logistic Measures and Equipment for Implementation of Effective Emergency Response

In case of an extraordinary event on the territory of the Czech Republic, the response system is activated for this extraordinary event at all levels. Each authority involved in dealing with the extraordinary event is obliged to provide logistics activities within their competences from own resources. A list and method of use of such resources is defined in a crisis or, where appropriate, emergency plan.

If the response to crisis situation is managed from the central level, the Central Crisis Staff coordinates activities of ministries and central administration offices in dealing with the extraordinary event. The Ministry of Interior of the Czech Republic and the Administration of State Material Reserves play a fundamental role in providing logistics support at national level. The Ministry of Interior, among other things, manages the construction and operation of information and communication networks and services of the Integrated Rescue System, elaborates the concept of protection of the population, provides and operates the uniform warning and notification system, creates and provides logistics bases of Fire Rescue Service of the Czech Republic on the territory of the Czech Republic (towns of Zbiroh, Hlučín).

The Administration of State Material Reserves has available the technical and material resources that can be used for the case of management of extraordinary event where technical and material resources of authorities and organisations responsible for dealing with the extraordinary event are insufficient. The state material reserves include the mobilisation reserves and stand-by stock intended for 23 type crisis situations. The constitution of emergency stocks is subject to the requirements of individual departments.

The Administration creates a concept of economic measures for crisis situations and their coverage pursuant to the relevant acts. It replenishes, protects, exchanges and maintains the state material reserves, including stock for humanitarian aid. Together with the Ministry of Foreign Affairs of the Czech Republic and the Ministry of Interior of the Czech Republic, the Administration provides the humanitarian aid of the Czech Republic abroad. The Government decides on the use of the stock kept by the Administration of State Material Reserves based on the recommendation of the Central Crisis Staff.

In the event of a crisis situation – radiation accident, additional special logistics support is provided by SÚJB. SÚJB has available software tool ESTE, which evaluates NPP technology and processes a forecast for the development of extraordinary event. SÚJB uses this system as a support for decision making process regarding proposals for appropriate protective measures. SÚJB has also established RMN and manages its activities.

Within the scope of its competence, MV – GŘ HZS ČR has a central stock prepared for rescue and remedy works to remove the consequences of large extraordinary events on the territory of the Czech Republic. To ensure a streamlined, economic and efficient creation, maintenance and use of material means of fire protection in central stock, there are rules set out for their systematisation and standardisation. Under the conditions set out by the Government of the Czech Republic, this stock may be further used in announcement of crisis situations for recovery works carried out or organised by the components of the Integrated Rescue System.

The individual material types are divided into individual coherent sets corresponding to the nature of extraordinary event or crisis situation, and stored evenly in warehouses on the territory of the Czech Republic. Among other things, there is a set intended for emergency survival of the population or a set of personal protective equipment for protection against contamination with radioactive, chemical and biological substances or a set with material means for decontamination.

D.4.1. Nuclear Power Plant Operator

An organisation of emergency response is established at NPP to implement efficient emergency response, which is composed of a stand-by organisation of emergency response and on-site stand-by organisation of emergency response. The following centres are established for the activity of stand-by organisation of emergency response personnel: emergency control centre, off-site emergency support centre, emergency information centre, and logistics support centre. A workplace of emergency staff and technical support centre is located in the emergency control centre.

Figure D-1 shows the basic scheme of organisation of emergency response of NPP, with mutual links and information flow.

Emergency Staff

The emergency staff is the main control workplace of NPP organisation of emergency response. After its activation, it ensures the announcement of protective measures for employees and other persons situated on the premises of NPP at the time of occurrence of an extraordinary event, the management of activities carried out by all employees and other persons taking part in intervention when suppressing the development and dealing with the consequences of extraordinary event at NPP, and communicates with external components of emergency preparedness. The emergency staff ensures deliveries of necessary material, special tools, personnel rotation and material security through a logistics support centre. Persons identified in Figure D-2 work in the emergency staff.

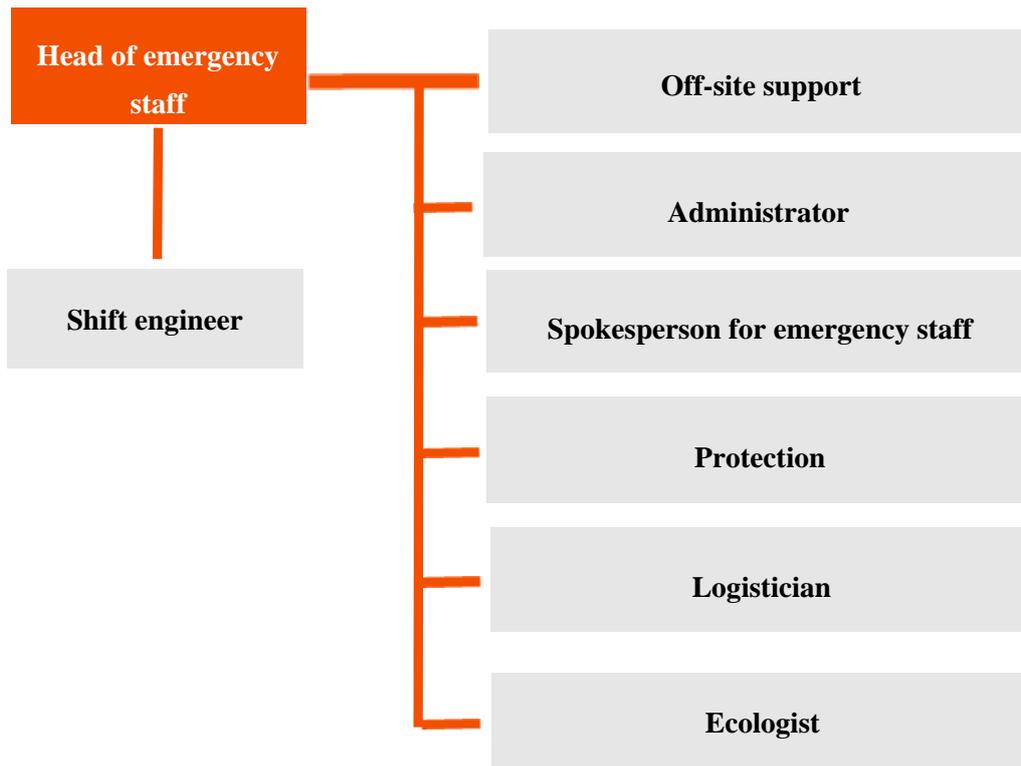


Figure D-2:Scheme of emergency staff organisational structure

Technical Support Centre

The technical support centre (hereinafter referred to as “TPS”) is professionally occupied so as to be able to provide qualified technical support to control room personnel of the affected unit in management of extraordinary events. At the same time, the TPS personnel ensure the immediate evaluation of security state of NPP, with emphasis on nuclear safety and radiation protection, manage the activity of operationally established intervention groups in dealing with the consequences of extraordinary events and are able to elaborate documents and recommendations for decision-making and management activity of emergency staff. The head of TPS, through shift engineer or head of emergency staff, may require the strengthening of TPS with other specialists. Persons identified in Figure D-3 work in the technical support centre.

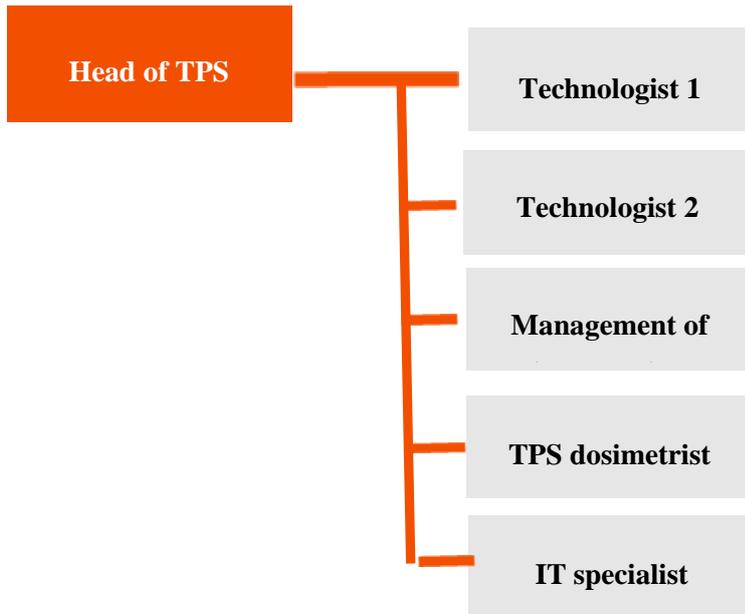


Figure D-3: Scheme of the organisational structure of technical support centre

Off-site Emergency Support Centre

The off-site emergency support centre ensures the activities related to radiation monitoring and to the evaluation of radiation situation in the emergency planning zone, and on the basis of the results of radiation monitoring as well as forecast of further development of the radiation situation. Persons identified in Figure D-4 work in the off-site emergency support centre (RMMS means a fast mobile monitoring group).

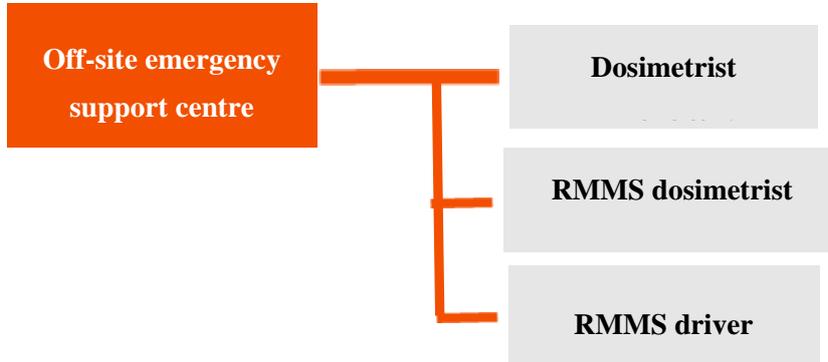


Figure D-4: Scheme of the structure of off-site support centre

Emergency Information Centre

The emergency information centre ensures, in the case of an extraordinary event, the distribution of all information to mass media and the answering of questions from the public. Its activity is primarily to inform the general public and state administration and local authorities not directly involved in the off-site emergency preparedness system of NPP. The centre is responsible for preparing press releases for mass media. Persons identified in Figure D-5 work in the emergency information centre.



Figure D-5: Scheme of the structure of emergency information centre

Logistics Support Centre

The logistics support centre ensures the necessary material-technical means and highly-qualified human resources according to the requirements and needs of the emergency staff, technical support centre and off-site emergency support centre. Persons identified in Figure D-6 work in the logistics support centre.



Figure D-6:Scheme of the structure of logistics support centre

To implement the protective measures for personnel, a system of shelters and assembly points is available at NPP. Each shelter at NPP contains equipment for the protection of persons against the effects of radioactive substances, poison warfare agents and biological warfare agents. Thanks to their construction, these shelters provide protection to persons against the effects of strong radiation. Technical facilities within the shelter allow their operation for at least 72 hours. In a basic setup, the shelters contain dosimetric devices for measuring surface contamination and dose rate, spare emergency means of protection, spare clothing, iodine prophylaxis and means of communication with the emergency staff. Spare emergency means of protection, spare clothing and medical material are distributed by members of the shelter team, based on justified needs and the requests of sheltered persons.

Each employee of NPP is trained and informed about his/her place of sheltering (assembling) and when an extraordinary event is announced, he/she is obliged to remove thereto on the basis of instructions issued by shift engineer or of instructions issued by emergency staff, and to observe the code of conduct for sheltered/assembled persons. Employees from individual workplaces shelter/assemble in a shelter/at an assembly point defined by a sheltering/assembling plan. There are 7 shelters and 2 assembly points, and 4 shelters and 3 assembly points at the Dukovany NPP and at the Temelín NPP, respectively.

D.5. Plans and Procedures

In the Czech Republic, an emergency response system is established pursuant to acts and implementing legal regulations, which do not include the obligation to elaborate a national radiation emergency plan. The requirement for the elaboration of the national plan for radiation incident is introduced in the new Atomic Act prepared by SÚJB, i.e. act that will supersede Act No. 18/1997 Coll.

The legal regulations of the Czech Republic define the documents, which must be elaborated for the management of extraordinary events at each level. This includes the following documents elaborated by state administration or by operator.

D.5.1. Documents of the Czech Republic Elaborated by the State Administration

Off-site Emergency Plan for Emergency Planning Zone of NPP

The off-site emergency plan is one of the documents, which plans the implementation of rescue and remedy works in the case of extraordinary event on the territory of the region. For the case of a radiation accident, tasks and measures are planned in the off-site emergency plan for the emergency planning zone to remedy the radiation accident and the consequences thereof, aimed at protecting the population and the environment.

The off-site emergency plan is elaborated by the competent Regional Fire Rescue Service on the basis of documents submitted by NPP operator, documents prepared by individual components of the Integrated Rescue System as well as in cooperation with the municipalities concerned in the emergency planning zone and municipalities with extended competences. Once considered by the municipalities concerned and by the administration offices concerned, the off-site emergency plan is approved by the head of the region. There are two off-site emergency plans for emergency planning zone in the Czech Republic: for emergency planning zone of Dukovany NPP and for emergency planning zone of Temelín NPP.

The off-site emergency plans are updated on a regular basis and examined through exercises at least once in three years.

Measures defined in the off-site emergency plan follow the on-site emergency plan of NPP. Links between the two emergency preparedness plans are discussed between the NPP operator and competent regional offices and the municipal offices concerned of municipalities with extended competences, with SÚJB participation. SÚJB approves the on-site emergency plan after this consideration.

The off-site emergency plan consists of information part, operative part, and plans for specific activities. For specific content of off-site emergency plans see Annex 4.

Regional Emergency Plan

A regional emergency plan is elaborated for the purposes of management of extraordinary events, which require announcement of alarm of degree 3 or alarm of special degree. The content and the structure of regional emergency plan is determined in the regulation 328/2001 Coll. (see Annex 5).

The Regional Fire Rescue Service elaborates the regional emergency plan using the analysis of the occurrence of extraordinary events and the threats to the territory of the region resulting therefrom, the documents provided by legal persons and natural persons engaged in business activity, and the documents provided by administration offices concerned, municipal offices, individual components and in cooperation with them.

The Regional Fire Rescue Service provides the components, administration offices and municipalities, which fulfil the tasks defined by regional emergency plan, extracts from regional emergency plan to elaborate their activities for the case of the occurrence of extraordinary events.

Regional Fire Alarm Plan

A regional fire alarm plan serves primarily to ensure the cooperation between the fire protection units in the region in fire-fighting operations, in carrying out rescue and remedy works on the territory of the region, in providing aid among regions and in providing aid to a neighbouring state.

Regional Fire Alarm Plan of the Integrated Rescue System and Central Alarm Plan of the Integrated Rescue System

The regional alarm plan of the Integrated Rescue System contains:

1. Connection to basic and other components of the Integrated Rescue System,
2. Overview of forces and means of other components of the Integrated Rescue System,
3. Method for calling and notifying the main components of the Integrated Rescue System and other posts and authorities.

The regional alarm plans of the Integrated Rescue System are a list of all forces and means of the components of the Integrated Rescue System, which may be used in tactical, operational or strategic coordination of rescue and remedy works. The regional alarm plans are drawn up under the agreements on the planned assistance on request. They are based on the regional emergency plans and the risk analyses contained therein.

The central alarm plan of the Integrated Rescue System is applied:

- a) If needed as a result of extraordinary event, crisis situation or safety-related action, and if conditions set out by law for central coordination of rescue and remedy works are met,
- b) If the head of the region, the mayor of the municipality with extended competences, the director of regional Fire Rescue Service or the leader of the intervention team requests, through the Operation Information Centre of the Regional Fire Rescue System, assistance and forces and means, not available to the components of the Integrated Rescue System at regional level, to carry out rescue and remedy works in an extraordinary event dealt with separately in the relevant region.

Type Plans

Type plans define the recommended type procedures, principles and measures to deal with a particular type of crisis situation. They form a part of the emergency plan of the central administration office in question. One of the type plans is the type plan “Radiation Accident”, drawn up by MV – GŘ HZS ČR along with SÚJB. For specific content of the type plan “Radiation Accident” see Annex 6.

Type Activities of the Components of the Integrated Rescue System in Joint Intervention

Type activities of the components of the Integrated Rescue System in joint intervention are a recommending methodological standard for the actions taken by the components of the Integrated Rescue System in rescue and remedy works, taking into account the type and nature of extraordinary event, which is followed by binding internal regulations of individual components of the Integrated Rescue System.

One of the extraordinary events, for which the type activity was prepared, is the “Accomplished and Verified Use of a Radiological Weapon.” (STČ-01/IZS). This type activity deals with the approach of the components of the Integrated Rescue System in case of a terrorist attack with the use of a radiological weapon (so-called “dirty bomb”) or when a radioactive substance was dispersed in other unexpected way, for which tactical and organisational requirements, procedures and guidance levels to prove the optimisation of radiation protection are not governed by regulation (or emergency plan).

D.5.2. Documents Elaborated by NPP Operator

On-site Emergency Plan of NPP

The on-site emergency plan of NPP contains a set of all planned measures to solve and to reduce the consequences of extraordinary events. The plan describes primarily the creation of technical-organisational and staff conditions for the detection of the occurrence of extraordinary event, assessment of the severity of extraordinary event, announcement of extraordinary event, management and performance of intervention, methods for reducing exposure of employees and other persons, and the verification of emergency preparedness. The on-site emergency plan includes the procedures for activities. The intervention instructions follow the procedures referred to in the on-site emergency plan. A joint on-site emergency plan of NPP is elaborated for both NPPs in the Czech Republic.

Procedures for Activities in Response to Extraordinary Events of Degree 1:

- a) Announcement of an extraordinary event of degree 1, i.e. warning and notification of only this part of personnel and other persons on the premises of NPP, which is affected by the originated extraordinary event. Employees and other persons shall be warned immediately after classification of the event occurred,
- b) Activation of technical support centre personnel and, where appropriate, activation of emergency staff,
- c) Evaluation of radiation situation monitoring supplemented by investigation in the place of origin of the extraordinary event of degree 1,
- d) Announcement of any protective measures for the employees concerned and other persons on the premises of NPP (assembly, evacuation from the affected building or any part thereof, use of means of emergency protection, etc.),
- e) Immediate communication of extraordinary event of degree 1 to the authorities and organisations concerned,
- f) Management and performance of intervention in work order, i.e. by means of personnel of a continuous shift pattern and with professional support of technical support centre personnel or, where appropriate, other specialists from ČEZ, a.s. called as required by shift engineer,
- g) Preparation of information for mass media,
- h) Recording of all activities carried out.

Procedures for Activities in Response to Extraordinary Events of Degree 2:

- a) Announcement of an extraordinary event of degree 2, i.e. warning and notification of personnel and other persons on the premises of NPP. Employees and other persons shall be warned immediately after classification of the event occurred.
- b) Activation of stand-by organisation of emergency response,
- c) Announcement of effective protective measures for employees and other persons on the premises of NPP, which may include the application of the following, depending on the extent of an extraordinary event:
 - Assembling at assembly points or sheltering in shelters,
 - Iodine prophylaxis,
 - Use of emergency protection equipment,
 - Evacuation from the premises of NPP,
- d) Radiation monitoring according to the principles and to the extent defined in the emergency monitoring program for radiation situation in order to demonstrate that no intervention levels for the announcement of urgent or long-term protective countermeasures are exceeded,
- e) Immediate communication of extraordinary event of degree 2 to the authorities and organisations concerned,
- f) Management and performance of necessary interventions to reduce the development of extraordinary event and to minimize its effects both on persons and on equipment:
 - Interventions on equipment are carried out by operational control personnel and selected operational intervention groups,
 - Interventions to protect the employees and other persons are ensured by fire-fighters, emergency medical services, police, security services and operational intervention groups,
- g) Requesting of assistance from external emergency workers in the scope of concluded contract terms and conditions,
- h) Preparation of up-to-date information for mass media,
- i) Recording of all activities carried out.

Procedures for Activities in Response to Extraordinary Events of Degree 3:

- a) Announcement of an extraordinary event of degree 3, i.e. warning and notification of personnel and other persons on the premises of NPP. Employees and other persons shall be warned immediately after classification of the event occurred,
- b) Activation of stand-by organisation of emergency response,
- c) Announcement of protective measures for employees and other persons on the premises:
 - Iodine prophylaxis,
 - Use of emergency protection equipment,
 - Sheltering,
 - Evacuation from the premises of NPP,
- d) Immediate notification of the authorities and organisations concerned,
- e) Warning of the population within the emergency planning zone of NPP,
- f) Management and performance of interventions to reduce the development of extraordinary event and to minimize its effects both on persons and on equipment:
 - Interventions on equipment are carried out by operational control personnel and selected operational intervention groups, with the support of instructions for the management of severe accidents,
 - Interventions to protect the employees and other persons are ensured by fire-fighters, emergency medical services, police, security services and operational intervention groups,
- g) Radiation monitoring according to the principles and to the extent defined in the emergency monitoring program for radiation situation in order to obtain data for confirming, specifying or cancelling the announced, urgent and long-term protective countermeasures,
- h) Requesting of assistance from external emergency workers in the scope of concluded contract terms and conditions,
- i) Preparation of up-to-date information for mass media,
- j) Recording of all activities carried out.

Intervention Instructions

For the case of the occurrence of extraordinary event, interventions instructions for employees and, where appropriate, for other persons in selected job positions included in the organisation of emergency response are elaborated for the needs of the management and performance of intervention. The intervention instructions are listed in the on-site emergency plan of NPP.

D.6. Trainings, Drills, Emergency Exercises

D.6.1. Trainings

Trainings Organised by Fire Rescue Service of the Czech Republic

The Fire Rescue Service of the Czech Republic organizes trainings for members of Fire Rescue Service in the area of preparation for response to radiation extraordinary event in the form of the below listed courses:

- a) *Supplementary course "Radiation Protection"*

This course is intended for the teams of regional Fire Rescue Service. The content of the course is, for example, the characteristics and biological effects of ionising radiation, ionising radiation sources, places with radiation risk, principles of radiation protection in intervention, radiation intervention tactics, instrumentation, detection of ionising radiation sources, contamination monitoring.

b) Specialisation course “Decontamination”

This course is intended for the teams of Regional Fire Rescue Service. The content of the course is, for example, the classification of hazardous substances in terms of decontamination, decontamination procedures and agents, principles for fire-fighter decontamination, decontamination equipment, and determination of decontamination efficiency by means of decontamination equipment.

c) Supplementary course “SEOD HZS Software Package Operation”

This course is intended for the members of Regional Fire Rescue Service, who are authorised to implement the electronic personal dosimetry system (SEOD). The content of the course are the activities primarily related to the system of monitoring of received doses by members of the Fire Rescue Service in extraordinary events and the operation of the relevant SW.

d) Supplementary course for personnel of chemical laboratories of regional Fire Rescue Service

This course is intended for the personnel of chemical laboratories of Regional Fire Rescue Service and, where appropriate, of mobile groups of RMN, whose activity is ensured by the Police of the Czech Republic or by the Customs Administration of the Czech Republic. The content of the course are primarily professional and special activities carried out by mobile groups, e.g. detection, identification and quantification of ionising radiation sources, assessment of contamination with radioactive substances emitting alpha, beta, and gamma radiation, evaluation of sources emitting neutron radiation, handling of ionising radiation sources, monitoring of contaminated areas, radiation situation monitoring by routes, sampling and spectrometric evaluation of samples, monitoring of radioactive substances in a cloud and in field.

Trainings Organised by NPP Operator

The obligation to hold demonstrable training in the area of emergency response is based on the legal regulations and this obligation is further detailed in documents issued by ČEZ, a.s., where training is divided into different levels in terms of job position and employment in the organisation of emergency response. Each individual training course is based on the Theoretical Training Plan for that year, which sets out a detailed division of individual types of training.

Training in the area of emergency preparedness is divided as follows:

- Training for management of ČEZ, a.s.,
- Training for employees of ČEZ, a.s.,
- Training for suppliers,
- Training for employees in the organisation of emergency response
- Training for members of sheltering and assembling teams,
- Specialised trainings (e.g. health personnel training, evacuation bus driver training, training for mayors of the municipalities, etc.),
- Visits, traineeships, excursions.

Trainings Organised by the State Office for Nuclear Safety

SÚJB organizes training for workers employed to carry out some of the functions of SÚJB's Crisis Staff. SÚJB organizes a drill of RMN mobile groups. This drill takes 2 days and is held once in two or three years to practice the selected activities.

D.6.2. Emergency Exercises

Emergency Exercises Organised from the central level

Under the provisions of § 10 j) Crisis Act processes MV – GŘ HZS ČR in cooperation with the concerned ministries and central administrative offices Plan of Crisis Management Exercises of the Czech Republic for a period of three years. This plan discusses and approves by the National Security Council and is updated every year. This plan includes exercises such as "ZONA" deal with solving extraordinary event, respectively crisis situation due to radiation accidents.

Emergency Exercises Organised by the State Office for Nuclear Safety

SÚJB organizes and conducts exercises related to its expertise, to practice responses to crisis situation – radiation accident by its crisis staff. This is an emergency exercise for RMN components and a coordination exercise for crisis staff and emergency staff of both NPPs. For these needs, SÚJB draws up a Crisis Staff Exercise Plan, which takes into account the plan of exercises for crisis management bodies, plans of exercises for operators and international exercises planned for that calendar year.

SÚJB takes part in exercises at international level organised mainly by the European Commission, the International Atomic Energy Agency (“ConvEx” exercise), the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (INEX exercise), and bilateral exercises with the neighbouring states, which are prepared based on bilateral agreements.

According to the scenario prepared by NEA OECD for the international exercise “INEX 4”, both the international exercise “INEX 4” and other exercise in this area were held in the Czech Republic. The exercise “INEX 4” was held in March 2011. This purpose of the exercise was to staff-practice the control of situation using a dirty bomb – intentional dispersion of radioactive substances in an urban area. This exercise was held in the town of Pelhřimov and SÚJB's Crisis Staff, Crisis Staff of the Vysočina Region, and the Crisis Staff of the town of Pelhřimov took part in the staff exercise.

This scenario was subsequently practised in the Czech Republic:

- a) In Mikulov in 2012, when SÚJB's Crisis Staff, Crisis Staff of the South Moravian Region, and the Crisis Staff of the town of Mikulov took part in the staff exercise
- b) In Písek in 2013, when SÚJB's Crisis Staff, Crisis Staff of the South Bohemian Region, and the Crisis Staff of the town of Písek took part in the staff exercise.

The exercise “INEX 4” in regions, where it was held, showed good preparedness of all participants to deal with an extraordinary event related to the use of a radiological weapon in an urban area with a higher concentration of people. During the exercise, the crisis staffs at all levels managed to tackle the problems related to the protection of the population in the affected area, especially care of injured persons, water and sewer monitoring, food and drinking water consumption control, and population evacuation from the affected area. An issue concerning the recovery of the affected area was also managed so that the evacuated people could return back to their homes.

In particular, decontamination of the affected area proved a weak point, especially decontamination of high-rise buildings, decontamination of apartments, the windows of which were smashed by explosion and the apartments were subsequently contaminated with dispersed radioactive substances, and potential decontamination of cellars under historical squares of municipalities, which could be entered by contaminated water from

decontamination carried out on the ground. The issue concerning the management of contaminated solid and liquid waste has not been fully solved.

The staff exercises “INEX 4” verified that the Czech Republic has enough material and technical means, and human resources to ensure adequate response to the use of a radiological weapon on its territory. In addition, it was verified that the competent bodies of crisis management in mutual cooperation can provide the citizens in the affected area with early and complete information on the development of an extraordinary event and on the way of its solution, and information on how the citizens should behave in that situation.

Emergency Exercises of Local Authorities

The local authorities take part in exercises at nationwide level; organize their own exercises to practise activities of the Integrated Rescue System components, Fire Rescue Service, and crisis staff, and exercises to verify the off-site emergency plan and their emergency plans.

Emergency Exercises of Fire Rescue Service of Regions, on the Territory of which the Emergency Planning Zone of NPP Is Located

In addition to the exercise “ZÓNA”, the fire protection teams take part in regular exercises at NPP, which are held alternatively at the Temelín NPP and at the Dukovany NPP. The exercises aim at routine activities carried out by fire-fighters such as firefighting, cooling, which, in conditions of the premises of NPP, relate to other activities such as coordination with Fire Rescue Service teams of ČEZ company, orientation and tactics of intervention in unknown environment, cooperation with other components of the Integrated Rescue System, personal dosimetry system, radiation quantity measurement or decontamination. The exercise takes one day, is held once a year and is organised by MV – GR HZS ČR in cooperation with the competent Regional Fire Rescue Service and ČEZ, a.s. This last exercise was the exercise “Station Blackout”, which was held at the Dukovany NPP in November 2011.

Emergency Exercises of Nuclear Power Plant Operator

Emergency exercises are one of the basic means of verifying the emergency preparedness. The purpose of emergency exercises is to verify knowledge of NPP employees in the area of emergency preparedness and to prove their skills to fulfil their tasks in a qualified, efficient and effective manner and to carry out activities set out by on-site emergency plan of NPP and suitable intervention instructions.

Emergency exercises are held according to the emergency exercise plan, which sets out the focus and scope of the exercise, and dates or frequency of emergency exercises. The annual emergency exercise plans are drawn up always by December 15 of the previous year. At the same time, the annual emergency exercise plan is submitted to SÚJB not later than by the end of the previous calendar year. Within the verification of emergency preparedness in the form of emergency exercises, the following frequency of practising is determined:

- a) Intervention procedures and intervention instructions for the case of the occurrence of an extraordinary event of degree 1 or 2 - at least once a year,
- b) Intervention procedures and following intervention instructions for the case of the occurrence of an extraordinary event of degree 3 - at least once in two years.

The exercises verify also the adequacy and veracity of intervention instructions, equipment of emergency centres and the reliability of communication means to ensure the transfer of necessary data.

In conclusion, the exercise is evaluated in the form of final report. A summary evaluation for the calendar year is made for the completed emergency exercises, which is submitted to SÚJB

not later than by the end of the first quarter of the following year, except the exercise for the case of the occurrence of a radiation accident, when the final report is submitted to SÚJB within 2 months after the evaluation of the exercise.

D.7. Quality Control Programs

SÚJB has introduced a management system that specifies responsibilities (see <http://www.sujb.cz/en>). The purpose of the management system is to improve work efficiency within all powers and responsibilities entrusted to SÚJB, aimed primarily at protection of individuals, society and the environment against potential harmful effects of ionising radiation, non-proliferation of nuclear weapons and control of chemical and biological weapons prohibition. The employees are sufficiently trained to be able to properly implement the management system.

Pursuant to Act No. 18/1997 Coll., the operator is obliged to establish a quality system. Requirements for quality assurance are described in detail in Regulation No. 132/2008 Coll. Pursuant to this Regulation, the operator draws up a quality assurance program, which is subject to the approval by SÚJB. This program contains no special requirements in terms of emergency preparedness.

Requirements for quality assurance in terms of emergency preparedness are indirectly set out in Regulation No. 318/2002 Coll., which, among other things, specifies that systems and equipment determined for emergency preparedness must be periodically checked and verified at determined intervals. Additionally, the Regulation sets out the requirement for the content of on-site emergency plan, which, among other things, must define organisational structures for response to extraordinary events and determine responsibilities for execution and management of emergency response.

The quality assurance program describes the quality system of NPP operator (ČEZ, a.s.), the processes and activities concerned, including those implemented in a supply way, and the necessary documented procedures related to the relevant licensed activity set out in Act No. 18/1997 Coll. The methodology “Creation of Quality Assurance Program and Change/Reconstruction Quality Program” describes the elaboration, review, approval, recording, archival including making of revisions of the quality assurance program in ČEZ, a.s. The top document “Integrated Control System Manual”, which describes the quality system, constitutes also the Quality Assurance Program for the licensed activities.

The equipment designed to work within the Radiation Monitoring Network in accordance with Regulation No. 319/2002 Coll., is subjected to periodic calibration or verification in accordance with Act No. 505/1990 Coll. The quality of laboratory measurements is confirmed based on comparative measurements carried out within RMN.

E. Overview of Emergency Response Elements

E.1. Emergency Response Management

The Czech Republic has created a crisis management system as referred to in Section D.

At central level, the response to crisis situation is managed by the Government on the basis of documents created by the Central Crisis Staff. At regional level, the response is managed by the head of the region on the basis of documents created by the Regional Crisis Staff.

The basic scheme of the structure of emergency response of the Czech Republic on occurrence of a radiation accident is described in Chapter A.2 and shown in Figure A-2.

In the vicinity of both NPPs, there are established teledosimetric systems, which form a part of the Early Warning Network, which allows the detection of any increased level above the level corresponding to normal radiation situation. The Early Warning Network is a part of the Radiation Monitoring Network and together with other data obtained from radiation situation monitoring, data are submitted to SÚJB to the MonRaS system (see <http://www.sujb.cz/en/radiation-situation-monitoring>). The data are submitted also on occurrence of a radiation accident.

All information on the occurrence of an extraordinary event is received by SÚJB, namely by person, who exercises the function of the contact point of the Czech Republic. This person gives immediately the information to the head of crisis staff. Based on the decision made by the head of crisis staff, the contact point of the Czech Republic forwards the information to the responsible bodies of crisis management of the Czech Republic or activates the Crisis Staff of SÚJB.

The emergency response management on the territory of the Czech Republic is carried out at tactical, operational and strategic level. At tactical level, the member of the Fire Rescue Service of the Czech Republic is the leader of the intervention team, who, through the Operation Information Centre of the Regional Fire Rescue Service, calls up other forces and means of the components of the Integrated Rescue System and specialised departments. If necessary, the leader of the intervention team establishes staff of the leader of the intervention team, usually with the representatives of the components of the Integrated Rescue System and the representatives of specialised departments, who, in the case of a radiation extraordinary event, is the representative of SÚJB or the National Radiation Protection Institute, and the representatives of competent local municipality with extended competences and the representative of the affected municipality.

At operational level of the management, the competent local Operation Information Centre cooperates with the Operation Information Centre MV – GR HZS ČR, operation centres of basic components of the Integrated Rescue System, Crisis Staff of SÚJB and control centres of specialised departments.

At strategic level, the Regional Fire Rescue Service shall establish the competent staff of the Regional Fire Rescue Service to coordinate rescue and remedy works, who communicates through the Operation Information Centre with the staff of the leader of the intervention team. The staff of the Regional Fire Rescue Service manages the intervention for rescue and remedy works at strategic level. The officer commanding of a shift of the Regional Fire Rescue Service is the head of staff of the Regional Fire Rescue Service. The components of the Integrated Rescue System and specialised departments (SÚJB, National Radiation Protection Institute) send their representatives to the staff of the Regional Fire Rescue Service. In addition, the Central Crisis Staff is called up in the case of radiation accidents.

In the case of illegal or criminal handling of ionising radiation sources, the Department for Combating Organised Crime of the Police of the Czech Republic, which cooperates closely with SÚJB, plays a key role in dealing with the event.

In the case of a radiation accident, SÚJB prepares recommendations for the evacuation and other protective measures, or specification or cancellation of implemented protective measures. Recommendations are based on the results of radiation situation monitoring on the territory of the Czech Republic and on the basis of a prognosis as to the development of the situation at the affected nuclear installation. If the response is managed from central level, SÚJB forwards the recommendations to the Central Crisis Staff. After discussion by the Central Crisis Staff and subsequent discussion by the Government, the protective measures are implemented by responsible bodies of crisis management of central administration offices and self-administration offices. If the response is managed from regional level, SÚJB forwards the recommendations to the Regional Crisis Staff, who, after discussion, forwards them to the head of the region. The head of the region decides on their implementation.

The actual response is carried out as part of rescue and remedy works, for which the Czech Republic established the Integrated Rescue System (see Chapter D.3) and which are managed by the Fire Rescue Service of the Czech Republic. Those works are carried out according to the alarm plan of the Integrated Rescue System and on the basis of crisis and emergency plans drawn up by all central administration offices or self-administration offices.

The Central Crisis Staff is activated also in the case of radiation accident at nuclear installations outside the territory of the Czech Republic with the possibility of extending to the territory of the Czech Republic.

E.1.1. Central Administration Offices

Ministries and other central administration offices are responsible for coordinating the solution to the extraordinary event occurred within their competence. Their response is governed by their crisis plan. They cooperate with each other and they exchange information and, on request, they ensure that professional work is carried out for other central administration offices.

E.1.2. SÚJB

SÚJB activates its Crisis Staff, who, in its work within the response to the radiation incident or the radiation accident occurred, uses the support provided by the National Radiation Protection Institute and the National Institute for Nuclear, Chemical and Biological Protection.

The main tool of SÚJB is the Radiation Monitoring Network (RMN), the outputs of which are used by the Crisis Staff of SÚJB in preparation of recommendations to adopt protective measures. In addition, SÚJB prepares the recommendations with the use of the ESTE software to calculate the consequences of release of radioactive substances. In dealing with the extraordinary event occurred SÚJB manages the activity of the components of the RMN and gives the information on radiation situation to other bodies of crisis management.

E.1.3. Regional Authorities

The regional office implements measures to deal with an extraordinary event. The regional office implements the measures according to its crisis plan, relevant emergency plans and, if there is an emergency planning zone of NPP located on its territory, according to the relevant off-site emergency plan. To ensure emergency response, the regional office unifies procedures of municipal offices of municipalities with extended competences and local administration offices with regional competence and regulates the Integrated Rescue System.

The head of the region coordinates the activities of bodies and organisations taking part in the solution to extraordinary events on the territory of the region, coordinates rescue and remedy works, and takes decisions according to the recommendations obtained from ministries and central administration offices (including recommendations from SÚJB).

E.1.4. Emergency Response Management on Occurrence of Radiation Incident or Radiation Accident at Dukovany NPP or Temelín NPP

In emergency response, the operator follows its on-site emergency plan. In response to radiation accident, the operator cooperates closely with the state administration and local authorities, and acts in accordance with the general obligations imposed upon legal persons for the case of response to the crisis situation occurred pursuant to Act No. 240/2000 Coll.

At the time of the occurrence of radiation extraordinary event, the NPP operator activates the stand-by organisation of emergency response. The shift engineer is responsible for announcing and classifying the radiation extraordinary event occurred as well as for the management of activities. After activating the emergency staff, the responsibility is transferred to the head of emergency staff. The shift engineer carries out the above listed activities according to the intervention instruction for shift engineer, which sets out all responsibilities and powers, the most important of which include:

- Assessment of the severity of extraordinary event - classification,
- Notification and warning of NPP personnel and warning in the emergency planning zone,
- Notification of NPP management and competent authorities and organisations of the occurrence of extraordinary event,
- Decision as to the activation of personnel of the organisation of emergency response,
- Decision concerning protective measures for NPP personnel,
- Responsibility for technology remains within the competence of the shift engineer.

At the time of the occurrence of radiation extraordinary event, the shift engineer shall notify immediately the NPP management, and shall announce without delay the event to SÚJB, Regional Office, Regional Directorate of Fire Rescue Service, to the municipalities with extended competences, to the Dispatching Centre of ČEZ, a.s., and to the meteorological station.

Internal Organisation of Emergency Response

The internal organisation of emergency response (hereinafter referred to as “IOER”) consists of shift personnel, i.e. employees, who ensure normal operation of NPP. The continuous shift personnel ensure all activities according to the instructions from the shift engineer, relating to eliminating any signs of occurring extraordinary event until the activation of employees who are on continuous stand-by duty within the organisation of emergency response. In the case of the announcement of extraordinary event, the continuous shift personnel (except the shift management personnel in the main control room), depending on the level of severity, either continue carrying out activities according to the relevant intervention instructions and guidelines from the shift management personnel, or assemble, in the case of the announcement of protective measures, in the operations support centre in the shelter under the service building, from where, on the basis of the instructions from the shift engineer or head of emergency staff, they carry out the required interventions on technology or provide the operational support to the team of the Fire Rescue Service within the enterprise in recovery and rescue works. For the needs of ensuring the implementation of protective measures of

sheltering and evacuation, shelter teams are established to ensure the activation and subsequent operation of shelters on the premises of NPP.

Stand-by Organisation of Emergency Response

The stand-by organisation of emergency response (hereinafter referred to “SOER”) – see Figure D-1, consists of emergency support centre personnel who are on weekly continuous stand-by duty. The stand-by organisation of emergency response members are on-call so that within 20 minutes during working hours and within 1 hour during off-working hours from the announcement of an extraordinary event, the respective experts are in attendance at NPP to the emergency control centre. Means for activation of stand-by organisation of emergency response personnel are backed up.

Intervention during the origination of an extraordinary event at NPP is always ensured in the first phase of the development of an extraordinary event by continuous shift personnel under the management of the shift engineer. In cases where the event is, by its scope, outside the framework of the capacities of continuous shift personnel, internal organisation of emergency response is completed by employees who are on stand-by duty within the stand-by organisation of emergency response. In this case, the emergency support centres are activated: emergency staff, technical support centre, off-site emergency support centre, emergency information centre and the logistics support centre. The responsibility for the management of interventions after activation of emergency staff is taken from the shift engineer by the head of emergency staff.

Activities Carried Out by Individual Entities of Emergency Response after Announcement of Extraordinary Event of Degree 2 with Suspected Release of Radioactive Substances

NPP operator

- a) Notifies SÚJB and the Operation Information Centre of the Regional Fire Rescue Service of the occurrence of a radiation accident with suspected release of radioactive substances within no more than four hours from its detection.

SÚJB

On receipt of operator's notification of the occurrence of an extraordinary event of degree 2, SÚJB activates its Crisis Staff. The members of crisis staff shall immediately present themselves at the workplace of crisis management (Crisis Coordination Centre), within no more than 120 minutes from notification. On the basis of information received, the Crisis Staff evaluates the situation and decides primarily on the following:

- a) Dissemination of information to the Prime Minister of the Czech Republic and the bodies of crisis management of the Czech Republic on the occurrence of an extraordinary event of degree 2,
- b) Transition of the Radiation Monitoring Network of the Czech Republic from normal to emergency monitoring mode,
- c) Announcement of emergency to mobile groups and activation of aircraft monitoring groups,
- d) Dissemination of information to the public and to mass media on the situation occurred and on the measures adopted,
- e) Notification of the occurrence of an extraordinary event of degree 2 abroad (IAEA, EU, neighbouring countries).

The Crisis Staff evaluates regularly the situation, cooperates closely with the operator's emergency staff, with the Crisis Staff of MV – GR HZS ČR and the head of the affected region.

Operation Information Centre of Regional Fire Rescue Service

- a) Receives the notification and verifies it at NPP,
- b) Notifies the head of the region, informs the mayors of the municipalities with extended competences,
- c) Calls the competent crisis staffs, as needed,
- d) Notifies the Joint Operation Centre of the Ministry of Defence through the Operation Information Centre MV – GŘ HZS ČR and the Integrated Operation Centre of the Regional Directorate of Police of the Czech Republic,
- e) Ensures activities according to the alarm plan.

Head of the Region

- a) Receives and verifies the notification with the Operation Information Centre of the Regional Fire Rescue Service,
- b) Issues instructions to submit information or, where appropriate, to call the crisis staff,
- c) Evaluates the situation and prepares decisions to adopt protective measures,
- d) According to the situation, activates forces and means.

Mayor of the Municipality with Extended Competences

- a) Receives and verifies the notification with the competent Operation Information Centre of the Regional Fire Rescue Service,
- b) Issues instructions to submit information or, where appropriate, to call the crisis staff,
- c) Evaluates the situation and prepares decisions to adopt protective measures,
- d) According to the situation, activates forces and means.

Activities Carried Out by Individual Entities of Emergency Response after Announcement of Extraordinary Event of Degree 3 – Radiation Accident

NPP operator

- a) Notifies immediately SÚJB and the Operation Information Centre of the Regional Fire Rescue Service of the occurrence of an extraordinary event of degree 3 and sends a report,
- b) Warns (through the Operation Information Centre of the Regional Fire Rescue Service) the population in the emergency planning zone by central activation of sirens, informs the selected representatives of components of emergency preparedness and the mayors of the municipalities in the emergency planning zone via SMS messages and ensures broadcasting of the warning in specified mass media,
- c) Sends NPP representative to attend the meeting of Regional Crisis Staff.

SÚJB

On receipt of operator's notification of the occurrence of an extraordinary event of degree 3, SÚJB activates its Crisis Staff. The members of crisis staff shall immediately present themselves at the workplace of crisis management (Crisis Coordination Centre), within no more than 120 minutes from notification. On the basis of information received, the Crisis Staff evaluates the situation and decides primarily on the following:

- a) Dissemination of information to the Prime Minister of the Czech Republic of an extraordinary event of degree 3 and requesting the Prime Minister of the Czech Republic to activate the Central Crisis Staff and declare state of emergency on the affected territory,
- b) Dissemination of information to the bodies of crisis management of the Czech Republic on the occurrence of an extraordinary event of degree 3,

- c) Transition of the Radiation Monitoring Network from normal to emergency monitoring mode,
- d) Announcement of accident to mobile groups and activation of aircraft monitoring groups,
- e) Activation of mobile groups and sending of mobile groups to monitor the radiation situation in the emergency planning zone,
- f) Readiness of airborne group and sending of airborne group to monitor the radiation situation in the emergency planning zone via Operation Information Centre MV – GŘ HZS ČR,
- g) Dissemination of information to the public and to mass media on the situation occurred and on the measures adopted,
- h) Notification of the occurrence of an extraordinary event of degree 3 abroad (IAEA, EU, neighbouring countries).

The Crisis Staff evaluates regularly the situation and the measures adopted, and based on those results, provides basis for taking decisions on measures to reduce or avert exposure.

The Crisis Staff cooperates closely with the operator's emergency staff, with the crisis staff of MV – GŘ HZS ČR and the head and the Fire Rescue Service of the affected region.

Operation Information Centre of Regional Fire Rescue Service

- a) Receives and verifies the notification of the occurrence of a radiation accident from NPP operator,
- b) Warns in the emergency planning zone (under the contract with NPP operator) by activating the sirens, informs via SMS messages and requests the broadcasting of prepared information on the Czech Radio and the Czech Television,
- c) Notifies the head of the region and the mayor of the municipality with extended competence of the extraordinary event,
- d) Calls the competent crisis staffs,
- e) Notifies the authorities and organisations according to the notification plan,
- f) Notifies the Joint Operation Centre of the Ministry of Defence through the Operation Information Centre MV – GŘ HZS ČR,
- g) Ensures activities according to the alarm plan,
- h) Coordinates the deployment of components of the Integrated Rescue System, forces and means to deal with the emergency,
- i) Receives reports on the progress of rescue and remedy works, and forwards them to the regional crisis staff and crisis staffs of municipalities with extended competences,
- j) Documents the course of extraordinary event and hands over reports to the Ministry of Defence through the Operation Information Centre MV – GŘ HZS ČR.

Head of the Region and Regional Crisis Staff

- a) Receives and verifies the notification of the occurrence of a radiation accident,
- b) Issues instructions to call the Crisis Staff of the region,
- c) Ensures cooperation with the mayors of the municipalities with extended competences, with the Crisis Staff of SÚJB, with the head of the neighbouring region in the emergency planning zone, and with the emergency staff of NPP,
- d) Regulates and coordinates rescue and remedy works at regional level,
- e) Announces and cancels protective measures for the population,
- f) Coordinates evacuation, emergency accommodation and other necessary measures to ensure the survival of the population,
- g) Provides information to mass media,

- h) Documents the course of extraordinary event and hands over reports to the Ministry of Defence through the Operation Information Centre of the Regional Fire Rescue Service,
- i) Organizes and coordinates humanitarian aid.

Mayor of the Municipality with Extended Competences and Municipal Crisis Staff

- a) Receives and verifies the notification of the occurrence of a radiation accident,
- b) Issues instructions to call the crisis staff,
- c) Evaluates the situation with the crisis staff,
- d) Issues instructions to fulfil the tasks to protect the population and property,
- e) Ensures collaboration with the head of the region and other authorities and organisations in its administrative district,
- f) Regulates and coordinates rescue and remedy works in its administrative district,
- g) Organizes evacuation, humanitarian aid, emergency accommodation and other necessary measures to ensure the survival of the population on the basis of the decision taken by the regional crisis staff,
- h) Provides information to mass media,
- i) Documents the course of extraordinary event and hands over reports to the regional office through the Operation Information Centre of the Regional Fire Rescue Service.

Mayor of the Municipality

- a) Calls the municipal crisis staff and individual members of the established civil protection facility,
- b) Checks the penetration of siren signal on the territory; in case of failure, warns the population by manually activating the sirens or, where appropriate, in an alternative way,
- c) Notifies the population, authorities and organisations according to the notification plan,
- d) Broadcasts instructions on local radio as to the behaviour of the population,
- e) Organizes evacuation, emergency accommodation and other necessary measures to ensure the survival of the population,
- f) Ensures cooperation with the crisis staff of the municipality with extended competences,
- g) Fulfils and ensures tasks according to the prepared implementation documentation,
- h) Documents the course of extraordinary event and hands over reports to the municipality with extended competences.

Regional Fire Rescue Service

- a) Ensures notification and readiness of own forces and means,
- b) Organizes connection between individual components of emergency preparedness,
- c) Ensures tasks directly at NPP according to the alarm plan,
- d) Carries out recovery works and release of blocked roads,
- e) Fulfils tasks according to the implementation documentation or decision taken by the mayor of the municipality with extended competences, head of the region,
- f) Organizes the necessary supplies (food, clothing, shoes, hygiene products, etc.) to the population, evacuated from the affected areas and to the persons taking part in rescue and remedy works,
- g) Organizes humanitarian aid,
- h) Ensures measures adopted to notify and warn, to distribute the means of individual protection, to evacuate and to decontaminate.

Police of the Czech Republic

- a) Ensures notification and readiness of own forces and means,
- b) Installs roadblocks at predetermined places,
- c) Ensures control and movement of persons and vehicles,
- d) Ensures peace and order in the emergency planning zone and in the places of receipt of evacuated population,
- e) Ensures the protection of property in the emergency planning zone,
- f) Cooperates with the Army of the Czech Republic to ensure control and security of property (general police service),
- g) Fulfils tasks according to the implementation documentation or decision taken by the head of the region.

Units of the Army of the Czech Republic

- a) Adopt a decision taken by the head of the region of using forces and means via Operation Information Centre MV – GŘ HZS ČR
- b) Based on the requirements, fulfil tasks contained in this decision, or under the Agreement on the Planned Assistance on Request between MV – GŘ HZS ČR and the Ministry of Defence – General Staff of the Armed Forces of the Czech Republic:
 - Ensure the establishment of decontamination points and the decontamination of persons and vehicles,
 - Earmark forces and means in favour of the Police of the Czech Republic to ensure control and security of property (general police service),
 - Take part in evacuating persons or precious livestock and in providing humanitarian aid.

Health Authorities

- a) Ensure notification and readiness of own forces and means,
- b) Fulfil tasks according to the trauma plan or decision taken by the head of the region,
- c) Organize a health survey, search and removal of affected persons to health facilities,
- d) Implement hygiene and epidemiological measures,
- e) Adopt measures to protect foodstuffs and goods, emphasising warehouses of high capacities and business units,
- f) Ensure special health measures in cooperation with other health facilities.

Transportation Authorities

- a) Ensure notification and readiness of own forces and means,
- b) Fulfil tasks according to the implementation documentation or decision taken by the head of the region,
- c) Ensure the interruption in traffic on selected railway lines,
- d) Close roads on the edge of the emergency planning zone in cooperation with the Police of the Czech Republic,
- e) Ensure removal of persons and livestock from the endangered area.

Environmental Authorities

- a) Ensure notification and readiness of own forces and means,
- b) Fulfil tasks according to the implementation documentation or decision taken by the head of the region,
- c) Ensure continuous water quality monitoring in cooperation with the hygiene station,
- d) Ensure an alternative supply of drinking water (in cooperation with agricultural authorities).

Veterinary Authorities

- a) Ensure notification and readiness of own forces and means,
- b) Fulfil tasks according to the implementation documentation or decision taken by the head of the region,
- c) Adopt measures to ensure the survival of livestock and the method for securing them (emergency feeding, water supply, protection of water sources and feedstuffs),
- d) Determine the routes for the movement of animals to uninfected areas including housing and identification of sites for decontaminating the transported animals,
- e) Sort out the livestock in terms of contamination for their further use for farming purposes or their burying at the predetermined burying spots.

Other Authorities, Components and Organisations (specified by the head of the region and by the mayor of the municipality)

- a) Receive notification of the situation occurred,
- b) Ensure readiness of own forces and means,
- c) Ensure protective measures,
- d) Based on the decision taken by the head of the region or by the mayor of the municipality, fulfil tasks set out in their implementing documents or tasks contained in this decision.

E.2. Identification, Notification and Activation

In the case of the loss of control over the ionising radiation source (i.e., among other things, nuclear reactor) or in the case of the loss or theft of the source, the operator shall follow its on-site emergency plan. The operator shall classify the event with the relevant degree pursuant to Regulation No. 318/2002 Coll., and notifies of this extraordinary event SÚJB, the Police of the Czech Republic, municipal and local authorities within the below defined periods of time.

In the case of the occurrence extraordinary events, the operator shall make:

- a) Announcement of an extraordinary event of degree one and two without undue delay, however, at the latest within
 1. 24 hours after the extraordinary event of degree one was identified,
 2. 4 hours after the extraordinary event of degree two was identified,
- b) Immediate announcement of an extraordinary event of degree three,
- c) Immediate announcement of an extraordinary event of degree two, which involves unacceptable release of radioactive substances into the environment to the competent office of the municipality with extended competences through the Operation Information Centre of the Regional Fire Rescue Service, however, at the latest within four hours after the event was identified,
- d) Immediate notification of an extraordinary event of degree three to the competent office of the municipality with extended competences through the Operation Information Centre of the Regional Fire Rescue Service, SÚJB and other authorities concerned, as specified by the on-site emergency plan.

In addition, the operator activates the emergency workers, for each extraordinary event in the extent and at the time set out by the on-site emergency plan or by the intervention instructions.

The severity of extraordinary events occurred on the premises of the operator is assessed by person, who is appointed in its on-site emergency plan; e.g. the shift engineer at NPP.

When the operator of workplace with ionising radiation sources does not draw up the on-site emergency plan, it means that only radiation extraordinary events of degree 1 may occur at the workplace operated by this operator. Then, the operator shall respond to such an extraordinary event on the basis of the “Safety Instruction” elaborated for the given workplace.

When finding or searching such sources, the recommendation “Radioactive Material Capture Procedure” shall apply (this recommendation was published by SÚJB on www.sujb.cz) and SÚJB shall additionally follow the relevant internal procedure for the activity to be carried out by SÚJB upon capture or finding of radioactive materials.

As mentioned above, upon the occurrence of an extraordinary event at NPP, the operator shall ensure immediate notification of the event to SÚJB, regional office, Regional Directorate of Fire Rescue Service, to the municipalities with extended competences, to the Dispatching Centre of ČEZ, a.s., and to the meteorological station.

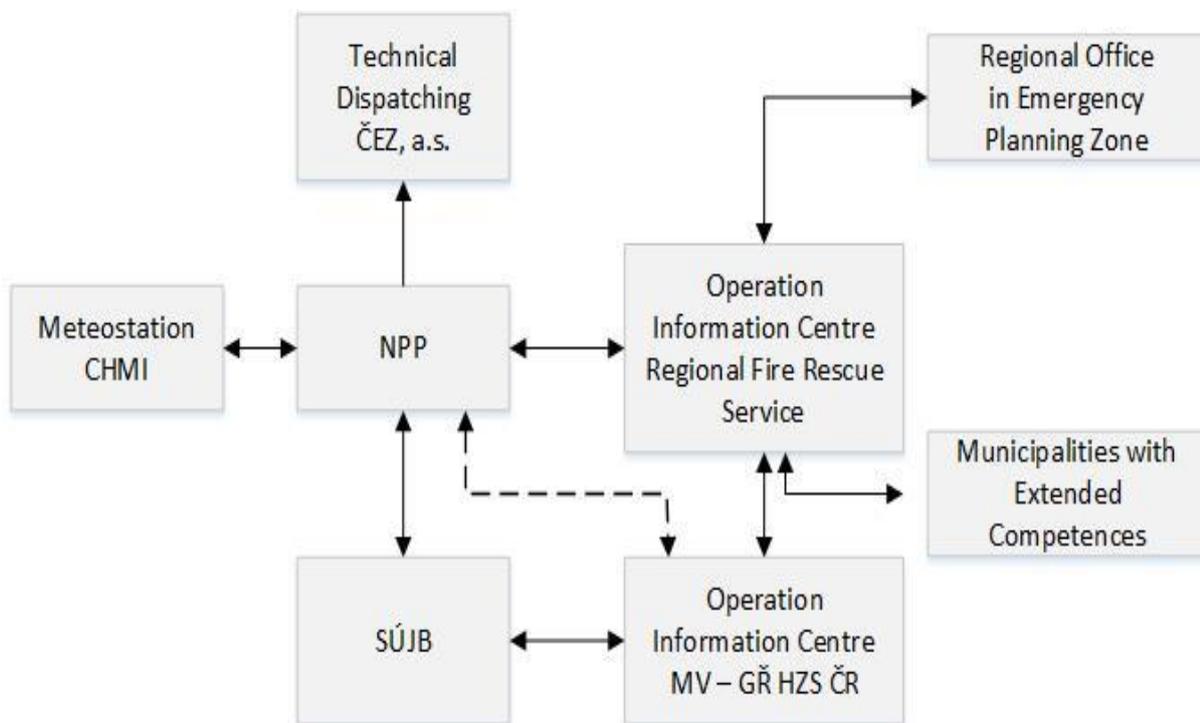


Figure E-1: Scheme of notification of authorities and organisations made by NPP operator

On the basis of the legislation of the European Union, bilateral agreements and international conventions, the EU countries, neighbouring countries and IAEA shall be informed on the occurrence of an extraordinary event, which could possibly have transboundary impacts. Information is provided in USIE, webECURIE or through direct communication with the party to the bilateral agreement. Towards IAEA, SÚJB acts as the “National Competent Authority for an Emergency Abroad/for a Domestic Emergency”. Towards IAEA, MV – GŘ HZS ČR acts as the “National Warning Point”.

Towards the European Union, SÚJB and MV – GŘ HZS ČR act as the “Competent Authority” and the “Contact Point”, respectively.

E.2.1. Activities Carried Out on Receipt of Notification of the Occurrence of a Radiation Accident from Abroad

Ensuring receipt of information (notification)

The Operation Information Centre MV – GŘ HZS ČR is an official contact point of the Czech Republic for abroad in the area of disasters. The Operation Information Centre obtains and evaluates continuously information on serious extraordinary events and ensures early response thereto. In this context, the Operation Information Centre is the partner to operation centres abroad, nation-wide operation centres and standing services in the Czech Republic (including the Contact Point at SÚJB). The activity of the Operation Information Centre is ensured on a continuous basis.

Activities carried out upon receipt of information on event, which could have impact on the territory or the population of the Czech Republic

Upon receipt of information on extraordinary event, which could have impact on the territory or the population of the Czech Republic, the Operation Information Centre carries out the following activities:

- a) Primary evaluation of information,
- b) Provision of information to the competent officer MV – GŘ HZS ČR,
- c) When the event is outside the scope of competence of the Ministry of Interior, submission of information to the competent national authority (e.g. SÚJB),
- d) Activation of population warning,
- e) Activation of the Crisis Staff of MV – GŘ HZS ČR (when the event is within the scope of competence of the Ministry of Interior or if required due to the nature of the event),
- f) Fulfilment of tasks as requested by the competent national authority,
- g) Proposal for calling up the Central Crisis Staff (activation of national crisis structure),
- h) In addition, the Operation Information Centre fulfils tasks resulting from the nature of the event.

E.3. Adoption of Measures to Mitigate the Consequences of Radiation Extraordinary Events

Measures to mitigate the consequences of radiation extraordinary events are specified in Regulation No. 307/2002 Coll. The measures aim at reducing the exposure of individuals and the environment during radiation extraordinary event. For individuals, the protective measure must eliminate the deterministic effects of ionising radiation and minimise the probabilistic (stochastic) effects to as low as reasonably achievable level given by radiation extraordinary event.

The protective measures are divided into:

- a) Urgent protective countermeasures, which include sheltering, iodine prophylaxis and evacuation,
- b) Long term protective countermeasures, which include relocation, regulation of the ingestion of radionuclide-contaminated foodstuffs and water, and regulation of the use of radionuclide-contaminated feedstuffs.

The imposition of protective measures must be always justified and the scope of measure must be optimised. When making decision on imposing the protective measures, the guidance levels are applied, which reflect the current state of knowledge and internationally acquired experience about when greater benefit than damage may be expected from the given protective measure. All facts affecting the implementation of protective measures must be

taken into account at the same time, particularly the presence of specific groups of the population, traffic situation, high population density, presence of a large residential unit, etc.

For guidance levels for taking decisions on the imposition of protective measures see Chapter G.2.

The relevant off-site emergency plan shall be followed when adopting measures in the emergency planning zone. These are primarily measures implemented according to the following procedures and plans:

- a) Setting of protective zones,
- b) Principles of radiation protection,
- c) Electronic personal dosimetry system,
- d) Rescue and remedy work plan,
- e) Monitoring plan,
- f) Decontamination plan and contamination monitoring,
- g) Plan for regulation of the movement of persons and vehicles,
- h) Plan for ensuring public order and security,

The settings of protective zones (external, security, danger) are basic measures of radiation intervention, which aim not only at mitigating the consequences of radiation extraordinary event, but also at setting regime measures for rescue components. The basic principles of radiation protection (shielding, distance, time) can significantly contribute to the mitigation of exposure and contamination of individuals, who were found near the radiation extraordinary event. The electronic personal dosimetry system as set by the Fire Rescue Service of the Czech Republic enables to monitor the doses received by members of the Fire Rescue Service of the Czech Republic. In terms of area, it is ensured that each station is equipped with at least one active personal dosimeter, which represents a group dosimeter for the intervening group. In the case of the confirmation of a radiation extraordinary event, other personal dosimeters are employed for every emergency fire-fighter. This measure will significantly contribute to the reduction of the doses received. The monitoring will not directly contribute to immediate mitigation of the consequences, but it is of significance to other decision-making process of the staff of the leader of the intervention team and long-term countermeasures.

The contamination monitoring is another significant element of the mitigation of the consequences, with the fire protection teams equipped with devices for contamination measurement and able to classify the affected persons as uncontaminated and contaminated persons. The teams are able to decontaminate the contaminated persons. At least one line for decontamination of persons is currently set in each Regional Fire Rescue Service (total of 22 stations for decontamination of persons in the Fire Rescue Service of the Czech Republic) and each district is provided with devices for decontamination of emergency workers, which may be also used to decontaminate the limited number of contaminated persons. Moreover, every first vehicle of the fire protection team must be equipped with the devices for improvised decontamination.

E.4. Adoption of Measures to Protect the Population and Emergency Workers

Urgent protective measures are planned and prepared in the Czech Republic only for the inhabitants of the emergency planning zones of Dukovany NPP and Temelín NPP.

Urgent protective measures of sheltering and iodine prophylaxis are automatically imposed on the basis of the announcement of a radiation accident. Evacuation as well as long-term protective countermeasures are adopted on the basis of the monitoring of actual radiation situation and according to the development of meteorological situation.

For details of the adoption of measures see the plans for specific activities in off-site emergency plans for Dukovany NPP and Temelín NPP.

The conditions for emergency exposure of emergency workers are set out in Act No. 18/1997 Coll., and in Regulation No. 307/2002 Coll. Emergency exposure of emergency workers shall not exceed ten times the limits laid down for exposed workers, unless it is a matter of saving human lives or preventing the development of radiation accident, potentially causing extensive social and economic consequences. Emergency workers shall be demonstrably informed about the risks relating to such intervention and shall participate in the intervention on a voluntary basis only.

Emergency exposure of emergency workers shall be kept as low as reasonably achievable taking into account economic and social factors. The intervention shall be organised so that the exposure limits or at least the maximum permitted levels laid down by Act No. 18/1997 Coll., are not exceeded. To prevent from exceeding the limits multiplied by a factor of ten which are laid down for occupational exposure of exposed workers, 200 mSv for a personal dose equivalent in a depth of 10 mm shall not be exceeded per calendar year. The persons performing intervention shall be demonstrably informed about the risks relating to the intervention in accordance with Act No. 18/1997 Coll., and they shall participate in such an intervention on a voluntary basis.

If individual protection of the population outside the emergency planning zone is necessary, it would be provided using improvised means for the protection of respiratory tract and body surface.

E.4.1. Adoption of Measures to Protect the Population In Case of Radiation Accident at Nuclear Power Plant

The exposure of individuals during radiation accident is reduced by implementing the above mentioned protective measures. Protective measures during radiation accident are implemented whenever they are justified by benefit greater than costs of measure and damages caused by them, and should be optimised in terms of form, scope and duration so as to bring as much as reasonably achievable benefit.

As a basic guidance for making decision on imposing the protective measures, the guidance levels are applied, which reflect a current state of knowledge and internationally acquired experience about when greater benefit than damage may be expected from the given protective measure. For particular radiation activities and ionising radiation sources to which a risk of radiation accident is related, the intervention levels specific for a given radiation activity or a ionising radiation source shall be set out in emergency plans based on the optimisation of radiation protection and the data specific for each particular event.

Data specific to the determination of intervention levels shall also mean data characterising the population density and infrastructure in the vicinity of the ionising radiation source and conditioning the expected collective dose equivalents and feasibility of protective measures, in particular:

- a) Presence of specific groups of the population, especially in hospitals, retirement homes, in nursing homes, and prisons,
- b) Traffic situation,
- c) High population density,
- d) Presence of a large residential unit.

After the announcement of an extraordinary event of degree 3, sirens in the emergency planning zone are activated on the basis of a decision taken by the shift engineer of NPP.

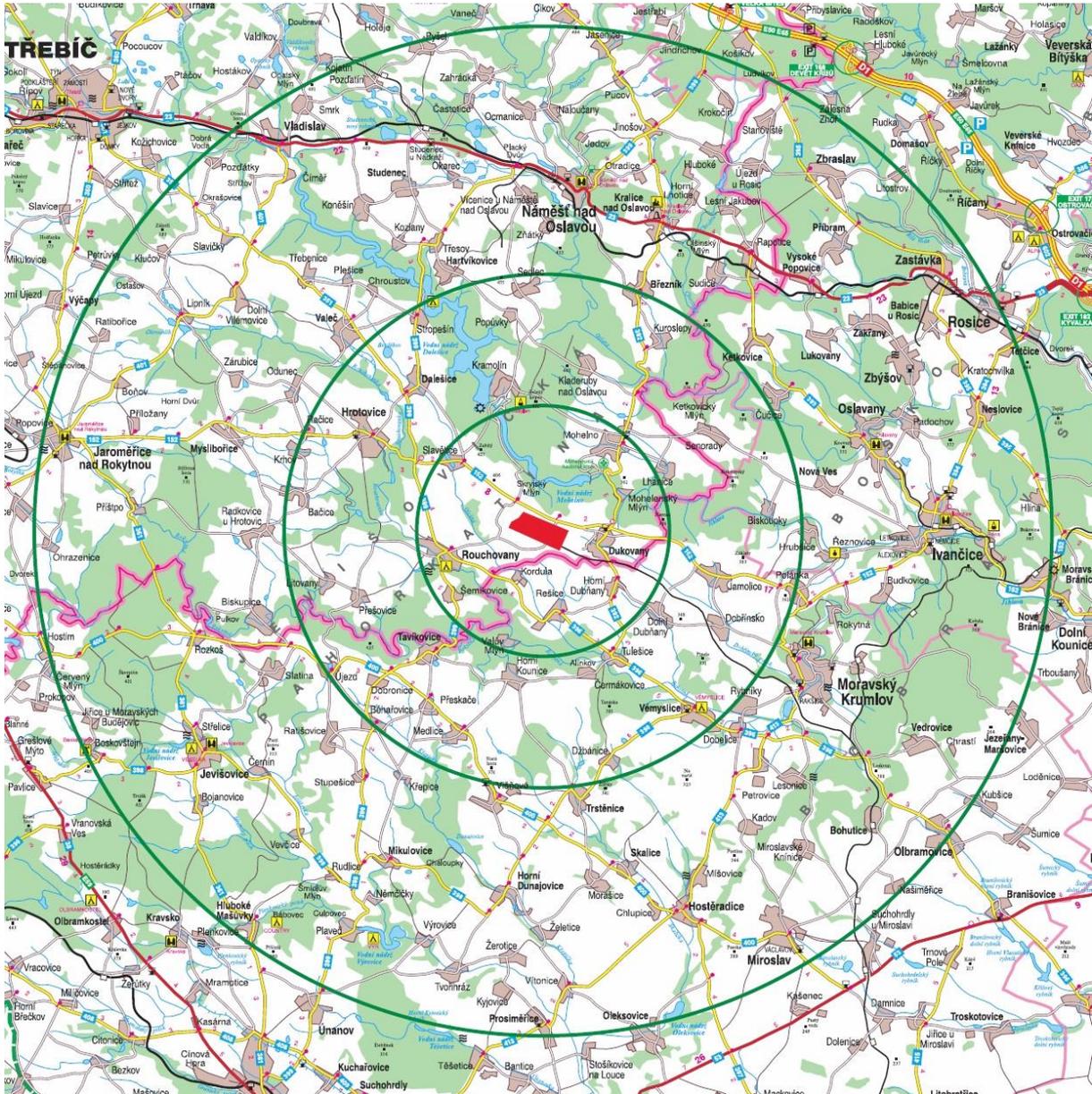


Figure E-3: Emergency planning zone of Dukovany NPP

E.5. Provision of Information and Instructions to the Public

The system used for communication with the public and media has to ensure rapid and accurate evaluation of information, prepare outputs and deliver such outputs quickly and correctly to the public and to the media. This prevents the public and media from receiving incorrect and distorted information. The system used for communication with the public and media is also regularly tested during exercises at all levels.

At all levels of crisis management, the system used for communication with the public and media forms a part of crisis and relevant emergency plans.

The system used for informing the population is tested in both emergency planning zones during regular exercises.

E.5.1. Government Level:

Information on extraordinary events, which required the activation of the Central Crisis Staff, is provided by its professional working group – Media Group. The head of the Media Group

is an authorised employee of the Ministry, whose Minister is the Chairman of the Central Crisis Staff and members are authorised workers of offices, whose representatives are members of the Central Crisis Staff. The Media Group provides the following services to the Central Crisis Staff, in particular:

- a) Monitoring and information analysis in the course of event development,
- b) Collection, processing, sorting and delivery of information,
- c) Collected information analysis and preparation of details for information outputs,
- d) Information and organisational links to the Office of the Government – Secretariat of the National Security Council, to crisis staffs of the ministries, other central administration offices, administrative offices with national competences, and to regional crisis staffs.

E.5.2. Central Administration Offices:

The central administration offices, through their spokespersons, inform the public, or set up their media groups for this purpose. For example: MV – GŘ HZS ČR sets up a workplace for communications with the public in case of an extraordinary event. This workplace is staffed by trained personnel in communications and equipped with several telephone lines and internet access.

Each central administration office is responsible for its own information campaign, i.e. publishes its own press releases, holds press conferences, or publishes printed documents containing information for the public and media.

Pursuant to Act No. 18/1997 Coll., SÚJB is obliged to provide information relating to its competence, i.e. SÚJB is obliged to provide information both on radiation protection in the case of the occurrence of radiation extraordinary events, and on the origination thereof. SÚJB presents the information, for example, on its website, in its annual reports or ad hoc, as currently needed. SÚJB also publishes press releases and answers questions from the public. During the Fukushima accident, there was created a special website for this event: <http://otazky-fukusima.cvrez.cz>. Since 2012, SÚJB has also its own facebook profile.

E.5.3. Regional Offices and Municipalities with Extended Competences:

The regional offices and the municipalities with extended competences inform the public through their spokespersons, or set up their media groups and workplaces for public communication. These workplaces are staffed by trained personnel in communications and equipped with several telephone lines and internet access.

Each regional office and each municipality with extended competences are responsible for their own information campaign, i.e. publish their own press releases, hold press conferences, or publish printed documents containing information for the public and media.

The components of the Integrated Rescue System provide the necessary information with respect to an extraordinary event and to rescue and remedy works in progress to the media and to the public.

E.5.4. NPP Operator

The NPP operator informs the public through its spokesperson, publishes its own press releases, holds press conferences, or publishes printed documents containing information for the public and media. The NPP operator sets up a media group as part of the emergency staff.

Pursuant to Government Decree No. 11/1999 Coll., the NPP operator is obliged to ensure press and information campaign for population preparedness (i.e. issue of the Population Protection Manual, training for representatives of local authorities). The Population Protection

Manual is issued in the form of calendar, is updated once in two years and is distributed to all inhabitants within the emergency planning zone. The manuals contain information on how the inhabitants should proceed after the warning in the emergency planning zone in the case of needed sheltering, application of iodine prophylaxis and on the announcement of preparation for evacuation. Among other things, the manual uses graphic representations and figures to make this information attractive and understandable.

The NPP operator, local bodies of crisis management, MV – GŘ HZS ČR and SÚJB cooperate during the process of creation and update of the Population Protection Manual. The “Information Centres of Nuclear Power Plants” are also used to inform the population.

E.5.5. Population Warning in the Emergency Planning Zone

When an extraordinary event of degree three is announced, the NPP operator is obliged to ensure the warning of the population in the emergency planning zone, namely via terminal elements of warning and other technical and organisational measures (mainly radio and television broadcasting with preliminarily prepared records).

The Fire Rescue Service of the Czech Republic ensures and operates a uniform warning and notification system; whereby ensures the warning and notification. The municipal office informs the legal and natural persons in the municipality about the nature of potential threat, about the prepared rescue and remedy works, and about the protection of the population. In the implementation of rescue and remedy works, the mayor of the municipality ensures the warning of persons situated on the territory of the municipality against the imminent threat. The Operation Information Centres of the Integrated Rescue System are authorised to warn the population on the affected territory in the event of danger of delay.

At the time of the announced crisis situation, the mayor of the municipality ensures the warning and information of persons situated on the territory of the municipality against imminent danger, and the notification of crisis management bodies, unless already made by the Regional Fire Rescue Service.

The uniform warning and notification system is technically, operationally and organisationally ensured by notification centres, telecommunication networks and terminal elements of warning and notification, by means of which the population is immediately provided with emergency information.

A siren test is carried out in the Czech Republic at 12:00 noon every 1st Wednesday in a calendar month.

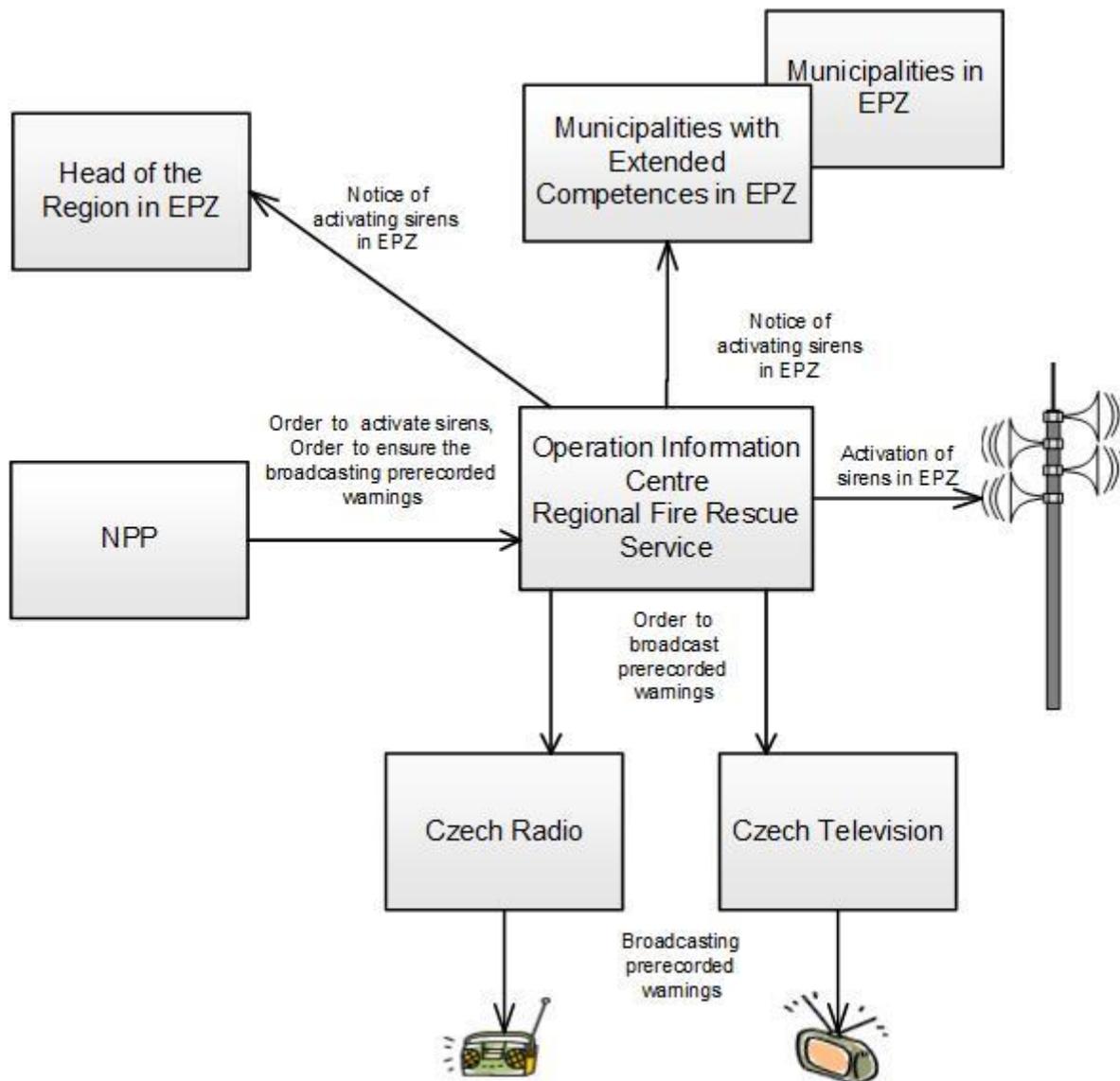


Figure E-4: Scheme of system of warning of the population in the emergency planning zone upon the occurrence of an extraordinary event of degree 3

Note: EPZ – emergency planning zone

E.5.6. Education of Experts

The education of experts has its own rules set out in the “Concept of Education in the Area of Crisis Management”. The concept set a system solution to the preparation of persons in the area in question, set target groups, methods and principles for elaborating educational programs, created conditions for acquiring and deepening qualification and its improvement in the area necessary for the activity of professional workers and persons affected by the area of crisis management. This education is the responsibility of the Ministry of Interior together with other central administration offices (Ministry of Defence, Ministry of Health, Ministry of Education, Youth and Sports, and the Administration of State Material Reserves).

The above described education is intended for officers of local authorities, employees in administration offices, members of armed forces and security services as well as for employees of legal persons and natural persons engaged in business activity, who deal with such problems. Educational modules were developed to this purpose, which form a basis for

elaborating study materials that are available to individual educational institutions and, in electronic form, to the participants in courses.

The problems related to radiation accidents are covered in the following modules:

- Module C - crisis management in non-military situations
- Module D - crisis management in the area of state defence
- Module E - population protection

The above described education includes also cooperation with universities preparing future experts in the area of safety and security. Universities may accredit their own study program in the area of safety and security, the basis of which is the minimum common educational core.

E.5.7. Education and Information of Population

In educating and informing the population, the Fire Rescue Service of the Czech Republic focuses mainly on two basic target groups: children and young people, and adults. The content and the form of action are directed to allow a citizen access to information to prevent and prepare for extraordinary events, on the nature of potential threat, prepared crisis measures and the methods of their implementation. For more details on education of information of the population see Annex 7.

E.5.8. Warning and Information in the Case of the Occurrence of a Radiation Accident

In the case of the occurrence of a radiation accident, the warning of the population is the primary measure. The population is primarily warned through the “General Alert” warning signal. The signal is sounded by warble tone of siren during 140 seconds and it can sound three consecutive times at approximately three-minute intervals. The signal is activated by the Fire Rescue Service of the Czech Republic on request of the shift engineer of the operator of a nuclear installation. The signal is immediately followed by spoken emergency information notifying the population of the data on the imminent or emerged extraordinary event and of the measures for protection of population. The provision of such emergency information is performed through the end warning elements, fitted with the module for transmission of voice information. The warning signal indicates a general danger. Other specific information on danger and protection mode will be communicated to the population immediately via radio (Czech Radio) and television (Czech Television, channels ČT 1, ČT 24), local radio, vehicles of the components of the Integrated Rescue System, or other available method. Scheme of warning of the population in the emergency planning zone upon the occurrence of an extraordinary event of degree 3 is shown in Figure E-4. For more details on the uniform warning and notification system see Annex 8.

E.6. Medical Assistance Management

The education and training of health professionals in the Czech Republic is governed by Act No. 95/2004 Coll., and Act No. 96/2004 Coll., and their implementing regulations. According to the education programs for individual medical specialisations, an obligation is imposed upon all physicians who indicate (and apply) medical exposure (including general practitioners and medical specialists) to take one-day training course of radiation protection, which includes a lecture on biological effects of ionising radiation and a lecture on the health care system for individuals exposed in case of a radiation incident. An IAEA/WHO leaflet is distributed to the health facilities in the Czech Republic.

The medical part of on-site or off-site emergency plan is called the “Trauma Plan”. It describes the medical assistance system for radiation incident. This Trauma Plan would apply

in the event that this involves damage to persons in a nuclear installation or its vicinity. The Trauma Plans contains organisational procedures and guidelines for providing first aid, method for ensuring medical treatment and principles of possible removal of exposed persons to a specialised centre. The principles of medical provision are set out in Regulation No. 318/2002 Coll. The purpose is to organize the provision of standard medical procedures and actions in changed organisational and spatial conditions or, where appropriate, in conditions of radioactive contamination. In cases where internal contamination of persons with radioactive substances cannot be excluded, a sufficient number of antidotes must be available, including specification of a place of their storage and methods of their distribution.

On the basis of the obligation set out in Act No. 18/1997 Coll., and within the meaning of the provisions of Article 51(3) of Directive No. 96/29/EURATOM of the Council, the Bulletin of the Ministry of Health of the Czech Republic provides a list of centres of specialised healthcare for persons exposed as a result of radiation accidents, including their nationwide competence. The last update of this list was on 26 September 2013 and the centres of specialised healthcare for persons exposed as a result of radiation accidents are established:

- In the Královské Vinohrady Faculty Hospital; the Burn Clinic; Šrobárova 50, 100 34 Prague 10 – Vinohrady,
- In the General Faculty Hospital in Prague, the Clinic of Dermatology and Venerology; U Nemocnice 2, 128 08 Prague 2 Nové Město,
- In the Faculty Hospital in Hradec Králové, the Internal Clinic of Haematology and Oncology, Sokolská 581, 500 05 Hradec Králové
- In the Thomayer Hospital, Department of Medical Genetics, Vídeňská 800, 140 59 Prague 4 – Krč,
- In the University Hospital Brno, the Clinic of Dermato-venerology, Jihlavská 20, 625 00 Brno.

Within the field of competence, the centres of specialised healthcare for persons exposed as a result of radiation incident are methodological centre for problems related to healthcare for exposed persons and provide consultations and lectures to other healthcare providers in the scope of their specialisation.

The provision of specific medical care through health facilities listed in the Trauma Plan approved by SÚJB is another area. These health facilities are intended to provide primarily emergency medical service and care in multiple accidental traumas, which could be complicated by contamination with radioactive substances. Additionally, they should have available reserve surgical beds.

Of course, the healthcare would be also provided by provider of industrial-medical services, if needed and urgent, other providers would be involved in the system, as resulting from Act No. 373/2011 Coll.

E.7. Measures to Mitigate Non-radiation Effects

E.7.1. Psychosocial Support to Persons Affected by Extraordinary Event

In dealing with the extraordinary event occurred, the psychosocial impacts on persons affected by extraordinary event and on rescuers should be always taken into account. The need to provide psychosocial support is not dependent only on the severity of situation and on the number of affected persons, but the actual condition of an individual, his/her needs and response to the event in question should be always taken into account.

Psychosocial support to persons affected by extraordinary event shall mean:

- a) Activity within the humanitarian aid and emergency survival,
- b) Meeting the needs detected in the physical, mental, spiritual and social area, in accordance with the values of the persons affected,
- c) In terms of time – first psychological support (short-term support in a period of extraordinary event and several days thereafter), medium-term support (approximately 5 days to 3 months after extraordinary event), long-term support (from 3 months after extraordinary event and thereafter).

Within rescue and remedy works, the first psychological support and short-term psychosocial support are provided, which involve the establishment of the cooperation with municipalities, local organisations and non-governmental non-profit organisations. Municipalities, local organisations and non-governmental non-profit organisations subsequently continue to offer medium-term and long-term supports. Psychosocial support within rescue and remedy works is organised by leader of the intervention team in the place of intervention. If a professional specialist is used for the given area, this person is included in the staff of the leader of the intervention team or as an assistant leader of the intervention team.

Psychosocial support is addressed in more detail, for example, within the type activity of the components of the Integrated Rescue System (STČ 12/IZS Type Activity of Integrated Rescue System Components in Provision of Psychosocial Support), as well as the Rules of Combat of the Fire Protection Teams – Post Trauma Care to Fire Fighters and Psychosocial Support to Persons Affected by Extraordinary Event. MV – GŘ HZS ČR developed this issue in the document “Psychosocial Crisis Support and Cooperation Standards Aimed at Course and Result”.

E.7.2. Population Supply

The population in the contaminated area will be supplied on the basis of a decision taken by the head of the relevant region. The regional crisis staff is responsible for the management and organisation of the supply system and uses all existing devices and material means, mainly from own resources, to ensure the system, and fulfils its tasks using undertakings and their establishments, which are equipped and prepared for such activities.

The necessary supply is organised by the competent local authorities on a contract basis or by imposing an obligation. The organisations are selected by local authority, which subsequently concludes with their operators a contract for the provision of necessary supply to intended groups of population including mode of financial compensation.

The range and composition of goods cannot be defined in advance. This depends on the need of the affected population and on the possibilities of drawing (stocks). The supply also depends on the season, nature of accommodation and other ensuring of affected persons. Specific amount and composition of the diet depend on the available sources of foodstuffs and on the capacity of cooking units. The affected population should get food and the adequate amount of drinks (hot drinks in winter) twice a day. Priority should be given to the needs of children and sick persons.

E.8. Radioactive Waste Management

Radioactive waste management in the Czech Republic is governed by Act No. 18/1997 Coll., and Regulation No. 307/2002 Coll.

Act No. 18/1997 Coll., imposes an obligation upon anyone engaged in radioactive waste management to take into account all physical, chemical and biological properties of

radioactive waste, which could affect the safety in radioactive waste management. This requirement is defined in more detail in Regulation No. 307/2002 Coll., as follows: *“In addition to radioactivity, all hazardous properties of radioactive waste that may impact safety of waste management, particularly its toxicity, flammability, explosiveness, spontaneous fission, and formation of critical mass or residual heat shall be taken into account during radioactive waste management.”* In relation to the hazardous properties, radioactive waste management shall be carried out in accordance with general legal regulations on waste management.

In connection with the minimisation of radioactive waste production, Act No. 18/1997 Coll., requires to reduce the production of radioactive waste and spent fuel to the necessary extent. On an annual basis, the operator submits to SÚJB a document, called “Evaluation of Radioactive Waste Management”, which includes proposals for improvements (minimisation of radioactive waste production) and their implementation. The main part of radioactive waste minimisation involves radioactive waste sorting on waste collection and application of efficient separation methods.

Interlinkages between individual management actions are described in Regulation No. 307/2002 Coll. This Regulation defines a basic principle that any activity in each individual action related to radioactive waste management may not affect the following activities.

Radioactive waste management in the Czech Republic may not be carried out without a licence issued by SÚJB. Prior to the issue of a licence, the applicant must, among other things, prove in the documentation required by Act No. 18/1997 Coll., that it is able to ensure the radiation protection in the extent and at the level required by this Act and its implementing regulations. The ensuring of radiation protection is examined by inspections prior to the issue of a licence. The below defined provision applies to fulfilment of the requirement to avoid actions, which may have real impacts on future generations or creation of inadequate loads for future generations: *“Whoever utilises nuclear energy or performs radiation practices or interventions to reduce natural exposure or exposure due to radiation incidents must ensure that his or her action is justified by the benefits outweighing the risks arising or liable to arise from these activities.”* Furthermore, all requirements for safe management of ionising radiation sources apply to radioactive waste management.

Radioactive waste in the Czech Republic is collected, sorted, processed, conditioned into the form suitable for storage and disposed of in repositories provided that this radioactive waste meets the acceptability criteria of the repository in question. For the needs of disposal of radioactive waste, there are three radioactive waste repositories in the Czech Republic – Bratrství, Dukovany and Richard. For details see Chapter C.3.5.

If waste produced as a result of a radiation accident was classified as radioactive waste, it would be managed in the same way as the other radioactive waste, as mentioned above. If this radioactive waste meets the acceptability criteria, it will be disposed of in repositories. Otherwise, this waste will be safely stored, separated from the environment by means of safe engineering barriers, until the time when this waste could be disposed of or released.

E.9. System of Requesting, Delivering and Receiving International Assistance

Under the “Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency”, signed also by the Czech Republic, the Emergency Response Network (ERNET) was established by IAEA in 2000. Following a new concept of this original network, the network was renamed to the Response and Assistance Network (RANET) in 2005. RANET enables the Parties to the Convention, through the Convention, to request assistance and to receive offers for assistance related to radiation extraordinary events. The Czech Republic is a

participant in the RANET network from 15 April 2009. Therefore, the system of requesting, delivering and receiving international assistance in the Czech Republic is governed both by rules set out within the RANET network and by relevant legislation of the Czech Republic.

Within the RANET network, the Czech Republic registered its national capacities/sources for delivering assistance to other Parties to the above mentioned Convention. Registered were services in the area of source search and recovery, radiation survey, environmental sampling and analysis, radiological assessment and advice as well as dose assessment. All these capacities are currently registered as external based support..

The delivery of humanitarian aid by the Czech Republic is governed by Act No. 151/2010 Coll. Pursuant to this Act, the Ministry of Foreign Affairs delivers the humanitarian aid to the states outside the European Union and the European Economic Area, and decides on its scope and form. The Ministry of Foreign Affairs in cooperation with the Ministry of Interior decide on the provision of material and rescue assistance. Pursuant to this Act, the Ministry of Interior delivers the humanitarian aid to Member States of the European Union and other states forming the European Economic Area, and decides on its scope and form. Any assistance within the RANET network would be provided in the Czech Republic as part of the system of providing humanitarian aid.

Pursuant to Act No. 239/2000 Coll., the Ministry of Interior fulfils tasks in the area of involvement of the Czech Republic in international rescue operations during extraordinary events abroad and provision of humanitarian aid abroad in cooperation with the Ministry of Foreign Affairs. MV – GŘ HZS ČR, in cooperation with the Ministry of Foreign Affairs, components of the Integrated Rescue System or central administration offices, organizes rescue and material aid abroad. Some important rules related to the involvement in international rescue operations are set out in Government Decree No. 463/2000 Coll.

The state humanitarian aid is provided from funds allocated in the budget of the Ministry of Foreign Affairs. Depending on the nature of disaster, the Minister of Foreign Affairs, in agreement with the Minister of the Interior, decides on the release of funds from this budget, up to CZK 5 million. In each individual case, the release of funds above CZK 5 million must be decided on by the Government on the basis of a proposal submitted by the Minister of Foreign Affairs.

In general terms, there are the following forms of immediate humanitarian aid:

- a) Rescue (rescue team),
- b) Material,
- c) Financial,
- d) Advisory,
- e) Combined.

The Czech Republic provides the humanitarian aid abroad on a bilateral basis or through international organisations. The Operation Information Centre MV – GŘ HZS ČR is the contact point of the Czech Republic for international organisations and their operation centres such as ERCC, NATO-EADRCC, IAEA, UN-OCHA, etc.

In the case of any extraordinary event, when the affected state asks for assistance through the competent international organisation or through the representative office of the Czech Republic in the affected state, this information is received by the Operation Information Centre MV – GŘ HZS ČR, which, in agreement with the Ministry of Foreign Affairs, prepares a proposal for the provision of assistance. Furthermore, the Operation Information Centre MV – GŘ HZS ČR and the international organisation cooperate actively on the preparation, coordination and implementation of humanitarian aid.

In the course of the provision of humanitarian aid, MV – GŘ HZS ČR continues to cooperate with the Ministry of Foreign Affairs, which ensures, for example, the communication with the representative office, obtains information from the affected state, visas for members of the rescue team or visas for escort to material humanitarian aid. In addition, the Ministry of Foreign Affairs ensures the procedural delivery of humanitarian aid.

Special types of rescue teams are prepared as part of rescue humanitarian aid abroad. The teams are always composed so as to meet the needs in the place of an extraordinary event, and their members are mainly members of the Fire Rescue Service of the Czech Republic, and possibly members of cynological teams, National Institute for Nuclear, Chemical and Biological Protection, National Radiation Protection Institute, Police of the Czech Republic, etc.

The material humanitarian aid abroad is delivered on the basis of a particular application of the affected country, which is subsequently considered by the Czech Republic and, where appropriate, the humanitarian aid is provided by the Czech Republic. The Ministry of Interior in agreement with the Ministry of Foreign Affairs decides also on material humanitarian aid.

The Ministry of Foreign Affairs decides on the provision of financial humanitarian aid abroad. This aid is mostly provided through international organisations or directly to a bank account specified by the affected state.

In accordance with the existing regulations, the procedure defined in Annex 9 is applied to the involvement of the Czech Republic in international rescue operations or to the delivery of humanitarian aid abroad.

The Czech Republic has concluded bilateral government agreements on cooperation and assistance in disasters, natural disasters and other extraordinary events with all neighbouring countries and with Hungary, which enables the rescue teams in the case of an extraordinary event to cross the national boundary in simplified regime. Within the cross-border cooperation, the teams of the relevant territorial unit (Regional Fire Rescue Service) intervene on the territory of the relevant territorial unit of the neighbouring state under the above mentioned agreements. The application for assistance is transferred between the operation centres of the relevant territorial units; on the Czech side, this is the Operation Information Centre of the Regional Fire Rescue Service or operation centre of territorial department. All interventions on the territory of another state shall be subsequently reported to the Operation Information Centre MV – GŘ HZS ČR. In addition, the agreements govern, for example, joint trainings, exercises, information exchange, use of radio stations, compensation of damage incurred, use of aircraft, etc. The Czech Republic has also concluded bilateral agreements concerning the area of nuclear safety, radiation protection and emergency preparedness. For a list of such agreements see Annex 10.

E.10. Taking Decision to End the Emergency Response

Urgent and long-term protective countermeasures are cancelled if as a result of change in radiation situation, the exposure drops below guidance levels for taking a decision on imposing the protective measures defined in Chapter G.2.

F. Early Notification and Assistance Conventions

F.1. Implementation of Obligations Resulting from Both Conventions for the Czech Republic

The Czech Republic is a signatory of the Convention on Early Notification of a Nuclear Accident (the ‘Early Notification Convention’) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (the ‘Assistance Convention’).

With respect to these Conventions, SÚJB, in relation to IAEA, acts as the National Competent Authority for an Emergency Abroad /a Domestic Emergency. The function of the National Warning Point is ensured by the Operation Information Centre MV – GŘ HZS ČR. SÚJB acts as the National Competent Authority for an Abroad/ a for a Domestic Emergency towards the neighbouring countries.

Following the “Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency”, the Czech Republic is a participant in the RANET network, as from 15 April 2009 – for details see Chapter E.9.

G. Limits and Guidance Levels for Reduced Emergency Exposure

G.1. Protective Measures and Other Activities within Emergency Response, Expected to Be Always Implemented In Order to Prevent or to Mitigate Severe Deterministic Effects

Regulation No. 307/2002 Coll., establishes details of method and extent of radiation protection assurance during interventions in order to reduce exposure due to radiation accident. Furthermore, the Regulation establishes guidance levels for urgent measures.

An urgent protective measure shall always be considered justified if expected exposure of an individual might directly lead to his or her health damage, and hence urgent protective measures are always imposed when it is expected that absorbed doses in less than 2 days for any person might exceed the levels (so-called “guidance levels”) given in Table G-1.

Table G-1: Guidance levels for intervention levels for the case of radiation accident

Organ, tissue	Absorbed dose, which is assumed or expected to be received in less than two days [Gy]
Whole body	1
Lungs	6
Skin	3
Thyroid gland	5
Eye lens	2
Gonads	1

G.2. Protective Measures and Other Activities within Emergency Response, which Should Be Implemented, If They Could Be Implemented in Safe Manner, In Order to Reasonably Mitigate (Probabilistic) Stochastic Effects

Regulation No. 307/2002 Coll., establishes that if an urgent protective measure might avert or reduce the exposure of the critical group of the population, not longer than 7 days, that exceeds the lower level of the span of guidance intervention levels, the implementation of the protective measure shall be considered with respect to its extent, feasibility, and expensiveness and its possible consequences; if the upper range level is exceeded,. The guidance intervention levels for the case of a radiation extraordinary event are given in Table G-2.

To implement and evaluate the extent of urgent protective measures, the following guidance levels shall be followed as a specifying guidance:

- a) For sheltering, an averted effective dose of 10 mSv for a period of sheltering not longer than 2 days,
- b) For iodine prophylaxis, an averted committed equivalent dose of 100 mSv induced by iodine radioisotopes in thyroid, and
- c) For evacuation, an averted effective dose of 100 mSv over a period of evacuation not longer than 1 week.

Table G-2: Guidance levels for intervention levels for urgent measures

Measure	Dose range	
	Effective dose	Equivalent dose in an individual organ or issue
Sheltering and iodine prophylaxis	5 mSv to 50 mSv	50 mSv to 500 mSv
Evacuation of population	50 mSv to 500 mSv	500 mSv to 5000 mSv

For long-term protective countermeasures, the determined guidance intervention levels are given in Table G-3. The levels are used for comparing with expected effective or equivalent doses, received due to failure to implement the appropriate protective measures, as a result of all ways of external exposure and receipt of radionuclides by inhalation as well as ingestion during the first year after radiation accident and for the regulation of the ingestion of contaminated foodstuffs and water, only as a result of the receipt of radionuclides by ingestion during the first year after radiation accident.

To take a decision on relocation, the following guidance levels shall be followed as a specifying guidance:

- a) For start of temporary relocation, an averted effective dose of 30 mSv for a period of 1 month,
- b) For end of temporary relocation, an expected effective dose of 10 mSv for a period of 1 month. If it appears over a period of 1 to 2 years that the total effective doses for a period of 1 month do not drop below the intervention level for end of temporary relocation, a permanent relocation must be taken into consideration,
- c) For permanent relocation, an expected lifelong effective dose of 1 Sv.

Table G-3: Guidance levels for intervention levels for long-term countermeasures

Measure	Dose range	
	Effective dose	Equivalent dose in an individual organ or issue
Regulation of the ingestion and use of radionuclide-contaminated foodstuffs, water, and feedstuffs	5 mSv to 50 mSv	50 mSv to 500 mSv
Relocation of population	50 mSv to 500 mSv	<i>Not determined</i>

G.3. Trade Regulation Ensured While Taking into Account Non-radiation Consequences of Radiation Extraordinary Event

The trade regulation in the Czech Republic is governed by EU legislation, an overview of which is provided in Annex 11.

Regulation No. 307/2002 Coll., defines guidance intervention levels for the regulation of the ingestion and use of radionuclide-contaminated foodstuffs, water, and feedstuffs - see Table G-3. If it should be necessary to introduce this regulation, it would also involve the regulation of the trade in commodities in question.

G.4. Transition from Emergency to Existing Exposure Situation

The transition from emergency to existing exposure situation is given by the end of emergency response, cancellation of unjustified protective measures, if as a result of change

in radiation situation, the exposure dropped below guidance levels for taking a decision on imposing the protective measures defined in Chapter G.2. This is a situation where so-called “persistent exposure” occurs. By implementing a general measure, SÚJB is entitled to further regulate the persistent exposure if this measure is justified and optimised for a particular route of exposure.

G.5. Overview of Determined Operation Intervention Levels for Each Exposure Situation

No operation intervention levels are determined in the legislation of the Czech Republic. SÚJB uses operation intervention levels for making decisions on the imposition of individual measures to protect the population:

- a) Implemented in SW tools used to estimate the impact of releases from NPP on the vicinity,
- b) Referred to in the Catalogue of Countermeasures (*Compendium of Measures to Reduce Radiation Exposure Following Events with not Insignificant Radiological Consequences; Catalogue of Countermeasures, Vol. 1, 2, Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, Berlin, 2000*).

NPP operator has the operation intervention levels determined in the intervention instruction, which is determined for the activity carried out by shift engineer, and uses them to assess the occurrence of an extraordinary event, to classify it and start the relevant response.

G.6. Guidance Levels to Reduce Exposure of Emergency Workers

Pursuant to the provisions of Act No. 18/1997 Coll., emergency exposure of emergency workers may not exceed ten times the limits laid down for exposed workers, unless it is a matter of saving human lives or preventing the development of radiation accident, potentially causing extensive social and economic consequences. Emergency workers shall be demonstrably informed about the risks relating to such intervention and shall participate in the intervention on a voluntary basis only. This provision is elaborated in detail in Regulation No. 307/2002 Coll.

Emergency exposure of emergency workers shall be kept as low as reasonably achievable taking into account economic and social factors. The intervention shall be organised so that the exposure limits or at least the maximum permitted levels laid down by the Atomic Act are not exceeded. To prevent from exceeding the limits multiplied by a factor of ten which are laid down for occupational exposure of exposed workers, 200 mSv for a personal dose equivalent in a depth of 10 mm shall not be exceeded per calendar year. Emergency workers shall be demonstrably informed about the risks relating to such intervention and shall participate in the intervention on a voluntary basis only.

In accordance with Act No. 18/1997 Coll., and Regulation No. 307/2002 Coll., operator is required to submit to SÚJB for approval a monitoring program, which must include the monitoring under normal operation, the monitoring for predictable deviations from normal operation as well as the monitoring during radiation incidents and radiation accidents.

NPP operator in the Czech Republic has elaborated monitoring program approved by SÚJB, in which, for purpose of dose optimisation, emergency workers are divided into four groups by the activities carried out:

- I. Saving human lives, preventing the development of radiation accident potentially causing extensive social and economic consequences – operation intervention level: $H_p(10) > 200$ mSv.

- II. Preventing severe health damage, preventing serious injury, averting high collective dose, preventing the development of accident, recovery of reactor safety system function, monitoring of dose rate in NPP vicinity – operation intervention level: $H_p(10) = 200 \text{ mSv}$.
- III. Operating personnel in exposed workplaces (control rooms), short-term recovery actions, collecting samples from the environment – operation intervention level: $H_p(10) = 100 \text{ mSv}$.
- IV. Long-term recovery actions, activities not directly related to accident – operation intervention level: limits for exposed workers.

H. Challenges in the Area of Emergency Preparedness and Emergency Response

H.1. Identification of Deficiencies in the Existing Measures and in the Emergency Preparedness and Emergency Response System. Summary of Problems and Recommendations for the IAEA Secretariat as to which Further Standards, Guidelines and Tools Should Be Adopted to Improve the International and National of Emergency Preparedness and Emergency Response Systems.

H.1.1. Findings of IRSS Mission

As stated above, an IRRS mission, organised by IAEA, took place at SÚJB in November 2013. The area of emergency preparedness and emergency response was one of the areas whose compliance with the safety guidelines was examined by the IAEA mission. Specifically, it consisted in examination of the compliance of legal regulations of the Czech Republic with the "Preparedness and Response for a Nuclear or Radiological Emergency, Safety Standards Series No. GS-R-2 [2]" guideline, and the examination resulted in 2 recommendations and 2 incentives for elimination of the non-compliances found.

The first recommendation is the recommendation for the Government of the Czech Republic to ensure that threat categorization, national emergency plans and recovery actions in the Czech legislation will be in line with GS-R-2 requirements. [2].

The second recommendation is the recommendation for SÚJB to establish requirements for emergency action levels in the Czech regulatory framework.

In the area of suggestions, SÚJB was proposed to consider:

- c) Having an inspector present on site in the Emergency Control Centre in emergency situations, in order to provide independent oversight and to communicate with the SÚJB Crisis Staff.
- d) Improving its arrangements to provide information to the public and to the media during a radiation emergency, by establishing a comprehensive strategy in this regard.

H.1.2. Findings from Emergency Exercises

The emergency exercises accomplished so far have shown that within the emergency preparedness and emergency response system, the off-site emergency plans must be continuously updated for both emergency planning zones both from the content perspective and from the perspective of changing legal regulations.

In view of the continuous changes of the emergency documentation and of the staffing of the components of the integrated rescue system, the crisis management bodies, the central and territorial administrative authorities and other entities, it is very useful to maintain regular trainings and examinations of functionality of the emergency preparedness and emergency response system in form of national inter-branch practical exercises.

Each national emergency "ZÓNA" exercise leads to some conclusions and the deficiencies found are processed in the document called "Evaluation of "ZÓNA" exercise". The Evaluation, containing also the identified deficiencies and the determination of responsibility and the deadline for their elimination, is subsequently discussed at the meeting of the Civil Emergency Planning Committee.

H.1.3. Findings According to the National Action Plan

Actions from the area of emergency preparedness and emergency response according to the National Action Plan to Increase Nuclear Safety in the Czech Republic (following up the

National Report of Stress Tests of Nuclear Power Plants of the Czech Republic [1], processed on incentive of the European Commission in response to the accident at Fukushima NPP).

The deficiencies identified in the areas of emergency preparedness and emergency response led to the specification of the actions described below.

- Creation of a back-up Emergency Control Centre outside the locality (deficiency identified: If unspecified events cause unavailability of the Emergency Control Centre in the NPP locality, there were no sufficiently equipped alternative areas for the activity of the emergency staff and of the Technical Support Centre available in 2011).
- Definition of alternative places for staff at the power plant and outside the locality in case of unavailability of shelters (deficiency identified: If unspecified events cause unavailability of shelters in the power plant, there were no sufficiently equipped alternative areas available for the shift staff to shelter in 2011).
- Establishment of alternative mobile control centre of emergency response (deficiency identified: If unspecified events cause unavailability of the Emergency Control Centre in the NPP locality and of the back-up emergency control centre, there were no alternative control centres for the activity of the emergency staff and of the Technical Support Centre available in 2011).

The elimination of the above stated deficiencies in the Czech Republic is either under way or will start upon adoption of the new Atomic Act that is being prepared by SÚJB.

At the time of elaboration of this national report, the Czech Republic had not come to the conclusion that it had some recommendations for the IAEA secretariat with regard to which other standards, guidelines and tools should be adopted to improve the national and international emergency preparedness and emergency response systems.

Annex 1 List of Legislation

A Review of Legislation

1) Atomic Act and its Implementing Regulations

- a) Act No. 18/1997 Coll., on Peaceful Utilisation of Nuclear Energy and Ionising Radiation (Atomic Act) and on Amendments and Additions to Related Acts, as amended.,
- b) Government Decree No. 11/1999 Coll., on Emergency Planning Zone,
- c) Regulation No. 195/1999 Coll., on Basic Design Criteria for Nuclear Installations with Respect to Nuclear Safety, Radiation Protection and Emergency Preparedness,
- d) Regulation No. 307/2002 Coll., on Radiation Protection, as amended.,
- e) Regulation No. 318/2002 Coll., on Details of Emergency Preparedness of Nuclear Installations and Workplaces with Ionising Radiation Sources and on Requirements for the Content of On-Site Emergency Plan and Emergency Rule, as amended.,
- f) Regulation No. 319/2002 Coll., on Performance and Management of the National Radiation Network, as amended.,
- g) Regulation No. 132/2008 Coll., on Quality Assurance System in Performing and Ensuring Activities Related to the Utilisation of Nuclear Energy and Radiation Activities, and on Quality Assurance of Classified Equipment with Regard to Their Classification in Safety Classes.

2) Crisis Legislation (selected legislation)

- a) Constitutional Act No. 110/1998 Coll., on Security of the Czech Republic, as amended.,
- b) Act No. 239/2000 Coll., on Integrated Rescue System and on Amendment to Certain Related Acts, as amended,
- c) Act No. 240/2000 Coll., on Crisis Management and on Amendment to Certain Related Acts (Crisis Act), as amended,
- d) Act No. 241/2000 Coll., on Economic Measures for Crisis Situations and on Amendment to Certain Related Acts, as amended,
- e) Act No. 133/1985 Coll., on Fire Protection, as amended,
- f) Government Decree No. 462/2000 Coll., on Implementation of Some Provisions of the Crisis Act, as amended,
- g) Government Decree No. 463/2000 Coll., on Setting the Rules for Participation in International Rescue Operations, Granting and Receiving Humanitarian Aid, and Reimbursement of Expenses Incurred by Legal Persons and Natural Persons Pursuing Business Activities for Protection of Inhabitants, as amended by Government Decree No. 527/2002 Coll.,
- h) Government Decree No. 465/2008 Coll., on Calling in the Troops of the Armed Forces of the Czech Republic to Fulfil the Tasks of the Police of the Czech Republic in Radiation Accidents at Nuclear Power Plants,
- i) Government Decree No. 431/2010 Coll. amending Government Decree No. 462/2000 Coll. to implement § 27 paragraph 8 and § 28 paragraph 5 of Act No. 240/2000 Coll., on crisis management and amending certain acts (Crisis Act), as amended,
- j) Government Decree No. 432/2010 Coll., on Criteria for Defining Critical Infrastructure Elements,
- k) Regulation of the Ministry of Interior No. 328/2001 Coll., on Some Details of the Security of the Integrated Rescue System, as amended,
- l) Regulation of the Ministry of Interior No. 247/2001 Coll., on the Organisation and Operation of Fire Protection, as amended,

- m) Regulation of the Ministry of Interior No. 380/2002 Coll., on the Preparation and Fulfilment of Tasks to Protect the Population.

3) Multilateral International Conventions and Agreements with IAEA

The below listed international conventions, to which the Czech Republic (or the former Czechoslovak Socialist Republic, later the Czech and Slovak Federal Republic) acceded form a part of the applicable legislation of the Czech Republic in the given area:

- a) Convention on Early Notification of a Nuclear Accident (Vienna, 26/09/1986, Communication of the Ministry of Foreign Affairs No. 116/1996 Coll.),
- b) Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Vienna, 26/09/1986, Communication of the Ministry of Foreign Affairs No. 115/1998 Coll.).

4) Selected Legislation Related to SÚJB's Activity

- a) Act No. 281/2002 Coll., on Some Measures Related to Prohibition of Bacteriological (Biological) and Toxin Weapons and on Amendments to Trades Licensing Act, as amended,
- b) Act No. 106/1999 Coll., on Free Access to Information, as amended,
- c) Act No. 19/1997 Coll., on Some Measures Concerning Chemical Weapons Prohibition, as amended,
- d) Act No. 255/2012 Coll., on Inspection (Inspection Rules), as amended
- e) Act No. 500/2004 Coll., on Administrative Proceedings (Administrative Code), as amended,
- f) Act No. 505/1990 Coll., on Metrology, as amended.,
- g) Act No. 373/2011 Coll., on Specific Medical Services as amended.

B Brief Content of the Most Important Legislation

Act No. 18/1997 Coll.:

- 1) Defines the basic terms – emergency preparedness, radiation incident, radiation accident, radiation extraordinary event, emergency exposure, emergency planning zone, and emergency plan,
- 2) Sets out competences of SÚJB, within the scope of which SÚJB, among other things:
 - a) Issues licences to perform practices,
 - b) Approves on-site emergency plans and their changes subject to discussion with the relevant Regional Offices and relevant Municipalities with extended competences of compatibility with offsite emergency plans; licence to commission and operate a nuclear installation can be issued only after approval an on-site emergency plan,
 - c) Determines the emergency planning zone on the basis of licensee's application,
 - d) Manages the activity of RMN and ensures the function of its centre,
 - e) Ensures the activity of the crisis coordination centre and the international exchange of data on radiation situation,
 - f) Ensures, by means of RMN and based on assessment of a radiation situation, the availability of background information necessary to take decisions on measures aimed at reducing or averting exposure in the case of a radiation accident,
- 3) Among other things, sets out the principles to carry out radiation activities and to limit emergency exposure. (The principles for averting or reducing exposure in the case of radiation accident and exposure of persons participating interventions are elaborated in Regulation No. 307/2002 Coll.),
- 4) Among general obligations, imposes an obligation upon operator to ensure emergency preparedness, including its verification to the extent corresponding to individual licences, and to notify SÚJB of any change important from emergency preparedness viewpoint, including changes in all facts relevant to the issue of a licence,
- 5) Among other obligations, the operator is obliged to:
 - a) Monitor, measure, evaluate, verify and record any quantities, parameters and facts important for emergency preparedness to the extent set out by implementing regulations,
 - b) Keep and archive records of ionising radiation sources, facilities, materials, activities, quantities and parameters and other facts important from emergency preparedness point of view, and submit the recorded information to SÚJB in the manner set out in an implementing regulation,

- c) Ensure systematic supervision of observance of emergency preparedness, including its verification.
- 6) Among obligations of the operator in the case of a radiation incident to the extent and in the manner set out by the on-site emergency plan approved by SÚJB, the operator is obliged to:
 - a) Immediately notify the relevant Municipal Office of Municipality with extended competence s, SÚJB and other relevant bodies specified in the on-site emergency plan of the occurrence or suspected occurrence of a radiation accident,
 - b) In the case of the occurrence of a radiation accident, ensure that a warning is issued to the public within the emergency planning zone,
 - c) Immediately ensure that the consequences of the radiation incident are dealt with in premises where his activities are performed and take steps to protect employees and other persons from the effects of ionising radiation,
 - d) Ensure monitoring of exposures of employees and other persons and prevent any escape of radionuclides or ionising radiation into the environment,
 - e) Inform relevant bodies, especially of monitoring results, factual and anticipated development of the situation, interventions taken to protect employees and the public, and interventions taken to deal with the radiation incident, and also of factual and anticipated exposure of individuals,
 - f) Control and regulate exposure of employees and persons participating in the radiation incident mitigation within the premises where he performs his activities,
- 7) Cooperate on remedy of the effects of a radiation accident at its installation,
- 8) In the case of the occurrence of a radiation accident, participate in RMN activity,
- 9) Imposes an obligation upon operator to provide the competent regional office and the municipal offices concerned of the municipalities with extended competences with information needed to draw up the off-site emergency plan and to cooperate with them on ensuring emergency preparedness in the emergency planning zone,
- 10) Imposes an obligation upon some ministries to participate in ensuring emergency preparedness, i.e. says that for the needs of RMN on the territory of the Czech Republic:
 - a) The Ministry of Finance shall ensure the operation of specified parts of border crossing monitoring points and shall participate in operation of mobile groups,
 - b) The Ministry of Defence shall participate in operation of Early Warning Network, roadblock monitoring points, mobile groups and airborne groups, ,
 - c) The Ministry of Interior shall participate in operation of mobile groups,
 - d) The Ministry of Agriculture shall participate in operation of water contamination monitoring points and foodstuffs contamination monitoring points,
 - e) The Ministry of Environment shall provide meteorological services and participates in operation of Early Warning Network, air contamination monitoring points and water contamination monitoring points,
 - f) In ensuring and verifying emergency preparedness, the Ministry of Interior shall provide the notification and warning system.
- 11) Sets out that the Ministry of Health shall develop a system of special medical care provided by selected clinics to persons irradiated during radiation accidents.

Details and requirements in the area of emergency preparedness for the case of the occurrence of extraordinary events (radiation incidents and radiation accidents) are set out in implementing regulations to the above mentioned Act:

- *Regulation No. 318/2002 Coll., which sets out details of:*
 - a) Emergency preparedness of nuclear installations and ionising radiation source workplaces,
 - b) Detection of the occurrence of an extraordinary event,
 - c) Assessment of the severity of an extraordinary event,
 - d) Announcement of extraordinary event,
 - e) Intervention management and implementation,
 - f) Methods to limit an exposure of employees and other persons,
 - g) Training of employees and other persons,
 - h) Emergency preparedness verification,
 - i) Requirements for the content of on-site emergency plan and emergency plan.
- *Regulation No. 307/2002 Coll., which, among other things:*
 - a) Defines the general rules for the preparation and implementation of interventions,
 - b) Defines details of the method and extent of radiation protection in interventions to reduce exposure as a result of radiation accidents,
 - c) Determines guidance levels for urgent and long-term protective countermeasures.

- *Regulation No. 319/2002 Coll.*, governing the function and organisation of Radiation Monitoring Network
- *Government Decree No. 11/1999 Coll.*, Imposes obligation upon operator to ensure at own costs the following requirements for:
 - a) Elaboration of a proposal for establishing the emergency planning zone (the operator shall submit this proposal to SÚJB to define the size of emergency planning zone),
 - b) Ensuring the activity of National Radiation Monitoring Network in the emergency planning zone,
 - c) Provision of the population in the emergency planning zone with antidotes,
 - d) Ensuring the press and information campaign for the population in the emergency planning zone for the cases of radiation accidents,
 - e) Ensuring the notification system of involved bodies about occurrence or occurrence suspicion of a radiation accidents,
 - f) For ensuring the warning system of population in the emergency planning zone.

Act No. 239/2000 Coll., which

- a) Specifies the Integrated Rescue System,
- b) Specifies the components of the Integrated Rescue System and their competences,
- c) Specifies the competences and powers of state authorities and local authorities,
- d) Specifies the rights and obligations of legal and natural persons in preparation for extraordinary events and in rescue and remedy works and in protection of the population before and after the announcement of danger, emergency, threat to the state, and state of war.

Act No. 240/2000 Coll., which

- a) Specifies the competences and powers of state authorities and local authorities,
- b) Sets out rights and obligations of legal persons and natural persons engaged in business activity in preparation for crisis situations that are not linked to a defence of the Czech Republic against external attacks, and in crisis management and in protection of critical infrastructure and liability for breach of the above obligations,
- c) Incorporates the relevant regulations of the European Union and governs the specification and protection of the European critical infrastructure.

Implementing regulations were issued to the above listed acts, which, among other things, relate to emergency preparedness and response, and to crisis management in the area of utilisation of nuclear energy and ionising radiation. The relevant details are governed by:

- a) Regulation of the Ministry of Interior No. 328/2001 Coll. Among other things, this regulation sets out:
 - 1) Details of operation of the Integrated Rescue System including principles of coordination and cooperation of the components thereof in joint intervention,
 - 2) Requirements for the content of Integrated Rescue System documentation, method of documentation elaboration and details on alarm stages in the alarm plan,
 - 3) Principles and method of elaboration, approval and use of regional emergency plan and off-site emergency plan,
 - 4) Principles of crisis communication and connection in the Integrated Rescue System.
- b) Regulation No. 380/2002 Coll. Among other things, this regulation sets out details of:
 - 1) Method of provision information to legal and natural persons on the nature of potential threat, prepared measures and the method of their implementation,
 - 2) Technical, operational and organisational operation of the uniform warning and notification system,
 - 3) Method of provision of emergency information.
- c) Government Decree Order No. 462/2000 Coll. Among other things, this Government Decree order sets out:
 - 1) Content and activities and composition of the Security Council of the region and of the municipality with extended competences,
 - 2) Requirements for and method of elaboration of crisis plan.
- d) Government Decree Order No. 432/2010 Coll., on Criteria for Defining Critical Infrastructure Elements. This Decree order defines the criteria for defining an element of critical infrastructure.

Annex 2 Documents of Non-legislative Nature

1. Central Alarm Plan of the Integrated Rescue System
2. Off-site Emergency Plan for Emergency Planning Zone of Dukovany NPP
3. Off-site Emergency Plan for Emergency Planning Zone of Temelín NPP
4. Type Plan Pursuant to the Resolution of the National Security Council No. 295/2002 – Radiation Accident
5. Alarm Plan of the Integrated Rescue System of the Vysočina Region
6. Alarm Plan of the Integrated Rescue System of the South Moravian Region
7. Alarm Plan of the Integrated Rescue System of the South Bohemian Region
8. Agreement on the Planned Assistance on Request (ref. no. MV-146429-2/PO-IZS-2013) concluded between MV – GR HZS ČR and the Ministry of Defence – General Staff of the Armed Forces of the Czech Republic
9. Statute of the Central Crisis Staff, approved by Government Resolution of 24 November 2008 No. 1500

Annex 3 Additional Description of Nuclear Installations

Dukovany NPP

The Dukovany NPP is built in the form of two double-units. Each unit has its own reactor building. Unit flow diagram is of double-circuit type. The primary circuit includes a reactor and six circulation loops, each of which includes a steam generator, reactor coolant pump, electrically operated isolation valves and connecting piping with a diameter of 500 mm. Primary circuit components and containment are situated in the middle part of the reactor building. Emergency core cooling system components together with spray system components are located in the region of the foundations of the reactor building.

The steam generation plant of one unit of Dukovany NPP consists of a heterogeneous pressurized-water power reactor VVER440, type V 213, with a rated thermal capacity of 1444 MW. The reactor pressure vessel and the primary circuit are designed for an overpressure of 13.729 MPa at temperature of 350°C, with a rated overpressure and temperature at reactor outlet of 12.261 MPa and 297.2°C, respectively. The steam generators generate steam with an overpressure of 4.751 MPa and temperature of 260.7°C, which drives the pair of steam turbines. Primary circuit equipment is located in the containment, which prevents radioactive substances from leaking to the surroundings in case of damage to primary circuit integrity. The containment is composed of reinforced concrete walls with steel-sheet lining, which separate all hermetically enclosed regions from the surroundings. The containment is designed for a design overpressure of 0.150 MPa and for a temperature of 127°C.

Temelín NPP

Unit flow diagram is of double-circuit type. The primary circuit consists of a reactor with a rated thermal capacity of 3000 MW (998 MWe) and four cooling circulation loops including main circulation pipeline, reactor coolant pumps and a primary side of horizontal steam generators.

The steam generation plant of one unit of Temelín NPP consists of a heterogeneous pressurized-water power reactor. The reactor pressure vessel and the primary circuit are designed for a pressure of 17.6 MPa at temperature of 350°C (operating pressure is 15.7 MPa at temperatures of 290 - 320°C). The reactor core consists of 163 fuel assemblies and 61 control rods arranged in a hexagonal field. The steam generators generate the steam with a pressure of 6.3 MPa and temperature of 278.5°C, which drives the steam turbine with a capacity of 1000 MWe. Primary circuit equipment is located in the containment, made of pre-stressed concrete; the inner containment surface is covered with a hermetically sealed steel lining. The containment is designed for a design pressure of 0.49 MPa and for a design temperature of 150°C.

LVR -15

Since 2005, the Czech Republic has joined the global initiative of USA, Russian Federation and IAEA GTRI (Global Threat Reduction Initiative), which aims at reducing misuse of nuclear and radioactive materials for terrorist purposes. This initiative includes two projects:

- 1) RRRFR – (Russian Research Reactors Fuel Return) for the return of spent and fresh fuel of Russian origin back to the Russian Federation and RERTR (Reduction of Enrichment from Research and Test Reactors) for the reduction of enriched fuel in research reactors below 20%. The final transport of spent fuel from LVR-15 reactor was completed in April 2013.
- 2) RERTR (Reduction of Enrichment of Research and Test Reactors) reduction of enrichment of fuel in research reactors below 20% ²³⁵U. This programme was commenced in 2009 by transporting 12 fuel assemblies IRT – 4M with enrichment of 19.7% ²³⁵U. There are three fuel assemblies loaded in the reactor since 2010.

Annex 4 Content of Off-site Emergency Plans

A. Content of the off-site emergency plan for emergency planning zone of TEMELÍN NPP

INFORMATION PART

- a) General characteristics of Temelín NPP
- b) Characteristics of the area, particularly from geographical, demographical and climatic point of view, and description of the infrastructure on the territory
- c) List of municipalities, including overview of total population and list of legal persons and natural persons engaged in business activities, which are included in on-site emergency plan
- d) Results of analyses of possible radiation accidents and possible radiological effects on the population, animals, and the environment
- e) System of classification of extraordinary events according to the on-site emergency plan
- f) Requirements for the protection of the population and the environment in relation to intervention levels in a radiation accident
- g) Description of the structure of the organisation of emergency preparedness in emergency planning zone
- h) Description of notification and warning system
- i) Definitions and abbreviations

OPERATIVE PART

- a) Tasks of the administrative authorities, municipalities and components concerned
- b) Method for coordinating radiation accidents management
- c) Criteria to announce appropriate crisis situations if on-site emergency plan is apparently not sufficient to deal with the situation
- d) Method for ensuring information flows in management of the remedy of the consequences of radiation accident
- e) Principles of activities in case of extension or possible extension of the effects of a radiation accident outside the emergency planning zone
- f) Forms, methods and procedures for providing information to the population in the emergency planning zone

C – 1 LIST OF PLANS FOR SPECIFIC ACTIVITIES

- a) List of plans for specific activities

C – 2 NOTIFICATION PLAN

- a) Overview of contact information of the authorities concerned and the organisation of emergency preparedness
- b) Listing of the notification system provided by licensee
- c) Activity of emergency teams, regional office and municipalities after notification

C - 3 WARNING PLAN

- a) Main method of population warning
- b) Alternative method of population warning

C - 4 RESCUE AND REMEDY WORK PLAN

- a) List of components assigned to fulfil tasks in a radiation accident
- b) Need for predetermined forces and means
- c) Method of notification and calling of such components
- d) Protective and technical equipment
- e) Predetermination for fulfilment of specific tasks
- f) Probable site of their deployment
- g) Route of arrival and departure of components
- h) Method of intervention management
- i) Maximum time of deployment of components in the place of intervention
- j) Provision of material, technical and medical services
- k) Method of decontamination and dosimetric check

C - 5 SHELTER PLAN

- a) Principles and methods of suitable sheltering of persons in the emergency planning zone

- b) Principles concerning behaviour of population in sheltering
- c) Principles concerning behaviour of population in sheltering
- C - 6 IODINE PROPHYLAXIS PLAN
 - a) Implementation of iodine prophylaxis
 - b) Use of iodine prophylaxis
 - c) Method of distributing the prophylactics
 - d) Exchange of prophylactics
- C - 7 POPULATION EVACUATION PLAN
 - a) Evacuation principles
 - b) Expected numbers of evacuated persons
 - c) Scope of evacuation measures
 - d) Evacuation security
 - e) Authorities designated for management of evacuation and method of their notification
 - f) Division of responsibility for evacuation
 - g) Monitoring of evacuated persons and decontamination centres
- C - 8 PLAN FOR INDIVIDUAL PROTECTION OF POPULATION
 - a) Possibilities and way of using improvised means
 - b) Amount and structure of individual protection means, places of their storage and ensuring of their issue
 - c) Method of management of used individual protection means
- C - 9 DECONTAMINATION PLAN
 - a) List of decontamination centres and buildings
 - b) Method of decontamination of persons, buildings, transportation and other means and the territory in the emergency planning zone
 - c) Forces and means for decontamination, method of notifying and deploying them
 - d) Radiation control after decontamination
 - e) Method for ensuring spare clothing for contaminated persons
- C - 10 MONITORING PLAN
 - a) National Radiation Monitoring Network
 - b) Submission of reports on monitoring results obtained from the Radiation and Monitoring Network of the Czech Republic
 - c) Submission of reports on monitoring results obtained from the licensee
- C - 11 PLAN FOR REGULATION OF THE MOVEMENT OF PERSONS AND VEHICLES
 - a) Method of regulating the movement of persons
 - b) Tasks related to regulation of the movement of persons and vehicles
 - c) Forces and means for ensuring the regulation and movement of persons, notification, deployment and responsibility for task accomplishment
 - d) Determination of the boundaries of enclosed area
 - e) Determination of the points of entry and exit
- C - 12 TRAUMA PLAN
 - GENERAL PART
 - a) Procedures of Medical Components during Extraordinary Event
 - b) Emergency Medical Service
 - c) In-patient facilities and other components
 - SPECIAL PART – radiation accident
 - a) Principles and procedures for providing medical assistance to the population
- C - 13 PLAN OF VETERINARY MEASURES
 - a) Numbers and location of livestock
 - b) Measures prepared for the survival of livestock and method for securing them
 - c) Livestock to be evacuated
 - d) Methods of veterinary sorting and decontamination of animals
 - e) Measures for livestock affected by radiation accident including removal and destruction of fallen livestock
- C - 14 FOODSTUFF REGULATION AND DISTRIBUTION PLAN
 - a) Method of controlling the contamination of foodstuffs, feedstuffs and water with radionuclides

- b) Method for issuing regulation instructions
 - c) Variants of possible regulation
 - d) Method of disposal of foodstuffs and feedstuffs contaminated with radionuclides
 - e) Method for ensuring and distributing safe foodstuffs, water and feedstuffs
 - f) Protective measures in the area of agriculture and nutrition
 - g) Long-term measures in households
- C - 15 PLAN FOR DEATH MEASURES
- a) Search for and identification of the deceased
 - b) Handling of contaminated remains of the deceased
 - c) Burial of persons
- C - 16 PLAN FOR ENSURING PUBLIC ORDER AND SECURITY
- a) Method for ensuring public order and security
 - b) Tasks in ensuring public order and security
 - c) Forces and means for ensuring the public order and security, notification, deployment and responsibility for task accomplishment
 - d) Determination of the boundaries of enclosed area, main points of entry and exit
 - e) Determination of the points of entry and exit
- C - 17 PLAN FOR COMMUNICATION WITH THE PUBLIC
- a) Overview of contact information of persons from mass media
 - b) Texts (records) of television and radio emergency information
 - c) Radio station frequencies
 - d) Method for verifying the penetration of information
 - e) Alternative method of public information
 - f) Population response to emergency information
 - g) Organisational and material security of press centre
 - h) Contact information of press centres

B. Content of the off-site emergency plan for emergency planning zone of DUKOVANY NPP

Introduction

Responsibility for elaboration of partial documents for individual parts of VHP

Content and structure of the off-site emergency plan

Overview of used abbreviations and symbols

Applicable legislation

A. INFORMATION PART

- A.1 General Characteristics of Dukovany NPP
- A.2 Characteristics of the area
- A.3 List of municipalities, including overview of total population and list of legal persons and natural persons engaged in business activities
- A.4 Results of analyses of possible radiation accidents and radiological effects on the population, animals, and the environment
- A.5 System of classification of radiation accident according to the on-site emergency plan
- A.6 Requirements for the protection of the population and the environment in relation to intervention levels in a radiation accident
- A.7 Description of the structure of the organisation of emergency response in the emergency planning zone including competences of their components to carry out the necessary activities
- A.8 Description of notification and warning system including links to licensee and transmission of information within the organisation of emergency preparedness in the emergency planning zone

B. OPERATIVE PART

- B.1 Tasks assigned to administrative authorities, municipalities and components, to which the measures from VHP apply
- B.2 Method for coordinating radiation accident management
- B.3 Criteria to announce appropriate crisis situations if the off-site emergency plan is apparently not sufficient to deal with the radiation accident

- B.4 Method for ensuring information flows in management of the remedy of the consequences of radiation accident
- B.5 Principles of activities in case of extension or possible extension of the effects of a radiation accident outside the emergency planning zone and cooperation of administrative authorities and municipalities, to which the measures from VHP apply
- C. PLANS FOR SPECIFIC ACTIVITIES
- C.1 NOTIFICATION PLAN
 - 1. Names of persons and names of institutions, addresses and method of contact
 - 2. Listing of the notification system provided by Dukovany NPP
 - 3. Activity of each emergency team and competent employees of regional offices, municipalities with extended competences and municipalities to be carried out after notification
- C.2 POPULATION WARNING PLAN
 - 1. Main method of population warning including description of activities to be carried out by the population after warning
 - 2. Alternative method of population warning
- C.3 RESCUE AND REMEDY WORK PLAN
 - 1. Need for predetermined forces and means, which is based on the local alarm plan
 - 2. List of components assigned to fulfil tasks in a radiation accident at a nuclear power plant
 - 3. Method of notification and calling of such components, protective and technical equipment, predetermination for fulfilment of specific tasks including any particular deployment, probable site of their deployment, route of arrival and departure
 - 4. Method of intervention management
 - 5. Maximum time of deployment of the components in the place of intervention with regard to threat to health of the components
 - 6. Provision of material, technical and medical services to the components
 - 7. Method of decontamination and dosimetric check of persons and technology
- C.4 POPULATION SHELTER PLAN
 - 1. Method of suitable sheltering of persons in the emergency planning zone
 - 2. Principles concerning behaviour of population in sheltering
 - 3. Principles of supply of foodstuffs and water to sheltered population
- C.5 IODINE PROPHYLAXIS PLAN
 - 1. Method of using iodine prophylaxis
 - 2. Method of distribution, exchange and dosage of iodine prophylactics
 - 3. Numbers of prophylactics
- C.6 POPULATION EVACUATION PLAN
 - 1. Evacuation principles
 - 2. Numbers of evacuated persons
 - 3. Scope of evacuation measures
 - 4. Evacuation security
 - 5. Authorities designated for management of evacuation and method of their notification
 - 6. Division of responsibility for evacuation
 - 7. Monitoring of evacuated persons including decontamination centres
- C.7 PLAN FOR INDIVIDUAL PROTECTION
 - 1. Possibilities and method of using improvised means for the protection of respiratory tract, eyes and body surface
 - 2. Amount and structure of individual protection means, places of their storage and ensuring of their issue
 - 3. Method of disposal of the means used
- C.8 DECONTAMINATION PLAN
 - 1. List of decontamination centres and buildings
 - 2. Method of decontamination of persons and clothing, buildings, transportation and other means and the territory in the emergency planning zone
 - 3. Forces and means for decontamination, method of notifying and deploying them
 - 4. Radiation control after decontamination

- 5. Method for ensuring spare clothing for contaminated persons
- C.9 MONITORING PLAN
 - 1. Methods for submitting reports on monitoring results obtained from the National Radiation Monitoring Network
 - 2. Method of handling and disclosure of information obtained from licensee
- C.10 PLAN FOR REGULATION OF THE MOVEMENT OF PERSONS AND VEHICLES
 - 1. Determination of the boundaries of enclosed area
 - 2. Determination of the points of entry and exit
 - 3. Method of regulating the movement of persons
 - 4. Forces and means for ensuring the regulation of the movement of persons and vehicles, their notification, deployment and responsibility for task accomplishment
 - 5. Tasks related to regulation of the movement of persons and vehicles
- C.11 TRAUMA PLAN
 - 1. Principles and procedures for providing medical assistance to the population, or individuals, who ensure measures to reduce exposure or who carry out rescue works, and who were exposed in connection with a radiation accident (external exposure, internal contamination) or affected by combination of multiple emergency traumas
 - 2. Method for providing medical assistance to evacuated or sheltered population
- C.12 VETERINARY PLAN
 - 1. Numbers and location of livestock
 - 2. Measures prepared for the survival of livestock and method for securing them
 - 3. Livestock to be evacuated, their numbers, routes of transport, methods of their treatment and places of their subsequent location
 - 4. Method of veterinary sorting and decontamination of animals
 - 5. Measures for livestock affected by radiation accident including removal and destruction of fallen livestock
- C.13 PLAN FOR REGULATION AND DISTRIBUTION AND INGESTION AND USE OF FOODSTUFFS, FEEDSTUFFS AND WATER
 - 1. Method of controlling the contamination of foodstuffs, feedstuffs and water with radionuclides
 - 2. Method for issuing regulation instruction
 - 3. Variants of possible regulation
 - 4. Method of disposal of foodstuffs and feedstuffs contaminated with radionuclides
 - 5. Method for ensuring and distributing safe foodstuffs, water and feedstuffs
- C.14 PLAN FOR MEASURES TAKEN TO DEAL WITH DEATH OF PERSONS IN CONTAMINATED AREA
 - 1. Search for and identification of the deceased
 - 2. Handling of contaminated remains of the deceased
 - 3. Burial of persons
- C.15 PLAN FOR ENSURING PUBLIC ORDER AND SECURITY
 - 1. Method for ensuring public order and security
 - 2. Activity to be carried out by competent authorities and municipalities
- C.16 PLAN FOR COMMUNICATION WITH THE PUBLIC AND MASS MEDIA
 - 1. Overview of contact information of persons from mass media
 - 2. Texts of records of television and radio emergency information including method of its preparation and update
 - 3. Frequencies and alternative frequencies of radio stations
 - 4. Method for verifying the penetration of warning broadcasts
 - 5. Alternative method of public information
 - 6. Forms, methods and procedures in providing information to the population on actual threat and subsequently adopted measures to protect the population
 - 7. Organisational and material security of press centre

Annex 5 Content of the Regional Emergency Plan

INTRODUCTION - includes the definition of the emergency plan of the region, defining its content and use.

INFORMATION PART

Characteristic of the Region – informative set of data of the relevant region, including the geographic, climatic and hydrological characteristic of the region and description of infrastructure.

Analysis of Origination of Extraordinary Events – description of the method of performance of risk analysis (summary analysis of origination of extraordinary events and detailed risk analysis), specification of extraordinary events, surveys of endangering and endangered buildings.

OPERATIVE PART

Forces and Means for Rescue and Remedy Works – partial document on forces and means for rescue and remedy works; it informs about the providers of such forces and means.

PLANS FOR SPECIFIC ACTIVITIES

Notification Plan – plan of technical and organisational measures to ensure transfer of information on imminent or existing extraordinary event to crisis management bodies and other legal persons and business persons specified by the emergency plan.

Trauma Plan – plan of tasks and management methods in health sector with focus on activities in case of large-scale disasters, contacts to health care services and facilities.

Plan of Population Warning – plan of method of warning the population when any danger emerges. It specifies, among other things, the definition of the only existing “General Alert” warning signal (warble siren tone during 140 s). It familiarizes with the task of the notification centres and end elements of warning (sirens, municipal radios). It informs of the alternative warning method, of the method of transfer of emergency information, of the method of information about end of danger and of distribution of responsibility for execution of population warning. The plan reflects the requirements on maximum coverage of the region territory by technical warning means.

Plan of Population Sheltering – plan on principles of ensuring protection by sheltering. It includes the principles of improvised sheltering, informs of responsibility for implementation of sheltering measures.

Plan of Individual Protection of Population – plan of utilization of individual protection means for specified population categories for the period of threat of the country and state of war (child protection bags, child protection jackets, protective masks for children and adult population including protection filters and protective clothing). The means are intended exclusively for protection against toxic, radiation and infection effects of combat toxic, radioactive and biological substances. The individual protection (the protection of the individual's air passages, eyes and body surface) is ensured primarily through use of improvised protection means (e.g. plastic raincoats, rubber boots, caps, scarves, etc.).

Plan of Population Evacuation – plan of measures for organised relocation of persons, farm animals and material means from the areas endangered by the extraordinary event to new dislocation places. The plan schema consists of the principles of implementation of evacuation, the extent of evacuation measures, evacuation bodies and distribution of responsibility for implementation of evacuation; the health care, transport, safety and information provision of the evacuation is specified. The measures of the plan take precedence over the measures of the Plan of emergency survival of population.

Plan of Emergency Survival of Population – plan to overcome critical burden caused by the effect of extraordinary situation on health and lives of population. It includes emergency accommodation, supply of foodstuffs and water, emergency basic services for population,

emergency supplies of energy, organisation of humanitarian aid and other preparation of conditions for emergency survival. From organisational perspective, the plan measures follow up the measures of the Evacuation plan.

Monitoring Plan – plan of methods and procedures of continuous observation, measuring and evaluation of quantities from the perspective of the hydrological, meteorological, climatic, radiation and chemical situation, including transport of hazardous substances, as well as atmosphere and water cleanness, methane leakage and incidence of epidemics and epizootics.

Emergency Plan of Veterinary Measures – plan for the case of origination of dangerous animal infections. From the veterinarian perspective, it deals with cases of incidence of foot-and-mouth disease, pig plague, Newcastle disease, BSE and sheep catarrhal fever. It expresses principles for veterinarian activities in case of radiological and chemical emergency and for protection against effects of bacteriological means.

Plan of Public Order and Security – plan of fulfilment of tasks of the Police of the Czech Republic as the basic component of the Integrated Rescue System in case of origination and dealing with extraordinary events. It includes operational management of the police, their forces and means and cooperation within the Integrated Rescue System in the spirit of maintenance (recovery) of public order and security.

Plan of Protection of Cultural Monuments - plan of purposeful solution of protection of cultural monuments against negative impacts of extraordinary events. The protection concerns both movable and immovable cultural monuments.

Plan of Hygiene and Anti-epidemic Measures – the plan describes and analyses hygiene anti-epidemic measures and lists the forces and means for such measures. It includes the Emergency plan for the case of outbreak of dangerous infectious diseases with distribution of responsibilities, procedures for notification of extraordinary events and use of emergency groups of the regional hygiene station.

Plan of Communication with the Public and the Mass Information Media - plan for communication with the public and the mass information media, including texts of TV and radio broadcasts prepared in advance. It familiarizes with the forms, methods and procedures of informing the population about current threat by extraordinary event. It informs of the press centre and of the responsibility for communication with the public and the mass information media.

Plan of Disposal of Wastes Generated during Extraordinary Event – plan of specification of wastes, including waste water after decontamination, including a list of waste dumps, incinerators and other facilities for waste disposal. In the end, it distributes responsibilities and specifies supervision for waste disposal.

Plan of Measures for Large-scale Death of Persons – plan of procedures and measures for large-scale death of persons caused by origination and continuation of extraordinary event. It prescribes procedures for determination and notification of deaths, for search for dead persons and their identification, for handling of mortal remains and the actual burying process.

Decontamination Plan – plan of disposal of hazardous and harmful substances from surfaces and environments. It defines disposal of substances by substance types, by affected objects (who or what is affected) and execution of disposal (partial and full). It informs of means where the decontamination is carried out and specifies detoxication, deactivation and disinfection.

Plan of Psychological and Spiritual Assistance – plan of acute post-traumatic intervention care and basic psychological and spiritual assistance to be provided to the population in case of crisis events that may occur during or after extraordinary events.

Annex 6 Type Plan – Radiation Accident

1. Brief description of crisis situation and possibilities of its occurrence on the territory of the Czech Republic

- 1.1. Causes (originators) of the occurrence and duration of crisis situation
- 1.2. Crisis situation development scenario

2. Impacts of crisis situation

- 2.1. Impacts on lives and injury to health of persons
- 2.2. Destruction or damage to property
- 2.3. Harm to the environment
- 2.4. International impacts
- 2.5. Economic impacts
- 2.6. Social impacts
- 2.7. Impacts on maintenance of the necessary range of basic functions of the state in crisis situation and so-called critical infrastructure
- 2.8. Other impacts

3. Conditions (prerequisites) for crisis management

- 3.1. Legal conditions
- 3.2. International conditions and links
- 3.3. National conditions
- 3.4. Conditions for maintenance of the necessary range of basic functions of the state in crisis situation and so-called critical infrastructure
- 3.5. Other conditions

4. Limitations (obstacles) in crisis management

5. Recommended type procedures, principles and measures for crisis management

- 5.1. Required target state and centre of activity
- 5.2. Preventive measures
- 5.3. Responsibility for crisis management
- 5.4. Principles of situation monitoring, information transfer, notification of threat of the occurrence of crisis situation and methods of warning
- 5.5. Type procedures and measures implemented at the time of threat of the occurrence of crisis situation
- 5.6. Type procedures and measures implemented at the time of the occurrence of crisis situation
- 5.7. Type procedures and measures implemented in crisis management
- 5.8. Type procedures and measures implemented in the stage of remedy of the consequences of crisis situation
- 5.9. Requirements for extra forces and means
- 5.10 Requirements for extra resources

6. Information for the elaboration of type plan includes:

- 6.1. Special information
- 6.2. Technical information
- 6.3. Organisational information

7. Identification information of the author of type plan

Annex 7 Education and Information of Population

Children and youth

The preparation of this group takes place particularly in elementary and secondary schools, in compliance with valid education documents including protection of people in case of common risks and extraordinary events. It has been gradually amended and developed since 1991.

In 2013, the General Education Program for Elementary Education (the education document valid at present) was updated and the issue of protection of people in case of common risks and extraordinary events was included into it in far larger extent.

The curriculum and the partial goals were specified. The above stated issue is included in seven out of the total nine educational areas. The curriculum is focused on protection of persons against consequences of natural disasters, including the indispensable skills (principles of behaviour in case of flood, earthquake, large earth slides, volcanic eruptions, atmospheric disruptions, fires, avalanche dangers), against consequences of leakage of hazardous substances to the environment, including the indispensable skills (improvised protection of persons in case of leakage of radioactive, chemical and biological substances), etc.

In 2014, similarly to elementary education, the Fire Rescue Service of the Czech Republic will cooperate with the Ministry of Education, Youth and Physical Education on reviewing the general education programs for secondary education, focusing the education more on the theoretical part of the issue (legal standards, rights and obligations of citizens and legal entities, etc.).

Teachers are being prepared to teach this issue. Future teachers are being prepared at universities, in compliance with the Government Resolution 734/2011, specifying three so called study bases for individual education disciplines of the schools, including, among other things, also issues related to radiation accident. Those study bases have been gradually introduced in education of individual universities.

Training courses are being implemented for the existing teachers who are going to teach newly the issue of protection of people in case of common risks and extraordinary events at elementary and secondary schools. The courses are organised by the national Institute for Further Education, and the Fire Rescue Service of the Czech Republic takes part in them by sending its instructors, or the Fire Rescue Service of the Czech Republic organizes them independently (from 2014 in newly accredited education programs).

Additionally, the methodical tool called Documentation for teaching of topics of protection of people in case of common risks and extraordinary events was elaborated for teachers, in cooperation with the Research Institute for Education, Ministry of Health and the “Záchraný kruh Association”; the tool offers the teachers a set of basic concepts, a draft of distribution of curriculum into individual grades, the recommended methods and forms of work, literature, aids, useful references, an outline of integration of the issue in the existing general education program for elementary education and draft of test questions for individual grades of elementary schools.

Additionally, the Fire Rescue Service of the Czech Republic implements further activities to complement and develop the lessons:

- a) It helps to prepare practical training,
- b) It organizes competitions (movement-knowledge, art competitions),
- c) It organizes talks for pupils, students and teachers,

- d) It organizes demonstrations of activities of fire brigade units (independently or in cooperation with other components of the Integrated Rescue System),
- e) It enables educational tours of schools to the Fire Rescue Service stations of regions,
- f) It prepares or is involved in creation of textbooks and handbooks for teaching (see below).

Adult population

The adult population is the largest group; it can be subdivided by spheres of interests, e.g. into work-active population, pensioners, mothers with children, handicapped citizens, etc. The transfer of information to this group is more difficult and it is influenced by different secondary factors: lack of time, overload of different commercial information, difficult passing of information, lack of interest to approach actively the gathering of information, diverse interests, etc.

This target group is not regularly educated, but different projects are implemented for them, informing, among other things, also about the issue of radiation accident.

Fire Rescue Service of the Czech Republic implements a number of state-wide projects for this group. They include particularly:

- a) “Your Path to Safety, or Advice from Smart Blondes” Project - it is an information-education project of the Fire Rescue Service of the South Moravian Region. It was created in cooperation of the Fire Rescue Service of the South Moravian Region, the Regional Direction of the Police of the South Moravian Region and the Diocesan Charity of Brno. The workers of the above stated institutes pass information on three spheres - protection of population, fire prevention and the citizen's security - including 33 topics. The project has resulted in a self-standing handbook.
- b) Internet site of the Fire Rescue Service of the Czech Republic,
- c) “Good Fortune Smiles on Those Prepared” Project - a series of short video clips made by the Institute of Protection of Population of Lázně Bohdaneč (IOO of Lázně Bohdaneč) and serving as guideline how to act in hazardous situations that can happen to each of us,
- d) The Fire Rescue Service of the Karlovy Vary Region, in cooperation with the Záchraný kruh o.s. Association, has created the “Information System for Towns and Villages”, providing the most important advice, guidelines and information from the world of risks and hazards for the population (site visitors) of towns and villages,
- e) Organisation of expert conferences.

Simultaneously with the above stated big projects, there are smaller, but not less important projects taking place at regional level. They include particularly:

- a) Information of citizens through regional radio stations,
- b) Cooperation with other organisations,
- c) Organisation of expert conferences,
- d) Transfer of information within demonstration of activities,
- e) Creation and distribution of materials among citizens,
- f) Cooperation with citizens' associations.

Non governmental non-profit organisations

The activities supporting the preparation of population are carried out by the Fire Rescue Service of the Czech Republic in cooperation with other organisations.

The “Záchraný kruh ' Association” has created an integrated project called "Záchraný kruh" ("Life Ring"). The project is aimed at increasing the education level and preparedness of the population (particularly of children and youth), but also of other entities and organisations, in the area of common risks, risks of extraordinary events and crisis situations.

In the scope of the Záchranný kruh integrated project, the Fire Rescue Service of the Czech Republic acts as one of the main expert partners and, additionally to methodical professional support in the area of integrated project development, it acts as partner in the following partial projects:

1. "Security Portal - Efficient Tool for First Aid Education of Children and Youth and their Parents and Teachers" Project with the output in form of Interactive Multimedia First Aid Handbook that was created with financial support from the Czech Republic budget through the non-investment grant of the Ministry of Health. A high-quality, efficient, but also interesting and attractive tool intended particularly for education of children and youth in the area of first aid but also for education of general public was created within this project. The Fire Rescue Service of the Czech Republic was involved in the project providing methodical expert help and at present it is involved in divulging the project within the Czech Republic.
2. "Internet Security Portal" Project – an education, information, communication and evaluation tool for life, that has expanded the www.zachranny-kruh.cz security portal to nationwide level, creating or extending particularly the publication and news system as well as other partial portal modules, and creating a high-quality testing and examining system for teachers in the scope of education at schools in the areas of protection of health, lives, environment and property. The project was created with financial support from state budget of the Czech Republic through the investment grant of MV – GŘ HZS ČR.
3. The "Protect Your World, Protect Your Life" Project is focused on activities related to schools and school facilities, children and young people. The project was supported from the EU means through a grant of the Education for Competitiveness Operation Program. The main project goal consists in system support and assistance to schools and school facilities in teaching and education with regard to the issues of protection of life, health, environment and property (summarizing topics). The project is focused on introduction of new teaching methods, organisation forms and education activities leading to develop the key competences of pupils and teachers. The project created 11 interactive multimedia teaching courses focused on teaching in the areas of common risks and of extraordinary event risks. Further, high-quality worksheets and other education tools including methodologies for teachers were created. The Fire Rescue Service of the Czech Republic was involved in this project particularly by providing expert methodical assistance; it is also involved in divulging the project all over the Czech Republic.
4. "Road and Railway Transport Risks" Project, with output in form of interactive multimedia handbook of traffic education, created with financial support from the Czech state budget through the non-investment grant of MV – GŘ HZS ČR. The project is intended particularly for teachers and parents to educate and prepare children and youth in the sphere of risks of road and railway transport and in the sphere of their desirable behaviour, but also for self-standing preparation of children and youth, based on motivational approach thanks to interesting design. The project constitutes another part and partial project of the "Záchranný kruh" integrated project, following up the three preceding projects.
5. "Timely Knowledge Is Forever" Project - a project intended for kindergartens. Completely new didactic and methodical aids for kindergarten teachers were created within the project; they serve for education in the spheres of common risks, personal safety, fire, extraordinary events, traffic and environmental education.

All products created within partial projects 1 – 4 are available freely and at no cost at the www.zachranny-kruh.cz security portal and at present, they are used at state-wide level, particularly within education at all types of schools, but also for education of the public and of the population as such, and the Fire Rescue Service of the Czech Republic is involved in their dissemination.

Another supporting activity in which selected Fire Rescue Service units of the regions cooperate, consists in the program of education system of elementary school pupils called "HASÍK CZ". It consists in passing information to elementary school children in form of talks

on the sphere of protection of population and fire protection, in compliance with specified content focus. The information is passed by appointed pair of activists who have passed instructor courses organised by Citadela Bruntál o.s.

The Centre for Safe State organisation, with MV – GŘ HZS ČR as expert guarantor, implements the “Population Protection” Project. The project is aimed at improving the information level of the citizens about what to do in crisis situations. The special-purpose publication “What to Do...” - or A Pocket Guide to Crisis Situations at Home and Abroad was published within the project, under expert cooperation of MV – GŘ HZS ČR, expert responsibility of the Czech Police Headquarters and the Department of Urgent Medicine and Disaster Medicine of the Institute of Postgraduate Education in Health Sector and it is now distributed through the Regional Fire Rescue Service to all elementary, secondary and higher professional schools all over the Czech Republic. Further, video clips were made within the project and broadcast on TV. A significant activity consisted also in communication with citizens on the website through answers to questions sent in by the public. MV – GŘ HZS ČR is involved in such activities as well.

The Association of Fire Fighters of Bohemia, Moravia and Silesia is a significant organisation with 3,464 collectives of young fire fighters all over the Czech Republic, cared for by 6 194 adult supervisors. Children from the age of 6 years visit the collectives. Members aged 6-11 years learn playfully how to call the fire fighters, how to classify the fire extinguishers and how to use them, how to give first aid, etc. Members aged 11-15 years are familiarized with activities - how to behave correctly if there is fire in the house, how to behave when an extraordinary event emerges, how to orientate themselves in the wild, what to pack into evacuation luggage, etc.

The collective supervisors cooperate with elementary schools in education of other children. Passing of information is based on communication among children, i.e. among the Association members and elementary school children. The collective supervisors cooperate with the elementary school on organising demonstrations of their activities where the children show to their peers what they have learned in the Association of Fire Fighters.

The following materials were issued to support the education of population:

- 1) Štěstí přeje připraveným (Good Fortune Smiles on Those Prepared) - a series of short video clips “Good Fortune Smiles on Those Prepared” made by the Institute of Protection of Population of Lázně Bohdaneč (IOO of Lázně Bohdaneč) and serving as guideline how to act in hazardous situations that can happen to each of us. The individual video clips may be copied free of charge for further use.
- 2) HANDBOOK “PRO PŘÍPAD OHROŽENÍ (IN CASE OF DANGER)” - Handbook for inhabitants; MV – GŘ HZS ČR; ISBN: 80-86640-18-3; Prague 2003.
- 3) OCHRANA ČLOVĚKA ZA MIMOŘÁDNÝCH UDÁLOSTÍ (HUMAN PROTECTION DURING EXTRAORDINARY EVENTS) - Handbook for teachers of primary and secondary schools; MV – GŘ HZS ČR; ISBN: 80-86640-08-6; Prague 2003.
- 4) OCHRANA ČLOVĚKA ZA MIMOŘÁDNÝCH UDÁLOSTÍ (HUMAN PROTECTION DURING EXTRAORDINARY EVENTS) (DVD ROM) – interactive educational software “Schola ludus”; F. X. Šalda Grammar School Liberec 2006 – cooperation of MV – GŘ HZS ČR on creation.
- 5) SEBEOCHRANA OBYVATELSTVA (POPULATION SELF-PROTECTION) – Methodological tool for state authorities, local authorities, legal persons and natural persons engaged in business activity; MV – GŘ HZS ČR; ISBN 80-86284-12-3; Prague 2001.
- 6) VAŠE CESTY K BEZPEČÍ ANEB CHYTRÉ BLONDÝNKY RADÍ (YOUR PATH TO SAFETY, OR ADVICE FROM SMART BLONDES) – Information-education project of the Fire Rescue Service of the South Moravian Region, Regional Directorate of Police of the South Moravian Region and the Diocesan Charity of Brno; The Fire Rescue Service of the South Moravian Region; 2011.
- 7) DVD OCHRANA ČLOVĚKA ZA MIMOŘÁDNÝCH UDÁLOSTÍ (HUMAN PROTECTION DURING EXTRAORDINARY EVENTS) – Emergencies with release of hazardous substances, floods and human protection before ambulance arrival; MV – GŘ HZS ČR; 2005.

- 8) JAK SI ZACHRÁNIT ŽIVOT A ZDRAVÍ PŘI MIMOŘÁDNÝCH UDÁLOSTECH (HOW TO SAVE LIVE AND PROTECT HEALTH DURING EXTRAORDINARY EVENTS) – Kubíčková Z; Beňo M; National Institute for Further Education; cooperation of the Fire Rescue Service of the Capital City of Prague; Prague 2006.
- 9) CO DĚLAT... (WHAT TO DO ...) - A pocket guide to crisis situations at home and abroad; Centrum pro bezpečný stát, o.s.; ISBN 978-80-904066-1-2; Prague 2008; expert advisor - MV – GŘ HZS ČR – IOO LB.
- 10) PROSTŘEDKY INDIVIDUÁLNÍ OCHRANY (MEANS OF INDIVIDUAL PROTECTION) – Handbook for for state authorities, local authorities, legal persons, natural persons engaged in business activity and population; Krupka M.; ISBN 80-86640-11-6; MV – GŘ HZS ČR; Prague 2003.
- 11) CHOVÁNÍ OBYVATELSTVA V PŘÍPADĚ HAVÁRIE S ÚNIKEM NEBEZPEČNÝCH CHEMICKÝCH LÁTEK (POPULATION BEHAVIOUR IN CASE OF EMERGENCY WITH RELEASE OF HAZARDOUS CHEMICAL SUBSTANCES) – Handbook for for state authorities, local authorities, legal persons, natural persons engaged in business activity and population; Kroupa M; ISBN 80-86640-23-X; MV – GŘ HZS ČR; Prague 2004.
- 12) HAVÁRIE (EMERGENCIES) - interactive educational software; Záchranný kruh Association; Karlovy Vary 2010; partner of the project: MV – GŘ HZS ČR.
- 13) MIMOŘÁDNÉ UDÁLOSTI I. (EXTRAORDINARY EVENTS I) - interactive educational software; Záchranný kruh Association; Karlovy Vary 2010; partner of the project: MV – GŘ HZS ČR.
- 14) MIMOŘÁDNÉ UDÁLOSTI II. (EXTRAORDINARY EVENTS II) - interactive educational software; Záchranný kruh Association; Karlovy Vary 2010; partner of the project: MV – GŘ HZS ČR.

Furthermore, MV – GŘ HZS ČR participated in development of textbooks for primary and secondary schools:

- 1) Ochrana člověka za mimořádných událostí - Osobní bezpečí (Human protection during extraordinary events - Personal safety), Felix Černocho; Published by ALBRA; ISBN 80-86490-90-4; 2004, methodological handbook for the first tier of primary schools.
- 2) Ochrana člověka za mimořádných událostí - Osobní bezpečí - Neztratím se? Neztratím! (Human protection during extraordinary events - Personal safety - Will I get lost? No I won't!), Felix Černocho; Published by ALBRA; ISBN 80-86490-91-2; 2004 textbook for the first year of primary schools, approval clause of the Ministry of Education, Youth and Sports.
- 3) Ochrana člověka za mimořádných událostí - Osobní bezpečí - Bezpečí a nebezpečí (Human protection during extraordinary events - Personal safety - Safety and danger), Felix Černocho; Published by ALBRA; ISBN 80-86490-92-0; 2004, textbook for the second year of primary schools, approval clause of the Ministry of Education, Youth and Sports.
- 4) Ochrana člověka za mimořádných událostí - Osobní bezpečí - Počítej se vším (Human protection during extraordinary events - Personal safety - Be ready for anything), Felix Černocho; Published by ALBRA; ISBN 80-86490-93-9; 2004, textbook for the third year of primary schools, approval clause of the Ministry of Education, Youth and Sports.
- 5) Ochrana člověka za mimořádných událostí - Osobní bezpečí - S mapou nezabloudím (Human protection during extraordinary events - Personal safety - Don't get lost, keep a map), textbook for the forth year of primary schools, Felix Černocho; Published by ALBRA; ISBN 80-86490-94-7; 2004, approval clause of the Ministry of Education, Youth and Sports.
- 6) Ochrana člověka za mimořádných událostí - Osobní bezpečí - Pomáhám zraněným (Human protection during extraordinary events - Personal safety - Helping the injured), textbook for the fifth year of primary schools, Felix Černocho; Published by ALBRA; ISBN 80-86490-95-5; 2004, approval clause of the Ministry of Education, Youth and Sports.
- 7) Ochrana člověka za mimořádných událostí – Povodně (Human protection during extraordinary events - Floods), textbook for the sixth year of primary schools, Mgr. Miroslav Sedláček; Published by ALBRA; ISBN 80-7361-026-4; 2006, approval clause of the Ministry of Education, Youth and Sports.
- 8) Ochrana člověka za mimořádných událostí – Požáry (Human protection during extraordinary events - Fires), textbook for the seventh year of primary schools, Mgr. Miroslav Sedláček; Published by ALBRA; ISBN 80-7361-027-2; 2006, approval clause of the Ministry of Education, Youth and Sports.
- 9) Ochrana člověka za mimořádných událostí – Havárie (Human protection during extraordinary events - Emergencies), textbook for the eighth year of primary schools,

Mgr. Miroslav Sedláček; Published by ALBRA; ISBN 80-7361-028-0; 2006, approval clause of the Ministry of Education, Youth and Sports.

- 10) Ochrana člověka za mimořádných událostí – Od vichřice k zemětřesení (Human protection during extraordinary events - From storm to earthquake), textbook for the ninth year of primary schools, Mgr. Miroslav Sedláček; Published by ALBRA; ISBN 80-7361-029-9; 2006, approval clause of the Ministry of Education, Youth and Sports.
- 11) Ochrana člověka za mimořádných událostí - Sebeochrana a vzájemná pomoc (Human protection during extraordinary events - Self-protection and mutual assistance), textbook for civic and family education at primary schools, Horská, V.; Marádová, E.; Slávik, D.; Published by Fortuna; ISBN 80-7168-829-0; 2002, approval clause of the Ministry of Education, Youth and Sports.
- 12) Ochrana člověka za mimořádných událostí - Havárie s únikem nebezpečných látek, Radiační havárie (Human protection during extraordinary events - Emergency with release of hazardous substances, radiation accident), textbook for chemistry and physics at primary schools, Beneš, P., et al.; Published by Fortuna; ISBN 80-7168-818-5; 2002, approval clause of the Ministry of Education, Youth and Sports.
- 13) Ochrana člověka za mimořádných událostí - Živelní pohromy (Human protection during extraordinary events - Natural disasters), textbook for geography and biology at primary schools, Herink, J.; Balek, V.; Published by Fortuna; ISBN 80-7168-830-4; 2002, approval clause of the Ministry of Education, Youth and Sports.
- 14) Ochrana člověka za mimořádných událostí (Human protection during extraordinary events), textbook for the first year of primary schools, Danielovská, V.; Published by Fortuna; ISBN 80-7168-864-9; 2003, approval clause of the Ministry of Education, Youth and Sports.
- 15) Ochrana člověka za mimořádných událostí (Human protection during extraordinary events), Balek V.; Čapoun T.; Janota H.; Linhart P.; Ločárek M.; Pacinda Š.; Urban I.; Published by Fortuna; ISBN 80-71-68-869-X; 2003, textbook for secondary schools.

Annex 8 Uniform System of Warning and Information

The uniform system of warning and information has been developed in the Czech Republic since 1991. The system consists of a network of alarm sirens and local information systems (so called municipal radios) of so called end warning elements ensuring immediate warning of the population, further of a system for transfer of signal and information and of the infrastructure for control of alarm sirens and notification of persons. The uniform system of warning and information is a fully selective system, which means that it is possible to choose activation of all end warning elements or of individual sirens or local information systems depending on the extent of the extraordinary event and on the requirements on warning and information of the population.

If an extraordinary event is imminent or emerges, the population is warned primarily through the “General Alert” warning signal. The signal is sounded by warble tone of siren during 140 seconds and it can sound three consecutive times at approximately three-minute intervals. The signal is immediately followed by spoken emergency information notifying the population of the data on the imminent or emerged extraordinary event and of the measures for protection of population. The provision of such emergency information is performed through the end warning elements, fitted with the module for transmission of voice information, or the emergency information is transmitted through mass communication media.

There are several types of sirens: the most modern ones - electronic, fitted with voice module; the electric rotatory ones - with remote control receiver; the electric rotatory ones, controlled locally by button; and local information systems enabling transmission of warning signal and passing of voice emergency information and included in the remote control system.

The availability of the warning system is examined by acoustic test carried out usually on first Wednesday of each month on the whole territory of our republic. On that day, at 12.00, the sirens sound with the continual testing tone during 140 seconds; electronic sirens notify the citizens also by voice.

At present, the Fire Rescue Service of the Czech Republic has more than 5 000 sirens under its competence (most of them can be remotely controlled), covering with warning signal 85% of populated territory of the Czech Republic.

Electrical and electronic sirens for timely warning of population are deployed in the emergency planning zone surrounding the NPP. Those end warning elements are controlled both by the Fire Rescue Service of the Czech Republic and by the actual JEZ, and they are owned by ČEZ a.s., in compliance with the Atomic Act.

Annex 9 Humanitarian Aid

Procedure for the case of origination of an extraordinary event or crisis situation abroad, decision-making process applied in case of deployment of forces and means in international rescue operations and in delivery of humanitarian aid to foreign countries

1. PRIMARY INFORMATION

The ÚSÚ, usually the Ministry of Interior or the Ministry of Foreign Affairs receives the information on a serious extraordinary event abroad (in compliance with the relevant international treaty or international convention, from an international organisation (UN-OCHA, ERCC, NATO-EADRCC, IAEA, etc.) or from another foreign body (e.g. a representative office), from the media, etc.), or it receives direct solicitation for help from the affected state.

2. EVALUATION OF INFORMATION

The state administration bodies consult the available information with each other and evaluate them. At the same time, they assess whether the Czech Republic is able to provide the required form of aid. The information on an extraordinary event is consulted between the Ministry of Interior or the Ministry of Foreign Affairs, or possibly with other ministries and ÚSÚ; the method of provision of aid is technically prepared and the predetermined forces and means are informed.

3. DECISION MAKING

After assessing the situation and finding that the provision of aid is appropriate and possible, the ministers of the interior and of foreign affairs are informed and required to make a decision. In case of a request on sending rescuers or material aid, the minister of the interior suggests possible variants or commodities that can be provided by the Czech Republic. The minister of foreign affairs decides on the release of the relevant funds.

4. ACTIVATION OF FORCES AND MEANS

After the decision on provision of aid in specified financial amount, the predetermined forces and means are activated and the specialists are gathered, the sending of material aid or rescue unit is prepared, the documentation for sending of aid is prepared, the commander of the unit or of the convoy is appointed, the foreign currency means are issued and other details are specified. In order to accelerate this stage, the process runs according to prepared model procedures with indispensable situation-specific deviations.

5. IMPLEMENTATION

The material aid or the rescue unit leaves the territory of the state in specified manner and gets involved in on-site rescue works or fulfilment of further tasks.

Annex 10 List of Bilateral Agreements

1. Agreement between the Government of the Czechoslovak Socialist Republic and the Government of the Republic of Austria to Settle Issues of Common Interest in Connection with Nuclear Safety and Radiation Protection, Vienna, 25 October 1989, entered into effect on 23 July 1990, Communication of the Federal Ministry of Foreign Affairs No. 431/1990 Coll.
2. Protocol between the Government of the Czech Republic and the Government of the Republic of Austria Amending the Agreement between the Government of the Czechoslovak Socialist Republic and the Government of the Republic of Austria to Settle Issues of Common Interest in Connection with Nuclear Safety and Radiation Protection, Prague, 20 December 2007, entered into effect on 1 July 2008, Communication of the Ministry of Foreign Affairs No. 44/2008 Coll.
3. Agreement between the Government of the Czech and Slovak Federal Republic and the Government of the Federal Republic of Germany to Settle Issues of Common Interest in Connection with Nuclear Safety and Radiation Protection, Prague, 30 May 1990, entered into effect on 2 August 1990, Communication of the Federal Ministry of Foreign Affairs No. 432/1990 Coll.
4. Agreement between the Government of the Czech and Slovak Federal Republic and the Government of the Republic of Hungary on Exchange of Information and Cooperation in the Field of Nuclear Safety and Radiation Protection, Vienna, 20 September 1990, entered into effect on 15 May 1991, Communication of the Federal Ministry of Foreign Affairs No. 447/1991 Coll.
5. Agreement between the Government of the Czech and Slovak Federal Republic and the Government of the United States of America on Cooperation in Peaceful Uses of Nuclear Energy, Vienna, 13 June 1991
6. Agreement between the Government of the Czech Republic and the Government of the Russian Federation on Cooperation in the Field of Nuclear Energy, Moscow, 4 December 1994, entered into effect on 4 April 1995, Communication of the Ministry of Foreign Affairs No. 171/1995 Coll.
7. Amendment to the Agreement between the Government of the Czech Republic and the Government of the Russian Federation on Cooperation in the Field of Nuclear Energy of 4 December 1994, Moscow, 15 April 1999, entered into effect on 15 April 1999, Communication of the Ministry of Foreign Affairs No. 154/1999 Coll.
8. Agreement between the Government of the Czech Republic and the Government of Canada on Cooperation in Peaceful Uses of Nuclear Energy, Ottawa, 22 February 1995, entered into effect on 22 February 1995, Communication of the Ministry of Foreign Affairs No. 69/1995 Coll.
9. Agreement between the Government of the Czech Republic and the Government of the Slovak Republic on Cooperation in the Field of State Supervision of Nuclear Safety of Nuclear Installations and State Supervision of Nuclear Materials, Bratislava, 8 March 1996, Communication of the Ministry of Foreign Affairs No. 117/1996 Coll.
10. Agreement between the Government of the Czech Republic and the Government of Ukraine on Cooperation in the Field on Nuclear Energy and Nuclear Industry, Kiev, 30 June 1997, Communication of the Ministry of Foreign Affairs No. 241/1997 Coll.
11. Agreement between the Government of the Czech Republic and the Government of the Republic of Korea on Cooperation in Peaceful Uses of Nuclear Energy, Seoul, 16 March 2001, Communication of the Ministry of Foreign Affairs No. 83/2001 Coll.
12. Agreement between the Government of the Czechoslovak Socialist Republic and the Government of the People's Republic of Bulgaria on Cooperation in the Area of Peaceful Uses of Nuclear Energy, Sofia, 12 June 1970, entered into effect on 12 June 1970, Decree of the Ministry of Foreign Affairs No. 29/1971 Coll.
13. Agreement between the Government of the Czechoslovak Socialist Republic and the Government of the Republic of India on Cooperation in the Field of Peaceful Uses of Nuclear Energy, New Delhi, 9 November 1966, entered into effect on 1 January 1967, Decree of the Ministry of Foreign Affairs No. 80/1970 Coll.

14. Agreement between the Czechoslovak Socialist Republic and the Socialist Federal Republic of Yugoslavia on Cooperation in Peaceful Uses of Nuclear Energy, Prague, 15 February 1966, entered into effect on 18 June 1968, Decree of the Ministry of Foreign Affairs No. 112/1968 Coll. 4 April 1997 - Terminated, Succession to bilateral agreements via exchange of notes, Decree of the Ministry of Foreign Affairs No. 56/2000 point 5 cancelled Croatia, Decree of the Ministry of Foreign Affairs No. 59/2000 point 6 cancelled Macedonia, Remaining contracting parties: Bosnia and Herzegovina, Slovenia and Yugoslavia.
15. Agreement between the Government of the Czech Republic and the Government of the Slovak Republic on Early Notification of a Nuclear Accident, Prague, 28 June 2002, entered into effect on 14 November 2002, Communication of the Ministry of Foreign Affairs No. 132/2002 Coll.
16. Agreement between the Government of the Czech Republic and the Government of Australia on Cooperation in Peaceful Uses of Nuclear Energy and the Transfer of Nuclear Material, Prague, 27 July 2001, entered into effect on 17 May 2002, Communication of the Ministry of Foreign Affairs No. 78/2002 Coll.
17. Agreement between the Czech Republic and the Government of the Republic of Poland on Early Notification of a Nuclear Accident and on Exchange of Information on Peaceful Uses of Nuclear Energy, Nuclear Safety and Radiation Protection, Vienna, 27 September 2005.

Annex 11 EU Legislation for Trade Regulation

- 1) Council Regulation (EURATOM) No. 3954/87 of 22 December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency,
- 2) Commission Regulation (EURATOM) No. 944/89 of 12 April 1989 laying down maximum permitted levels of radioactive contamination in minor foodstuffs following a nuclear accident or any other case of radiological emergency,
- 3) Council Regulation (EURATOM) No. 2218/89 of 18 July 1989 amending Regulation (EURATOM) No. 3954/87 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency,
- 4) Commission Regulation (EURATOM) No. 770/90 of 29 March 1990 laying down maximum permitted levels of radioactive contamination of feedingstuffs following a nuclear accident or any other case of radiological emergency,
- 5) Council Regulation (EEC) No. 2219/89 of 18 July 1989 on the special conditions for exporting foodstuffs and feedingstuffs following a nuclear accident or any other case of radiological emergency,
- 6) Council Decision 87/600/EURATOM, on Community arrangements for the early exchange of information in the event of a radiological emergency,
- 7) Regulation (EC) No. 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.
- 8) Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom.
- 9) Codex Alimentarius

Annex 12 List of References

- [1] National Report on “Stress Tests” of NPP Dukovany and NPP Temelín, Czech Republic, December 2011
- [2] INTERNATIONAL ATOMIC ENERGY AGENCY, Preparedness and Response for a Nuclear or Radiological Emergency, Safety Standards Series No. GS-R-2, IAEA, Vienna (2002).
- [3] Nuclear Energy Safety 21 (59) No. 7/8, V. KLENER, K. PETROVÁ, J. DAVÍDKOVÁ - History of the Provision of Assistance in Radiation Accidents in the Czech Republic and Records of Extraordinary Events, 2013
- [4] National Report of the Czech Republic for the Purposes of the Convention on Nuclear Safety, SÚJB, 2013

Annex 13 List of Figures

Figure A-1: Basic scheme of the structure of crisis preparedness of the Czech Republic for the case of occurrence of extraordinary event.....	8
Figure A-2: Basic scheme of the structure of emergency response of the Czech Republic for the case of occurrence of radiation accident	11
Figure A-3: Schematic representation of population warning system within Emergency Planning Zone	13
Figure D-1: Scheme of organisation of emergency response of NPP, with mutual links and information flow.....	34
Figure D-2: Scheme of emergency staff organisational structure.....	40
Figure D-3: Scheme of the organisational structure of technical support centre	41
Figure D-4: Scheme of the structure of off-site support centre.....	41
Figure D-5: Scheme of the structure of emergency information centre.....	41
Figure D-6: Scheme of the structure of logistics support centre.....	42
Figure E-1: Scheme of notification of authorities and organisations made by NPP operator ..	60
Figure E-2: Emergency planning zone of Temelín NPP.....	64
Figure E-3: Emergency planning zone of Dukovany NPP	65
Figure E-4: Scheme of system of warning of the population in the emergency planning zone upon the occurrence of an extraordinary event of degree 3	68

Annex 14 List of Abbreviations

Atomic Act	<i>Act No. 18/1997 Coll., on Peaceful Utilisation of Nuclear Energy and Ionising Radiation, as amended</i>
EWN	Early Warning Network
IAEA	International Atomic Energy Agency (IAEA)
IRRS	Integrated Regulatory Review Service
MV – GŘ HZS ČR	Ministry of Interior – General Directorate of Fire Rescue Service of the Czech Republic
NPP	Nuclear Power Plant
RMN	Radiation Monitoring Network
SÚJB	State Office for Nuclear Safety
TPS	Technical Support Centre