



Republic of Croatia

CROATIAN REPORT ON NUCLEAR SAFETY

***CROATIAN NATIONAL REPORT FOR SECOND CNS
EXTRAORDINARY MEETING ON THE IMPLEMENTATION
OF THE OBLIGATIONS UNDER THE CONVENTION ON
NUCLEAR SAFETY***

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the Obligations under the Convention on Nuclear Safety

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INTRODUCTION

The Republic of Croatia continues its successful cooperation with the International Atomic Energy Agency (IAEA) and attaches great importance to the nuclear safety and commends the work of IAEA in this field. The legal regime on nuclear safety was effectively established with acceptance of the Convention on Nuclear Safety (O.G. 13/1995) and the Joint Convention on Spent Fuel and Radioactive Waste Management (O.G. 03/1999). By the virtue of succession, Croatia became a party to the Convention on Physical Protection of Nuclear Material (O.G. 05/2001), Convention on Early Notification in Case of Nuclear Accident (O.G. 01/2006) and the Convention on Assistance in Case of Nuclear Accident or Radiological Emergency (O.G. 01/2006).

Furthermore, Croatia participated in the Fifth Review Meeting of the Parties to Convention on Nuclear Safety in Vienna in 2011 and successfully presented its Fifth National Report.

As one of the first IAEA Member States, Croatia signed and ratified the Protocol Additional to the Agreement between the Republic of Croatia and International Atomic Energy Agency for the Application of Safeguards in connection with the Treaty on Non-proliferation of Nuclear Weapons (O.G. 07/2000). In that respect, in 2010 IAEA verified Initial Report under SQP for Croatia.

Croatia implements the system of integrated safeguards and all nuclear material in Croatia remains in peaceful activities.

According to the Constitution of the Republic of Croatia the requirements of the Convention became part of the national legislation. By further development of national nuclear safety legislation, the measures and obligations defined by the Convention have been more directly implemented.

In the early eighties of the last century state power utilities of Croatia and Slovenia constructed the Krško nuclear power plant (Krško NPP) on the territory of the Republic of Slovenia. Presently, two states share the nuclear liability and the ownership of the Krško NPP. In March 2003 the Agreement between the Republic of Croatia and the Government of the Republic of Slovenia on Regulation of Status and Other Legal Relations regarding the Investment, Use and Dismantling of Nuclear Power Plant Krško, enter into force.

Concerning Krško NPP licensing and operation, the Croatian regulatory body was the authority competent to provide appropriate consents. Nowadays,

the Croatian regulatory body does not play any role concerning this issue. The Slovenian regulatory body, Slovenian Nuclear Safety Administration, is in charge to license Krško NPP operators, to review operation and modifications as well as to carry out regulatory inspections.

This report for the Extraordinary Meeting *on the Implementation of the Obligations under the Convention on Nuclear Safety* is the sixth Croatian report in row of previous reports on the implementation of the obligations under the Convention (1998, 2001, 2004, 2007, 2010). The Report is in different format from previous reports and in accordance to instructions for the Extraordinary meeting. As a country without nuclear power plant on its territory Croatia reports on three topics: Organizational items, Emergency preparedness and International cooperation.

The brief status of changes in the organization of the regulatory body following Fukushima accident is provided in section *National Organizations*. The emergency preparedness system in the Republic of Croatia and plans for improvements are described in a separate section regarding the situation of Croatia which has several nuclear power reactors in close vicinity to its borders. International cooperation of the Republic of Croatia in the field of radiological and nuclear safety is described in the section *International Cooperation*.

The report is followed by the Summary table which summarizes activities taken or planned after Fukushima accident.

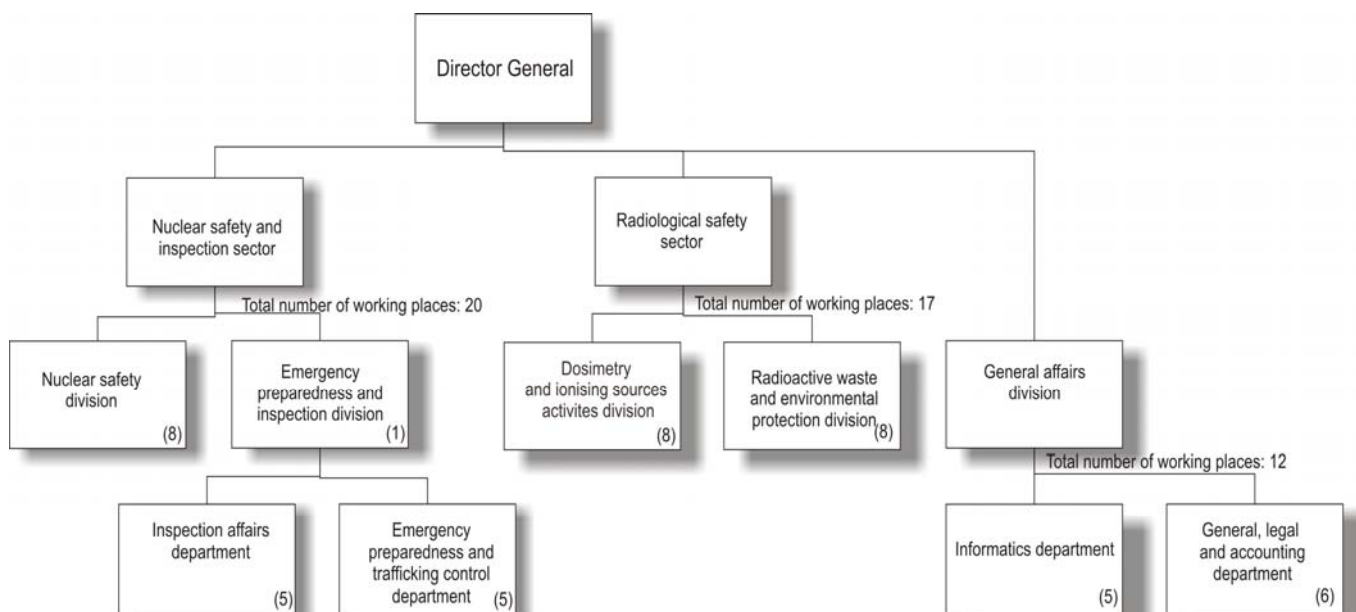
TOPIC 4 - NATIONAL ORGANIZATIONS

According to the Act on Radiological and Nuclear Safety (O.G. 28/10) a single regulatory body, the State Office for Radiological and Nuclear Safety (SORNS), is established. The SORNS reports directly to the Government of the Republic of Croatia and the Director General of SORNS has been appointed by the Government. The SORNS is funded from the state budget only. If needed, the SORNS could charge the costs of any special/additional independent safety analyses from the legal entities/applicants.

There has been changes in the position of the SORNS within the governmental body structure and the organization of the SORNS following the Fukushima accident. Changes were influenced mostly by change in Government and partly by Fukushima accident.

From the beginning of the year 2012, SORNS reports directly to the Government of the Republic of Croatia. Before this change supervision over SORNS were performed by the ministry competent for health.

Organizational changes of the SORNS started with new regulation on SORNS organization adopted by the Government in April 2012. The new organizational chart is given in the following picture.



Together with the adoption of the new organizational chart, SORNS requested increase in number of stuff for additional 5 workers.

Today, the SORNS has 25 employees and according to the new systematisation, it is planned to have 49 employees.

TOPIC 5 – EMERGENCY PREPAREDNESS AND RESPONSE AND POST – ACCIDENT MANAGEMENT (OFF SITE)

Due to changes in radiological and nuclear safety regulation and greatly influenced by accident in Fukushima, the Croatian Government started to review national Emergency preparedness and response plan. New revision of the national Emergency preparedness and response plan is expected to be finalised by September 2012. As there are no nuclear facilities on Croatian territory, with respect to nuclear accident Croatia has responsibility only to develop and implement off-site emergency plans. Nearest to the territory of the Republic of Croatia are Krško NPP (PWR, 707 MW_e, Slovenia, Joint venture between Slovenia and Croatia) and Paks NPP (VVER, 4x440 MW_e, Hungary). Krško NPP is situated 10.6 km from the western border, and Paks NPP 74.1 km from the northern border. Taking into account proximity of NPPs, Croatia defined the Urgent Protective Action Planning Zone (UPZ) within the radius of 25 km around the Krško NPP, and the Long-term Protective Action Planning Zone (LPZ) is defined as an area within the radius of 100 km around the NPP. The LPZ includes the UPZ.

The western part of the Croatian territory is within the UPZ and the LPZ with regard to the Krško NPP. The UPZ of the Croatian territory covers a 550 km² area and it has about 66.000 inhabitants, so that the average population density is quite high (120 inhabitants/km²). The LPZ includes big population centres such as Zagreb, Karlovac, etc. Eastern part of the Croatian territory is within the LPZ with regard to Paks NPP. The LPZ covers a big part of the Osijek-Baranja County, which is a well-known corn-producing region and agriculturally one of the most outstanding parts of Croatia.

Following the Fukushima accident Croatia started to reconsider basis for emergency planning zoning, The Hazard Assessment of Republic of Croatia from Natural and Technical-technological Disasters and Accidents. The revision of the Assessments of the threat of nuclear accidents in NPP Krško is under way and the first results are expected by the end of 2012.

In March 2012, Croatia hosted EPREV Mission. Final Mission findings are expected in Autumn 2012. Nevertheless, preliminary mission findings point out two major deficiencies in emergency preparedness system with respect to Krško NPP. First one is lack of direct communication between Krško NPP operator and emergency response system in Croatia which can lead to delay in distribution of information. Second one is differences in emergency planning

zoning in Croatia and Slovenia for the same nuclear facility. Activities on harmonization across national border with Slovenia are preliminary found as priority.

TOPIC 6 – INTERNATIONAL COOPERATION

International cooperation of the Republic of Croatia in the field of radiological and nuclear safety is responsibility of the State Office for Radiological and Nuclear Safety (SORNS). According to the Radiological and Nuclear Safety Act (OG 28/10) the State Office for Radiological and Nuclear Safety: “coordinates technical cooperation with the International Atomic Energy Agency for all participants from the Republic of Croatia”; “fulfils the obligations which the Republic of Croatia has assumed through international conventions and bilateral agreements concerning protection against ionising radiation, nuclear safety and the application of protective measures aimed at the non-proliferation of nuclear weapons” and “cooperates with international and domestic organisations and associations in the area of protection against ionising radiation and nuclear safety, and appoint its own expert representatives to take part in the work of such organisations and associations or to monitor their work”.

Croatia is a Party of all major international conventions:

- Convention on Nuclear Safety, signed and ratified in 1995,
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, signed in 1998 and ratified in 1999,
- Convention on the Physical Protection of Nuclear Material, adopted by succession in 1992, the Amendment to the Convention signed in 2005 and ratified in 2006,
- Convention on Early Notification of a Nuclear Accident, adopted by succession in 1992,
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, adopted by succession in 1992 etc.

On the basis of the Convention on Early Notification of a Nuclear Accident, Croatia signed two bilateral agreements: the Agreement Between the Republic of Croatia and the Republic of Slovenia on the Early Exchange of Information in the Event of a Radiological Emergency (in 1998) and the Agreement Between the Government of the Republic of Croatia and the

Government of the Republic of Hungary on the Early Exchange of Information in the Event of a Radiological Emergency (in 1999).

Also, in 2007 Croatia ratified the Agreement between the European Atomic Energy Community (Euratom) and Non-Member States of the European Union on the Participation of the Latter in the Community Arrangements for the Early Exchange of Information in the Event of Radiological Emergency (Ecurie).

Croatia cooperates with many international organizations in the field of radiological and nuclear safety like Nuclear Suppliers Group, Zangger Committee, Wassenaar Arrangement, Comprehensive Nuclear-Test-Ban Treaty Organization, North Atlantic Treaty Organization etc.

Also, Croatia participates in the work of European Nuclear Safety Regulators Group (ENSREG) as observer.

As an EU Neighboring Country, Croatia accepted invitation and joined Nuclear Stress Test in form agreed with European Commission. According to the agreement no national report due to status of national nuclear program was needed but Commission expected comments on the Slovenian national report due to joint venture between Slovenia and Croatia and Croatian participation in peer review process. Both agreed activities were fulfilled successfully.

Croatia hosted EPREV mission in March 2012.

Representatives of SORNS participate in the work of IAEA Nuclear Safety Standards Committee, Radiation Safety Standards Committee, Waste Safety Standards Committee and Transport Safety Standards Committee. IAEA safety standards are utilized in the preparation of legislation and regulations in the field of radiological and nuclear safety.

SUMMARY TABLE

Activity	Activities by the Regulator		
	(Item 3.a)	(Item 3.b)	(Item 3.c)
Topic 4 – National Organizations			
New Organizational Structure of DZRNS	Ongoing	May 2012	No
Ask for additional 5 staff	Ongoing	End of 2012	No
Topic 5 – Emergency Preparedness and Response and Post Accident Management (Off Site)			
New National Off Site Emergency Preparedness and Response Plan	Ongoing	September 2012	No
Revision of Emergency planning zoning and harmonisation with neighbours	Planned	2013	No
Topic 6 – International Cooperation			
EPREV Mission	Taken	March 2012, findings September 2012	No
Nuclear stress test, EU neighbouring countries	Ongoing	2012	No