



REPUBLIC OF CROATIA
MINISTRY OF INTERNAL AFFAIRS
CIVIL PROTECTION DIRECTORATE

CLASS: 018-08/20-01/130
REF. NO: 511-01-327-20-3
Zagreb, 14 July 2020

**SECOND NATIONAL REPORT ON THE IMPLEMENTATION OF
COUNCIL DIRECTIVE 2009/71/EURATOM**

of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear
installations

and

COUNCIL DIRECTIVE 2014/87/EURATOM

of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework
for the nuclear safety of nuclear installations

Contents

1. Introduction	4
2. Article 4 Legislative, regulatory and organisational framework.....	5
3. Article 5 Competent regulatory authority	10
4. Article 6 Licence holders.....	16
5. Article 7 Expertise and skills in nuclear safety.....	17
6. Article 8 Transparency.....	18
7. Article 8a Nuclear safety objective for nuclear installations	19
8. Article 8b Implementation of the nuclear safety objective for nuclear installations	19
9. Article 8c Initial assessment and periodic safety reviews.....	20
10. Article 8d On-site emergency preparedness and response	21
11. Article 8e Peer reviews	21
12. Article 9 Reporting	22

List of abbreviations:

Directive	Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, as amended by Council Directive 2014/87/Euratom of 8 July 2014
DZRNS	State Office for Radiological and Nuclear Safety
IRRS mission	Integrated Regulatory Review Service mission
IAEA	International Atomic Energy Agency
NN	<i>Narodne novine</i> – Official Gazette of the Republic of Croatia
NN-MU	Official Gazette of the Republic of Croatia – International Treaties
Krško NPP	Krško Nuclear Power Plant
Paks NPP	Paks Nuclear Power Plant
MUP	Ministry of Internal Affairs
RCZ	Civil Protection Directorate
TPR	Topical peer review
URSJV	Slovenian Nuclear Safety Administration
Radiological and Nuclear Safety Act	Radiological and Nuclear Safety Act (NN Nos 141/13, 39/15, 130/17 and 118/18)

Introduction

Article 9(1) of Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, as amended by Council Directive 2014/87/Euratom of 8 July 2014 ('the Directive') requires Member States to submit a report to the European Commission on the implementation of the Directive by 22 July 2020.

There are no nuclear installations in Croatia, and the new Energy Development Strategy of the Republic of Croatia until 2030 with an outlook to 2050 (NN No 25/20), which was adopted in February 2020, does not provide for the development of a nuclear programme in Croatia.

In the early 1980s the state electricity companies of Croatia and Slovenia built the Krško nuclear power plant ('Krško NPP') in Slovenia, some 10 kilometres from the Croatian border. Today, the Krško NPP is jointly owned by both countries. As the plant is located in Slovenia, it is subject to Slovenian law, which means that the Croatian regulatory authority has no control over the operation of the Krško NPP. The Croatian and Slovenian Governments have signed a Treaty regulating the Status and Other Legal Relations related to the Investment, Exploitation and Decommissioning of the Krško NPP.

When drawing up this report, account has been taken of Article 10(1a) of the Directive, which states that the transposition and implementation of Articles 6, 8a, 8b, 8c and 8d of the Directive do not apply to Member States without nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction.

Accordingly, Articles 6, 8a, 8b, 8c and 8d of the Directive no longer apply to Croatia and have not been included in this report.

Article 4 Legislative, regulatory and organisational framework

Article 4

1. Member States shall establish and maintain a national legislative, regulatory and organisational framework ('national framework') for the nuclear safety of nuclear installations.

There are no nuclear installations in Croatia. The nearest nuclear installation is the Krško NPP in neighbouring Slovenia. The Croatian regulatory authority has no influence over the licensing or supervision of the Krško NPP. The Slovenian regulatory authority, the Slovenian Nuclear Safety Administration (URSJV), which operates independently within the Ministry of the Environment, is responsible for licensing the activities of the Krško NPP and carrying out regulatory inspections of the power plant.

The legislative framework in the field of radiological and nuclear safety in Croatia consists of the Radiological and Nuclear Safety Act (NN Nos 141/13, 39/15, 130/17 and 118/18), decrees and sets of rules adopted on the basis of that Act, European regulations and international agreements and treaties.

The Radiological and Nuclear Safety Act regulates radiological and nuclear safety measures, nuclear security measures, the recording and supervision of nuclear material and other measures for non-proliferation of nuclear weapons when performing activities involving sources of ionising radiation, nuclear activities and the management of radioactive waste and disused sources for the purposes of ensuring appropriate protection of individuals, society and the environment, now and in the future, from the harmful effects of ionising radiation and ensuring the safe performance of activities involving ionising radiation sources, nuclear activities, management of radioactive waste and disused sources, and the nuclear security of sources of ionising radiation and nuclear installations.

The Radiological and Nuclear Safety Act contains provisions that are in accordance with the following legal acts that form part of the EU acquis:

- Council Regulation (Euratom) No 1493/93 of 8 June 1993 on shipments of radioactive substances between Member States (OJ L 148, 19.6.1993);
- Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom safeguards (OJ L 54, 28.2.2005);
- Commission Regulation (Euratom) No 66/2006 of 16 January 2006 exempting the transfer of small quantities of ores, source materials and special fissile materials from the Rules of the Chapter on supplies (OJ L 11, 17.1.2006);
- Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel (OJ L 337, 5.12.2006);
- Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (OJ L 172, 2.7.2009);
- Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste (OJ L 199, 2.8.2011);

- 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 (OJ L 13, 17.1.2014);
- Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations (OJ L 219, 25.7.2014).

The Croatian Government has also adopted a Radiological and Nuclear Safety Strategy for the 2017-2025 period (NN No 65/17) ('Radiological and Nuclear Safety Strategy').

The Radiological and Nuclear Safety Strategy aims above all to protect the public and the environment from the harmful effects of ionising radiation without any undue restriction on the installation's operation or on the performance of any activity that could create risks due to exposure to ionising radiation.

In February 2020 the Croatian Government adopted the Energy Development Strategy of the Republic of Croatia until 2030 with an outlook to 2050 (NN No 25/2020), which does not provide for the development of a nuclear programme in Croatia, and for that reason Articles 6, 8a, 8b, 8c and 8d of the Directive no longer apply to Croatia.

Under the Croatian Constitution, international treaties that have been concluded and ratified in accordance with the Constitution, have been promulgated and are in force, form part of the domestic legal order of Croatia and have primacy over domestic law.

Croatia is party to the following international agreements and treaties in the field of radiological and nuclear safety:

- Vienna Convention on Civil Liability for Nuclear Damage (NN – International Treaties Nos 12/93 and 1/06);
- Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention (NN – International Treaties No 12/93);
- Convention on the Physical Protection of Nuclear Material (NN – International Treaties Nos 12/93, 5/01 and 5/06);
- Convention on Early Notification of a Nuclear Accident (NN – International Treaties Nos 12/93 and 1/06);
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (NN – International Treaties Nos 12/93 and 1/06);
- Convention on Nuclear Safety (NN – International Treaties No 13/95);
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (NN – International Treaties No 3/99);
- Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg,

the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency on implementation of Article III(1) and (4) of the Treaty on the non-proliferation of nuclear weapons and the Additional Protocol to the Agreement (NN – International Treaties No 3/16);

- Revised Supplementary Agreement concerning the Provision of Technical Assistance by the International Atomic Energy Agency to the Government of the Republic of Croatia (NN – International Treaties No 9/97);
- Comprehensive Nuclear-Test-Ban Treaty (NN – International Treaties No 1/01).

To respond more effectively in the event of a nuclear accident at one of the nuclear installations in its vicinity, Croatia has established cooperation with neighbouring countries that have a nuclear installation on their territory and has signed the following agreements on the early exchange of information in the event of a nuclear accident:

- Agreement between the Republic of Croatia and the Republic of Slovenia for the Early Exchange of Information in the Event of a Radiological Emergency (NN – International Treaties Nos 9/98 and 3/00) and
- Agreement between the Government of the Republic of Croatia and the Government of the Republic of Hungary for the Early Exchange of Information in the Event of a Radiological Emergency (NN – International Treaties No 11/99).

Emergency preparedness and response are regulated in Croatia by the Radiological and Nuclear Safety Act (NN Nos 141/13, 39/15, 130/17 and 118/18) and the Decree on measures for protection against ionising radiation and emergency procedures (NN Nos 24/18 and 70/20) ('the Decree'). These two texts ensure full compliance with the obligations under 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, and with the obligations under Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations.

In this respect, Croatia monitors safety in nuclear power plants in the region and assesses risks of potential nuclear accidents at those plants, in particular the Krško NPP in Slovenia and the Paks NPP in Hungary. In accordance with Article 7 of the Decree, the Ministry of Internal Affairs has drawn up a Nuclear and Radiological Risk Assessment for the Republic of Croatia, and in accordance with Article 9 of the Decree a proposal for a Plan for Preparedness and Response of the Republic of Croatia to a Radiological or Nuclear Emergency ('proposal for a Plan') has been drawn up and is in the process of being adopted.

Article 4

The national framework shall provide in particular for:

1. (a) *the allocation of responsibilities and coordination between relevant state bodies;*

In Croatia, the Ministry of Internal Affairs' Civil Protection Directorate (RCZ) is responsible for

radiological and nuclear safety.

As there are no nuclear installations in Croatia, the task of the regulatory authority is to monitor the safety of nuclear power plants in the region and assess the risk of a nuclear accident occurring there, in particular at the Krško NPP and the Paks NPP.

The roles and responsibilities of the government bodies involved in responding to a radiological or nuclear emergency are set out in the Decree and defined by taking into account:

- the response models for each type of emergency;
- the basic division of responsibilities according to IAEA guidelines, such as GSR Part 7 Preparedness and Response for a Nuclear or Radiological Emergency and *EPR-NPP Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor*, and the responsibilities of the authorities, organisations, companies and individuals defined by the regulations in force.

According to Article 10(2) of the Decree, the following government bodies form part of the radiological or nuclear emergency preparedness and response system: Ministry of Internal Affairs, State Meteorological and Hydrological Service, Ministry of Health, Ministry of Agriculture, Ministry of Defence, Ministry of Finance, Ministry of the Economy, Enterprise and Small Business, Ministry of Demography, the Family, Youth and Social Policy, and Ministry of Foreign and European Affairs.

In the event of a nuclear or radiological emergency, the regulatory authority is required to provide the other response participants with expert assistance, including proposing protective and other measures.

To that end, and in accordance with the proposal for a Plan, the RCZ activates a radiological and nuclear emergency expert team, which provides all response participants with expert assistance. The Plan for Preparedness and Response of the Republic of Croatia to a Radiological or Nuclear Emergency is in the process of being adopted.

The Civil Protection Headquarters of the Republic of Croatia is the coordination body in the event of a nuclear accident. Article 21 of the Civil Protection System Act (NN Nos 82/15, 118/18 and 31/20) defines how the Civil Protection Headquarters operates.

Article 4

(1)(b) national nuclear safety requirements, covering all stages of the lifecycle of nuclear installations;

Although there are no nuclear installations in Croatia, the country has adopted regulations on nuclear safety that cover all phases of the life cycle of nuclear installations.

The national requirements for the nuclear safety of nuclear installations are laid down in the following implementing acts:

- Rules laying down the nuclear safety conditions for granting approval for the construction of a nuclear installation (NN Nos 36/16 and 79/16);

- Rules on the evaluation of a nuclear installation site (NN No 38/17);
- Rules on the list and content of documents authorising nuclear activities (NN No 29/17);
- Rules on the content of applications for consent for starting or terminating the operation or decommissioning of a nuclear installation (NN No 47/17);
- Rules on the frequency, content, scope and procedure for reporting on the operation of a nuclear installation (NN No 94/17);
- Rules on the frequency, content, scope and procedure for carrying out periodic safety inspections of nuclear installations (NN No 94/17);
- Rules on the content of applications for consent for authorising the start of the trial operation of a nuclear installation (NN No 29/17);
- Rules on the nuclear installation safety analysis report (NN No 29/17);
- Rules on authorised nuclear safety operators (NN No 29/17);
- Rules on the establishment of a quality assurance programme for the management of nuclear installations (NN No 29/17).

Article 4

1. *(c) a system of licensing and prohibition of operation of nuclear installations without a licence;*

Croatia has adopted this article despite having no nuclear installations because the Energy Development Strategy of the Republic of Croatia in force when transposing the Directive left the nuclear option open, with the possibility to activate a nuclear programme.

According to Article 38(1) of the Radiological and Nuclear Safety Act, it is prohibited to build, test, put into operation or in any other way use nuclear installations without having obtained the consent or authorisation prescribed under the Act.

The Rules on the list and content of documents authorising nuclear activities (NN No 29/17) set out the documents required for obtaining authorisation for nuclear activities and proving that all the conditions prescribed under the Act are met.

The Rules on the content of applications for consent for starting or terminating the operation or decommissioning of a nuclear installation (NN No 47/17) set out the content of applications for obtaining authorisation to start or terminate operations at a nuclear installation and the content of applications for obtaining authorisation to start or terminate the decommissioning of nuclear installations.

Article 4

(1) (d) a system of regulatory control of nuclear safety performed by the competent regulatory authority;

The inspection of implementation of the provisions of the Radiological and Nuclear Safety Act and of the acts implementing that Act is the responsibility of the Ministry of Internal Affairs' radiological and nuclear safety inspectors. The Radiological and Nuclear Safety Act also provides for inspections of the operation of nuclear installations, even though there are none in Croatia.

The regulatory control of nuclear safety is performed by the radiological and nuclear safety inspectors, in accordance with Article 76 of the Radiological and Nuclear Safety Act.

Article 4

(1) (e) effective and proportionate enforcement actions, including, where appropriate, corrective action or suspension of operation and modification or revocation of a licence.

Enforcement actions, including corrective action, the possibility to suspend operation and to revoke decisions, are carried out in accordance with the inspectors' powers, including the possibility to launch infringement proceedings. The provisions on infringements are laid down in Articles 92, 93 and 94 of the Radiological and Nuclear Safety Act.

Article 4

2. Member States shall ensure that the national framework is maintained and improved when appropriate, taking into account operating experience, insights gained from safety analyses for operating nuclear installations, development of technology and results of safety research, when available and relevant.

The regulatory authority monitors changes in international regulations and standards and takes those changes into account when amending the Act and its implementing acts.

Article 5 Competent regulatory authority

Article 5

(1) Member States shall establish and maintain a competent regulatory authority in the field of nuclear safety of nuclear installations.

Since 1 January 2019 radiological and nuclear safety activities have been the responsibility of the Ministry of Internal Affairs (MUP).

The responsibilities of the MUP in the field of radiological and nuclear safety are set out in Article 7 of the Radiological and Nuclear Safety Act and its implementing acts. The Decree on

the internal organisation of the Ministry of Internal Affairs of the Republic of Croatia was adopted on 11 March 2019 (NN No 24/19). Article 118a of the Decree establishes the Civil Protection Directorate (RCZ) as an organisational unit of the MUP, whose responsibilities include radiological and nuclear safety activities.

The RCZ is responsible for performing radiological and nuclear safety activities, performing and supervising radiological and nuclear safety measures, nuclear security measures, recording and supervising nuclear material and other measures for non-proliferation of nuclear weapons when performing activities involving sources of ionising radiation, nuclear activities and the management of radioactive waste and disused sources for the purposes of protecting individuals, society and the environment, now and in the future, from the harmful effects of ionising radiation.

A description of the activities of the internal organisational units of the MUP is provided in the Decree on the internal organisation of the MUP and the Rules on the internal organisation of the MUP.

The organisational units of the RCZ responsible for radiological and nuclear safety activities are:

- the Radiological and Nuclear Safety Department;
- the Radiological and Nuclear Safety Inspectorate;
- the Radiological and Nuclear Emergency Unit; and
- the Unit for International Civil Protection Matters.

The responsibilities of the Radiological and Nuclear Safety Department include:

- authorising activities involving sources of ionising radiation and authorising nuclear activities;
- authorising activities involving the management of radioactive waste and disused sources; issuing permits for the transport of sources of ionising radiation;
- performing independent safety analyses and issuing approval for the site, design, construction, operation and decommissioning of a nuclear installation;
- participating in the procedure for issuing site and planning permission certificates and in the procedure for issuing building inspection certificates for structures housing sources of ionising radiation or where activities involving sources of ionising radiation or activities involving the management of radioactive waste are performed;
- authorising technical service providers and nuclear safety operators;
- organising and supervising tests for the presence, type and strength of ionising radiation in the environment, food, feed, medicines and consumer goods under regular conditions and in the event of a suspected emergency; and
- keeping records and organising professional training on the application of radiological safety measures and nuclear security measures.

The Radiological and Nuclear Emergency Unit:

- is involved in organising the emergency preparedness system;
- provides expert assistance for implementing the Decree on measures for protection against ionising radiation and emergency procedures;
- produces a nuclear and radiological risk assessment for Croatia; and
- approves plans for the preparedness and response to a radiological and nuclear emergency of all participants in the emergency preparedness and response system.

The Radiological and Nuclear Safety Inspectorate is responsible for carrying out inspections.

The Unit for International Civil Protection Matters is responsible for cooperation with international organisations and companies in the field of radiological and nuclear safety and coordinating technical cooperation with the IAEA for all Croatian participants.

The organisational chart of the Civil Protection Directorate is shown in Figure 1.

Figure 1 Organisational chart of the Civil Protection Directorate

See p. 15 of the original Croatian (barely legible)

Article 5

2. Member States shall ensure the effective independence from undue influence of the competent regulatory authority in its regulatory decision-making. For this purpose, Member States shall ensure that the national framework requires that the competent regulatory authority:

(a) is functionally separate from any other body or organisation concerned with the promotion or utilisation of nuclear energy, and does not seek or take instructions from any such body or organisation when carrying out its regulatory tasks;

According to the Act on the Organisation and Competences of Ministries and Other Central State Administrative Bodies (NN Nos 93/16, 104/16, 116/18 and 127/19), the MUP is functionally separate from any other body or organisation concerned with the promotion or use of nuclear energy, which ensures effective independence from undue influence in its regulatory decision-making.

Article 5

(1) (b) takes regulatory decisions founded on robust and transparent nuclear safety-related requirements;

The current Croatian regulations apply international principles and standards aimed at achieving and maintaining an adequate level of nuclear safety in regulatory decision-making, as already described under Article 4.

Article 5

2. (c) is given dedicated and appropriate budget allocations to allow for the delivery of its regulatory tasks as defined in the national framework and is responsible for the implementation of the allocated budget;

According to Article 7a of the Radiological and Nuclear Safety Act, the regulatory authority is given dedicated and appropriate budget allocations to allow for the delivery of its tasks as defined in the national framework and is responsible for the implementation of the allocated budget.

Article 5

(2) (d) employs an appropriate number of staff with qualifications, experience and expertise necessary to fulfil its obligations. It may use external scientific and technical resources and expertise in support of its regulatory functions;

At present, 53% of the posts for the RCZ provided for by the Decree on the internal organisation of the MUP have been filled. The skills and level of training of its staff are strengthened through an internal training plan and through participation in training courses organised by the IAEA, various national preparedness exercises, and in-house training.

In accordance with the Decree on the internal organisation of the MUP, the Minister for Internal Affairs has adopted amendments to the Rules on the internal organisation of the MUP. In accordance with these Rules, the Minister for Internal Affairs adopts a plan for admission to the civil service, through which it plans for the MUP's staffing needs. The plan sets out the requirements in terms of educational qualifications, knowledge, professional experience, ability and skills. Croatia has a shortage of professional staff with experience and expertise in the field of radiological and nuclear safety. For that reason, the RCZ is hiring external contractors as the need arises with the necessary scientific knowledge and expertise to support it in its regulatory function.

Article 5

(1) (e) establishes procedures for the prevention and resolution of any conflicts of interest;

The prevention and resolution of conflicts between private and public interests in the performance of public duties are regulated by the Act on the Prevention of Conflicts of Interest (NN Nos 26/11, 12/12, 126/12, 48/13, 57/15 and 98/19).

Matters of this kind are also regulated by the Ethics Code for Civil Servants (NN Nos 40/11 and 13/12).

Article 5

(2) (f) provides nuclear safety-related information without clearance from any other body or organisation, provided that this does not jeopardise other overriding interests, such as security, recognised in relevant legislation or international instruments.

The right of access to information is set out in the Freedom of Information Act (NN Nos 25/13 and 85/15).

Article 5

3. Member States shall ensure that the competent regulatory authority is given the legal powers necessary to fulfil its obligations in connection with the national framework described in Article 4(1). For this purpose, Member States shall ensure that the national framework entrusts the competent regulatory authorities with the following main regulatory tasks, to:

(a) propose, define or participate in the definition of national nuclear safety requirements;

The Act regulating nuclear safety is adopted and amended by the Croatian Parliament acting on a proposal from the Croatian Government. Rules regulating nuclear safety are adopted and amended by the regulatory authority responsible for radiological and nuclear safety, i.e. the Ministry of Internal Affairs, in accordance with the Radiological and Nuclear Safety Act.

Article 5

3. (b) require that the licence holder complies and demonstrates compliance with national nuclear safety requirements and the terms of the relevant licence;

According to Article 38(1) of the Radiological and Nuclear Safety Act, it is prohibited to build, test, put into operation or in any other way use nuclear installations without having obtained the consent or authorisation prescribed under the Act. According to Article 38(2), the holder of a building inspection certificate for a nuclear installation is responsible for the nuclear safety of the installation, including the safe handling of radioactive substances, radioactive waste or spent nuclear fuel housed or generated in the installation.

Article 5

(c) verify such compliance through regulatory assessments and inspections;

The regulatory control of nuclear safety is performed by the radiological and nuclear safety inspectors.

In accordance with Article 76 of the Radiological and Nuclear Safety Act, the inspection of implementation of the provisions of the Radiological and Nuclear Safety Act and of the implementing acts adopted on the basis of the Act is the responsibility of the radiological and nuclear safety inspectors.

Article 5

(d) propose or carry out effective and proportionate enforcement actions.

Enforcement actions, including corrective action, the possibility to suspend operation and to revoke decisions, are carried out in accordance with the inspectors' powers, including the possibility to launch infringement proceedings. The provisions on infringements are laid down in Articles 92, 93 and 94 of the Radiological and Nuclear Safety Act.

New infringement provisions may be proposed based on the previous findings of inspections and the most common shortcomings identified when applying the provisions of the Act and its implementing acts.

Article 6 Licence holders

Article 6

(1) Member States shall ensure that the national framework requires that:

(a) the prime responsibility for the nuclear safety of a nuclear installation rests with the licence holder. That responsibility cannot be delegated and includes responsibility for the activities of contractors and sub-contractors whose activities might affect the nuclear safety of a nuclear installation;

(b) when applying for a licence, the applicant is required to submit a demonstration of nuclear safety. Its scope and level of detail shall be commensurate with the potential magnitude and nature of the hazard relevant for the nuclear installation and its site;

(c) licence holders are to regularly assess, verify, and continuously improve, as far as reasonably practicable, the nuclear safety of their nuclear installations in a systematic and verifiable manner. That shall include verification that measures are in place for the prevention of accidents and mitigation of the consequences of accidents, including the verification of the application of defence-in-depth provisions;

(d) licence holders establish and implement management systems which give due priority to nuclear safety;

(e) licence holders provide for appropriate on-site emergency procedures and arrangements, including severe accident management guidelines or equivalent arrangements, for responding effectively to accidents in order to prevent or mitigate their consequences. Those shall in

particular:

- i. be consistent with other operational procedures and periodically exercised to verify their practicability;*
- ii. address accidents and severe accidents that could occur in all operational modes and those that simultaneously involve or affect several units;*
- iii. provide arrangements to receive external assistance;*
- iv. be periodically reviewed and regularly updated, taking account of experience from exercises and lessons learned from accidents;*

(f) licence holders provide for and maintain financial and human resources with appropriate qualifications and competences, necessary to fulfil their obligations with respect to the nuclear safety of a nuclear installation. Licence holders shall also ensure that contractors and subcontractors under their responsibility and whose activities might affect the nuclear safety of a nuclear installation have the necessary human resources with appropriate qualifications and competences to fulfil their obligations.

In accordance with Article 10(1a) of the Directive, the obligations of transposition and implementation of this Article do not apply to Member States that have no nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction.

Article 7 Expertise and skills in nuclear safety

Member States shall ensure that the national framework requires all parties to make arrangements for the education and training for their staff having responsibilities related to the nuclear safety of nuclear installations so as to obtain, maintain and to further develop expertise and skills in nuclear safety and on-site emergency preparedness.

Although Croatia does not have any nuclear installations and is not planning any nuclear programme, it has adopted regulations on obtaining, maintaining and further developing expertise and skills in nuclear safety. In accordance with Article 47 of the Radiological and Nuclear Safety Act and Articles 29 to 43 of the Rules on the qualifications required to operate sources of ionising radiation, to apply radiation protection measures and to manage technical processes in nuclear installations (NN No 42/18), during the operating lifetime of the nuclear installation the licence holder must ensure that the installation is staffed by a sufficient number of qualified workers, who have the necessary level of education, training and further training to perform all activities carried out in the installation and to implement nuclear safety measures.

All workers in the nuclear installation must undergo continuous training on protection from ionising radiation and training according to the needs of their workplace. The training is carried out by the licence holder.

Activities and tasks involving the management of technological processes in the nuclear installation and the monitoring of such management are performed by workers who meet the requirements in terms of educational qualifications and professional experience laid down in the Rules issued by the Minister for Internal Affairs.

The licence holder for the nuclear installation must ensure that qualified workers receive regular professional refresher training and that their skills are continuously assessed.

Article 8 Transparency

1. Member States shall ensure that necessary information in relation to the nuclear safety of nuclear installations and its regulation is made available to workers and the general public, with specific consideration to local authorities, population and stakeholders in the vicinity of a nuclear installation. That obligation includes ensuring that the competent regulatory authority and the licence holders, within their fields of responsibility, provide in the framework of their communication policy:

(a) information on normal operating conditions of nuclear installations to workers and the general public;

(b) prompt information in case of incidents and accidents to workers and the general public and to the competent regulatory authorities of other Member States in the vicinity of a nuclear installation.

2. Information shall be made available to the public in accordance with relevant legislation and international instruments, provided that this does not jeopardise other overriding interests, such as security, which are recognised in relevant legislation or international instruments.

3. Member States shall, without prejudice to Article 5(2), ensure that the competent regulatory authority engages, as appropriate, in cooperation activities on the nuclear safety of nuclear installations with competent regulatory authorities of other Member States in the vicinity of a nuclear installation, inter alia, via the exchange and/or sharing of information.

4. Member States shall ensure that the general public is given the appropriate opportunities to participate effectively in the decision-making process relating to the licensing of nuclear installations, in accordance with relevant legislation and international instruments.

Although Croatia has no nuclear installations, the proximity of nuclear installations in neighbouring countries means that it provides the necessary information on the nuclear safety of those installations.

The closest nuclear installations to Croatia are the Krško NPP (PWR, 707 MWe, Slovenia) and the Paks NPP (VVER, 4x440 MWe, Hungary). The Krško NPP is 10.6 km from Croatia's western border, 24 km from Samobor (roughly 37 600 inhabitants) and Zaprešić (roughly 27 000 inhabitants), and some 40 km from Zagreb (population: roughly 800 000). The Paks NPP is 74.1 km from Croatia's northern border. Beli Manastir (roughly 1 000 inhabitants) and Osijek (roughly 103 000 inhabitants) are 90 and 120 km respectively from the Paks NPP.

The Krško NPP and the Paks NPP have been declared Category V emergency preparedness (according to the IAEA categorisation – IAEA Safety Standards Series No GSR Part 7, 2015).

Consequently, in accordance with the applicable regulations, all participants in the emergency preparedness and response system are required to inform the public, in particular of safety measures in the event of an emergency, according to their responsibilities. The information relates to the basic facts about radioactivity and its effects on human beings and on the environment, the various types of radiological emergency covered and their consequences for the general public and the environment, and the emergency measures envisaged to alert and protect the general public in the event of a radiological emergency.

Members of the public likely to be affected by an emergency will be informed, without having to submit a specific request, of the measures designed to protect them and the action to be taken in the event of such an emergency. The information will be continuously available to the public and regularly updated where significant changes occur.

The MUP is responsible for communicating with the public in the event of an emergency at national and regional level, via the Civil Protection Headquarters of the Republic of Croatia. At local and regional level, the Civil Protection Headquarters of the relevant local or regional authorities are responsible for communicating with the public.

If the holder of a licence for activities involving radioactive sources is the emergency response manager and coordinator, he/she is required to inform the public of the sources of ionising radiation that he/she possesses and of potential emergencies, in particular those that could affect areas that are not under the control of the licence holder.

To confirm that the operation of the Krško NPP does not expose the public to radiation above the levels permitted for individual members of the public, a continuous radiological monitoring programme is carried out by the accredited test laboratory of the Ruđer Bošković Institute in Croatia and the Jožef Stefan Institute in Slovenia. The test results are presented in a bulletin produced by the Ruđer Bošković Institute in collaboration with the RCZ. The bulletin is available on the website of the RCZ: <https://civilna-zastita.gov.hr/podrucja-djelovanja/radioloska-i-nuklearna-sigurnost/sluzba-za-nuklearnu-sigurnost/odjel-za-okolis-i-radioaktivni-otpad/bilteni-ne-krsko/175>.

Article 8a Nuclear safety objective for nuclear installations

1. Member States shall ensure that the national nuclear safety framework requires that nuclear installations are designed, sited, constructed, commissioned, operated and decommissioned with the objective of preventing accidents and, should an accident occur, mitigating its consequences and avoiding:

(a) early radioactive releases that would require off-site emergency measures but with insufficient time to implement them;

(b) large radioactive releases that would require protective measures that could not be limited in area or time.

2. Member States shall ensure that the national framework requires that the objective set out in paragraph 1:

(a) applies to nuclear installations for which a construction licence is granted for the first time after 14 August 2014;

(b) is used as a reference for the timely implementation of reasonably practicable safety improvements to existing nuclear installations, including in the framework of the periodic safety reviews as defined in Article 8c(b).

In accordance with Article 10(1a) of the Directive, the obligations of transposition and implementation of this Article do not apply to Member States that have no nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction.

Article 8b Implementation of the nuclear safety objective for nuclear installations

1. In order to achieve the nuclear safety objective set out in Article 8a, Member States shall ensure that the national framework requires that where defence-in-depth applies, it shall be applied to ensure that:

- (a) the impact of extreme external natural and unintended man-made hazards is minimised;*
- (b) abnormal operation and failures are prevented;*
- (c) abnormal operation is controlled and failures are detected;*
- (d) accidents within the design basis are controlled;*
- (e) severe conditions are controlled, including prevention of accidents progression and mitigation of the consequences of severe accidents;*
- (f) organisational structures according to Article 8d(1) are in place.*

2. In order to achieve the nuclear safety objective set out in Article 8a, Member States shall ensure that the national framework requires that the competent regulatory authority and the licence holder take measures to promote and enhance an effective nuclear safety culture. Such measures include, in particular:

- (a) management systems which give due priority to nuclear safety and promote, at all levels of staff and management, the ability to question the effective delivery of relevant safety principles and practices, and to report in a timely manner on safety issues, in accordance with Article 6(d);*
- (b) arrangements by the licence holder to register, evaluate and document internal and external safety significant operating experience;*
- (c) the obligation of the licence holder to report events with a potential impact on nuclear safety to the competent regulatory authority; and*
- (d) arrangements for education and training, in accordance with Article 7.*

In accordance with Article 10(1a) of the Directive, the transposition and implementation of this Article do not apply to Member States that have no nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction.

Article 8c Initial assessment and periodic safety reviews

Member States shall ensure that the national framework requires that:

- a) any grant of a licence to construct a nuclear installation or operate a nuclear installation, is based upon an appropriate site and installation-specific assessment, comprising a nuclear safety demonstration with respect to the national nuclear safety requirements based on the objective set in Article 8a;*
- b) the licence holder under the regulatory control of the competent regulatory authority, re-assesses systematically and regularly, at least every 10 years, the safety of the nuclear installation as laid down in Article 6(c). That safety reassessment aims at ensuring compliance with the current design basis and identifies further safety improvements by taking into account ageing issues, operational experience, most recent research results and developments in international standards, using as a reference the objective set in Article 8a.*

In accordance with Article 10(1a) of the Directive, the transposition and implementation of this Article do not apply to Member States that have no nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction.

Article 8d On-site emergency preparedness and response

Article 8d

Without prejudice to the provisions of the Directive 2013/59/Euratom, Member States shall ensure that the national framework requires that an organisational structure for on-site emergency preparedness and response is established with a clear allocation of responsibilities and coordination between the licence holder, and competent authorities and organisations, taking into account all phases of an emergency.

Member States shall ensure that there is consistency and continuity between the on-site emergency preparedness and response arrangements required by the national framework and other emergency preparedness and response arrangements required under Directive 2013/59/Euratom.' 25.7.2014, OJ L 219/50.

In accordance with Article 10(1a) of the Directive, the transposition and implementation of this Article do not apply to Member States that have no nuclear installations, unless they decide to develop any activity related to nuclear installations subject to a licence under their jurisdiction.

Article 8e Peer reviews

Member States shall, at least once every 10 years, arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and competent regulatory authorities with the aim of continuously improving nuclear safety. Outcomes of such peer reviews shall be reported to the Member States and the Commission, when available.

Article 71(1) of the Regulatory and Nuclear Safety Act requires the MUP, at least every 10 years, to conduct a self-assessment of the national legislative and regulatory framework and ensure that the key segments of the national legislative and regulatory framework undergo an international review with the aim of continuously improving radiological and nuclear safety.

In 2015, Croatia hosted the IRRS mission performed by the IAEA. The main objectives of the mission were to review the legislative and regulatory framework in the field of radiological and nuclear safety with reference to the relevant IAEA safety standards. The mission led to the issuing of 36 recommendations and 22 proposals to improve the legislative and regulatory framework.

The results of the IRRS mission were accepted by Government Resolution. As the state body responsible for radiological and nuclear safety at the time, the State Office for Radiological and Nuclear Safety informed the European Commission of the results of the IRRS mission by letter dated 12 October 2015. The IRRS mission report has been published on the following website: <https://civilna-zastita.gov.hr/podrucja-djelovanja/radioloska-i-nuklearna-sigurnost/medjunarodna-agencija-za-atomsku-energiju-iaea/237>.

An IRRS follow-up mission was held from 20 to 29 October 2019. On the basis of an integrated assessment, it was concluded that 60% of the findings in 2015 had been implemented, while 40% were still being resolved. The IRRS therefore concluded that the management and staff of the regulatory authority were committed to further strengthening their capacity to implement the regulatory processes more effectively and were aware of the importance of their contribution to ensuring the implementation of nuclear safety, the management of radioactive waste and protection from ionising radiation in general.

The IRRS follow-up mission report has been published on the following website: <https://civilna->

zastita.gov.hr/podrucja-djelovanja/radioloska-i-nuklearna-sigurnost/medjunarodna-agencija-za-atomsku-energiju-iaea/237.

Article 8e

2. Member States shall ensure that, on a coordinated basis:

- (a) a national assessment is performed, based on a specific topic related to nuclear safety of the relevant nuclear installations on their territory;*
- (b) all other Member States, and the Commission as observer, are invited to peer review the national assessment referred to in point (a);*
- (c) appropriate follow-up measures are taken of relevant findings resulting from the peer review process;*
- (d) relevant reports are published on the above mentioned process and its main outcome when results are available.*

The first topical peer review (TPR) got under way in 2017. Ageing management was identified as the topic of the first TPR, covering nuclear power plants and research reactors with a thermal power of 1 MW or more. As already mentioned, there are no nuclear installations in Croatia, so the country was not included in the first TPR.

Article 8e

3. Member States shall ensure that arrangements are in place to allow for the first topical peer review to start in 2017, and for subsequent topical peer reviews to take place at least every six years thereafter.

As there are no nuclear installations in Croatia, it was not included in the topical peer review.

Article 8e

4. In case of an accident leading to situations that would require off-site emergency measures or protective measures for the general public, the Member State concerned shall ensure that an international peer review is invited without undue delay.

As there are no nuclear installations in Croatia, the provisions of this point do not apply to it.

Article 9 Reporting

- 1. Member States shall submit a report to the Commission on the implementation of this Directive for the first time by 22 July 2014, and then by 22 July 2020.*
- 2. On the basis of the Member States' reports, the Commission shall submit a report to the Council and the European Parliament on progress made with the implementation of this Directive.*

In accordance with Article 9(1) of the Directive, Croatia is submitting its second Report to the European Commission.

ASSISTANT MINISTER

Damir Trut