EUROPEAN COMMISSION

Brussels, 19 August 2010
C(2010) 5693 final

EUROPEAN ATOMIC ENERGY COMMUNITY

REPORT

On the implementation of the obligations under the

Convention on Nuclear Safety

5th Review meeting

of the Contracting Parties to the
Convention on Nuclear Safety (CNS)
Vienna, 4 to 16 April 2011

(presented by the European Commission)

Executive Summary

Following the Commission's communication "Europe 2020: a strategy for smart, sustainable and inclusive growth"[1] and the discussions held in the Council on the 25-26 March 2010, the European Council reached an agreement "Towards a new Energy Strategy for Europe 2011-2020", on which the Council adopted Conclusions on 31 May 2010[2]. European Union (EU) energy policy is playing a key role to promote a more energy and resource efficient, sustainable, low carbon, secure, and competitive Europe in the framework of the Europe 2020 new strategy for jobs and growth. In this context, as one of seven flagship initiatives the Commission put forward the energy-relevant "Resource efficient Europe" initiative, to help decouple economic growth from the use of resources, support the shift towards a low carbon economy, increase the use of renewable energy sources, modernise our transport sector and promote energy efficiency. Around one third of the electricity in the EU comes from nuclear which is one of the largest sources of low-carbon energy in Europe. While it is for each Member State to decide whether to include nuclear energy in its own energy mix, the role of the EU should be to maintain and develop further in conformity with the law of the European Union and the European Atomic Energy Community (Euratom) the most advanced framework for nuclear energy in those Member States that choose nuclear power, meeting the highest standards of safety, security and non-proliferation as required by the Euratom Treaty.

Neither the EU nor EURATOM possesses nuclear installations as defined by the Convention. All nuclear power plants on the territories of the EU Member States are regulated by the national regulatory authorities in conformity with the legal framework of the Community.

On 1 December 2009 the Treaty of Lisbon[3] entered into force and amended the existing EU Treaty, the Treaty establishing the European Community and the Euratom Treaty[4]. While the amendments concerned mainly the institutional and financial provisions of the Euratom Treaty, the EU became its own legal personality. Euratom remains as a separate legal entity strongly interlinked with the EU, its membership, finances and institutions fully integrated with the European Union and sharing the same Member States and institutions.

After Euratom acceded to the Convention in 1999 as a regional organisation, it entered into force on 30 April 2000; since then Euratom actively participated in all review meetings.

The following states are members of the EU, and thus of Euratom: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK. All the 27 EU Member

[1] Communication from the Commission of 3.3.2010, Europe 2020 – a strategy for smart, sustainable and inclusive growth, COM (2010) 2020 final, http://ec.europa.eu/eu2020/index_en.htm

[2] Council conclusions "Towards a new Energy Strategy for Europe 2011-2020" 3017th TRANSPORT, TELECOMMUNICATIONS AND ENERGY Council meeting Brussels, 31 May 2010, http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/trans/114727.pdf

[3] Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007 (2007/C 306/01), OJ 306, 17.12.2007, page 1

[4] Consolidated version of the Treaty establishing the European Atomic Energy Community, OJ C 84 of 30.03.2010, p.1

States have signed and ratified the Convention on Nuclear Safety and are now Contracting Parties.

Euratom possesses competences, shared with its Member States in the fields of legislative and regulatory framework (Article 7), assessment and verification of safety (Article 14), radiation protection (Article 15), emergency preparedness (Article 16 Para 1,2 and 3), siting of nuclear installations (Article 17), design, construction and operation of nuclear installations (Article 18 and 19). In view of the new Council Directive on Nuclear Safety, Euratom reports in addition – on a voluntary basis – under Articles 8 to 12.

Since the Member States are responsible for implementing the European legislation, the Euratom report only informs about the current legal framework, European initiatives and programmes, but not on the practical implementation in the 27 Member States. This information is found in the respective national reports.

The present Euratom report is an alone-standing report, based on the last report for the 4th Review Meeting. It has been revised, updated and restructured to be in line with the new Guidelines regarding National Reports. New information is in ***bold italics***.

Euratom has been active in the field of nuclear safety for over 25 years. The commitment of Euratom and its Member States to a high level of nuclear safety is reflected, in particular, in the existing Euratom legislative framework as well as in the relevant Council Resolutions and conclusions of the European Council. Nuclear safety is and remains an absolute priority of the EU.

Following Euratom commitments in the last review meeting, the Community continued to engage in a wide-ranging process to develop instruments and initiate projects to more effectively promote harmonisation and enhancement to Nuclear Safety across the European Union. The Commission has worked with the support of expert groups for more than 30 years and has launched many studies and initiatives in the field of radiation protection and nuclear safety.

In 2007, following the Council' conclusions[5], the Commission established a High Level Group on Nuclear Safety and Waste Management[6], which replaced all former expert groups in these areas. The Group was later renamed the European Nuclear Safety Regulators' Group (ENSREG) and brings together the senior representatives from the national nuclear regulatory or safety authorities of all EU Member States. Among other activities, the group promoted a better use of the Convention of Nuclear Safety, increased transparency in the nuclear field, international peer reviews carried out against IAEA safety standards and self-assessments.

[5] Council Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste, 2798th ECONOMIC and FINANCIAL AFFAIRS Council meeting, Brussels 8 May 2007.

[6] Commission Decision of 17 July 2007 establishing a "European High Level Group for Nuclear Safety and Waste Management (High Level Group), OJ L 195/44 of 27.07.2007

In 2007, the EU Summit[7] endorsed the Commission proposal to organise a broad discussion among all relevant stakeholders on the opportunities and risks of nuclear energy. Since then the European Nuclear Energy Forum (ENEF) has been providing a unique discussion platform on nuclear safety, nuclear waste policies and possible initiatives on training and education as well as in the area of transparency. More than 250 representatives of the governments of all 27 EU Member States, European Institutions, nuclear industry, consumers and the civil society met alternately in Prague and Bratislava.

In its landmark ruling in Case 29/99[8], the Court of Justice of the European Union stated "it is not appropriate, in order to define the Community's competencies, to draw an artificial distinction between the protection of the health of the general public and the safety of sources of ionising radiation." Since then the initial proposal for a nuclear safety directive had been discussed, revised and re-discussed. In 2008, following widespread consultations the Commission presented the revised proposal for a Directive setting up a Community framework for nuclear safety. Both ENEF and ENSREG provided a valuable contribution to the preparation of the Council Directive on Nuclear Safety.

On 25 June 2009, for the first time since the establishment of the European Community in 1957 – unanimously and with the full support of all 27 EU Member States following widespread support from the European Parliament – the Council of the European Union adopted European-wide, binding requirements on nuclear safety. The 'Nuclear Safety Directive'[9] made a number of the safety requirements of the Convention on Nuclear Safety as well as of the Safety Fundamentals established by the IAEA legally binding to its Member States. It creates a solid and flexible legal framework that defines basic obligations and principles governing nuclear safety throughout the EU, which becomes the first major regional nuclear actor to give binding legal force to these leading international nuclear safety instruments.

Having discussed a revision and simplification of Community legislation in the area of radiation protection, the expert group established on the basis of Article 31 Euratom Treaty adopted its Opinion on the Revised Basic Safety Standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation on 24 February 2010. Now, the Commission plans to adopt a proposal for a new Basic Safety Standards Directive (Euratom) for discussion in the Council, which should consolidate five Directives and one Commission Recommendation into a new Basic Safety Standards Directive.

---

7 Council of the European Union Document No. 7224/1/07 REV 1 of 2 May 2007

8 Judgement of 10 December 2002 in the Case C-29/99 (Commission of the European Communities v Council of the European Union)

9 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

On 13 November 2008 the Nuclear Illustrative Programme 2007 was updated[10] as part of the Second Strategic Energy Review "EU energy security and solidarity action plan". It focuses on the security of supply and on requirements and conditions for realising investments. It highlights that by 2020 nearly two-thirds of EU electricity production could be low-carbon if rapid investment decisions are taken with regard to renewable energy sources as well as nuclear energy.

Since 1 January 2007, the nuclear safety cooperation and assistance activities, which were initiated under the TACIS programme for new independent states (NIS), continue under the "Instrument for Nuclear Safety Cooperation"[11]. For the period 2007-2013 it is endowed with 524 million euros, with the aim to improve the level of nuclear safety and safeguards for NIS and other third countries worldwide.

With more than 300 projects the PHARE nuclear safety programme has undoubtedly contributed to improve nuclear safety in the applicant countries of Central and Eastern Europe. Since 1 January 2007, the new Instrument for Pre-accession Assistance (IPA)[12] focuses on providing more substantial support to the Western Balkan Countries.

A number of key safety-related Euratom projects have been launched since the start of the 7th Euratom Framework Programme (FP) for nuclear research (and training) activities on 1 January 2007[13]. The 7th FP covers the period 2007 to 2011; as usual it is composed of two specific programmes for nuclear research activities: one implemented through indirect actions, such as consortia of nuclear industrial and R&D organisations, and one implemented through direct action, carried out by the Commissions Joint Research Centre (JRC). In September 2007, the Sustainable Nuclear Energy Technology Platform (SNETP) was launched to facilitate increased coordination and cooperation of R&D activities in general. It brings together all the key nuclear industrial and research organisations in Europe around a common vision for nuclear systems and safety-related research and development (R&D). The European Commissions JRC continues to be fully involved in international efforts for advanced nuclear reactor safety. Research is primarily centred on the long-term safe operation of existing Western and non-Western designed reactor types, as well as alternative and closed fuel cycle systems, sustainable reactor designs and the safety and sustainable use of advanced nuclear fuel; e.g. in 2008 the JRC has launched, in the interest of European national safety authorities, the "European Clearing House", aiming at delivering analyses and feed-back recommendations on operational events in nuclear power plants. In addition, the Commission has completed a series of studies, initiated new studies and workshops in the area of nuclear

[10] COM(2008)776 final [not published in the Official Journal], see http://ec.europa.eu/energy/strategies/2008/doc/2008_11_ser2/nuclear_illustrative_programme_pinc_updt_communication.pdf

[11] Council Regulation (Euratom) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation, OJ L81, 22.03.2007, p.1.

[12] Council Regulation (EC) No 1085/2006 of 17 July 2006 establishing an Instrument for Pre-Accession Assistance (IPA), OJ L 210 31/07/2006, p. 82.

[13] Council Decision 2006/969/EC of 18 December 2006 concerning the Seventh Framework Programme of the European Atomic Energy Community (Euratom) or nuclear research and training activities (2007 to 2011), OJ L 391 of 30/12/2006, p. 19.

safety (Nuclear Safety in a Situation of Fading Nuclear Experience, Nuclear Incident reporting and follow up, Nuclear Safety Performance Indicators and Regulation and Enforcement in the aviation, shipping and nuclear Industries). Finally, as part of the existing programmes the Commission continued the European Community Urgent Radiological Information Exchange (ECURIE), the decommissioning support and the EURATOM loans.

No previous safety issues have been identified during the last review meetings, but the Rapporteur mentioned that it is difficult to report and Peer review Euratom under the framework of the Convention because Euratom is a unique entity.

For the future an extension of the 7th framework programme is planned to align it with the general EU framework programme, covering also the years 2012 and 2013.

Euratom does not operate any nuclear installations as defined by the Convention. Yet, it is interesting to mention that the Euratom Nuclear Safety Directive defines nuclear installations broader than the Convention, as it includes also research reactors, nuclear fuel cycle facilities (except for off-site waste management facilities).

The Euratom Treaty and its derived legislation is a lex specialis of EU law and prevail in case of conflicting rules. Legislation adopted under the Treaty on the Functioning of the EU (TFEU) and the Euratom Treaty is legally binding to Member States. It has primacy over national law and may be directly applicable within the legal systems of its Member States. To ensure a better understanding and easier peer review of Euratom the present report contains a revised and updated introduction into the legal framework of the EU and Euratom, explaining the legal instruments, the legislative procedures, the joint institutional framework, the general and special obligations of Member States and the EU enforcement mechanisms.

In the course of the last 50 years a substantial corpus of Euratom legislation has been adopted and updated to protect the health of workers and of the general public. The so-called basic safety standards are completed by a set of legal instruments of different binding nature, covering a wide range of aspects including nuclear safety.

The Nuclear Safety Directive supplements the basic standards as regards the nuclear safety of nuclear installations and is without prejudice to the Basic Safety Standards Directive. Its goal is to maintain and promote the continuous improvement of nuclear safety and to ensure that at high level of nuclear safety is provide by EU Member States to protect workers and the general public against dangers arising from nuclear installations. It does not prevent Member States from taking more stringent safety measures in the subject-matter covered by this Directive, in compliance with Community law. The Nuclear Safety Directive aims to reinforce the role and the independence of the competent national regulatory authorities by building on their competencies. It requires Member States to establish and maintain a national legislative, regulatory and organisational framework governing the safety of nuclear installations and recognises the prime responsibility of licence holders for nuclear safety under the supervision of the competent authorities. Licence holders are required to undertake

systematic and verifiable safety assessments, including the verification of "defence-in-depth" measures.

The Directive obliges Member States to ensure the establishment and implementation of management systems by the license holder which give due priority to nuclear safety and are regularly verified by the competent regulatory authority. It ensures that the competent regulatory authority is given the legal powers and human and financial resources necessary to fulfil its obligations in connection with the national framework with due priority to safety.

Nuclear safety assessments carried out in installations based in the EU Member States are a responsibility of the Member State where the installation is based. The Nuclear Safety Directive requires regular nuclear safety supervision, carried out by the regulatory authority and the licence holder throughout the whole lifetime of nuclear installations.

The Euratom Treaty requires the establishment of uniform safety standards to protect the health of the workers and of the general public and to ensure that they are applied. First established in 1959, the current safety standards, as set out in "Basic Safety Standards" Directive 96/29/Euratom of 13 May 1996[14], are based on the 1990 Recommendation of the International Commission on Radiological Protection (ICRP).

In the area of emergency preparedness the basic safety standards were complemented with Council Directive 89/618/Euratom[15] on measures to be applied and steps to be taken in the event of a radiological emergency and Council Decision 87/600/Euratom[16] sets out arrangements for the early exchange of information between competent authorities in the event of a radiological emergency (ECURIE). In 2009, the IAEA and the European Commission initiated a planning for providing technology of the European Radiological Data Exchange Platform (EURDEP) to the IAEA in order to facilitate global application of this technology by the IAEA.

There is no detailed Euratom legislation in place which defines criteria for the siting of nuclear installations. The siting of a nuclear installation necessarily includes an environmental impact assessment under the Treaty of the Functioning of the European Union (TFEU), taking into account radiation protection aspects, such as the demographic characteristics of the site.

The design, construction and operation of nuclear installations lie within the competence of the national authorities and there is no detailed Euratom legislation in place. However, following the mandatory submission of general data relating to any plan for the disposal of radioactive waste including discharges, the Commission gives an opinion, which contains also the results of the analysis of the possible radiological consequences of unplanned releases

[14] Council Directive 96/29/Euratom of 13 May 1996 laying down the basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation, L 159 of 29.06.1996 p. 1

[15] Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, OJ L 357, 07.12.1989 P. 31

which may occur in the event of an accident. In addition, corresponding to the Convention on Nuclear Safety, the Nuclear Safety Directive illustrates the fundamental principle of "defence-in-depth" that implies the setting up of more than one protective measure for a given safety objective.

The report closes with a series of annexes, including the Declaration of Competences, the last Rapporteur's report, a list of the Euratom legislation and a copy of the Nuclear Safety Directive.

[16] Council Decision 87/600/Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency, OJ L 371 of 30.12.1987, p. 76

TABLE OF CONTENTS

SECTION I
INTRODUCTION

1. THE EUROPEAN UNION (EU) NUCLEAR ENERGY POLICY

According to the first strategic energy review of the European Union in 2007[17], around one third of the electricity in the EU comes from nuclear which is one of the largest sources of low-carbon energy in Europe. Nuclear power has been one of the ways of limiting CO2 emissions within the EU and, for those Member States that wish, is also likely to form part of an energy mix where significant emission reductions are going to be required in the coming decades. Nuclear power is less vulnerable to fuel price changes than coal or gas-fired generation, as uranium represents a limited part of the total cost of generating nuclear electricity and is based on sources which are sufficient for many decades and widely distributed around the globe. Nuclear energy is one of the cheapest sources of low carbon energy that is presently produced in the EU and also has relatively stable costs[18]. It is for each Member State to decide whether or not to rely on nuclear electricity. However, it is essential at EU level the objective of cutting Greenhouse gas emissions and improving security of energy supply will be met. In the current energy context, the International Energy Agency (IEA) expects the world-wide use of nuclear power to increase from 368 GW in 2005 to 416 GW in 2030. There are therefore economic benefits in maintaining and developing the technological lead of the EU in this field. As set out in the 2007 Nuclear Illustrative Programme [19], at EU level, the role should be to maintain and develop further, in conformity with Community law, the most advanced framework for nuclear energy in those Member States that choose nuclear power, meeting the highest standards of safety, security and non-proliferation as required by the Euratom Treaty. In addition, nuclear waste and decommissioning have to be well managed and should be included in future Community work. The EU should also continue their efforts to promote the application of such high standards internationally. In order to make progress on this the Commission proposed to establish an EU High Level Group on Nuclear Safety and Waste Management. This proposal was endorsed by the Council and the High level Group in question has been established on 17 July 2007 (see below chapter 3.2.1, p.31).

In the context of the European Unions second strategic energy review in 2008[20], the Nuclear Illustrative Programme of 2007 was updated[21] (see below, p. 25). A number of the

---

17 Communication from the Commission to the European Council and the European Parliament of 10 January 2007 – An energy policy for Europe (SEC(2007) 12), COM(2007) 1 final

18 According to the IEA 2006 World Energy Outlook "new nuclear power plants could produce electricity at 4.9 to 5.7 $ cents per kWh [3.9 to 4.5 Euro cents at mid November 2006 exchange rates] if construction and operating risks are mitigated" and that is, at " a price of about 10 $ per tonne of CO2 emitted makes nuclear competitive with coal-fired power stations".

19 Communication from the Commission to the Council and the European Parliament: „Nuclear Illustrative Programme" - COM(2007)565 final of 04.10.2007; SEC(2007)1261 and SEC(2007)1262..

20 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 13 November 2008 - Second Strategic Energy Review - An EU energy security and solidarity action plan (SEC(2008) 2870, 2871, 2872), COM(2008) 781 final.

21 Communication from the Commission to the European Parliament, the Council and the Economic and Social Committee – Update of the nuclear illustrative programme in the context of the second strategic energy review of 13 November 2008, COM(2008) 776 final.

partners of the EU are considering launching a nuclear programme, a technology where EU industry enjoys a global leadership, or expanding their current activities. Many developing countries do not currently have the legislative and regulatory infrastructure needed to ensure that safety is the priority in design, construction and operational decisions. EU action to promote the highest standards of nuclear safety and security has recently been outlined[22]. With the Instrument for Nuclear Safety Cooperation (see below p. 27), the EU proposes to cooperate with third countries - who wish so - in improving their nuclear safety culture and the safety of their operating nuclear power plants. For emerging countries intending to build nuclear power plants, as a first step, the EU will help in the development of competent and independent nuclear regulatory authorities, capable of ensuring that the new plants are built according to international nuclear safety standards and operate in accordance with the highest standards. Finally, nuclear energy contributes to the EU security of energy supply as a major source of base load electricity, not increasing greenhouse gas emissions and thus combating climate change. EU uranium supplies are diversified within stable regions (Kazakhstan, the world's third biggest major uranium supplier after Australia and Canada, which represent nearly half of the EU needs) and the cost of uranium has a limited impact on the electricity price. As indicated in the Communication "Update of the Nuclear Illustrative Programme", over the next 10-20 years the majority of nuclear power plants in the EU will start to reach the end of their originally designed lifetimes. By 2020 the share of nuclear energy in power generation would decrease significantly if there are no decisions made about long term operation and/or new investments. Decisions about lifetime extension, new investments or replacement become more acute, notably in the light of the EU CO2 reduction objective. It is for each Member State to choose whether or not to invest in nuclear energy but the nuclear safety and security framework applied everywhere in the EU is of common interest. It must be clear that the EU maintains the highest safety, security, non-proliferation and environmental protection standards for nuclear generation. The EU therefore develops a common legislative framework with respect to the safety of nuclear installations and the management of nuclear waste.

2. OVERVIEW OF THE EU NUCLEAR PROGRAMME

Euratom does not possess ***or operate any*** nuclear installations as defined in Article 2(1) of the Convention. Such nuclear installations exist only in the territories of the Member States of the European Atomic Energy Community, to which the Euratom Treaty applies.

Despite the Convention applies to nuclear power reactors only, so that research reactors are not formally covered by the Convention (see Art. 2), some Contracting Parties agreed to include them during the last CNS peer review conference. The only nuclear reactor owned by Euratom, which is still in operation, is the High Flux Reactor (hereinafter: HFR) of the European Commissions Joint Research Centre (hereinafter referred to as: 'JRC')[23] in Petten, Netherlands. The HFR research reactor is formally owned by the JRC on behalf of the

[22] "Addressing the international challenge of nuclear safety and security", COM(2008)312.

[23] For more information on the JRC please see below Section III, Chapter 1.3 "The Joint Research Centre (JRC) of the Commission", p.38 and Chapter 3.1.2 "Specific Programme for research and training activities implemented by direct actions and carried out by the Commission's Joint Research Centre (JRC)", p. 46.

Euratom Community, but it is operated by Nuclear Consultancy and Research Group (NRG), a subsidiary of the Energy Research Centre of the Netherlands (ECN). It is regulated by the Dutch regulatory authority. For these reasons the present Euratom report entails no information on research reactors. In the past, the JRC was the owner of the license, but the IAEA recommended the transfer of the license to the operator NRG. For this reason the Dutch competent authority (Ministry of Housing, Spatial Planning and the Environment) transferred the operating licence from JRC to the Dutch entity NRG.

Since more than 25 years all research reactors of the JRC in Ispra, Italy, have been shutdown and will undergo decommissioning in the coming years. All nuclear fuel has been removed from their cores. For this reason they are excluded from the scope of application (see Art 2 of the Convention) and will be dealt with in the Euratom Report for the next review meeting under the Joint Convention on the Safety of Spent Fuel and the Safety of Radioactive Waste Management.

For all these reasons the present Euratom report does not include any information about the HFR research reactor in Petten (NL). HFR is considered as a Dutch research reactor. This choice was facilitated by the decision of the Government of the Netherlands to include HFR on a voluntary basis in its 3rd national report to the CNS in 2005.

3. THE EUROPEAN ATOMIC ENERGY COMMUNITY'S (EURATOM) ACCESSION TO THE CONVENTION ON NUCLEAR SAFETY

The EU is not a federal state, nor is it an intergovernmental organization. The European Union is, in fact, unique because it constitutes a new legal order in international law. For the mutual social and economic benefit its Member States have set up common institutions to which they delegate some of their sovereignty so that decisions on specific matters of joint interest can be taken at European level.

Like the EU, the European Atomic Energy Community (hereinafter referred to as Euratom) is an international organization endowed with international legal personality. While membership and organization of Euratom is fully integrated with the European Union, Euratom is a separate legal entity bearing rights and duties on the international plane.

As a regional organisation as referred to in Article 30 (4) of the Convention on Nuclear Safety (hereinafter: the Convention) Euratom acceded to the Convention after the Decision of the European Commission of 16 November 1999[24] on the basis of Article 101 of the Euratom Treaty following a Decision of the Council of 7 December 1998. The instruments of accession were deposited with the Director General of the International Atomic Energy Agency on 31 January 2000. Thus, for Euratom the Convention entered into force on 30 April 2000 in accordance with Article 31(2) of the Convention.

Euratom participated in the 2nd Review Meeting of the Contracting Parties (Vienna, 15-26 April 2002). This participation was restricted to those fields for which a Community competence had been declared and this fact was duly reflected in the Euratom Report

[24] Commission Decision 1999/819/Euratom of 16 November 1999 concerning the accession to the 1994 Convention on Nuclear Safety by the European Atomic Energy Community (EURATOM), OJ L 318, 11.12.1999, p. 2

presented by the European Commission at that forum.[25] In December 2002, the Court of Justice of the European Communities annulled the third paragraph of the Declaration attached to the Council Decision of 7 December 1998 approving the accession of the European Atomic Energy Community to the Nuclear Safety Convention in so far, as it failed to state that the Community was competent in the fields covered by Articles 7, 14, 16(1) and (3) and 17 to 19 of the Convention.[26] On the basis of this Court ruling a second Declaration under Article 31(2) of the Convention was deposited with the Director General of the IAEA on 11th May 2004[27].

Euratom participated in the 3rd Review Meeting of the Contracting Parties (Vienna, 11-22 April 2005) and submitted a report according to Article 5 of the Convention, taking into account the revised Declaration of Competences under Article 30(4)iii of the Convention. Answers to the five questions on the report submitted by non Member States were given within the deadline. On behalf of Euratom, the European Commission presented the last report for peer review at the fourth review meeting of contracting parties to the Convention at the International Atomic Energy Agency in April 2008.

The following States are Members of the EU and thus Members of Euratom: The Republic of Austria, the Kingdom of Belgium, the Republic of Bulgaria, the Republic of Cyprus, the Czech Republic, the Kingdom of Denmark, the Republic of Estonia, the Republic of Finland, the French Republic, the Federal Republic of Germany, the Hellenic Republic, the Republic of Hungary, Ireland, the Italian Republic, the Republic of Latvia, the Republic of Lithuania, the Grand Duchy of Luxembourg, the Republic of Malta, the Kingdom of the Netherlands, the Republic of Poland, the Portuguese Republic, Romania, the Slovak Republic, the Republic of Slovenia, the Kingdom of Spain, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland. ***All the 27 EU Member States have signed and ratified the Convention on Nuclear Safety and are now Contracting Parties.***

4. STATEMENT OF THE COMMITMENT OF THE CONTRACTING PARTY TO THE CONVENTION ON NUCLEAR SAFETY

According to the Convention, regional organisations must – in matters within their competence – "on their own behalf, exercise the rights and fulfil the responsibilities, which the Convention attributes to States Parties" (Article 30(4) ii of the Convention). The participation of Euratom in the CNS Review Meetings is therefore limited to those fields, for which a Community competence was declared by the Declaration under Article 30(4)iii of the Convention (see Annex 1).

On the basis of Article 2(b) and the relevant Articles of Title II, Chapter 3, entitled "Health and Safety" of the Euratom Treaty in connection with the Decision of the Court of Justice of the European Communities of 10th December 2002[28] the Community (Euratom) possesses competences, shared with the abovementioned Member States, in the fields of

[25] Report on the implementation of the obligations of the Convention on Nuclear Safety (COM(2001) 568 final.

[26] Judgement of the European Court of Justice in Case C-29/99, European Court Reports (hereinafter: ECJ) 2002 Page I-11221, 102-103.

[27] See Declaration of Competences in Annex 1

[28] C-29/99 ECJ 2002 Page I-11221, 102-103

- Legislative and regulatory framework, covered by Article 7,
- Assessment and verification of safety, covered by Article 14,
- Radiation protection, covered by Article 15,
- Emergency preparedness, covered by Article 16 paragraph 1, 2 and 3,
- Siting of nuclear installations covered by Article 17,
- Design and construction of nuclear installations, covered by Article 18 and
- Operation of nuclear installations, covered by Article 19 of the Convention.

In conclusion, only the Articles 1 to 5, Article 7 and Articles 14 to 35 of the Convention apply to Euratom. This fact was and is duly reflected in the past[29] and present Euratom Reports presented by the Commission.

As the new Council Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations covers additional Articles of the Convention, EURATOM reports under Articles 8 to 12 on a voluntary basis.

5. EXPLANATION OF THE PREPARATION, STRUCTURE AND MAIN FEATURES OF THE EURATOM REPORT

Euratom submits the present report for peer review at the ***fifth*** Review Meeting of the Convention at the International Atomic Energy Agency (IAEA) ***in April 2011***. ***Since the Member States are responsible for implementing and applying Euratom legislation, the Euratom report only informs about the current legal framework, European initiatives and programmes, but not on the practical implementation in the 27 Member States. This information is found in the respective national reports.***

This report is based on the last report for the 4th Review Meeting. It has been revised, updated and restructured to be in line with the new Guidelines regarding National Reports under the Convention on Nuclear Safety[30]. It is a full report without references to previous reports to allow easy reading. New information has been highlighted, as recommended, in bold italics font. For a better follow-up of the 4th review meeting the last 'Rapporteur's Report' for EURATOM has been annexed to the present report.

The EURATOM report starts with an introduction on the general policy, the accession and declaration of competences, followed by a summary to highlight the follow-up from the 4th Review Meeting. Finally, the Article by Article Review should demonstrate how Euratom, ***as a regional organisation***, contributes to meeting the main objective of the Convention: to achieve and maintain a high level of nuclear safety worldwide by enhancing Community

[29] EURATOM Report on the implementation of the obligations of the Convention on Nuclear Safety (COM(2001) 568 final) and EURATOM Report on the implementation of the obligations under the Convention on Nuclear Safety, Brussels, 13.10.2004, C(2004) 374

[30] INFCIRC/572/Rev.3 of 28 September 2009

measures and international cooperation. It also shows how the Community meets the obligations of the applicable articles established by the Convention.

Until the last review meeting Euratom possessed only limited competences, therefore the scope of ***the last*** report *was* limited to the Article 7 and Articles 14 to 19 of the Convention as stated in the Declaration under Article 30(4)iii of the Convention, deposited with the Director General of the IAEA on 11th May 2004. ***With the new Council Directive establishing a Community framework for the nuclear safety of nuclear installations[31] the scope of this report was broadened in order to include reporting under the Articles 8 to 12.***

[31] OJ L 172, 02/07/2009, p.18

SECTION II
SUMMARY

1. EURATOM'S EFFORTS IN ACHIEVING THE CONVENTIONS OBJECTIVES

The European Atomic Energy Community (Euratom) has been active in the field of nuclear safety for over 25 years, through the action of its institutions, in particular the Commission and the Council, at different levels. The commitment of Euratom and its Member States to a high level of nuclear safety and to the safe management of spent fuel and radioactive waste is reflected, in particular, in the existing Euratom legislative framework adopted under the Euratom Treaty as well as in the relevant Council Resolutions and conclusions of the European Council.

In the Council Resolution of 22 July 1975 on the technological problems of nuclear safety[32], the European Council considered that the technological problems relating to nuclear safety, in view of their environmental and health implications, called for appropriate action at Community level which would take into account the prerogatives and responsibilities assumed by national authorities. It recognised that it was the Commission's responsibility to act as a catalyst in initiatives taken at international level with regard to nuclear safety. As a result of this resolution, the Commission set up several expert groups dealing with nuclear safety matters. These groups, in which representatives of the safety authorities of the Member States participate, have actively contributed to the harmonisation of nuclear safety practices.

The Council Resolution of 18 June 1992 on the technological problems of nuclear safety[33] encouraged the continuation of the process of consultation and co-operation established by the resolution of 1975, and recommended its extension to third countries, notably to the Central and Eastern European Countries (hereinafter: CEEC) and the New independent States comprising the Republics of the former Soviet Union as a result of its break-up (hereinafter: NIS). It further requested the Member States and the Commission to adopt as the fundamental and priority objective of Community cooperation in the nuclear field, in particular with the other European countries, especially those of Central and Eastern Europe and the Republics of the former Soviet Union, that of bringing their nuclear installations up to safety levels equivalent to those in practice in the Community and to facilitate the implementation of the safety criteria and requirements already recognized throughout the Community. Following this Resolution, participation in the different expert groups was extended to representatives of the CEECs and the NIS.

The Cologne European Council in June 1999 asked the Commission to ensure that high safety standards are applied in Central and Eastern Europe. Following on from this request, the safety of nuclear installations in the candidate countries[34] was evaluated by the Commission

[32] OJ C-185 of 14.08.1975, p. 1

[33] OJ C-172 of 08.07.1992, p. 2

[34] The fifth EU Enlargement comprised the largest number of countries ever admitted at one time: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia acceded to the EU on 1st May 2004, Romania and Bulgaria joined in on 1st January 2007.

and the Council in 2001, making it possible to arrive at a European perspective with regard to nuclear safety agreed by the then fifteen Member States and the Commission.

The Laeken European Council in December 2001 marked the transition from reflection conducted in the perspective of enlargement to that of a global political vision at the level of the enlarged EU. One of the conclusions of this meeting was that *"the European Council undertakes to maintain a high level of nuclear safety in the Union. It stresses the need to monitor the security and safety of nuclear power stations. It calls for regular reports from Member States' atomic energy experts, who will maintain close contacts with the Commission".*

In the framework of the discussions on recent Commission proposals for Council Directives (Euratom) setting out the basic obligations and general principles on the safety of nuclear installations and on the management of spent nuclear fuel and radioactive waste[35], the Council of the European Union, at its 2593rd meeting held in Luxembourg on 28 June 2004, adopted clear Conclusions on nuclear safety and on the safety of the management of spent nuclear fuel and radioactive waste, where, among other, the following statements were made:

> "(the Council) urges Member States together with the Commission:
>
> to avail themselves in particular of the possibilities offered by the review meetings under the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management in 2005 and 2006 respectively,
>
> to assess the results achieved under these Conventions, including at previous Conferences of the Parties,
>
> to take stock of the outcome of the work conducted by national nuclear regulatory authorities in multinational fora, including in the WENRA framework,
>
> and on that basis
>
> to engage in a wide ranging consultation process facilitating the choice of instrument(s), in the framework of the Euratom Treaty, that can contribute more effectively to achieving nuclear safety and the safe management of spent fuel and radioactive waste, without excluding any instrument and in line with the principles of better law making."

Following the June 2004 Council conclusions on Nuclear Safety and Safe management of spent fuel and radioactive waste[36], the *Ad Hoc* Working Party on Nuclear Safety (WPNS) had been activated by the Council to undertake a wide ranging consultation process to identify new instrument(s) that could contribute more effectively to further improving nuclear safety and the safety of the management of the spent fuel and radioactive waste, without excluding any instrument in the framework of the Euratom Treaty and in line with the principles of better law making.

---

35 Proposal for a Council Directive setting out basic obligations and general principles on the safety of nuclear installations (COM(2003) 32 final

36 Council Document 10823/04

Following the accession by Euratom to the Convention on Nuclear Safety[37], this Convention became a part of the Euratom corpus of binding legislation. Council Directive 96/29/Euratom lays down the Basic Safety Standards and Member States ensure the safety of nuclear facilities from the design to the decommissioning in compliance with the said Directive.[38]

On 3 December 2004 the Council agreed an Action Plan[39] for following up on the Council conclusions, which called for an "extensive consultation" with stakeholders before any instrument(s) in these fields were developed in the framework of the Euratom Treaty. During the following years the Member States together with the Commission reviewed the outcome of the work conducted by national nuclear regulatory authorities in multinational fora, such as the OECD/NEA and the IAEA, including in the WENRA framework, and in the past review meetings under the Convention on Nuclear Safety and the Joint Convention. In December 2006, the Council produced a final report serving as a basis for the consultation process, in particular taking into account the work conducted by national nuclear regulatory authorities to reach harmonised safety approaches.[40]

The Brussels European Council of 8/9 March 2007 confirmed that it is for each and every Member State to decide whether or not to rely on nuclear energy and stressed, that this has to be done while further improving nuclear safety and the management of radioactive waste.[41]

To this effect the Council envisages the creation of a high-level group on nuclear safety and waste management and suggested that broad discussion takes place among all relevant stakeholders on the opportunities and risks of nuclear energy.

On 8 May 2007 the Council adopted Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste on the basis of the Presidency Conclusions of the Brussels European Council of 8/9 March 2007 in Brussels[42]. In these recent conclusions the Council ***recalled that nuclear safety is a national responsibility exercised where appropriate in an EU-framework and that decisions concerning safety actions and the supervision of nuclear installations would remain solely with the operators and national authorities. Community added value had been recognized in building common views on nuclear safety issues, and Council resolutions have paved the way for co-operation between Member States and the Commission. Finally the Council endorsed the Commission proposal[43] concerning*** the establishment of a High Level Group on Nuclear Safety and Waste Management at EU-level aimed at furthering a common approach on the area of the Safety of nuclear installations, the Safety of the management of spent fuel and radioactive waste and the Financing of the decommissioning of nuclear installations and safe management of spent fuel and radioactive waste.

---

37 See above, chapter 3, Euratom accession to the Convention on Nuclear Safety, page 17.

38 Opinion of the Article 31 Group of Experts of 19 December 2002 (not published in the Official Journal), see http://ec.europa.eu/energy/nuclear/radiation_protection/doc/art31/2002_12_opinion_nuclear_safety.pdf

39 Council Document 15955/04

40 Council of the European Union, Brussels, 20 January 2005, 5574/05 ATO 11

41 Council of the European Union, Brussels, 8-9 March 2007: Presidency Conclusions (9 March 2007: Brussels), Council Document No 7224/07 of 2 May 2007, REV 1, CONCL 1.

42 Council Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste, 2798th ECONOMIC and FINANCIAL AFFAIRS Council meeting, Brussels 8 May 2007.

43 Communication from the Commission to the European Council and the European Parliament : « An Energy Policy for Europe », COM(2007) 1 final of 10.01.2007; SEC(2007)12.

The High Level Group is composed of senior representatives from safety authorities, regulatory or administrative bodies of the Member States, having competence in the areas covered by the High Level Group, and a representative of the Commission. With the aim of maintaining and further improving the safety of nuclear installations, the safety of the management of spent fuel and radioactive waste, and the financing of the decommissioning of nuclear installations and safe management of spent fuel and radioactive waste, the Council proposed that the following list of possible actions be addressed in the areas mentioned above, as deemed practicable, by the High Level Group. This list comprises mainly actions concerning harmonised approaches, shared knowledge and joint efforts, co-operation, openness and transparency.

2. SIGNIFICANT CHANGES AND DEVELOPMENTS SINCE THE PREVIOUS EURATOM REPORT

2.1. Adoption of the new Council Directive on the establishment of a Community framework for the safety of nuclear installations 2009/71/Euratom[44]

Following the establishment of the High Level Group on Nuclear Safety and Waste Management - ENSREG (see below Chapter 3.2.1, p. 31 ff), composed of national regulators, and following the discussions within the European Nuclear Energy Forum – ENEF (see below Chapter 3.2.2, p.33), the Commission presented in 2008 a revised proposal for a Directive setting up a Community framework for nuclear safety (see chapter 7.1.3, p. 54).

On 25 June 2009 – unanimously and with the full support of all 27 EU Member States following widespread support from the European Parliament – the Council of the European Union adopted for the first time since the establishment of the European Community in 1957 European wide, binding requirements on nuclear safety. The Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations[45] (hereinafter referred to as the 'Nuclear Safety Directive') reflects the fundamental safety principles and requirements of the Convention on Nuclear Safety and creates a solid and flexible legal framework that defines basic obligations and principles governing nuclear safety throughout the EU[46].

This new common European framework is built upon the nuclear safety requirements of the Convention on Nuclear Safety and of the Safety Fundamentals[47] established by the IAEA and provides binding legal force to these main international nuclear safety standards. With the Nuclear Safety Directive the Community has contributed to the development of an even more advanced EU legal framework for nuclear energy meeting the highest standards of safety, security and non-proliferation. The Nuclear Safety

---

44 Council Directive 2009/71/Euratom of 25 June 2009, establishing a Community framework fort he nuclear safety of nuclear installations, OJ L 172, 2.7.2009, p.19

45 OJ L 172, 2.7.2009

46 For more details see Chapter ***7.1.3*** New EU framework for the nuclear safety of nuclear installations**,** p. ***54*** ff)

47 IAEA Safety Fundamentals: Fundamental safety principles, IAEA Safety Standard Series No. SF-1 (2006)

Directive reinforces the role and independence of the regulatory bodies in all EU Member States.[48]

When this Directive will be fully implemented, the EU becomes the first major regional nuclear actor giving binding legal force to these leading international nuclear safety instruments. This will respond to a key demand of European citizens with Europe becoming a model for the rest of the world (for more details see below chapter 7.1.3, p. 54ff).

2.2. The European Union after the Lisbon Treaty and its relation with the European Atomic Energy Community - Euratom

The Treaty of Lisbon (TL) was signed at Lisbon on 13 December 2007[49] ***for an indefinite duration. It mainly amends the Treaty on the European Union (92/C 191/01)***[50]***, and the Treaty establishing the European Community, but also the Euratom Treaty***[51]***. While the TEU contains the general principles, the 'Treaty on the Functioning of the European Union (TFEU)' replaces the 'Treaty establishing the European Community'***[52]***. Articles, sections, chapters, titles and parts of the Treaty on European Union, the Treaty on the Functioning of the European Union and the Euratom Treaty are renumbered. Since its entry into force on 1 December 2009, the European Union (hereinafter EU) has its own legal personality***[53]***.*** The European Union (EU) is ***now founded on the present Treaty of the European Union (TEU) and on the Treaty on the Functioning of the European Union (TFEU).***

Until 2009, the EC and Euratom together formed the so called European Communities and as such the first "pillar" of the European Union. Both the European Community Treaty and the Treaty establishing the European Atomic Energy Community (known as the Euratom Treaty) were signed in Rome on 25th March 1957 for an indefinite duration. The European Coal and Steel Community (ECSC) ceased to exist when the Treaty of Paris establishing it expired in 2002. ***With the Lisbon Treaty the EU replaces and succeeds*** the European Community [54] ***(Article 1 TEU). It is no longer*** based on the European Coal and Steel Community (hereinafter: ECSC) and the European Atomic Energy Community (Euratom***).***

While Euratom remains strongly interlinked with the EU in institutional and financial matters, it is not dissolved into the EU (like the European Community) and thus keeps its separate legal personality.

---

48 See Recital 8 of the Nuclear Safety Directive, Annex 4.

49 Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007 (2007/C 306/01), OJ 306, 17.12.2007, page 1

50 Official Journal C 191 of 29 July 1992.

51 Consolidated version of the Treaty establishing the European Atomic Energy Community, OJ C 84 of 30.03.2010, p.1

52 Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, Official Journal C 115 of 9 May 2008

53 Comment: ***The EC and Euratom always had their own, separate legal personalities as European Communities, but the European Union was never equipped with legal personality, until now.***

54 The European Community (EC) was originally founded on March 25, 1957 by the signing of the Treaty of Rome under the name of European Economic Community. The 'Economic' was removed from its name by the Maastricht treaty in 1992, which at the same time effectively made the European Community the first of three pillars of the European Union, called the Community (or Communities) Pillar.

The ***EU and Euratom*** law operate ***both*** alongside the laws of the Member States. The EU ***and Euratom*** law has primacy over the national law and may also be directly applicable within the legal systems of its Member States.

The Treaty of Lisbon amends the Euratom Treaty by its Protocol No 2, recalling that the provisions of the Euratom Treaty should continue to have full legal effect. The amendments concern institutional and financial aspects. Euratom keeps its own legal personality outside the framework of the EU. The new Article 106a of the Euratom Treaty lists up all provisions of the EU Treaties, which will apply to it especially those on institutions, procedure for amending the Treaties, application to become a member or withdrawal from the EU financial matters and legislative procedures will apply.

Article 106a (3) states that "provisions of the TEU and of the TFEU shall not derogate from the provisions of this Treaty (Euratom)", which means that the Euratom Treaty and its derived legislation is a lex specialis of EU law and prevails in case of conflicting rules.

2.3. A revised Nuclear Illustrative Programme (PINC)

The periodic publication of "nuclear illustrative programmes", otherwise know from its French acronym as "PINC" is required by the Euratom Treaty[55]. Such a Programme should contribute to the on-going energy debate within the EU with respect to the viability of nuclear energy and to open a discussion on all its various aspects. It should provide a basic economic analysis and explores the conditions necessary for the development of nuclear energy in Europe in terms of safety of nuclear installation and of the nuclear fuel cycle in order to increase public acceptability of this form of energy.

After a long time the first Communication from the Commission "nuclear illustrative programme ", was adopted on 4 October 2007[56] and formed later a part of the First Strategic Energy review ***"An Energy Policy for Europe"*** of 10 January 2007[57]. It described the status of the nuclear sector in the EU in 2006 and the possible developments in this sector, taking into account economic and environmental issues. ***Among other measures it proposed*** the establishment of an EU High Level Group on Nuclear Safety with the mandate of progressively developing common understanding and, eventually, additional European rules, on nuclear safety and management of highly radioactive waste.

As part of the Second Strategic Energy Review "EU energy security and solidarity action plan"[58], the 2007 Nuclear Illustrative Programme was updated on 13 November 2008[59]. It

---

55 Art. 40 Euratom Treaty: In order to stimulate action by persons and undertakings and to facilitate coordinated development of their investment in the nuclear field, the Commission shall periodically publish illustrative programmes indicating in particular nuclear energy production targets and the type of investments required for their attainment.

56 Communication from the Commission to the Council and the European Parliament of 4 October 2007 entitled: 'Nuclear Illustrative Programme', COM(2007) 565 final " Not published in the Official Journal, see http://europa.eu/legislation_summaries/energy/nuclear_energy/l27072_en.htm

57 Communication from the Commission to the European Council and the European Parliament of 10 January 2007, "An energy policy for Europe", COM(2007) 1 final - Not published in the Official Journal, see http://europa.eu/legislation_summaries/energy/european_energy_policy/l27067_en.htm

58 COM(2008)781 final [not published in the Official Journal]

59 COM(2008)776 final [not published in the Official Journal], see http://ec.europa.eu/energy/strategies/2008/doc/2008_11_ser2/nuclear_illustrative_programme_pinc_updt_communication.pdf

focuses on the security of supply and requirements and conditions for realising investments, making a number of recommendations: proposing that future new build is of the latest technology; ensuring the highest standards of nuclear safety as well as simplifying and harmonising the currently differing licensing requirements and procedures in the Member States. It highlights that by 2020 nearly two-thirds of EU electricity production could be low-carbon if rapid investment decisions are taken with regard to renewable energy sources as well as nuclear energy.

3. FOLLOW-UP FROM THE 4TH REVIEW MEETING IN 2008

"Euratom committed to continue to engage in a wide ranging process, within the framework of the Euratom treaty, to more effectively promote nuclear safety. Since the last report Euratom has continued to develop instruments and initiate projects to promote harmonization and enhancement to Nuclear Safety across the European Union. Among these initiatives are: Evolution of the TACIS programme to become the Instrument for Nuclear Safety Co-operation, Evolution of the PHARE programme to become the Instrument for Pre-Accession Assistance, Establishment of the High Level Group on Nuclear Safety and Waste Management, now called ENSREG (European Nuclear Safety Regulators Group) and the European Nuclear Energy Forum, continuation of the existing programmes e.g. ECURIE programme, as well as research initiatives under the new 7th Euratom Framework Programme. Initiation of new studies and completion of current studies (the fading of nuclear knowledge, the perceived need to promote OPEX, the harmonization of Performance indicators across the EU) and to continue to Work with EU Member States to identify new initiatives to further progress the mission of Euratom."[60]

3.1. Instruments for improving the level of nuclear safety in Central and Eastern European Countries (CEEC) and New Independent States (NIS) and other third countries

The European Union used two major instruments for improving the level of nuclear safety in Central and Eastern European Countries (CEEC) and New independent States (NIS) ***and other third countries***:

3.1.1. Evolution of the TACIS programme to become the Instrument of Nuclear Safety Co-operation[61]

The TACIS programme had the general objective of encouraging democratisation, the strengthening of the rule of law and the transition to a market economy; it applied to Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Mongolia, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Since 1 January 2007, cooperation with third countries on nuclear safety, as well as on safeguards, takes place under the new Instrument for Nuclear Safety Cooperation in specific ***nuclear safety and security***

60 From: Rapporteur's Report for EURATOM in the 4th Review Meeting under the Convention on Nuclear Safety, Vienna, 2008 (not published).

61 Council Regulation (Euratom) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation, OJ L81, 22.03.2007, p.1.

subjects may also be funded through other Community instruments, like the Instrument on Pre-accession ***Assistance (IPA)*** and the Instrument for Stability ***(IfS).***[62]

Since the earlier 90's the EU cooperated with and assisted the New Independent States (NIS) of the former Union of Soviet Socialist Republics (USSR) in improving nuclear safety. This was achieved through the "Technical Assistance to the Commonwealth of Independent States-CEI" (TACIS) Nuclear Safety Programme[63]. It provided the means to contribute to the improvement of safety culture, to support the reform of the regulatory framework, to develop waste management policies and to implement efficient safeguards. The EU contributed also to the international efforts to address the legacies of the Chernobyl accident[64] and the nuclear waste resulting from the dismantling of vessels of the Northern Fleet of the North Russia Navy[65]. The implementation of the TACIS programme in the recent years has been enhanced through the dedicated effort towards an increased budget to be contracted and shortening of the implementation phases. Notably the volume of funds contracted in 2006 is close to 80 Mio Euro (52 projects) and in the period 2003-2005, 155 projects have been launched for a total amount of 194 Million Euro.

The promotion of safety culture included the implementation of large Plant Improvement Projects for most of Russian and Ukrainian nuclear power plants. These projects supported, inter alia, the improvement of the control-command of the reactor, the primary circuit and the treatment of waste.

An extended and sustained cooperation has also been established with the regulatory authorities of Russia and Ukraine, as well as the regulators of other CIS countries like Armenia, Belarus, Georgia and Kazakhstan. Projects are carried out with consortia of European Regulators and Technical Support Organisations which aimed at transferring methodologies and knowledge in the fields of nuclear safety regulation and licensing activities. Considerable support was provided for the management of radioactive waste and spent nuclear fuel, in particular in the Russian Federation and Ukraine. In Ukraine several waste management projects were carried out which were instrumental in enabling other international initiatives to be completed at the Chernobyl site. An overall waste management strategy was established in Ukraine and the Russian Federation. In Armenia, the Commission maintained that the Medzamor Power Plant should be shut down as soon as possible, however, the TACIS programme supported the most urgent safety measures which were required while the plant remained in operation These were carefully co-ordinated with the other international donors, under the aegis of the IAEA.

TACIS supported also efforts to ensure the correct implementation of nuclear safeguards in NIS countries. The TACIS regulation***, which provided for the funding of the Nuclear Safety***

---

62 For more information see http://ec.europa.eu/europeaid/how/finance/nsci_en.htm

63 1.3 billion Euros in the period 1991-2006 including 205 million Euros for CSF and 40 million Euros for the nuclear part of the NDE.

64 The Chernobyl Shelter Fund, constituted in 1997, is managed by the EBRD to implement the project for converting the existing Chernobyl sarcophagus into a safe and environmentally stable system. In total the Commission has pledged a contribution of € 190.5 million, of which the full amount has already been transferred. In May 2005, a new pledge had been made by the Commission for a total amount of € 49.1 million. In 2007, the Commission has paid the first part (14.4 M€) of this pledge.

65 The management of spent nuclear fuel and radioactive waste from the nuclear submarines of the Northern Fleet in North West Russia is covered by the nuclear part of a separate programme - managed by EBRD - the Northern Dimension Environmental Partnership (NDEP).

Programme, expired at the end of 2006, however the implementation of some projects initiated under the Programme is still continuing.

The nuclear safety cooperation and assistance activities initiated under the TACIS programme continued under a new financial instrument based upon Article 203 of the Euratom Treaty - the "Instrument for Nuclear Safety Cooperation", which covers the period 2007-2013[66]. The instrument has a financial reference amount of ***524 million Euros (some 75 million Euros per year)*** for cooperation actions with third countries. ***The major difference relative to the TACIS programme is the extension in the*** geographical coverage, ***which is no longer limited to the NIS but applies to third countries worldwide. This was justified by the fact that the most important nuclear safety issues in the NIS had been resolved and the Community's experience could be used elsewhere to address the needs of emerging countries, as well as countries with established nuclear power programmes in need of nuclear safety improvement, including those with rapidly expanding nuclear programmes.***

The work programme under the Instrument for Nuclear Safety Cooperation includes support to the nuclear regulators, to the nuclear operators, safety improvement in design, operation and maintenance of nuclear installations, safety of nuclear material and radioactive waste management, accounting and control of fissile materials, off-site emergency preparedness, measures to promote international cooperation and participation in international funds (in particular those for the implementation of the Chernobyl site projects) as well as training for both the nuclear regulatory authorities and the technical support organisations.

The programme has paid particular attention to the need for establishing and maintaining competent regulatory authorities, which must remain effectively independent, as a growing number of countries worldwide have expressed a renewed interest in nuclear energy.

A new joint project European Commission – IAEA – Ukraine for the safety evaluation of the Nuclear Power Plants of Ukraine was also supported by the Instrument on Nuclear Safety Cooperation. The evaluation had been foreseen by the Memorandum of Understanding on Energy between the EU and Ukraine signed in December 2005, it was carried out in accordance with the IAEA Safety Standards and was completed by the end of 2009.

Collaboration with the IAEA was stepped up under the Instrument for Nuclear Safety Cooperation with the objective of further developing nuclear safety culture and the required expertise at global level and to support adherence to international Conventions and Treaties as well as to avoid duplication of activities in the cooperation programmes carried out for the third countries.

---

66 Council Regulation No 300/2007/Euratom of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation, OJ L 81, 22/03/2007, p.1

3.1.2. Evolution of the PHARE programme to become the Instrument for Pre-Accession Assistance (IPA[67])

The PHARE programme is one of the three pre-accession instruments financed by the European Union to assist the applicant countries of CEEC in their preparations for joining the European Union. It was originally created in 1989 as the "Poland and Hungary: Assistance for Restructuring Economies (PHARE)".It later expanded from Poland and Hungary to cover ten countries. It assisted the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia, as well as acceding countries Bulgaria and Romania with around 230 million Euros (this figure does not include the support for the early decommissioning of eight nuclear reactors in Bulgaria, Lithuania and Slovakia, see page 42). More than 300 projects ***were*** funded covering a wide range of issues related to nuclear safety.

The PHARE nuclear safety programme has undoubtedly contributed to efforts to improve nuclear safety in Central and Eastern European Countries. It helped, in particular, to strengthen the independence of regulatory authorities in the region, to improve the level of design and operational safety, including provision of equipment, and to improve the situation of radioactive waste management. ***A list of nuclear projects funded by PHARE until 2003 is provided in a specific website of the Joint Research Centre in Petten[68]. The list is being completed in order to cover all PHARE projects which were programmed until 2006, i.e. until accession of Bulgaria and Romania. Additional nuclear projects were programmed in these countries through the Transition Facility Instrument which lasted until 2006 for the 10 new EU Member States and up to 2007 for Bulgaria and Romania. Several PHARE and Transition Facility nuclear projects were still running in 2009.***

Western Balkan countries, which are currently potential candidate and candidate countries for the EU accession (Albania, Bosnia-Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Kosovo under UNSCR 1244/99, Montenegro and Serbia) received very limited support for nuclear activities until 2006 through PHARE and the CARDS programme (Community Assistance for Reconstruction, Development and Stability in the Balkans)..

Since 1 January 2007, through the new Instrument for Pre-accession Assistance (IPA)[69], a more substantial support has been provided to the Western Balkan Countries. 32 nuclear projects have already been programmed in these countries for a total amount of about 24 million Euros. The main activities of the IPA horizontal programme on nuclear safety and radiation protection are currently covering the repatriation of spent fuel from Serbia to the Russian Federation, management of radioactive waste, radiation protection, actions to prevent illicit trafficking of nuclear materials and radiation sources, monitoring of the radioactivity in the environment and enhancement of the technical capacity of newly created nuclear regulatory bodies. Several IPA projects are being implemented under joint management with the International Atomic Energy Agency.

---

67 Council Regulation (EC) No 1085/2006 of 17 July 2006 establishing an Instrument for Pre-Accession Assistance (IPA), OJ L 210 31/03/2007, p. 82.

68 http://ie.jrc.ec.europa.eu/dissem/

69 For more information see http://europa.eu/legislation_summaries/enlargement/ongoing_enlargement/e50020_en.htm

3.2. Experts Groups of the European Commission – history and overview

The Commission has worked with the support of expert groups for more than 30 years and has launched many studies and initiatives in the field of radiation protection and nuclear safety. The Nuclear Regulators' Working Group (NRWG), which met for the last time in June 2005, ***included*** representatives of nuclear regulatory authorities from EU Member States and Candidate States of Central and Eastern Europe (hereinafter: CEEC). The Reactor Safety Working Group (RSWG), which included all the EU regulatory bodies and industry, was discontinued in 1998. Their approach to "harmonisation" ***consisted*** of a comparison of national practices, identification of common features, and analysis of the safety relevance of differences. Common technical opinions are expressed on certain safety issues, and, while these are not safety "standards", they are expected to promote good practice. On-going activities include safety aspects of ageing, applications of risk-based approaches and innovative technologies. These activities have been widely documented and published either as technical publications or as Communications to the Council and the European Parliament.

The CONCERTation on European Regulatory Tasks (hereinafter: CONCERT), formed in 1992, was a unique forum that brought together EU, CEEC and New independent States (hereinafter: NIS) nuclear regulators to share experience and to further the progress of assistance and co-operation activities in general. Among its other activities, discussions within this group significantly contributed to achieving the objectives of the Nuclear Safety Convention by forming a common regulatory view on nuclear safety issues and increasing a safety culture.

In 2005 activities of all expert groups were reviewed in order to reorganise the tasks and avoid duplications. Following the adoption of the Council conclusions their activities will be integrated in the work of the High Level Group on Nuclear Safety and Waste Management[70].

3.2.1. Establishment of the High-level Group for Nuclear Safety and Waste Management (ENSREG)

Following the endorsement of the Commission proposal[71] by the European Council of 8-9 March 2007, the Conclusions of the 2798th meeting of the Council of the European Union (Economic and Financial Affairs) of 8 May 2007 and the European Parliament resolution on Assessing Euratom — 50 years of European nuclear energy policy (10 May 2007), the Commission adopted a Decision establishing a "European High Level Group for Nuclear Safety and Waste Management (High Level Group)"[72] on 17 July 2007. The High Level Group is based on the work carried out by European Union Member States and the Commission in the "Working Party on Nuclear Safety (WPNS)" during 2005 and 2006 which aimed at improving the nuclear safety within the European Union. ***Later the Group was renamed the European Nuclear Safety Regulators' Group (ENSREG).*** It brings together the senior representatives from the national nuclear regulatory or safety authorities of all EU Member States having competence in the areas covered, and a representative of the

[70] See below, Chapter 3.2.1, p 31

[71] The Nuclear Illustrative Programme 2007 put forward a proposal to set up an EU High Level Group on Nuclear Safety and Waste Management; Communication from the Commission to the Council and the European Parliament of 4 October 2007, COM(2007) 565 final, p. 22, not published in the Official Journal; http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0565:FIN:EN:PDF.

[72] OJ L 195/44 of 27.07.2007

Commission. Its mandate is to develop common approaches in the domains of the safety of nuclear installations and the safety of the management of spent fuel and radioactive waste and to advise the Commission on possible Community legislation in these fields. ***As a first concrete result, the ENSREG work has provided a valuable contribution to the preparation of the Council Directive on Nuclear Safety.***

In July 2009, ENSREG submitted to the Commission its first Activity Report[73], presenting the Group's undertaken activities, discussions and recommendations covering nuclear safety, waste management and transparency aspects. According to the procedure established in the Decision, the Commission has further transmitted this Report to the European Parliament and to the Council. The report was based on the work of its three subgroups in the areas of

- ***Improving nuclear safety arrangements,***
- ***Improving spent fuel, radioactive waste management and decommissioning arrangements[74],***
- ***Improving arrangements for transparency.***

Within this context, one of main ENSREG activities consisted to elaborate on how to make a better use of the Convention of Nuclear Safety. Besides, ENSREG has promoted the benefits of the international peer reviews carried out against IAEA safety standards and self assessments, and called the Member States to regularly carry out such reviews. This aspect was emphasized in the Directive establishing a Community framework for the nuclear safety of nuclear installations to which preparation ENSREG Members largely contributed.

In order to increase public's confidence that nuclear installations within EU are safe, ENSREG undertook to establish an independent website that would offer a global overview on how nuclear safety is regulated. The website ENSREG went online in January 2010 and is accessible under www.ensreg.eu, where all documents are available to the public.

Following ENSREG report, the Council prepared conclusions on the follow-up of ENSREG activities. It encourages the Group to continue developing common learning from the review meetings of the Convention on Nuclear Safety, and improve transparency on issues related to the nuclear safety and its regulation. Council conclusions invite the Group to elaborate common methodology for periodic self-assessments and a system for coordination of the international peer reviews in the EU Member States generating nuclear energy. Other major activities that have been identified by the Council conclusions are, inter alia, preparation of transparency guidance for national nuclear regulators, organisation of a European conference on nuclear safety regulation and possible solutions to the challenges regarding qualified staff in nuclear safety.

As a main concrete result until present, the ENSREG work has provided a valuable contribution to the preparation of the Council Directive on nuclear safety.

---

73 The full Report is available at http://www.ensreg.eu/documents?view_filter_1=19

74 The aspect of ENSREG work related to radioactive waste management is not covered in the present Community report for the review meeting on the implementation of the Convention on Nuclear Safety

For the period 2010-2011, ENSREG agreed to contribute to a consistent and high standard implementation of the Nuclear Safety Directive by the 27 EU Member States by suggesting a unified structure for the Member States' Reports on the implementation of the Directive (having as a model the IAEA Guidelines for reporting under the Convention on Nuclear Safety) and facilitating consultation and cooperation of national regulatory authorities. The Group will help also to establish a common methodology for the periodic safety self-assessments and a system for the coordination of the international peer-reviews. The Commission follows closely and contributes actively to these activities.

3.2.2. Establishment of the European Nuclear Energy Forum - ENEF

In the framework of the European Council Summit of 8 and 9 March 2007, the Heads of State and Government had an exchange of views on the contribution of nuclear energy in meeting the growing concerns about security of energy supply, reduction of CO2 emissions and competitiveness, while taking fully into account nuclear safety and security aspects. In the Presidency conclusions[75], they also endorsed the Commission proposal to organise a broad discussion among all relevant stakeholders on the opportunities and risks of nuclear energy.

As a concrete follow-up, the Prime Ministers from the Czech Republic and the Republic of Slovakia agreed to jointly host this nuclear discussion forum. The plenary sessions of ENEF, have therefore been organised twice a year successively in Bratislava and Prague. During the inaugural meeting of the Forum was held on 26 and 27 November 2007 in Bratislava, three Working Groups on "Risks", "Opportunities", and "Transparency" have been set up. These Working Groups meet more frequently, most often in Brussels, and prepare the plenary meetings. Several sub-groups concentrate on specific subjects. Outcomes of the working groups are presented during the plenary forum meetings.

Since 2007 the European Nuclear Energy Forum (ENEF) has been providing a unique platform for organising a broad discussion on opportunities and risks of nuclear energy, free of any "taboos", among all relevant stakeholders in the nuclear field: governments of the 27 EU Member States, European Institutions including the European Parliament and the European Economic and Social Committee, nuclear industry, electricity consumers and the civil society.

In 2009, ENEF held its fourth plenary meeting in Prague in May 2009. As nuclear safety is a major concern of the European Union the issue was of course prominently discussed in ENEF. At the Prague meeting, that gathered more than 250 high-ranking participants from all relevant stakeholders, the ENEF has been dedicated to nuclear safety, nuclear waste policies, and possible initiatives on training and education as well as in the area of transparency. High level interventions from political leaders and from industry showed that nuclear power is perceived as a major contributor to the future low carbon economy, together with renewables. Among others, the Forum endorsed principles used later on in the preparation of the Nuclear Safety Directive presented in this report. On practical matters, it was decided that the ENEF plenary sessions would be organised once a year

[75] Council of the European Union Document No. 7224/1/07 REV 1 of 2 May 2007 (not published in the Official Journal), http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/93135.pdf

instead of biannually, alternatively in Bratislava and Prague. The next plenary ENEF meeting will be held in Bratislava in 2010.

3.2.3. Article 31 Group of Experts

It is laid down in Article 31 of the Treaty establishing the European Atomic Energy Community (the "Euratom Treaty") that a Group of scientific experts shall be attached to the Commission and shall have advisory status.

By virtue of the very high standing of its members, and their qualification in the fields of radiation protection and public health, the Group of scientific experts referred to in Article 31 of the Euratom Treaty (the "Group") is called upon to assume the all-important function of adviser to the Commission on preparing the basic standards to be established by the latter. Moreover, the Treaty itself requires the Commission to consult the Group when revising and supplementing the basic standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation (Articles 31 and 32 of the Euratom Treaty). Thus, when putting forward proposals concerning the basic standards, the Commission convenes the Group so that it may formally obtain an expert opinion to enable it to guide its decisions and make the requisite choices. Such decisions are collectively given by the Group whose members, each being appointed on a personal basis, speak on their own behalf and act independently of all external influence.

The Commission may convene the Group not only on the occasions specifically laid down in the Treaty, but also whenever it considers such action to be necessary. A schedule of at least two meetings a year should permit the Commission to keep up a fruitful dialogue with the Group, whilst periodically requesting exchanges of view and guidance on any major problem affecting radiation protection. If necessary, additional meetings can be held or matters can be dealt in written procedure.

The members of the Group are appointed for a term of five years, renewable, by the Scientific and Technical Committee set up in compliance with Article 134 of the Treaty. In its present composition the Groups expertise is primarily in the field of radiation protection as specified in Articles 30 to 32 of the Euratom Treaty, for this reason it focuses its opinion on those aspects of draft legislative measures, which would enhance the overall objectives of radiation protection.

The Group has adopted their own Rules of Procedure[76]. The opinions on legislative proposals of the Commission are published on
http://ec.europa.eu/energy/nuclear/radiation_protection/article_31_en.htm.

Every year, the European Commission organises, in cooperation with the Group of Experts referred to in Article 31 of the Euratom Treaty, a Scientific Seminar on emerging issues in Radiation Protection – generally addressing new research findings with potential policy and/or regulatory implications[77]. Leading scientists are invited to present the status of scientific knowledge in the selected topic. Based on the outcome of the Scientific Seminar, the Group of Experts referred to in Article 31 of the Euratom Treaty may recommend

[76] http://ec.europa.eu/energy/nuclear/radiation_protection/doc/art31/2007_11_procedure_rules.pdf
[77] http://ec.europa.eu/energy/nuclear/radiation_protection/scientific_seminar_en.htm

research, regulatory or legislative initiatives. The European Commission takes into account the conclusions of the Experts when setting up its radiation protection program. The Experts' conclusions are valuable input to the process of reviewing and potentially revising European radiation protection legislation.

Having discussed a revision and simplification of Community legislation in the area of radiation protection, the expert group established on the basis of Article 31 Euratom Treaty adopted their Opinion on the Revised Basic Safety Standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation on 24 February 2010[78]. The draft proposal should consolidate five Directives, including one Commission Recommendation into a new Basic Safety Standards Directive.

3.2.4. Article 37 Group of Experts

Under Article 37 of the Treaty establishing the European Atomic Energy Community (Euratom Treaty), each Member State shall provide the Commission with general data relating to any plan for the disposal of radioactive waste in whatever form. On the basis of these data and following consultation of the Group of Experts referred to in Article 31, the Commission shall determine whether the implementation of such a plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State and deliver its opinion within six months.

The Group of Experts referred to in Article 37 and created pursuant to Article 31 was, originally, the same as the group participating in the development of the basic safety standards and therefore comprised mainly public health experts. However, given the technical problems inherent in examining general data relating to the disposal of radioactive waste from fuel cycle facilities, the Commission decided, very early on, to ask the Scientific and Technical Committee (STC), created pursuant to Article 134 of the Euratom Treaty, and, pursuant to Article 31, responsible for the appointment of experts to the group mentioned in Article 31, to appoint another group of scientific experts for the activities coming under Article 37. Members are appointed to the group every five years (in the absence of other circumstances), as members are appointed to the STC. The chairmanship of the group follows that of the Council.

Nevertheless, for a project presented by the Member State holding the Presidency, the chairmanship is assured by an expert from the Member State which held the previous Presidency or is due to hold the following one. The Secretariat of the Article 37 Group of Experts is provided by the Commission.

3.3. Research Initiatives under the new 7th Euratom Framework Programme on research and training

The Community supports nuclear safety-related research through the Euratom Framework Programme. Article 7 of the Euratom Treaty foresees the establishing of multi-annual Community research and training programmes in the fields of nuclear energy and uses of

[78] Not published in the Official Journal, see http://ec.europa.eu/energy/nuclear/radiation_protection/doc/art31/2010_02_24_opinion_on_bss.pdf

radiation. A significant part of this research falls within the scope the Convention. Information on previous Framework Programmes is available on http://cordis.europa.eu.

The 7th Framework Programme for nuclear research activities (Euratom) for the period 2007 to 2011 (hereinafter: FP7) was adopted on 18 December 2006[79] and applies from 1 January 2007[80]. FP7 is composed of two Specific Programmes:

- Specific Programme for nuclear research and training activities implemented through indirect actions (i.e. implemented by consortia of nuclear industrial and R&D organisations)
- Specific Programme for research and training activities implemented by direct actions and carried out by the Commission's Joint Research Centre (JRC)[81].

3.3.1. Specific Programme for nuclear research and training activities implemented through indirect actions

Annex I.B to Council Decision 2006/970/Euratom[82] establishing Framework Programme 7 (FP7) on the "Scientific and technological objectives, themes and activities" covering "nuclear fission and radiation protection" – indirect actions identifies the priority areas of research, which include waste management, reactor systems, radiation protection, infrastructure, human resources, mobility and training. These themes are developed further in the Specific Programme (refer to Annex to Council Decision 2006/976/Euratom). The importance of research in the area of nuclear safety in general is emphasised throughout the text. In particular, the following themes are closely associated with nuclear safety:

Reactor systems: Research to underpin the continued safe operation of all relevant types of existing reactor systems (including fuel cycle facilities), taking into account new challenges such as life-time extension and development of new advanced safety assessment methodologies (both the technical and human element) including as regards severe accidents, and to assess the potential, the safety and waste-management aspects of future reactor systems, in the short and medium term, thereby maintaining the high safety standards already achieved within the EU and considerably improving the long-term management of radioactive waste.

---

79 Council Decision 2006/970/Euratom of 18 December 2006, OJ L 400 of 30.12.2006 p. 60, concerning the seventh Euratom Framework Programme for nuclear research and training activities (2007 to 2011); Council Decision 2006/976/Euratom of 19 December 2006, OJ L 400 of 30.12.2006, p.404, concerning the Specific Programme implementing the seventh Euratom Framework Programme for nuclear research and training activities (2007 to 2011), Council Regulation (Euratom) No 1908/2006 of 19 December 2006, OJ L 400 of 30.12.2006, p.1; laying down the rules for the participation of undertakings, research centres and universities in action under the Euratom seventh Euratom Framework Programme and for the dissemination of research results (2007 to 2011); Council Decision 2006/977/Euratom of 19 December 2006, OJ L 400 of 30.12.2006, p.434 , concerning the Specific Programme to be carried out be means of direct actions by the Joint Research Centre implementing the seventh Euratom Framework Programme for nuclear research and training activities (2007 to 2011).

80 For further information see http://ec.europa.eu/research/fp7/index_en.cfm

81 The JRC is a Directorate-General of the Commission and provides independent scientific and technical advice to the Commission and EU Member States in support of EU policies.

82 See Annex I.B to Council Decision 2006/970/Euratom establishing Framework Programme 7 (FP7) on the "Scientific and technological objectives, themes and activities" covering "nuclear fission and radiation protection" indirect actions, OJ L 460, 30/12/2006 as in L-54, 22.02.2007 p.21.

Radiation protection: Research, in particular on the risks from low doses, on medical uses and on the management of accidents, to provide a scientific basis for a robust, equitable and socially acceptable system of protection that will not unduly limit the beneficial and widespread uses of radiation in medicine and industry and research to minimise the impact of nuclear and radiological terrorism and diversion of nuclear material.

The Sustainable Nuclear Energy Technology Platform (SNETP), launched in September 2007, brings together all the key nuclear industrial and research organisations in Europe (some 75 bodies in 19 countries) around a common vision for nuclear systems and safety-related research and development (R&D). The platform's Strategic Research Agenda, available on their Website[83], includes important references to safety-related research. The platform will greatly facilitate increased coordination of R&D activities and enhance cooperation in key fields, including safety. Both current and future nuclear fission systems are covered. The platform is not an instrument of the European Commission, though Euratom activities will clearly benefit from the resulting enhanced strategic planning.

Integrated as part of this general strategy, a number of key safety-related Euratom projects have been launched since the start of Euratom 7th Euratom Framework Programme (FP7, 2007-2011 – see Section 13.1). The most important are:

- ***PERFORM60 – Prediction of the effects of radiation for reactor pressure vessel and in-core materials using multi-scale modelling - 60 years foreseen plant lifetime***
- ***SARNET2 – Severe accident research network of excellence 2***
- ***MMOTION – Man-machine-organisation through innovative orientations for nuclear***
- ***ASAMPSA2 – Advanced safety assessment methodologies: level 2 PSA (European best practices L2 PSA guidelines)***

Details of these and all other current and future projects are /or will be available in volumes 1-5 of 'Euratom FP7 Research and Training Projects' available on the Europa Website[84]

Another recent important safety-related development concerns the establishing of MELODI, the Multidisciplinary European Low-Dose Initiative, bringing together the principal funding agencies and actors in the field of research on the risks of low and protracted exposure to ionising radiation. This may have important impacts for all uses of radiation in industry and medicine, and again will be an important strategic forum coordinating all low-dose research in Europe, including that funded through the Euratom programme.

---

83 http://www.snetp.eu

84 http://ec.europa.eu/research/energy/fi/fi_pubs/article_1186_en.htm; For an outline of the first batch of nuclear research and training activities funded by the Seventh Framework Programme of the European Atomic Energy Community (FP7 Euratom 2007–11) see http://ec.europa.eu/research/energy/pdf/09_07_euratom.pdf.

3.3.2. Specific Programme for research and training activities implemented by direct actions and carried out by the Commission's Joint Research Centre (JRC)

The JRC multi-annual work programme [85] under the Seventh Framework Programme(FP7) 2007-2013 of the European Union and the Seventh Framework Programme 2007-2011 of the European Atomic Energy Community (Euratom), includes activities in the nuclear area regarding reactor safety, waste management, safeguards and radiation monitoring–centre on cross-border aspects and critical issues that require a common or harmonised EU response. Major objectives are to further increase knowledge on the safety and reliability of nuclear energy production and reactor systems, with particular consideration to sustainability and control.

The JRC is fully involved in international efforts for advanced nuclear reactor safety. Research is primarily centred on the long-term safe operation of existing Western and Russian-designed reactor types, as well as new fuel cycle systems and reactor designs and research on the safety of nuclear fuel.[86]

In 2008 the JRC has launched the "European Clearing House" (see chapter 3.4.2 on page 40) in the interest of European national safety authorities.

Furthermore, development and extension to non Western type nuclear reactors of the JRC-TRANSURANUS code, a flexible, comprehensive computer code that accurately predicts all important aspects of nuclear fuel performance under normal, off-normal and transient irradiation conditions, enables the design and safety criteria in the licensing procedure for nuclear fuel rods to be verified with confidence. Used by national nuclear regulatory bodies, the code provides a basis for the harmonisation of fuel licensing criteria in the enlarged European Union. In this context the TRANSURANUS Users Network has been extended to 19 members in 13 different countries. JRC organised biennial workshops for all users of the code and offered regular training courses.

Safety of a new generation of sustainable reactor technologies - Generation IV - and closing the nuclear fuel cycle to reduce the long-term radio-toxicity of the nuclear waste and improve sustainable use of resources is a key challenge of the Community. In that context, the JRC works in close cooperation with European Member States, following the terms defined within the Sustainable Nuclear Energy Technology Platform. At this stage, main efforts are being placed in the development of fuel and structural materials behaviour and of advanced fuel partitioning processes.

In 2007, a new action on "Alternative Nuclear Fuel cycle" started to address the development of advanced GEN IV type fuel cycles, where specially adapted partitioning schemes are being set-up to cope with the goal of the full recycling of all actinides in view of a minimisation of the waste radio-toxicity. The development of the process, the fabrication, characterisation and encapsulation of prototype fuel pins for irradiation and post-irradiation (PIE) studies are carried out. Fuel fabrication campaigns involving advanced CerMet fuels, HELIOS, have been successfully completed at JRC. In addition the FUTURIX fuel irradiation experiment in PHENIX reactor is being followed up. This will

[85] For the complete Work programme see: http://www.jrc.ec.europa.eu/download/mawp2007-2013.pdf

[86] For further information see: http://www.jrc.ec.europa.eu/

provide essential data concerning behaviour in pile and allow qualification and validation of fuel performance. The work has been carried out in the framework of the EURATOM Institutional research activities and the integrated project EUROTRANS supported by the Commission Directorate General for Research (RTD for EU policy implementation. Further work on demonstration of the partitioning of minor actinides, including the concomitant development of non-destructive analytical methods in support to safeguards objectives, and the development of a unique facility at disposal of the nuclear European Research Area for investigations of minor actinide fuels (JRC-, MA-LAB) are carried out.

The determination and modelling of safety relevant properties of Generation IV type reactor fuels is carried out within the FP7 action on "Safety of Advanced Nuclear Fuels". The deliverables allow improving the general understanding about advanced fuel behaviour as well as the subsequent refinement of simulations tools used by safety authorities and fuel designers. Nuclear Industry and safety authorities in the EU will therefore have access to a flexible, comprehensive computer code that accurately predict all important aspects of GEN IV fuel performance under normal, off-normal and transient irradiation conditions As a result the action contributes to the competitiveness of the European industry in the field of GEN IV fast reactors with a closed fuel cycle for increased sustainability.

In nuclear waste management, research activities performed at the JRC concentrated on fission gases in spent fuel and their impact on the fuel stability, study of corrosion behaviour and mechanism of spent nuclear fuel. Modelling analyses coupled experimental results to modelling studies to characterize the defect configuration in selected high level waste form and to validate current theoretical models in the framework of international cooperation agreements, including key programmes in nuclear waste safety-related research (e.g. NF-PRO, MICADO, RECOSY).

All activities are sustained through the development, within the JRC and through networking and cooperation with external EU key partners, of training and education programmes promoting adequate training for nuclear scientists, engineers and technicians, regulatory authorities' staff, and other officials in order to maintain and further develop European nuclear safety.

3.4. Completion of studies, new studies *and Workshops* undertaken by the European Union in the area of nuclear safety

International cooperation, the identification and exchange of best practices as well as the pooling of expertise are well recognised means to significantly improve nuclear safety. International organisations such as the IAEA or the OECD/NEA are providing valuable platforms in this regard and that is why the Commission is actively contributing to those fora. ***Furthermore, the European Commission is constantly seeking for means to contribute to the overall aim of high level of nuclear safety. Acknowledging the high value of the EU organisation and it's infrastructure, it was used to give support and good frame to carry out some topical studies in the area of Nuclear Safety, in order for different stakeholders to get the overview of the situation in other EU Member States and in the EU generally, to obtain information relevant to them and to use the results in their possible future activities, policy making issues, etc.***

The full reports of the studies, which are described in detail below, can be found including recommendations on http://ec.europa.eu/energy/nuclear/studies/index_en.htm

3.4.1. Study on "The expected fading of nuclear knowledge"

The purpose of the study on Nuclear Safety in a Situation of Fading Nuclear Experience was to analyse the situation in the EU as regards the availability of qualified and experienced staff with the key players (operators and regulators), possible negative consequences of phase-out programmes as well as possible additional initiatives at the national and at the EU level to address the problem and to ensure a continued high level of nuclear safety.

The study concentrated on Nuclear Safety Important Personnel (NSIP). This term was created by the contractor in order to be able to better focus on the most relevant group of people. NSIP consists of employers of operators and regulatory bodies necessary to ensure operational nuclear safety.

The information was collected from the key players in each EU Member State, as well as some international organisations.

The needs to hire and train young technical graduates to take over nuclear safety important functions are expected to rise during the next decade. The number varies widely between Member States but corresponds frequently to 50-100% of the number currently employed.

It was noted that there are differences between Member States in requirements of new NSIP – while in western countries technical university degree is required, in most of the eastern Member States they have to have a university degree in nuclear field. Maybe due to this, they also have more cooperation between universities and nuclear industry. Nevertheless, comprehensive training is organised by operators in all Member States with nuclear programmes.

3.4.2. Study on "The perceived need to promote OPEX"

The Study on "Nuclear Incident reporting and follow up" was launched to determine whether and how the OEF (Operational Experience Feedback i.e. incident reporting, analysing and follow-up) at Nuclear Power Plants could be improved, in particular at a European level.

Operational Experience Feedback practice in EU Member States: All plants have IAEA OEF guidance, which requires the operator to take full account of safety lessons learned from all relevant experience Regulators generally perform reactive inspections following a safety-related incident and not so much routine inspections into the OEF process Lack of regulatory resources is one reason for under reporting of events to IRS from countries with small nuclear industries

Operational Experience Feedback at European level: Although harmonisation of OEF practice by EU operators has been broadly achieved, there is no plan for a common standard fro event reporting to the regulators. At least partly it is due to the different sizes and structures of the nuclear industry in the different EU Member States. From January 2008 JRC has been hosting a European Nuclear Safety Clearinghouse (NUSAC) to facilitate sharing and implementation of OEF information between the EU Member States.

International Operational Experience Feedback: International OEF amongst operators is the remit of WANO (World Association of Nuclear Operators), to which all plants worldwide belong, and various Owners Clubs. WANO operates effectively but is increasing its activities to improve members' standards to address concerns about recurring events. The IAEA has generated good, comprehensive "Best practice" Operating Experience Feedback guidance for operators and regulators The IAEA IRS (Incident Reporting System) that contains event reports submitted by regulators is the primary international tool available to the regulators, who do not have access to the WANO Operating Experience Feedback database. All EU regulators participate, along with most other regulators worldwide. The OECD/NEA has only limited resources but has been effective at lobbying for a better appreciation of international OEF on behalf of the regulatory bodies. The NEA intends to focus future activity on the effectiveness of corrective actions taken in response to events.

3.4.3. Study on "The Harmonization of performance indicators across the EU"

Benefits in using performance indicators are recognised both by operators and regulators with a focus to measure the level of safety in the nuclear installations. The objective of the study on "Nuclear Safety Performance Indicators" was to analyse and evaluate the use of Nuclear Safety Performance Indicators used by both operators and regulators in the EU Member States, in order to identify good practices and to stimulate further exchange of information in the subject among the Member States and individual agencies.

The operators from all EU Member Sates are using NSPI-systems, most of them in order to identify areas of safety deficiencies and to identify opportunities for improvement. The majority of plants consider the NSPI programme as an important too for measuring the effectiveness and efficiency of the system for managing safety but also for demonstrating effect of improvement.

There are many differences among the NSPI-systems used in different EU Member States. These differences include:

– ***characteristics of the NSPI programmes (mainly size and structure)***

– ***the implementation practices (data gathering/processing, reporting, thresholds, etc***

The NSPI programmes don't have a long history / the majority of users implemented their systems a couple of years ago. At many organisations the development of the system is ongoing. In spite of differences, there are similarities in the most typical uses of NSPIs, coverage of specific safety areas by low level indicators and even in the definition of individual indicators.

3.4.4. *Workshop on "Regulation and Enforcement in the aviation, shipping and nuclear Industries"*

Acknowledging that the nuclear industry is not the only industry considered risky or unsafe, a workshop was organised by the Commission in 2007. The workshop was called "Regulation and Enforcement in the Aviation, shipping and Nuclear Industries – What can

we learn from each other?" While, its objective was to provide a forum for different industries to discuss safety regulation issues common for all parties, no conclusions were drawn from the workshop.

3.5. Continuation of existing programmes

3.5.1. ECURIE

See Chapter 16.3.1 on ECURIE (European Community Urgent Radiological Information Exchange), p. 71.

3.5.2. Decommissioning support of the European Union

During their accession negotiations Lithuania, Slovakia and Bulgaria have committed themselves to the early closure of units 1 and 2 of the Ignalina nuclear power plant in Lithuania, of units 1 and 2 of the Bohunice V1 nuclear power plant in Slovakia and of Units 1 to 4 of the Kozloduy nuclear power plant in Bulgaria. The commitments were laid down in the corresponding Treaty of Accession and related Protocols (Act of Accession for Lithuania[87] and Slovakia[88] and the Treaty of Accession for Bulgaria[89]).

In order to support the efforts of the Member States in this regard the EU provides substantial financial assistance. Two new Council Regulations on the decommissioning support to Lithuania and the Slovak Republic[90] indicate the scope of this financial support:

- ***the safe maintenance of the shut-down plant prior to dismantling,***
- ***the actual decommissioning and waste management activities,***
- ***measures in the field of replacement capacity, energy efficiency and supply, which are consequential to the early closure and decommissioning of the NPPs, such as***
    - ***measures for the environmental upgrading in line with the acquis,***
    - ***modernisation measures of conventional capacity to replace the production capacity of closed down NPP reactors and***
    - ***other measures which contribute to the necessary restructuring, environmental upgrading and modernisation of the energy production, transmission and distribution sectors in the Member state as well as to enhancing the security of energy supply and improving energy efficiency in Lithuania.***

---

87 Protocol No 4 on the Ignalina nuclear power plant in Lithuania, Act of Accession, OJ L 236, 23.09.2003

88 Protocol No 9 on unit 1 and unit 2 of the Bohunice V1 nuclear power plant in Slovakia, Act of Accession, OJ L 236, 23.06.2003.

89 Article 30 of the Protocol of the Treaty of Accession concerning the conditions and arrangement for admission of the republic of Bulgaria and Romania to the European Union, OJ L 157, 21.06.2005

90 Council Regulation (EURATOM) No 549/2007 of 14 May 2007 on the implementation of Protocol No 9 on Unit 1 and Unit 2 of the Bohunice V1 nuclear power plant in Slovakia, OJ L 411 of 30.12.2006 and Council Regulation (EC) No 1990/2006 of 21 December 2006 on the implementation of Protocol No 4 on the Ignalina nuclear power plant in Lithuania, OJ L-27 of 02.02.2007, p. 7.

In order to support the early decommissioning efforts related to four units at Kozloduy Nuclear Power Plant the Community supports Bulgaria on the basis of the Accession Treaty of Bulgaria. At present the financial assistance of the Community is limited to the year 2009. Following the request of the Bulgarian government the Commission had adopted a proposal for a new Council Regulation for on financial assistance of the Union (Kozloduy Programme) with respect to the decommissioning of Units 1 to 4 of the Kozloduy Nuclear Power Plant in Bulgaria for the period 2010 – 2013, which was adopted by the Council on 13 July 2010[91].

The amounts for this assistance (***244 Mio Euro in the year 2007 and 255 Mio Euro in the year 2009***) are not based on a specific proportion of the estimated costs, but recognise the extraordinary burden placed on the Member State by the shutdown commitment, and are to some extent an expression of solidarity between the Union and the Member State.

3.5.3. Euratom loans

Euratom gives loans to finance investment in nuclear installations for the industrial production of electricity or the nuclear fuel cycle in Member States. It also gives loans to finance projects for improving nuclear safety in certain non-Member States, including the dismantling of nuclear power stations that cannot be upgraded.

This lending instrument was established by Council Decision 77/270/Euratom of 29 March 1977[92] empowering the Commission to issue Euratom loans for the purpose of contributing to the financing of nuclear power stations (the "Establishing Decision") in Member States. The ceiling for borrowing to fund Euratom lending was originally fixed by Council Decision 77/271/Euratom of 29 March 1977[93]. Subsequently, by various amendments of that Decision, the latest of which[94] increased it by 1 000 million Euro to 4 000 million Euro, the scope of the Euratom lending instrument was extended.

In a Decision dated 21 March 1994[95] the Council authorised the Commission to contract Euratom borrowings in order to contribute to the financing required for improving the degree of safety and efficiency of nuclear power stations in certain non-Member countries (the "Scope Extension Decision"). The proceeds of these borrowings would be assigned, in the form of loans, to the funding of projects to increase the safety and efficiency of the nuclear facilities in certain CEEC and NIS. In the last few years, Euratom loans have been granted to three projects: the safety upgrade of the Kozloduy Power Plant Units 5 and 6 in Bulgaria, the

91 Not yet published in the Official Journal.

92 Council Decision 77/270/Euratom of 29 March 1977 empowering the Commission to issue Euratom loans for the purpose of contributing to the financing of nuclear power stations, OJ L 88, 6.4.1977, p. 9–10.

93 Council Decision 77/271/Euratom of 29 March 1977 on the implementation of Decision 77/270/Euratom empowering the Commission to issue Euratom loans for the purpose of contributing to the financing of nuclear power stations, OJ L 88, 6.4.1977, p. 11–11.

94 Council Decision 90/212/Euratom of 23 April 1990, OJ No L 112, 03.05.1990, p 26

95 Council Decision of 21 March 1994 amending Decision 77/270/Euratom to authorize the Commission to contract Euratom borrowings in order to contribute to the financing required for improving the degree of safety and efficiency of nuclear power stations in certain non-member countries, OJ L-84, 29.03.1994 p 4.

completion of Cernavoda Power Plant Unit 2 in Romania, and the safety upgrade of Khmelnitsky Power Plant Unit 2 and Rovno Power Plant Unit 4 in Ukraine.[96]

A Commission proposal to increase the 4 billion Euros borrowing ceiling for such operations to 6 billion Euros was approved on 6 November 2002, but Member States have not yet reached a consensus on this proposal.[97]

4. PREVIOUS SAFETY ISSUES

No safety issues have been identified during the last review meetings, but "Because Euratom is a unique entity it is difficult to report and Peer review under the framework of the convention."[98] For this reason the Report contains a comprehensive explanation of the European Union and Euratom as unique entities and the structure and format of the report have been adapted to better implement the new Guidelines regarding National Reports[99].

5. FUTURE SAFETY RELATED ACTIVITIES AND PLANNED OR PROPOSED PROGRAMMES

5.1. Extension of 7th Euratom Framework Programme on research and training

During 2010, administrative procedures will begin for the formal approval and adoption of a 2-year extension to the programme for the years 2012&13, which will bring it in line with the 7-year duration of the more general research Framework Programme of the EU under the EC (now Lisbon) Treaty.

The Euratom and EC 8th FP will begin in 2014, though no details are yet available. As far as the Specific Programme for nuclear safety research implemented through indirect and direct actions is concerned, the scope of the 2-year extension mentioned above is likely to be very similar to that of the 2007-2011 programme.

5.2. Draft Proposal for a Council Directive on Basic Safety Standards for the Protection of Workers and the General Public

The European Commission has undertaken a revision ***and simplification of Community legislation in the area of radiation protection and will propose a consolidation of five Directives[100], including one Commission Recommendation into a new*** Basic Safety Standards Directive.

---

96 http://ec.europa.eu/economy_finance/financial_operation _instruments/financing_investment75_en.htm

97 Proposal for a COUNCIL DECISION COM (2002) 456, 2002/0246/CNS, amending Decision 77/270/Euratom empowering the Commission to issue Euratom loans for the purpose of contributing to the financing of nuclear power stations, OJ C 45E , 25.2.2003, p. 194–200

98 From: Rapporteur's Report for EURATOM in the 4th Review Meeting under the Convention on Nuclear Safety, Vienna, 2008 (not published).

99 INFCIRC/572/Rev.3, 28 September 2009.

100 Council Directive 96/29/Euratom of 13 May 1996, laying down basic safety standards for the health protection of the general public and workers against the dangers of ionising radiation (OJ L-159 of 29.06.1996, p.1),
Council Directive 97/43/Euraotm of 30 June 1997 on health protection of individuals against the dangers ionising radiation in relation to medical exposure, and repealing Directive 84/466/Euratom (OJ L-357/Euratom of 09.07.1997, p. 22),

Since the last report, the Commission has consulted the Group of Experts established under Article 31 Euratom, and developed a complete and advanced draft proposal for a new Basic Safety Standards Directive. The Group issued an Opinion on this first draft on 24 February 2010[101].

5.3. Co-sponsorship of IAEA Safety Standards

The Commission actively participates in the process for revision of the Inter-Agency Basic Safety Standards[102] with a view to eventual co-sponsorship.

5.4. Revision of IAEA Safety Standard

Though participation at the IAEA CSS as well as at the NUSSC, WASSC and RASSC technical committees, the Commission is actively participating at all stages of the IAEA Safety Standard preparation and revision process.

5.5. Revision of the Commission recommendation on the implementation of Article 37 of the Euratom Treaty

The aim of the revision of the recommendation is, on the basis of the experience gained, to clarify, simplify and improve the provisions of the current Commission recommendation. The consolidated draft revised text will be presented in April 2010 to the Article 37 Group of Experts. The final revised Commission recommendation should be adopted mid 2010.

Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency (OJ L-357 of 07.12.2989, p. 31),
Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas (OJ L-349 of 13.12.1990, p.21),
Council Directive 2003/122/Euratom of 22 December 2003 on the control of high-activity sealed radioactive sources and orphan sources (OJ L-346 of 31.12.2003).

101 Not published in the Official Journal, see http://ec.europa.eu/energy/nuclear/radiation_protection/doc/art31/2010_02_24_opinion_on_bss.pdf

102 International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, jointly sponsored by FAO, IAEA, ILO, OECD/NEA, PAHO, WHO, Safety Series No. 115, International Atomic Energy Agency, Vienna, 1996

5.6. Radioactive Waste and Spent Fuel Management

Based on the 2004 proposal for a Council Directive (Euratom)[103], a revised proposal for binding legislation covering the sustainable management of spent fuel and radioactive waste is being prepared by the Commission. The submission to the Council is planned for 2010.

5.7. Transport of Radioactive Materials

The Commission is currently preparing a proposal for a Council Regulation establishing a Community system for Registration of carriers of radioactive materials.

A Communication from the Commission to the European Parliament and the Council on the situation concerning medical applications of ionizing radiation in the European Union Including the security of supply of radioisotopes for nuclear medicine.

[103] COM(2004)526final (not published in the Official Journal)

SECTION III
IMPLEMENTATION OF THE CONVENTION
ARTICLE BY ARTICLE REVIEW

6. ARTICLE 6: EXISTING NUCLEAR INSTALLATIONS

Each Contracting Party shall take the appropriate steps to ensure that the safety of nuclear installations existing at the time the Convention enters into force for that Contracting Party is reviewed as soon as possible. When necessary in the context of this Convention, the Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact.[104]

Euratom does not possess ***or operate any*** nuclear installations as defined in Article 2(1) of the Convention. Such nuclear installations exist only in the territories of the Member States of the European Atomic Energy Community, to which the Euratom Treaty applies (see p. 16).

However, the new Council Directive 2009/71/Euratom on the establishment of a framework for the nuclear safety of nuclear installations applies to a range of nuclear installations that is wider than the one adopted in the Convention. This Directive applies to any civilian nuclear installation operating under a licence as defined in Article 3(4) at all stages covered by this licence (including the decommissioning stage). This means, the Nuclear Safety Directive applies to enrichment plants, nuclear fuel fabrication plants, nuclear power plants, reprocessing plants, research reactor facilities, spent fuel storage facilities and storage facilities for radioactive waste that are on the same site and are directly related to such nuclear installations listed above.

7. ARTICLE 7: LEGISLATIVE AND REGULATORY FRAMEWORK

(1) Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.

(2) The legislative and regulatory framework shall provide for:

i. The establishment of applicable national safety requirements and regulations;

ii. A system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a licence;

[104] Not applicable according to the Declaration of Competences (Annex 1). This means according to the revised Declaration of Competences (see Chapter 4 Statement of the Commitment of the Contracting Party to the Convention, p. 18 and Annex 1), which takes into account the Judgement 29/99 of the Court of Justice of the European Union (see Chapter 7.1.3, p. 54.

iii. A system of regulatory inspection assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licences;

iv. The enforcement of applicable regulations and the terms of licences.

This section summarizes the existing legislative system affecting the safety of nuclear installations in the Member States and includes statements with regard to the adequacy and effectiveness of that system.

7.1. Article 7(1) - The legislative and regulatory framework governing the safety of nuclear installations

This section introduces the legal system of the European Atomic Energy Community (hereinafter referred to as 'Euratom') and its relationship to the national laws of the Member States ***of the European Union***. It gives an overview on the legislative procedure on the basis of the Euratom Treaty.

7.1.1. The Euratom Treaty

The Treaty establishing the European Atomic Energy Community (hereinafter: Euratom Treaty) provides the legal framework for the competencies and activities of the European Atomic Energy Community. The signatories of the Euratom Treaty stated in the Preamble to the Treaty that they were in particular:

- Anxious to create the conditions of safety necessary to eliminate hazards to the life and health of the public;
- Desiring to associate other countries with their work and to cooperate with international organisations concerned with the peaceful development of atomic energy.

These statements are in complete accordance with the objectives of the Convention, as set out in Article 1 thereof. In effect, this Article (read with Article 2 of the Convention, “Definitions”) focuses on the Convention’s objectives, which are threefold, that is:

- a high level of nuclear safety;
- protection from ionising radiation of the population and of the environment in the design, siting, construction and operation of nuclear installations and
- prevention of accidents and mitigation of the radiological consequences of such accidents.

There are three types of Euratom law: The primary source of law is the Euratom Treaty. The secondary sources of law are regulations, directives, decisions, recommendations and opinions on the basis of the Treaty issued by the EU Institutions (European Commission or the Council). The final source of law is the case law including interpretation of treaties and institutional acts carried out by the Court of Justice ***of the European Union***. The whole body of EU ***and Euratom*** law together is called the "*acquis communautaire*".

Under the institutional provisions of the Euratom Treaty, Euratom possesses its own mechanisms to control the compliance of the national laws of all Member States with the relevant Community legislation. This includes the possibility to accordingly obtain a decision by the Court of Justice of the European ***Union***, based in Luxembourg.

The relationship between the legislation adopted by Euratom and the national legislation of the Member States ***of the European Union (hereinafter referred to as 'Union')*** is as follows according to Article ***288*** of the Treaty ***on the Functioning of the European Union (TFEU)***:

> *"To exercise the Unions competences, C* ***the institutions*** *shall* ***adopt*** *regulations, directives, decisions, recommendations or opinions.*
>
> *A regulation shall have general application. It shall be binding in its entirety and directly applicable in all Member States.*
>
> *A directive shall be binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods.*
>
> *A decision shall be binding in its entirety. A decision which specifies those to whom it is addressed shall be binding only upon them.*
>
> *Recommendations and opinions shall have no binding force."*

Member States must take all appropriate measures, whether general or particular, to ensure the fulfilment of the obligations arising out of the Euratom Treaty or resulting from action taken by the institutions of the Community. They have to facilitate the achievement of the Community's tasks and abstain from any measure which could jeopardize the attainment of the objectives of the Euratom Treaty (Art. 192 Euratom).

The organizational structures of Euratom and EC merged in 1967 by virtue of the Merger Treaty signed in 1965. ***With effect of 1 January 2010, Article 13 of the Treat of the European Union establishes the common institutional framework for both the European Union and Euratom. In accordance with Article 106a paragraph 1 of the Euratom Treaty, Articles 223 to 287of the Treaty on the Functioning of the European Union describe the methods, responsibilities and measures of the individual institutions which are available for*** both ***Euratom and the European Union with more detail***.

With the Lisbon Treaty, the European Council[105] – commonly known as "EU Summit" – officially gains the status of an EU institution, thus being separated from the Council of Ministers or Council of the European Union. The European Councils task is to define the general political direction and priorities of the European Union. It is composed of the heads of state or government of the Union's Member States along with the (nonvoting) President of the European Commission. The new position of a long-term (2 1/2 years term) President of the European Council has been introduced with the Lisbon Treaty to represent the European Union to third countries. The High Representative of the Union for Foreign Affairs and

[105] Articles 15 and 18 TEU and 235 to 236 TFEU

Security Policy has been established to a united position on EU policies. The conclusions of the European Council are referred to as "European Council Presidency Conclusions".

The Council[106] ***exercises the legislative and - together with the European Parliament - the budgetary functions, as well as policy-making and coordinating functions. It*** consists of the respective ministers of national governments of each Member State***.*** The Council shares with the European Parliament only the responsibility for passing general EU laws and taking general EU policy decisions. Under the Euratom Treaty the Council only consults the European Parliament and then decides alone on the legislation proposed by the European Commission, ***The Lisbon treaty has established the use of qualified majority voting in the Council as the ordinary voting procedure in almost every policy area[107]. Such legislative procedural meetings that include debate and voting in the Council of Ministers must now be held in public (televised).*** The Council meets in different configurations and is assisted by the General Secretariat. Each Member State presides over the Council for a six-month period. In addition ***a "Triple Presidency" is formed by three consecutive Presidencies in order to provide more continuity to their conduct.***

The Members of the European Parliament[108] represent the citizens of the EU Member States. They are elected by direct universal suffrage for five years. The plenary sessions of the Parliament are held in Strasbourg, others in Brussels. Together with the Council of the European Union it exercises legislative and budgetary functions and functions of political control and consultation. In the framework of the Euratom Treaty, however, the Parliament has only a consultative role. Though, Parliament and Council share responsibility for approving the EU annual budget.

The European Commission[109] ***is responsible for promoting the general interest of the Union and take appropriate initiatives to this end. It ensures the application of the Treaties and of measures adopted by the institutions.*** As the "Guardian of the Treaties" ***it oversees the control of Union and Euratom law under the control of the Court of Justice of the European Union, by*** initiating proceedings against Member States which did not implement ***Euratom*** law. ***It executes the budget and manages and has coordinating, executive and management functions.*** In its role as the manager and executor of common policies and of international trade relationships the Commission manages the EU budget, implements the agreed policies and programmes of the Communities, ensures the external representation of the EU and Euratom (with the exception of the common foreign and security policy) and negotiates external

106 Articles 16 TEU and 237 to 243 TFEU

107 Taking effect in 2014, the definition of a qualified majority will change: A qualified majority is reached when at least 55% of all member states, who comprise at least 65% of EU citizens, vote in favour of a proposal. When the Council of Ministers is acting on a proposal neither of the Commission nor of one of the High Representative QMV requires 72% of the member states while the population requirement remains the same. To block legislation, at least 4 countries (representing at least 35% of the EU population) have to vote against the proposal. Hence, the voting powers of the member states are based on their population, and are no more dependent on a negotiable system of voting points. The current rules for QMV, as set in the Treaty of Nice, require a majority of countries (50% / 67%),voting weights (74%), and population (62%). This rule remains in place until 2014. Between 2014 and 2017 a transitional phase will take place where the new QMV rules apply, but where the old Nice treaty voting weights can be applied when a member state wishes so. Moreover, from 2014 a new version of the 1994 "Ioannina Compromise" will take effect, which allows small minorities of EU states to call for re-examination of EU decisions.

108 Articles 14 TEU and 223 to 234 TFEU

109 Articles 17 TEU and 244 to 250 TFEU

agreements with other countries on behalf of the EU. According to the Euratom Treaty, the Commission concludes also international agreements (Art. 101 Euratom). The Commission is independent of national governments and represents and upholds the interests of the Communities as a whole. ***In carrying out its duties the Commission is responsible to the European Parliament. While the Council and the Parliament may request legislation, the Commission*** is the only body that can formally propose new legislation. Having heard the opinion of consultative bodies provided for by the Euratom Treaty, the Commission presents the new proposals to the Council. ***Since the Lisbon Treaty, one million EU citizens, who are nationals of a significant number of Member States, may call directly on the European Commission to bring forward an initiative of interest to them in an area of EU competence. This European Citizens' Initiative is one of the major innovations of the Treaty of Lisbon, aimed at increasing direct democracy in the European Union. Until the Council decides otherwise, every Member State may nominate one Commissioner. The 27 Commissioners together form the Commission, or so called 'College', the Commission decision making body.***

The Court of Justice of the European ***Union***[110], including the Court of Justice, the General Court and specialised courts, ensures that the law is observed in the interpretation and application of the Treaty on the European Union, the Treaty on the Functioning of the European Union, the Euratom Treaty and of the provisions laid down by the competent EU institutions. The Court of Justice has competence, inter alia, actions against Member States for failure to fulfil obligations, references for a preliminary ruling and appeals against decisions of the General Court. It adjudicates most commonly on matters of interpretation of European Union law, raised by:

- Claims by the European Commission that a Member State has not implemented a EURATOM Directive or other binding legal requirement, in the framework of an infringement procedure.

- References from national courts in the EU Member States asking the Court of Justice questions about the meaning or validity of a particular piece of EU law. The Court of Justice gives its ruling on the interpretation of the law, which is binding on the national court.

The General Court rules in principle on applications for annulment or actions for failure to act brought by a Member State, an institution or natural or legal persons if they are directly and individually concerned.

The legislation procedure for acts of secondary law (regulations, directives, decisions, recommendations and opinions) is laid down in the Euratom Treaty itself. For matters related to radiation protection and safety relevant to this convention, the Commission receives guidance from a group of scientific experts established under Article 31 of the Euratom Treaty[111], which then gives rise to a Commission proposal for a Council Directive, Regulation, Decision or Recommendation. The proposal is submitted first to the Economic and Social Committee. Upon incorporation of all or a part of the observations of this Committee, the proposal is transmitted to the Council of the European Union, which has to consult the European Parliament before

[110] Articles 19 TEU 251 to 281 TFEU

[111] Group of Scientific Experts Referred to in Article 31 of the Euratom Treaty, Rules of Procedures, Art.31/2004 approved final version, 4 June 2004, http://ec.europa.eu/energy/nuclear/radioprotection/doc/art31/procedure_rules_en.pdf

adoption. The European Parliament then may propose amendments to the Commission proposal, which the Council may examine and take into consideration. In the end, under the terms of the Euratom Treaty, the act is adopted by a qualified majority by the Council.

Member States are obliged to transpose or implement the existing binding Euratom legislation within a certain period of time, as detailed in the Act itself. A directive needs to be transposed into national legislation; regulations and decisions are directly applicable in the Member States.

The Euratom Treaty provides for a number of mechanisms to ensure that the relevant legislation is complied with by all Member States.

Under Article 33 of the Euratom Treaty, *"each Member State shall lay down the appropriate provisions, whether by legislation, regulation or administrative action, to ensure compliance with the basic standards"* (paragraph 1), which cover, according to the case-law, comprehensive and systematic safety assessments in the sense of Article 14(I) of the Convention. To this extent, *"the Commission shall make appropriate recommendations for harmonizing the provisions applicable in this field in the Member States"*. Member States must notify to the Commission all national legislation in the areas covered by the Euratom Treaty, both

- before adoption, so that the Commission can formulate, as the case might be, appropriate recommendations in order harmonize the implementing national provisions throughout the European Union according to Article 33 of the Euratom Treaty and

- After adoption, so that the conformity of the final measures can be controlled.

Whenever the Commission in its role as "Guardian of the Treaties" considers that a Member State is being infringing the Euratom provisions, for example if a Member State did not transpose a directive into national law within the given deadline, the Commission requests information from the authorities of the Member State concerned and, if explanations are not satisfactory, it can initiate proceedings against Member States. A proceeding can imply lodging an application before the Court of Justice of the European Communities. If the Member State does not take the necessary measures to comply with the ruling of the Court of Justice, the Court can decide to impose a lump sum or penalty on the Member State. In case of urgency, the Commission is entitled to directly hold the Court of Justice (Article 38 of the Euratom Treaty)[112]; though this situation has never occurred.

The Commission controls the implementation in practice through verifications of the environmental monitoring facilities on the basis of Article 35 of the Euratom Treaty[113] and through the examination of plans for the disposal of radioactive waste submitted to the Commission for opinion on the basis of Article 37 of the Euratom Treaty[114].

In addition, the Commission contributes in achieving a high level of harmonization in Europe by (non-binding) actions including

[112] See Article 38 of the EURATOM Treaty.

[113] See below chapter 15.2.5, Verification of environmental radiological surveillance facilities, p. 65

[114] See chapter 17.1, Description of licensing process, including summary of laws, regulations and requirements relating to the siting of nuclear installations, p. 73

- Non-binding Commission Recommendations in the areas of the Euratom Treaty[115].

- Other non-binding guidance documents, such as

  – "Radiation Protection Series" Publications of the Commission;

  – Recommendations of Advisory Groups of the Commission [116]

7.1.2. Uniform Safety Standards to protect the health of workers and the general public

Article 2 of the Euratom Treaty states that in order to perform its task, the Community shall, as provided for in the Treaty, in particular, establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied.

Title Two, Chapter 3, Health and Safety, sets out a number of detailed provisions intended to establish, give effect and apply the basic standards mentioned in Article 2(b) of the Euratom Treaty. A substantial corpus of Euratom legislation[117] has been adopted and updated in the course of the years and is completed by a set of legal instruments of different binding nature, covering a wide range of aspects such as

- operational protection of workers (including outside workers) and population,
- natural radioactive sources,
- high activity sealed sources and orphan sources,
- emergency preparedness,
- ***nuclear safety,***
- medical applications,
- control and supervision of shipments of spent fuel and radioactive waste,
- as well as a number of regulations establishing provisions on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power plant, aimed at safeguarding the health of consumers of such products.

The main instrument Council Directive 96/29/Euratom laying down basic safety standards for the health protection of the general public and workers against the dangers of ionising radiation is the central element of this legislation (hereafter "the Basic Safety Standards Directive")[118].

115 See Annex 3.

116 See chapter 3.2 Experts Groups of the European Commission – history and overview, p. 31

117 See Annex 3.

118 Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation, Official Journey (hereinafter OJ) L-159 of 29.06.1996, p. 1.

7.1.3. New EU framework for the nuclear safety of nuclear installations

Nuclear safety is and will remain an absolute policy priority for the EU.

As recognised by 'the European Court of Justice in its case-law[119], the Community shares competences, together with its Member States, in fields covered by the Convention on Nuclear Safety[120]. Furthermore, the Court of Justice recognised an intrinsic link between radiation protection and nuclear safety and declared that the provisions of Title two, Chapter 3 of the Euratom Treaty, related to health and safety (i.e. radiation protection), form a coherent whole conferring upon the Community powers of some considerable scope in order to protect the population and the environment against risks of nuclear contamination. In its landmark ruling the Case 29/99[121], the Court stated that "it is not appropriate, in order to define the Community's competencies, to draw an artificial distinction between the protection of the health of the general public and the safety of sources of ionising radiation." But the Court also declared that the tasks imposed on the Community by Article 2(b) of the Treaty to lay down uniform safety standards to protect the health of the population and of workers does not mean that, once such standards have been defined, a Member State may not provide for more stringent measures of protection.[122]

Consequently, the Council Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations[123] (hereinafter referred to as the 'Nuclear Safety Directive') was unanimously adopted by the Council on 25 June 2009, subsequent to a very large support expressed by the European Parliament and the European Economic and Social Committee.

The Nuclear Safety Directive creates a solid and flexible legal framework that defines basic obligations and principles governing nuclear safety throughout the EU. It is based on Chapter 3 of the Euratom Treaty, (articles 31 and 32) in order to achieve the objective established in Article 2b, which provides for the establishment of uniform safety standards to protect the health of workers and of the general public[124].

Title two, Chapter 3 of the Euratom Treaty has been used mainly as a legal basis for enacting legislation in the radiation protection field (see p 62.ff.). Article 30 f. of the Treaty provide for the establishment of basic standards within the Community for the protection of the health of workers and the general public against the dangers arising from ionizing radiations[125].

The provisions of Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation ('Basic Safety Standards Directive')[126] have been supplemented by more specific legislation[127]: Council Decision 87/600/Euratom of 14

---

119 C-187/87 (1988 ECR p. 5013), C-376/90 (1992 ECR I-6153) and C-29/99 (2002 ECR I-11221)

120 OJ L 318, 11.12.1999, p. 21.

121 Judgement of 10 December 2002 in the Case C-29/99 (Commission of the European Communities v Council of the European Union), paragraph 82

122 Recitals (4) to (6), OJ L 172, 02/07/2009, p. 18

123 OJ L 172, 2.7.2009

124 First Recital, Nuclear Safety Directive 2009/71/Euratom, OJ L 172, 02/07/2009, p. 18.

125 Same as above

126 OJ L 159, 29.6.1996, p. 1.

127 Third Recital, OJ L 172, 02/07/2009, p. 18

December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency[128] established a framework for notification and provision of information to be used by the Member States in order to protect the general public in case of a radiological emergency. Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency[129] imposed obligations on the Member States to inform the general public in the event of a radiological emergency.[130]

The Nuclear Safety Directive supplements the basic standards referred to in Article 30 of the Euratom Treaty as regards the nuclear safety of nuclear installations and is without prejudice to the Basic Safety Standards Directive. It does not prevent Member States from taking more stringent safety measures in the subject-matter covered by this Directive, in compliance with Community law[131]. It is built upon the nuclear safety requirements of the Convention on Nuclear Safety and of the Safety Fundamentals[132] established by the IAEA. Furthermore, Member States should assess, where appropriate, the relevant fundamental safety principles set by the International Atomic Energy Agency , which should constitute a framework of practices that Member States should have regard to when implementing this Directive[133]. Thus, the EU becomes the first major regional nuclear actor to give binding legal force to these leading international nuclear safety instruments.

The Nuclear Safety Directive recognizes the principle of national responsibility, the principle of continuous improvement of nuclear safety, and the principle of prime responsibility of the licence holder for the nuclear safety of a nuclear installation under the supervision of its national competent regulatory authority. Licence holders are required to undertake systematic and verifiable safety assessments, including the verification of "defence-in-depth" measures. The Directive aims to enhance these principles and to reinforce the role and independence of the competent national regulatory authorities.[134]

The goal of the Nuclear Safety Directive is to maintain and promote the continuous improvement of nuclear safety and to ensure that at high level of nuclear safety is provide by EU Member States to protect workers and the general public against dangers arising from nuclear installations.

While the Member States have already implemented measures enabling them to achieve a high level of nuclear safety within the Community[135], the Nuclear Safety Directive requires Member States to establish and maintain a national legislative, regulatory and organisational framework governing the safety of nuclear installations. As stated in the recitals, Member State may decide on its energy mix in accordance with relevant national policies[136]. When

128 OJ L 371, 30.12.1987, p. 76
129 OJ L 357, 7.12.1989, p. 31.
130 Seventh Recital, OJ L 172, 02/07/2009, p. 18
131 Article 2 (2), same as above
132 IAEA Safety Fundamentals: Fundamental safety principles, IAEA Safety Standard Series No. SF-1 (2006)
133 Thirteenth Recital, OJ L 172, 02/07/2009, p. 18.
134 Eighth Recital, same as above
135 Eleventh Recital, same as above
136 Ninth Recital, same as above

developing the appropriate national framework under this Directive, national circumstances will be taken into account[137].

This framework should be improved when appropriate, taking into account: (i) Advances in nuclear technology, lessons learnt from operating experience and safety research; (ii) insights gained from safety analyses for operating nuclear installations; (iii) development of technology; and (iv) results of safety research. In addition, periodic safety assessments of their national framework and competent regulatory authorities shall be organised by the Member States, supplemented with international peer reviews, including the verification of "defence-in-depth" measures. In keeping with the commitment to maintain and improve safety, Member States should take those factors into account when extending their nuclear power programme or deciding to use nuclear power for the first time.[138]

By 22 July 2011, the 27 EU Member States of the Community are required to bring into force the laws, regulations and administrative provisions necessary to comply with the Directive.

The Directive also establishes a reporting system for the Member States. In this context, the Member States must submit a Report to the Commission on the implementation of the Nuclear Safety Directive for the first time by 22 July 2014 and every three years thereafter, taking into account the timing for reporting and regular review meetings under the IAEA Convention on Nuclear Safety. On the basis of the Member States' reports, the Commission submits a report to the Council and the European Parliament on progress made with the implementation of this Directive.

Secondly, the Member States should report the outcomes of the international peer-reviews that they have the obligation to periodically invite, when such results are available, to the Member States and to the Commission.

7.2. Article 7(2) – requirements for the legislative and regulatory framework

7.2.1. Article 7(2) i – establishment of applicable national safety requirements and regulations

Article 4(1) of the Nuclear Safety Directive on the legislative, regulatory and organisational framework states that Member States shall establish and maintain a national legislative, regulatory and organisational framework (hereinafter referred to as the 'national framework') for nuclear safety of nuclear installations that allocates responsibilities and provides for coordination between relevant state bodies. The national framework must establish responsibilities for:

(a) the adoption of national nuclear safety requirements. The determination on how they are adopted and through which instrument they are applied rests with the competence of the Member States;

(b) the provision of a system of licensing and prohibition of operation of nuclear installations without a licence;

137 Tenth Recital, same as above

138 Eighteenth Recital, same as above

(c) the provision of a system of nuclear safety supervision;

(d) enforcement actions, including suspension of operation and modification or revocation of a licence.

Furthermore, Member States must 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.

7.2.2. Article 7(2) ii - system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a licence

The Member States are responsible for the establishment and maintenance of the national legislative, regulatory and organisational framework, which allocates responsibilities for the provision of a system of licensing and prohibition of operation of nuclear installations without a licence (Article 4(1) b of the Nuclear Safety Directive).[139]

Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation[140] requires that Member States shall require prior authorisation in particular for the operation and decommissioning of any facility of the nuclear fuel cycle and exploitation and closure of uranium mining.

Article 44 of the Directive

Operational protection of the population in normal circumstances from practices subject to prior authorization means all arrangements and surveys for detecting and eliminating the factors which, in the course of any operation involving exposure to ionizing radiation, are liable to create a risk of exposure for the population which cannot be disregarded from the radiation protection point of view. Such protection shall include the following tasks:

> (a) examination and approval of plans for installations involving an exposure risk, and of the proposed siting of such installations within the territory concerned, from the point of view of radiation protection;
>
> (b) acceptance into service of such new installations subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter, taking into account, if relevant, demographic, meteorological, geological, hydrological and ecological conditions;
>
> (c) examination and approval of plans for the discharge of radioactive effluents.

These tasks shall be carried out in accordance with rules laid down by the competent authorities on the basis of the extent of the exposure risk involved.

139 See Article 4(1) of the Directive, as cited above under 7.2.1.

140 OJ L 159, 29.6.1996, p. 1.

7.2.3. Article 7(2) iii – system of regulatory inspection assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licences

The Member States are responsible for the establishment of the national framework, which must establish the responsibilities for the adoption of national nuclear safety requirements, the provision of a system of nuclear safety supervision and enforcement actions, including suspension of operation and modification or revocation of a licence (Article 4(1)a, c and d of the Nuclear Safety Directive).

7.2.4. Article 7(2) iv - enforcement of applicable regulations and the terms of licences

In addition to the national responsibility of Member States for the enforcement of national regulations and terms of licenses, it is the supranational nature of European law makes the Nuclear Safety Directive a milestone in international and regional nuclear law. The Directive attributes a number of powers to the European Commission, and more importantly, to the Court of Justice of the European Union. The Commission as the Guardian of the Treaty and the measures taken by the institutions ensures that EU legislation is applied correctly by the Member States. It can start infringement procedures if not satisfied with a Member States implementation of the Directive and refer the matter to the Court of Justice of the European Union. As a last resort the Court may impose a lump sum or penalty payment on the Member State, which fails to fulfil its obligations (Art. 143 Euratom Treaty, repealed by Lisbon Treaty and replaced by Article 260 of the Treaty on the Functioning of the European Union - TFU).

7.3. Summary of laws, regulations and requirements affecting the safety of nuclear installations, the licensing system and the inspection, assessment and enforcement process

See Annex 3.

8. ARTICLE 8 OF THE CONVENTION: REGULATORY BODY

(1) Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.

(2) Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy.[141]

National responsibility of Member States for the nuclear safety of nuclear installations is the fundamental principle on which nuclear safety regulation has been developed at the international level, as endorsed by the Convention on Nuclear Safety. The Nuclear Safety Directive aims to reinforce the role and the independence of the competent national regulatory authorities by building on their competencies. It recognises the fundamental principle that only independent and strong regulators can guarantee the safe operation of the nuclear installations in the EU.

[141] Not applicable (according to the Declaration of Competences, Annex 1).

8.1. Article 8(1) – Establishment of a Regulatory Authority

Article 5 of the Nuclear Safety Directive obliges Member States to establish a competent regulatory authority, which is equipped with the required legal power (=authority), human and financial resources[142].

A 'competent regulatory authority' is defined as an "authority or a system of authorities designated in a Member State in the field of regulation of nuclear safety of nuclear installations as referred to in Article 5."[143]. Member States must ensure education and training arrangements for all parties with staff having responsibilities relating to the nuclear safety[144]. This applies both to operators and to regulators.

8.2. Article 8(2) – "Independence" of regulatory authority

Article 5(2) of the Nuclear Safety Directive requires Member States to ensure that the competent regulatory authority is "functionally separate from any other body or organisation concerned with the promotion, or utilisation of nuclear energy, including electricity production, in order to ensure effective independence from undue influence in its regulatory decision making".

9. ARTICLE 9 OF THE CONVENTION: RESPONSIBILITY OF THE LICENCE HOLDER

Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility[145].

The prime responsibility of licence holders for nuclear safety, as endorsed by the Convention, is explicitly recognised by the Nuclear Safety Directive.

Art. 3 (5) of the Nuclear Safety Directive defines 'licence holder' as a legal or natural person having overall responsibility for a nuclear installation as specified in a licence. A. 'licence' is defined by any legal document granted under the jurisdiction of a Member State to confer responsibility for the siting, design, construction, commissioning and operation or decommissioning of a nuclear installation (Article 3(4) of Directive 2009/71/Euratom).

EU Member States are obliged to ensure that the prime responsibility for nuclear safety of a nuclear installation rests with the licence holder. This responsibility cannot be delegated (Article 6(1) of Directive 2009/71/Euratom). In Recital 8 of the Nuclear Safety Directive Member States are furthermore encouraged to enhance this principle of prime responsibility of the licence holder for the nuclear safety of a nuclear installation under the supervision of its national competent regulatory authority.

---

142 See Article 5 (1) and (3) of the Safety Directive (Annex 4)

143 See Article 3(3) of the Safety Directive.

144 See **Article 7 of the Safety Directive.**

145 Not applicable according to the Declaration of Competences (Annex 1).

10. ARTICLE 10 OF THE CONVENTION: PRIORITY TO SAFETY

Each Contracting Party shall take the appropriate steps to ensure that all organizations engaged in activities directly related to nuclear installations shall establish policies that give due priority to nuclear safety.[146]

Article 6 (4) of the Nuclear Safety Directive obliges Member States to ensure that the national framework in place requires licence holders to establish and implement management systems which give due priority to nuclear safety and are regularly verified by the competent regulatory authority.

11. ARTICLE 11 OF THE CONVENTION: FINANCIAL AND HUMAN RESOURCES

(1) Each Contracting Party shall take the appropriate steps to ensure that adequate financial resources are available to support the safety of each nuclear installation throughout its life.

(2) Each Contracting Party shall take the appropriate steps to ensure that sufficient numbers of qualified staff with appropriate education, training and retraining are available for all safety-related activities in or for each nuclear installation, throughout its life.[147]

The Nuclear Safety Directive in Article 5(3) obliges Member States to ensure that the competent regulatory authority is given the legal powers and human and financial resources necessary to fulfil its obligations in connection with the national framework described in Article 4(1) with due priority to safety. This includes the powers and resources to:

(a) require the licence holder to comply with national nuclear safety requirements and the terms of the relevant licence;

(b) require demonstration of this compliance, including the requirements under paragraphs 2 to 5 of Article 6;

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

(d) carry out regulatory enforcement actions, including suspending the operation of nuclear installation in accordance with conditions defined by the national framework referred to in Article 4(1) of Directive 2009/71/Euratom.

12. ARTICLE 12 OF THE CONVENTION: HUMAN FACTORS

Each Contracting Party shall take the appropriate steps to ensure that the capabilities and limitations of human performance are taken into account throughout the life of a nuclear installation.[148]

146 Not applicable according to the Declaration of Competences (Annex 1).
147 Not applicable according to the Declaration of Competences (Annex 1).
148 Not applicable according to the Declaration of Competences (Annex 1).

Article 6(5) of the Nuclear Safety Directive requires Member States to ensure that the national framework in place requires licence holders to provide for and maintain adequate financial and human resources to fulfil their obligations with respect to nuclear safety of a nuclear installation, laid down in Article 6 paragraphs 1 to 4 of the Directive. Furthermore, Article 7 concerning 'Expertise and skills in nuclear safety' holds that Member States shall ensure that the national framework in place requires arrangements for education and training to be made by all parties for their staff having responsibilities relating to the nuclear safety of nuclear installations in order to maintain and to further develop expertise and skills in nuclear safety.

13. ARTICLE 13: QUALITY ASSURANCE

Each Contracting Party shall take the appropriate steps to ensure that quality assurance programmes are established and implemented with a view to providing confidence that specified requirements for all activities important to nuclear safety are satisfied throughout the life of a nuclear installation.[149]

Not applicable.

14. ARTICLE 14: ASSESSMENT AND VERIFICATION OF SAFETY

Each Contracting Party shall take the appropriate steps to ensure that:

(1) Comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;

(2) Verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of the nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.

14.1. Article 14 (1) - Safety assessments

Nuclear safety assessments carried out in installations based in the EU Member States are a responsibility of the Member State where the installation is based. Council Directive 2009/71/Euratom requires regular nuclear safety supervision, carried out by the regulatory authority and the licence holder throughout the whole lifetime of nuclear installations (Article 5(3) a, b, c, d). Member States must ensure that the national framework in place requires licence holders, under the supervision of the competent regulatory authority, to regularly assess and verify and continuously improve, as far as reasonably achievable, the nuclear safety of their nuclear installations in a systematic and verifiable manner (Article 6(2)). This assessments must include verification that measures are in place for prevention of accidents and mitigation of consequences of accidents, including verification of the physical

[149] Not applicable according to the Declaration of Competences (Annex 1)

barriers and licence holder's administrative procedures of protection that would have to fail before workers and the general public would be significantly affected by ionising radiations (Article 6(3)).

In order to strengthen the powers of European regulatory authorities, the Directive provides for extended regulatory powers in the interest of safety, by clearly spelling out their right to suspend the operation of a nuclear installation, if safety can not be fully guaranteed. These internal verifications should be supplemented with periodic international peer reviews of the relevant segments of the Member States' national nuclear safety frameworks and/or their authorities.

14.2. Article 14(2) - Verification programmes

Licence holders are required to undertake systematic and verifiable safety assessments. Nuclear safety verification programmes carried out in installations based in the EU Member States are a responsibility of the Member State where the installation is based. This principle of national responsibility for nuclear safety assessment is also confirmed in the Council Directive 2009/71/Euratom (see p. 56 above).

15. ARTICLE 15 - RADIATION PROTECTION

Each Contracting Party shall take the appropriate steps to ensure that in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits.

15.1. Summary of laws, regulations and requirements dealing with radiation protection as applied to nuclear installations[150]

Article 2(b) of the Euratom Treaty requires Euratom to establish uniform safety standards to protect the health of the workers and of the general public and to ensure that they are applied. Article 218 of the Treaty underlines the importance for Euratom of the basic standards as these had to be determined within one year of the entry into force of the Treaty. They were first established in 1959 and the current safety standards are set out in Council Directive 96/29/Euratom of 13 May 1996 (Basic Safety Standards).

The Directive follows the 1990 Recommendation of the International Commission on Radiological Protection (ICRP) and is consistent with the International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources sponsored and issued by the International Atomic Energy Agency and jointly sponsored by other five International Organisations with competence in radiation protection.

[150] See Annex 3

15.2. Implementation of applicable laws, regulations and requirements relating to radiation protection

15.2.1. Radiation dose limits

As regards dose limitation, the Basic Safety Standards Directive sets out dose limits for exposed workers, for apprentices and students and for members of the public. The relevant Articles of the Directive are follows:

"Article 9 – Dose limits for exposed workers

(1) The limit on effective dose for exposed workers shall be 100 millisieverts ('mSv') in a consecutive five-year period, subject to a maximum effective dose of 50 mSv in any single year. Member States may decide an annual amount.

(2) Without prejudice to paragraph 1:

(a) the limit on equivalent dose for the lens of the eye shall be 150 mSv in a year;

(b) the limit on equivalent dose for the skin shall be 500 mSv in a year. This limit shall apply to the dose average over any area of 1 cm2, regardless of the area exposed;

(c) the limit on equivalent dose for the hands, forearms, feet and ankles shall be 500 mSv in a year."

"Article 11 –Dose limits for apprentices and students

(3) The dose limits for apprentices aged 18 years or over and students aged 18 years or over who, in the course of their studies, are obliged to use sources shall be the same as the dose limits for exposed workers laid down in Article 9.

(4) The limit for effective dose for apprentices aged between 16 and 18 years and for students aged between 16 and 18 years who, in the course of their studies, are obliged to use sources shall be 6 mSv per year.

Without prejudice to this dose limit:

(a) the limit on equivalent dose for the lens of the eye shall be 50 mSv in a year;

(b) the limit on equivalent dose for the skin shall be 150 mSv in a year. This limit shall apply to the dose average over any area of 1 cm2, regardless of the area exposed;

(c) the limit on equivalent dose for the hands, forearms, feet and ankles shall be 150 mSv in a year.

(5) The dose limits for apprentices and students who are not subject to the provisions of paragraphs 1 and 2 shall be the same as the dose limits for members of the public specified in Article 13."

"Article 13 – Dose limits for members of the public

(6) Without prejudice to Article 14, the dose limits for members of the public shall be as laid down in paragraphs 2 and 3.

(7) The limit for effective dose shall be 1 mSv in a year. However, in special circumstances, a higher effective dose may be authorised in a single year, provided that the average over five consecutive years does not exceed 1 mSv per year.

(8) Without prejudice to paragraph 2:

(a) the limit on equivalent dose for the lens of the eye shall be 15 mSv in a year;

(b) the limit on equivalent dose for the skin shall be 50 mSv in a year averaged over any 1 cm2 area of skin, regardless of the area exposed."

15.2.2. Fulfilment of conditions for the release of radioactive materials

As regards practices involving a risk from ionising radiation for the population, Article 43 and Article 44 of the Basic Safety Standards Directive require Member States to apply the fundamental principles governing operational protection of the population. In particular, Article 44 states:

> "Operational protection of the population means all arrangements and surveys for detecting and eliminating the factors which, in the course of any operation involving exposure to ionising radiation, are liable to create a risk of exposure for the population which cannot be disregarded from the radiation protection point of view. Such protection shall include the following tasks:
>
> (a) examination and approval of plans for installations involving an exposure risk, and of the proposed siting of such installations within the territory concerned, from the point of view of radiation protection;
>
> (b) acceptance into service of such new installations subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter, taking into account, if relevant, demographic, meteorological, geological, hydrological and ecological conditions;
>
> (c) examination and approval of plans for the discharge of radioactive effluents.
>
> These tasks shall be carried out in accordance with rules laid down by the competent authorities on the basis of the extent of the exposure risk involved".

15.2.3. Steps taken to ensure that radiation exposures are kept as low as reasonably achievable

Optimisation (ALARA) Principle: The general principles of radiation protection: justification, optimisation and dose limitation are mandatory under Article 6 of the Basic Safety Standards Directive. In particular, as regards optimisation, Article 6 paragraph 3a reads:

"Each Member States shall ensure that, in the context of optimisation, all exposures shall be kept as low as reasonably achievable, economic and social factors being taken into account."

15.2.4. Estimates and records of population doses

Article 49 of the Basic Safety Standards Directive requires Member States to consider the possibility of radiological emergencies from practices subject to the Directive, and to assess the distribution of the radioactive substances dispersed and corresponding potential exposures.

15.2.5. Verification of environmental radiological surveillance facilities

In line with the implementation of Article 14 (ii) of the Convention, Article 35 of the Euratom Treaty stipulates:

> "Each Member State shall establish the facilities necessary to carry out continuous monitoring of the level of radioactivity in the air, water and soil and to ensure compliance with the basic standards.
>
> The Commission shall have the right of access to such facilities; it may verify their operation and efficiency."

The result of the checks carried out by the Member States under Article 35 of the Euratom Treaty are periodically communicated to the Commission under Article 36 of the Treaty. Commission Recommendation 2000/473/Euratom[151] and 2004/2/Euratom[152] aims at ensuring uniformity, comparability, transparency and timeliness of the data reported, respectively for levels of radioactivity in the environment and for discharges of radioactive effluent. The Commission regularly publishes summaries of the data reported by Member States[153]. It also exercises its right of access conferred on it by Article 35 of the Euratom Treaty.

Taking into account previous bilateral protocols, a Commission Communication has been published in the Official Journal on 4 July 2006[154] with a view to define some practical arrangements for the conduct of "Article 35 verification visits" in Member States. These may be amended as needed.

The primary objective of the "Article 35 verifications" is to establish the efficiency of the facilities installed for the measurement of environmental radioactivity and of radioactive discharges, and to establish the adequacy of the environmental monitoring programme. The efficiency and adequacy are assessed in relation to the overall approach developed at national level to ensure the protection of members of the public in compliance with the Basic Safety Standards[155].

Verifications are initiated:

---

151 OJ L-191 of 17.07.2000 p. 37.

152 OJ L 2 of 6.1.2004, p. 36.

153 See http://ec.europa.eu/energy/nuclear/radiation_protection/article_35_en.htm.

154 Verification of environmental radioactivity monitoring facilities under the terms of Article 35 of the Euratom Treaty - Practical arrangements for the conduct of verification visits in Member States (2006/C 155/02), OJ C-155 of 04.07.2006 p. 2.

155 Council Directive 80/836/EURATOM, amended by Council Directive 84/467/Euratom, and replaced by Council Directive 96/29/EURATOM, see above.

- where and when the Commission estimates it to be appropriate
- on request (invitation) of national authorities
- on request of the European Parliament
- on request of a Member State (to verify a neighbouring Member State)

The arrangements for the conduct of verification has been discussed with Member States and laid down in bilateral protocols. Verifications may extend to all installations discharging radioactive substances into the environment such as:

- nuclear fuel cycle installations (mainly power stations and reprocessing facilities)
- research reactors,
- radioactive isotope production facilities,
- users of radioactive isotopes (i.e. hospitals),
- Naturally Occurring Radioactive Material (henceforth: NORM) industries discharging effluents containing enhanced levels of natural radioactivity.

Verification activities cover all facilities and provisions for monitoring/sampling of:

- discharges of radionuclides into the environment (airborne and liquid effluents)
- environmental radioactivity around installations discharging radionuclides;
- environmental radioactivity as part of a national network (regional, national level).

Environmental monitoring includes:

- routine measurement of radioactivity in air, water, soil and biota;
- provisions in case of radiological emergencies (alarms and data collection, but not emergency response planning)

Verification activities basically cover:

- Monitoring/sampling devices (operation and efficiency)
- Monitoring/sampling procedures (methodologies and representativeness).
- Data handling and management procedures (reporting and archiving).
- Consistency of source data (operational records) with values reported under Articles 36 and 37 of the Euratom Treaty.
- Quality control and assurance programmes applied to the above fields of activity (working instructions, peer review, inter-comparison and accreditation).

Since 1999, about ***48*** verification reports under the terms of Article 35 of the Euratom Treaty have been made publicly available with consent of the competent authorities of the Member States concerned[156]. The official results of a verification visit are laid down in a document referred to as the Main Findings. A Technical Report is annexed to it. The Main Findings are based on the observation and recommendations listed in the Technical Report, but without technical detail.

15.2.6. Regulatory control activities

Not applicable.

[156] http://ec.europa.eu/energy/nuclear/radioprotection/verification_en.htm

16. ARTICLE 16 - EMERGENCY PREPAREDNESS

(1) Each Contracting Party shall take the appropriate steps to ensure that there are on-site and off-site emergency plans that are routinely tested for nuclear installations and cover the activities to be carried out in the event of an emergency.

For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.

(2) Each Contracting Party shall take the appropriate steps to ensure that, insofar as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the States in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.

(3) Contracting Parties which do not have a nuclear installation on their territory, insofar as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency.

The primary responsibility of protecting the general public in the event of a nuclear or radiological emergency lies with the Member State authorities; however Euratom has competences to establish legislation regarding emergency preparedness and emergency response. In addition, the Commission contributes in this work by initiating and participating in international systems for radiological emergency preparedness.[157]

16.1. General description of laws, regulations and requirements for on-site and off-site emergency preparedness

16.1.1. Council Directive 96/29/Euratom – "Basic Safety Standards Directive (BSS)"

Article 50 of the Basic Safety Standards Directive, on “Intervention preparation”, provides as follows:

> “1. Each Member State shall ensure that account is taken of the fact that radiological emergencies may occur in connection with practices on or outside its territory and affect it.
>
> 2. Each Member State shall ensure that appropriate intervention plans, taking account of the general principles of radiation protection for intervention referred to in Article 48 (2) and of the appropriate intervention levels established by the competent authorities, are drawn up at national or local level, including within installations, in order to deal with various types of radiological emergency and that such plans are tested to an appropriate extent at regular intervals.

[157] See Chapter 16.3 International arrangements, including those with neighbouring countries, p. 71.

3. Each Member State shall ensure, where appropriate, that provision is made for the creation and appropriate training of special teams for technical, medical and health intervention.

4. Each Member State shall seek to cooperate with other Member States or non-Member States in relation to possible radiological emergencies at installations on its own territory which may affect other Member States or non-Member States, in order to facilitate the organization of radiological protection in these States."

16.1.2. Council Directive 89/618/Euratom on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency

Council Directive 89/618/Euratom[158] deals with informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency.

The Directive specifies two types of information that has to be given to the members of the public:

- Prior information to be given to the population groups for which Member States have drawn up intervention plans in the event of a radiological emergency;

- Information in the event of a radiological emergency, to be given to the population groups actually affected in the event of a radiological emergency and for which specific protection measures are taken.

The Directive also requires that emergency workers regularly undergo medical surveillance and are informed about their health. ***In 1991 the Commission adopted a Communication on information for the implementation of Articles 5 and 6 of Council Directive 89/618/Euratom.***[159]

16.1.3. Council Decision 87/600/Euratom on Community arrangements for the early exchange of information in the event of a radiological emergency

Council Decision 87/600/Euratom sets out arrangements for the early exchange of information between competent authorities in the event of a radiological emergency (ECURIE). These arrangements "apply to the notification and provisions of information whenever a Member State decides to take measures of a wide-spread nature in order to protect the general public in case of a radiological emergency" (Article 1 of the Decision). A radiological emergency may be declared either due to an accident at a facility where a significant release of radioactive material occurs or is likely to occur, or due to detection of abnormal levels of radioactivity in the environment.

Article 2(i) of this Decision sets out the actions to be taken by the Member State that initially decides to take measures as referred to in Article 1 of this Decision as follows:

158 OJ L 357, 07.12.1989, p 31

159 OJ C 103, 19.04.1991, p 12–16.

(a) Forthwith notify the Commission and those Member States which are, or are likely to be, affected of such measures and the reasons for taking them;

(b) Promptly provide the Commission and those Member States which are, or are likely to be, affected with available information relevant to minimising the foreseen radiological consequences, if any, in those States.

Member States notify their "intention to take without delay measures as referred to in Article 1". The Decision also specifies the nature of the information that shall be provided and requires that the initial information is supplemented at appropriate intervals. The Commission forwards the information it receives from a Member State to all the Member States. The Decision applies to the Member States of Euratom. It also applies to Switzerland ***and Croatia*** following an agreement between Euratom and these Countries. The Decision is broadly compatible with the Convention on Early Notification of a Nuclear Accident, as demonstrated by several exercises carried out in co-operation with the IAEA and the States participating in such exercises.

16.1.4. Regulations laying down maximum permitted levels of contamination (for future accidents)

A set of Euratom regulations[160] lay down maximum permitted levels of radioactive contamination of foodstuffs and feeding stuffs following a nuclear accident or any other case of radiological emergency. These pre-established maximum permitted levels can be made immediately applicable through the adoption of a regulation by the Commission if the latter receives official information about an accident through the ECURIE system (Council Decision 87/600/Euratom) indicating that these levels are likely to be reached or have been reached.[161]

16.2. Implementation of emergency preparedness measures, including the role of the regulatory body and other entities

16.2.1. Classification of emergency situations

Not applicable.

16.2.2. Overall emergency preparedness scheme

Not applicable.

16.2.3. On-site and off-site emergency plans of research reactors, including supporting agencies and schemes

Not applicable.

[160] Council Regulation No 3954/87 of 22 December 1987, OJ L-371 of 30.12.1987 p. 11, as amended by Council Regulation No 2218/89 of 18 July 1989, OJ L-211 of 27.07.1989 p. 1; Commission Regulation No 770/90 of 29 March 1990, OJ L-83 of 29.03.1990 p. 78; Commission Regulation No 944/89 of 12 April 1989, OJ L-101 of 13.04.1989 p. 17; Council Regulation No 2219/89 of 18 July 1989, OJ L-211 of 22.07.1989 p.4.

[161] See Annex 3

16.2.4. Measures for informing the public about emergency preparedness in the vicinity of the nuclear installations

Not applicable.

16.2.5. Conduct of emergency exercises

The Commission organises the following radiological emergency preparedness exercises within the ECURIE (European Community Urgent Radiological Information Exchange) system:

'Level 0': Daily. Technical exercise to test the availability of the equipment (PC plus software and data transmission devices) in the participating states; generated automatically by technical equipment.

'Level 1': Three times per year. Not pre-announced. Test if the contact points in the participating states are available (a message has to be responded); physical persons acting.

'Level 2': ***For practical reasons, Level-2 exercises are not carried out anymore.***

'Level 3': Once per year, pre-announced, often combined with a national exercise in a Member State or with an international exercise (full scale notification - response - additional information exercise); physical persons acting.

The ECURIE system may on request also be used as an information tool for national exercises, when time and staff issues permit.

In addition, the European Commission participates in selected international exercises organised by the Member States, the OECD-NEA or the IAEA such as the ConvEx or the INEX series using the possibilities of the ECURIE system as well as - if deemed necessary - the activation of the radiation protection unit's emergency team. The ConvEx series ranges from tests of reaching the contact point to full scale exercises with a hypothetical large accident scenario, somewhere in the world. The INEX series was mainly a tool to help develop/enhance appropriate systems for emergency preparedness on national and international level.

16.3. International arrangements, including those with neighbouring countries

16.3.1. ECURIE (European Community Urgent Radiological Information Exchange)

ECURIE is a 24h emergency notification and information exchange system. The system notifies the competent authorities of the participating States (currently EU Member States, Switzerland ***and Croatia***) and the Commission in case of a major nuclear accident or a radiological emergency. During an emergency the system provides an information exchange platform for the participating States in order to inform about the current and foreseeable status of the accident, meteorological conditions, national countermeasures taken, etc.

The legal basis for participation in ECURIE by the EU Member States is the EU Council Decision 87/600/Euratom and the Agreement between 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)[162]. The Commission

[162] OJ C 102 of 29.4.2003, p. 2.

is responsible for ECURIE management and development. The Commission maintains a 24h preparedness service in order to activate the system in the event of a nuclear or radiological emergency.[163] There is an ongoing discussion between IAEA and EC services on the issue of having one technical system for the EC/MS for notification purposes which would deal with ECURIE messages as well as the IAEA's Emercon messages.

16.3.2. EURDEP (EUropean Radiological Data Exchange Platform)

EURDEP is both a standard data format and a network for the exchange of environmental radiation monitoring data between European countries in real-time. Participation of the EU Member States is based on the Recommendation 2000/473/Euratom. Participation of the various non-EU countries is on a voluntary basis. Those countries that send their national radiological monitoring data have access to the data of all the other participating countries. The system is continuously operating with a daily data exchange routine and there is a general consensus that participating in the system automatically means that the data transmissions will continue during an emergency in an elevated frequency.[164]

In 2009 IAEA and the European Commission initiated a planning for providing EURDEP technology to the IAEA in order to facilitate global application of this technology by the IAEA.

16.3.3. ENSEMBLE

In case of a major radiological or nuclear accident affecting Europe, national long-range radioactivity dispersion forecasts will inevitably differ because of differences in national models, differences in weather prediction methods and differences in national emergency management strategies. Differences in national long-range dispersion forecasts may cause problems at the European level, as national emergency management strategies based solely on national forecasts may not cohere with those in neighbouring countries. ENSEMBLE is software that integrates the different weather forecasts (with the possibility to select preferred ones and also to look at specific national forecasts) and thus, with the input of radioactive release data, provides a relatively reliable prediction of the dispersion of radioactive substances with time. In this context the system addresses the issue of harmonisation and coherence of emergency management and decision-making in relation to long-range atmospheric dispersion modelling by providing a website tool to view and compare national dispersion forecasts.[165]

In 2009 IAEA and the European Commission initiated a planning for providing EURDEP technology to the IAEA in order to facilitate global application of this technology by the IAEA.

16.3.4. IACRNE

The European Commission participates in the Inter-Agency Committee on Response to Nuclear Emergencies (IACRNE) and has concluded bilateral agreements with other international organisations on arrangements in the area of radiological emergency preparedness.

---

163 For more information on the ECURIE system see http://rem.jrc.ec.europa.eu/40.html and

164 For more information on the EURDEP system see http://rem.jrc.ec.europa.eu/175.html

165 For more information on the ENSEMBLE system see http://rem.jrc.ec.europa.eu/177.htm

16.3.5. Other activities

Other radiological emergency preparedness activities in the Commission include training of national authorities, assistance to research activity co-ordination, regular preparedness exercises and co-operation with other international organisations and other Commission emergency services. Additionally the Commission provides an INES (the International Nuclear Event Scale) liaison officer and organises regular meetings of Member States radiological emergency preparedness authorities.

17. ARTICLE 17 – SITING

Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:

i. For evaluating all relevant site-related factors likely to affect the safety of a nuclear installation for its projected lifetime;

ii. For evaluating the likely safety impact of a proposed nuclear installations on individuals, society and the environment;

iii. For re-evaluating as necessary all relevant factors referred to in sub-paragraphs (i) and (ii) so as to ensure the continued safety acceptability of the nuclear installation:

iv. For consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the like safety impact on their own territory of the nuclear installation.

This section of the Report describes the relevant Euratom legislation, which affects the siting of a nuclear facility.

17.1. Description of licensing process, including summary of laws, regulations and requirements relating to the siting of nuclear installations

Under Article 37 of the Euratom Treaty, the Community possesses competence as regards 'any plan for the disposal of radioactive waste in whatever form' if the implementation of that plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State. That fact provides sufficient grounds to conclude that Euratom possesses competence in the field covered by Article 17 of the Convention.[166]

Article 44 of the Council Directive 96/29/Euratom - "Operational protection of the population in normal circumstances from practices subject to prior authorization means all arrangements and surveys for detecting and eliminating the factors which, in the course of any operation involving exposure to ionizing radiation, are liable to create a risk of exposure for the population which cannot be disregarded from the radiation protection point of view. Such protection shall include the following tasks:

[166] C-29/99 ECJ 2002, I-11221, 102-103.

(a) examination and approval of plans for installations involving an exposure risk, and of the proposed siting of such installations within the territory concerned, from the point of view of radiation protection;

(b) acceptance into service of such new installations subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter, taking into account, if relevant, demographic, meteorological, geological, hydrological and ecological conditions;

(c) examination and approval of plans for the discharge of radioactive effluents.

These tasks shall be carried out in accordance with rules laid down by the competent authorities on the basis of the extent of the exposure risk involved."

Council Directive 2009/71/Euratom contains only a reference to the licence holder's responsibility for siting, by defining the term "licence" as " any legal document granted under the jurisdiction of a Member State to confer responsibility for the siting, design, construction, commissioning and operation or decommissioning of a nuclear installation" (Art. 3(4) of Directive 2009/71/Euratom. In addition, Article 6(2) therein sets up a general obligation for licensees: "Member States shall ensure that the national framework in place requires licence holders, under the supervision of the competent regulatory authority, to regularly assess, verify and continuously improve, as far as reasonably achievable, the safety of their nuclear installations in a systematic and verifiable manner."

17.1.1. Criteria for evaluating all site-related factors affecting safety

There is no detailed applicable Euratom legislation in place which defines criteria for the siting of nuclear installations. The siting of a nuclear installation necessarily includes taking into account factors relating to radiation protection, such as the demographic characteristics of the site. It is apparent that Article 17(ii) of the Convention relates to those factors.

17.1.2. Criteria for evaluating the nuclear safety impact of the nuclear installations on the surrounding environment and population:

Not applicable

17.2. Implementing provisions for fulfilment of the above mentioned criteria

Not applicable

17.3. Activities relating to maintenance of the continued safety acceptability of the nuclear installation, taking account of site-related factors

Not applicable

17.4. International arrangements, including those with neighbouring countries, as necessary

Not applicable

18. ARTICLE 18 – DESIGN AND CONSTRUCTION

Article 18: Each Contracting Party shall take the appropriate steps to ensure that:

(a) The design and construction of a nuclear installation provides for several reliable levels and methods of protection (defence in depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;

(b) The technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;

(c) The design of a nuclear installation allows for reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.

This section of the Report describes the relevant Euratom legislation, which affects the design, construction and operation of a nuclear facility.

In this regard there is no detailed Euratom legislation in place. The design, construction and operation of nuclear installations lie within the competence of the national authorities. However, in its Judgement of 10 December 2002 the Court stated, that "*the measures required by Articles 18 and 19 of the Convention concerning the design, construction and operation of nuclear installations can be the subject of the provisions which the Member States lay down to ensure, in accordance with the first paragraph of Article 33 of the Euratom Treaty, compliance with the basic standards. However, the Commission has competence to make recommendations for harmonising those provisions, as is clear from the second paragraph of Article 33 of the Euratom Treaty, interpreted in the light of the considerations set out in paragraphs 75 to 83 of the present judgment. The Member States are required to assist in drawing up those recommendations through the communications referred to in the third paragraph of Article 33 of the Euratom Treaty*".[167]

Corresponding to Article 18 (1) of the Convention on Nuclear Safety, Council Directive 2009/71/Euratom provides in Article 6(3) therein that the safety assessments made by the licence holder "shall include verification that measures are in place for prevention of accidents and mitigation of consequences of accidents, including verification of the physical barriers and licence holder's administrative procedures of protection that would have to fail before workers and the general public would be significantly affected by ionizing radiations". This provision illustrates the fundamental principle of "defence-in-depth" that implies the setting up of more than one protective measure for a given safety objective.

Article 37 of the Euratom Treaty indirectly may, however, affect the national licensing process. According to Article 37 and to the Recommendation 99/829/Euratom on its application each Member State shall provide the Commission with such "general data" relating to any plan for the disposal of radioactive waste in whatever form as will make it possible to determine whether the implementation of such plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State. This data should be sent one year – whenever possible – but not less than six months before granting any authorisation for the

[167] C-29/99 ECJ 2002, I-11221, 102-103.

disposal of radioactive waste by competent authorities or before the start-up of those operations for which no disposal authorisation is granted. In addition, in the "Cattenom judgement" of the Court[168] the latter confirmed that the Commission must be provided with General Data relating to the plan for the disposal of radioactive waste before definitive authorisation for such disposal is granted. Thus, the question when a submission of General Data under Art. 37 Euratom must take place and when the subsequent Commission's opinion is issued is not directly related to the final siting decision. The way and the sequence competent authorities grant their different authorisations (siting, construction, commissioning, discharges of radioactive effluents, decommissioning, etc.) may be completely different from Member State to Member State.

The Commission shall deliver their opinions on planned disposal of radioactive waste within six months, after consulting the group of experts referred to in Article 31 of the Euratom Treaty; meaning of "authorisation for the disposal of radioactive waste" being of course "authorisation for the discharge of radioactive effluents" (cf. original linguistic versions of the Euratom Treaty). However, while Article 37 refers to the same expert group established under Article 31, in practice it was decided at a very early stage to have a specific group of experts assigned to this task, called Article 37 group of experts.

These opinions contain also the results of the analysis of the possible radiological consequences of unplanned releases which may occur in the event of an accident. In practice the general data provided by the Member States refer to the results of the safety studies on which the national authorities base the granting of permits for the siting, construction and operation of nuclear installations. These data cover geographical, topographical and geological features of the site and region, seismology, hydrology, meteorology, natural resources, other activities in the vicinity of the site.

Commission opinions pursuant to Article 37 of the Euratom Treaty are published in the Official Journal of the European Communities but in order to be rendered fully effective they must be brought to the notice of the State delivering the authorisation, before the issue of such authorisation. In total, the Commission issued fifty-five opinions over the period 2004-2009.

Due to the experience gained but especially because of the closure and imminent decommissioning of a large number of nuclear power plants in the enlarged EU, the Commission Recommendation on the application of Article 37 was adopted on 6 December 1999[169] replacing the Recommendation of 12 December 1990[170].

Commission reports on the application of Article 37 of the Euratom Treaty are sent periodically the Council and the EP. The latest report dates of 14 March 2005[171] and explains the background, the different stages and timetable of the procedure, the structure of the reports. It entails information on the contents of the opinions, infringement procedures and conclusions from the application of Article 37 of the Euratom Treaty.

---

168 Case C-187/87

169 Commission Recommendation 1999/829/Euratom of 6 December 1999 on the application of Article 37, OJ L 324, 16.12.1999, p 23

170 Commission Recommendation 91/4/Euratom on the application of Article 37, OJ L 6, 9.1.1991, p 16.

171 Report from the Commission to the Council and the European Parliament, Report on the application of Article 37 of the Euratom Treaty, July 1994 to December 2003, SEC(2005)343, of 14 March 2005 (COM (2005) 85 final).

19. ARTICLE 19 – OPERATION

Article 19: Each Contracting Party shall take the appropriate steps to ensure that:

a) The initial authorisation to operate a nuclear installation is based upon an appropriate safety analysis and a commissioning programme demonstrating that the installation, as constructed, is consistent with design and safety requirements;

b) Operational limits and conditions derived from the safety analysis, tests and operational experience are defined and revised as necessary for identifying safe boundaries for operation;

c) Operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;

d) Procedures are established for responding to anticipated operational occurrences and to accidents;

e) Necessary engineering and technical support in all safety related fields is available throughout the lifetime of a nuclear installation;

f) Incidents significant to safety are reported in a timely manner by the holder of the relevant licence to the regulatory body

g) Programmes to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organizations and regulatory bodies;

h) The generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.

In this regard there is no detailed Euratom legislation in place. The design, construction and operation of nuclear installations lie within the competence of the national authorities. However, in its Judgement of 10 December 2002 the Court stated, that "the measures required by Articles 18 and 19 of the Convention concerning the design, construction and operation of nuclear installations can be the subject of the provisions which the Member States lay down to ensure, in accordance with the first paragraph of Article 33 of the Euratom Treaty, compliance with the basic standards. However, the Commission has competence to make recommendations for harmonising those provisions, as is clear from the second paragraph of Article 33 of the Euratom Treaty, interpreted in the light of the considerations set out in paragraphs 75 to 83 of the present judgment. The Member States are required to assist in drawing up those recommendations through the communications referred to in the third paragraph of Article 33 of the Euratom Treaty".[172]

[172] C-29/99 ECJ 2002, I-11221, 102-103.

This provision corresponds to the Article 4(2) of the Council Directive 2009/71/Euratom. Results of operating experience, insights gained from safety analyses for operating nuclear installations, development of technology and results of safety research, when available and relevant should be used by Member States for updating and improving their national nuclear safety framework.

ANNEX 1

“Declaration by the European Atomic Energy Community pursuant to Article 30 paragraph 4 (iii) of the Nuclear Safety Convention"

The following States are at present members of the European Atomic Energy Community: the Kingdom of Belgium, the Czech Republic, the Kingdom of Denmark, the Federal Republic of Germany, the Republic of Estonia, the Hellenic Republic, the Kingdom of Spain, the French Republic, Ireland, the Italian Republic, Republic of Cyprus, the Republic of Latvia, the Republic of Lithuania, the Republic of Hungary, the Republic of Malta, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the Republic of Austria, the Republic of Poland, the Portuguese Republic, the Republic of Slovenia, the Slovak Republic, the Republic of Finland, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland.

The Community declares that Articles 1 to 5, Article 7 and Articles 14 to 35 of the Convention apply to it.

The Community possesses competences, shared with the abovementioned Member States, in the fields covered by Article 7 and Articles 14 to 19 of the Convention as provided for by the Treaty establishing the European Atomic Energy Community in Article 2(b) and the relevant Articles of Title II, Chapter 3, entitled "Health and Safety".

ANNEX 2

Rapporteur's' Report for EURATOM of 22 April 2008 in the 4th Review Meeting under the Convention on Nuclear Safety

(1) Highlights - Euratom

- Report contained an excellent overview
- Many initiatives underway and being initiated
- All Member States of the EU are now Contracting Parties to the CNS

(2) Previous Preview Meeting Follow-up

Euratom will continue to engage in a wide ranging process, within the framework of the Euratom treaty, to more effectively promote nuclear safety. Euratom has continued to develop instruments and initiate projects to promote harmonization and enhancement to Nuclear Safety across the European Union. Among these initiatives are:

- Continuation of the ECURIE program
- Evolution of the TACIS program to become the Instrument for Nuclear Safety Co-operation
- Continuation of the PHARE program
- Initiation of new studies
- Establishment of the High Level Group on Nuclear Safety and Waste Management
  - Joint research initiatives

(3) Good Practices

Euratom continues to be a vehicle to support and facilitate harmonization, joint initiates in the form of research, projects of shared interest to EU Members in the nuclear area and assistance programming to EU Members and third countries in need .

(4) Challenges

Because Euratom is a unique entity it is difficult to report and Peer review under the framework of the convention

(5) Planned Measures to Improve Safety

- Continue with the existing programmes
- Complete current studies
  - the fading of nuclear knowledge
  - the perceived need to promote OPEX
  - the harmonization of Performance indicators across the EU
- Continue to Work with EU Member States to identify new initiatives to further progress the mission of Euratom

ANNEX 3

List of the "*acquis communautaire*" on the basis of the Euratom Treaty
(new legal instruments in ***bold italics***)

1. Nuclear Safety

Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations, Official Journal L 172, 2.7.2009

2. Radiation protection

Communication 2006/C/155/02 from the Commission *on Verification of environmental radioactivity monitoring facilities under the terms of Article 35 of the Euratom Treaty — Practical arrangements for the conduct of verification visits in Member States*, Official Journal C-155 of 4 July 2006, page 2

Commission Recommendation 2004/2/Euratom of 18 December 2003 *on standardised information on radioactive airborne and liquid discharges into the environment from nuclear power reactors and reprocessing plants in normal operatio*n, Official Journal L-002 of 6.1.2004 page 36;

Commission Recommendation 2000/473/Euratom of 8 June 2000 *on the application of Article 36 of the Euratom Treaty concerning the monitoring of the levels of radioactivity in the environment for the purpose of assessing the exposure of the population as a whole*, Official Journal L-191 of 27.7.2000, page 37;

Commission Recommendation 99/829/Euratom of 6 December 1999 *on the application of Article 37 of the Euratom Treaty*, Official Journal L-324 of 16.12.1999 page 23;

Commission Recommendation 91/444/Euratom of 26 July 1991 *on the application of the third and fourth paragraphs of Article 33 of the Euratom Treaty*, Official Journal L-238 of 27.8.1991 page 31;

3. Basic Safety Standards

Council Directive 96/29/Euratom of 13 May 1996 *laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation*, Official Journal L-159 of 29 June 1996, page 1, repealing and replacing Council Directive 80/836/Euratom of 15 July 1980, OJ L-246 of 17 September 1980, page 1, and Council Directive 84/467/Euratom of 3 September 1984, OJ L-265 of 5.10.1984 page 4

Communication 98/C133/03 *from the Commission concerning the implementation of Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation*, Official Journal C-133 of 30.4.1998 p. 3;

Communication 85/C347/03 *from the Commission concerning the implementation of Council Directives 80/836/Euratom and 84/467/Euratom of 3 September 1984 amending Directive 80/836/Euratom*, Official Journal C-347 of 31 December 1985 page 9;

4. Outside workers

Council Directive 90/641/Euratom of 4 December 1990 *on the operational protection of outside workers exposed to the risk of ionizing radiation during their activities in controlled areas*, Official Journal L-349 of 13.12.1990 page 21;

5. Information

Commission Communication 91/C103/03 *on the implementation of Council Directive 89/618/Euratom*, Official Journal C-103 of 19.4.1991 page 12;

Council Directive 89/618/Euratom of 27 November 1989 *on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency*, Official Journal L-357 of 7.12.1989 page 31;

Council Decision 87/600/Euratom of 14 December 1987 *on Community arrangements for the early exchange of information in the event of a radiological emergency*, Official Journal L-371 of 30.12.1987 page 76;

6. Contamination of foodstuffs and feeding stuffs - Post-Chernobyl

Commission Regulation (EC) No 1635/2006 of 6 November 2006 *laying down detailed rules for the application of Council Regulation (EEC) No 737/90 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power-station*, Official Journal L-306 of 7.11.206 page 3;

Commission Recommendation (EC) No 274/2003of 14 April 2003 *on the protection and information of the public with regard to exposure resulting from the continued radioactive caesium contamination of certain wild food products as a consequence of the accident at the Chernobyl nuclear power station*, Official Journal L-99 of 17.4.2003 page 55, amended by corrigendum published in Official Journal L-109 of 1.5.2003 page 27;

Commission Regulation No 1609/2000/EC of 24 July 2000 *establishing a list of products excluded from the application of Council Regulation (EEC) No 737/90 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station*, Official Journal L-185 of 25.7.2000, page 27;

Council Regulation No 616/2000 of 20 March 2000 amending Regulation (EEC) No 737/90 *on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station*, Official Journal L-75 of 24.3.2000, page 1;

Council Regulation No. 737/90/EEC No 737/90 of 22 March 1990 *on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power-station.* Official Journal L-82 of 30.3.1990, page 1;

7. Future accidents

Commission Regulation No 770/90/Euratom of 29 March 1990 *laying down maximum permitted levels of radioactive contamination of feeding stuffs following a nuclear accident or any other case of radiological emergency,* Official Journal L-83 of 29/03/90 page 78;

Council Regulation No 2218/89/Euratom of 18 July 1989 *amending Regulation 87/3954/Euratom laying down maximum permitted levels of radioactive contamination of foodstuffs and of feeding stuffs following a nuclear accident or any other case of radiological emergency*, Official Journal L-211 of 27.7.1989, page 1;

Council Regulation No 2219/89/EEC of 18 July 1989 *on the special conditions for exporting foodstuffs and feeding stuffs following a nuclear accident or any other case of radiological emergency*, Official Journal L-211 of 22.7.1989 page 4;

Commission Regulation No 944/89/Euratom of 12 April 1989 *laying down maximum permitted levels of radioactive contamination in minor foodstuffs and of feeding stuffs following a nuclear accident or any other case of radiological emergency*, Official Journal L-101 of 13.4.1989 page 17;

Council Regulation No 3954/87/Euratom of 22 December 1987 *laying down maximum permitted levels of radioactive contamination of foodstuffs and of feeding stuffs following a nuclear accident or any other case of radiological emergency,* Official Journal L-371 of 30.12.1987 page 11;

8. Shipments of radioactive waste and substances

Council Directive 2006/117/Euratom of 20 November 2006 *on the supervision and control of shipments of radioactive waste and spent fuel between Member States and into and out of the Community*, repealing Council Directive 92/3/Euratom, (Official Journal L-35 of 12.2.1992 page 24 *);*Official Journal L-337 of 5.12.2006 page 21;

Communication from the Commission of 19 April 1996 *on illicit trafficking in nuclear materials and radioactive substances,* COM (96) 171 final – not published in the Official Journal;

Council Regulation No. 1493/93/Euratom of 8 June 1993 *on shipments of radioactive substances between Member States*, Official J L-148 of 19.6.1993 page 1;

Commission Communication 2009/C41/02 concerning Council Regulation (Euratom) No 1493/93 on shipments of radioactive substances between Member States, Official Journal C 41 of 19.2.2009, page 2;

9. Control of radioactive sources

Council Directive 2003/122/Euratom of 22 December 2003 *on the control of high-activity sealed radioactive sources and orphan sources,* Official Journal L 346, 31.12.2003 pages 57–64;

10. Safeguards

Commission Regulation (Euratom) No 302/2005 of 8 February 2005 *on the application of Euratom safeguards*, in: O.J. L 54 of 28 February 2005, page 1 – 70

Commission Recommendation of 15 December 2005 *on guidelines for the application of Regulation (Euratom) No 302/2005 on the application of Euratom safeguards*, in: O.J. L28 of 1 February 2006, pages 1 - 85

11. Euratom Supply Agency

Council Decision of 12 February 2008 *establishing Statutes for the Euratom Supply Agency* (2008/114/EC, Euratom), in: OJ L 41 of 15 February 2008, pages 15 – 20

12. Euratom loans

Council decision 77/270/Euratom of 29 March 1977 empowering the Commission to issue Euratom loans for the purpose of contributing to the financing of nuclear power stations, in: O.J. L 88, 6 April 1977, page 11

Council decision 94/179/Euratom of 21 March 1994 amending decision 77/270/Euratom, to authorize the Commission to contract Euratom borrowings in order to contribute to the financing required for improving the degree of safety and efficiency of nuclear power stations in certain non-member countries, O.J. L 112, 3 May 1990, page 26

13. Other

Regulation (EURATOM) No 3 *implementing Article 24 of the Treaty establishing the European Atomic Energy Community*, OJ No 17, 6.10.1958, p. 406/58;

Communication from the Commission to the Council and the European Parliament of 4 October 2007 *concerning the Nuclear Illustrative Programme*, COM(2007) 565 final, [not published in the Official Journal].

Council Decision 2006/970/Euratom of 18 December 2006 concerning the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011), Official Journal L 460 of 30 December 2006 as amended by L 54 of 22 February 2007, page. 21.

Council Decisions 2006/970/Euratom of 19 December 2006 concerning the Specific Programme "Cooperation" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013), Official Journal No L 400/60 of 30.12.2006, page 60 as amended by L 54 of 22.2.2007, page 4.

Council Regulation (Euratom) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation, Official Journal L 81/1 of 22.3.2007.

Council Regulation (Euratom) No 549/2007 of 14 May 2007 on the implementation of Protocol No 9 on Unit 1 and Unit 2 of the Bohunice V1 nuclear power plant in Slovakia to the Act concerning the conditions of accession to the European Union of the Czech Republic, Estonia,

Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia, Official Journal L 411 of 30.12.2006.

> Corrigendum to Council Regulation (EC) No 1990/2006 of 21 December 2006 on the implementation of Protocol No 4 on the Ignalina nuclear power plant in Lithuania to the Act of Accession of the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia 'Ignalina Programme', OJ L-131 of 23.5.2007, page 1.

Council Regulation (EC) No 1990/2006 of 21 December 2006 on the implementation of Protocol No 4 on the Ignalina nuclear power plant in Lithuania to the Act of accession of the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia 'Ignalina Programme', OJ L-27 of 2.2.2007, page 7.

Commission Recommendation No. 2006/851/Euratom of 24 October 2006 on the management of financial resources for the decommissioning of nuclear installations, spent fuel and radioactive waste, OJ L-330 of 28.11.2006, page31.

ANNEX 4

COUNCIL DIRECTIVE 2009/71/EURATOM

Of 25 June 2009

establishing a Community framework for the nuclear safety of nuclear installations

THE COUNCIL OF THE EUROPEAN UNION,
Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Articles 31 and 32 thereof,
Having regard to the proposal from the Commission, drawn up after obtaining the opinion of a group of persons appointed by the Scientific and Technical Committee from among scientific experts in the Member States, and after having consulted the European Economic and Social Committee[173],
Having regard to the opinion of the European Parliament[174],
Whereas:

(1) Article 2(b) of the Treaty provides for the establishment of uniform safety standards to protect the health of workers and of the general public.

(2) Article 30 of the Treaty provides for the establishment of basic standards within the Community for the protection of the health of workers and the general public against the dangers arising from ionizing radiations.

(3) Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation[175] establishes the basic safety standards. The provisions of that Directive have been supplemented by more specific legislation.

(4) As recognised by the Court of Justice of the European Communities (hereinafter referred to as "the Court of Justice") in its case-law[176], the Community shares competences, together with its Member States, in fields covered by the Convention on Nuclear Safety[177].

(5) As recognised by the Court of Justice in its case-law, the provisions of Chapter 3 of the Treaty, related to health and safety, form a coherent whole conferring upon the Commission powers of some considerable scope in order to protect the population and the environment against risks of nuclear contamination.

(6) As recognised by the Court of Justice in its case-law, the tasks imposed on the Community by Article 2(b) of the Treaty to lay down uniform safety standards to protect the health of the population and of workers does not mean that, once such standards have been defined, a Member State may not provide for more stringent measures of protection.

---

173 Opinion of 10 June 2009 (not yet published in the Official Journal).
174 Opinion of the European Parliament of 22 April 2009 (not yet published in the Official Journal).
175 OJ L 159, 29.6.1996, p. 1.
176 C-187/87 (1988 ECR p. 5013), C-376/90 (1992 ECR I-6153) and C-29/99 (2002 ECR I-11221).
177 OJ L 318, 11.12.1999, p. 21.

(7) Council Decision 87/600/Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency[178] established a framework for notification and provision of information to be used by the Member States in order to protect the general public in case of a radiological emergency. Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency[179] imposed obligations on the Member States to inform the general public in the event of a radiological emergency.

(8) National responsibility of Member States for the nuclear safety of nuclear installations is the fundamental principle on which nuclear safety regulation has been developed at the international level, as endorsed by the Convention on Nuclear Safety. That principle of national responsibility, as well as the principle of prime responsibility of the licence holder for the nuclear safety of a nuclear installation under the supervision of its national competent regulatory authority, should be enhanced and the role and independence of the competent regulatory authorities should be reinforced by this Directive.

(9) Each Member State may decide on its energy mix in accordance with relevant national policies.

(10) When developing the appropriate national framework under this Directive, national circumstances will be taken into account.

(11) The Member States have already implemented measures enabling them to achieve a high level of nuclear safety within the Community.

(12) While this Directive concerns principally the nuclear safety of nuclear installations, it is also important to ensure the safe management of spent fuel and radioactive waste, including at storage and disposal facilities.

(13) Member States should assess, where appropriate, the relevant fundamental safety principles set by the International Atomic Energy Agency[180] which should constitute a framework of practices that Member States should have regard to when implementing this Directive.

(14) It is useful to build on the process where the national safety authorities of the Member States having nuclear power plants on their territory have been working together in the context of Western European Nuclear Regulators' Association (WENRA) and have defined many safety reference levels for power reactors.

(15) Following the Council's invitation to set up a High Level Group at EU level, as recorded in its Conclusions of 8 May 2007 on nuclear safety and safe management of spent nuclear fuel and radioactive waste, the European Nuclear Safety Regulators Group (ENSREG) was established by Commission Decision 2007/530/Euratom of 17 July 2007 on establishing the European High Level Group on Nuclear Safety and

178 OJ L 371, 30.12.1987, p 76

179 OJ L 357, 7.12.1989, p 31.

180 IAEA Safety Fundamentals: Fundamental safety principles, IAEA Safety Standard Series No SF-1 (2006).

Waste Management[181] to contribute to the achievement of the Community objectives in the field of nuclear safety.

(16) It is useful to establish a unified structure for reports of Member States to the Commission on the implementation of this Directive. Given its members' wide experience ENSREG could make a valuable contribution in this respect, thereby facilitating consultation and cooperation of national regulatory authorities.

(17) On 15 October 2008 at its 5th meeting ENSREG adopted ten principles to be used when drafting a nuclear safety Directive, as noted in its minutes dated 20 November 2008.

(18) Advances in nuclear technology, lessons learnt from operating experience and safety research and improvements in regulatory frameworks could have the potential to further improve safety. In keeping with the commitment to maintain and improve safety, Member States should take those factors into account when extending their nuclear power programme or deciding to use nuclear power for the first time.

(19) The establishment of a strong safety culture within a nuclear installation is one of the fundamental safety management principles necessary for achieving its safe operation.

(20) Maintenance and further development of expertise and skills in nuclear safety should be based, *inter alia*, on a process of learning from past operating experience and employing developments in methodology and science, as appropriate.

(21) In the past, self-assessments have been carried out in Member States in close connection with international peer reviews under the auspices of the IAEA as International Regulatory Review Team or Integrated Regulatory Review Service missions. These self-assessments were carried out and these missions were invited by Member States on a voluntary basis in the spirit of openness and transparency. Self-assessments and accompanying peer reviews of the legislative, regulatory and organisational infrastructure should be aimed at strengthening and enhancing the national framework of Member States, whilst recognising their competencies in ensuring nuclear safety of nuclear installations on their territory. The self-assessments followed by international peer reviews are neither an inspection nor an audit, but a mutual learning mechanism that accepts different approaches to the organisation and practices of a competent regulatory authority, while considering regulatory, technical and policy issues of a Member State that contribute to ensuring a strong nuclear safety regime. The international peer reviews should be regarded as an opportunity to exchange professional experience and to share lessons learned and good practices in an open and cooperative spirit through advice by peers rather than control or judgement. Recognising a need for flexibility and appropriateness in regard to different existing systems in Member States, a Member State should be free to determine the segments of its system being subject to the specific peer review invited, with the aim of continuously improving nuclear safety.

(22) In accordance with point 34 of the Inter-institutional Agreement on better law-making[182], Member States are encouraged to draw up, for themselves and in the

[181] OJ L 195, 27.7.2007 p. 44.

[182] OJ C 321, 31.12.2003, p. 1.

interests of the Community, their own tables illustrating, as far as possible, the correlation between this Directive and the transposition measures and to make them public,

HAS ADOPTED THIS DIRECTIVE:

CHAPTER 1

OBJECTIVES, DEFINITIONS AND SCOPE OF APPLICATION

Article 1
Objectives

The objectives of this Directive are:

(a) to establish a Community framework in order to maintain and promote the continuous improvement of nuclear safety and its regulation;

(b) to ensure that Member States shall provide for appropriate national arrangements for a high level of nuclear safety to protect workers and the general public against the dangers arising from ionizing radiations from nuclear installations.

Article 2
Scope

1. This Directive shall apply to any civilian nuclear installation operating under a licence as defined in Article 3(4**)** at all stages covered by this licence.

2. This Directive does not prevent Member States from taking more stringent safety measures in the subject-matter covered by this Directive, in compliance with Community law.

3. This Directive supplements the basic standards referred to in Article 30 of the Treaty as regards the nuclear safety of nuclear installations and is without prejudice to Directive 96/29/Euratom.

Article 3
Definitions

For the purposes of this Directive the following definitions shall apply:

1) "nuclear installation" means:

   (a) an enrichment plant, nuclear fuel fabrication plant, nuclear power plant, reprocessing plant, research reactor facility, spent fuel storage facility; and

   (b) storage facilities for radioactive waste that are on the same site and are directly related to nuclear installations listed under point (a);

2) "nuclear safety" means the achievement of proper operating conditions, prevention of accidents and mitigation of accident consequences, resulting in protection of workers and the general public from dangers arising from ionizing radiations from nuclear installations;

3) "competent regulatory authority" means an authority or a system of authorities designated in a Member State in the field of regulation of nuclear safety of nuclear installations as referred to in Article 5;

4) "licence" means any legal document granted under the jurisdiction of a Member State to confer responsibility for the siting, design, construction, commissioning and operation or decommissioning of a nuclear installation;

5) "licence holder" means a legal or natural person having overall responsibility for a nuclear installation as specified in a licence.

CHAPTER 2

OBLIGATIONS

Article 4
Legislative, regulatory and organisational framework

1. Member States shall establish and maintain a national legislative, regulatory and organisational framework (hereinafter referred to as "the national framework") for nuclear safety of nuclear installations that allocates responsibilities and provides for coordination between relevant state bodies. The national framework shall establish responsibilities for:

   (a) the adoption of national nuclear safety requirements. The determination on how they are adopted and through which instrument they are applied rests with the competence of the Member States;

   (b) the provision of a system of licensing and prohibition of operation of nuclear installations without a licence;

   (c) the provision of a system of nuclear safety supervision;

   (d) enforcement actions, including suspension of operation and modification or revocation of a licence.

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.

Article 5
Competent regulatory authority

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

2. Member States shall ensure that the competent regulatory authority is functionally separate from any other body or organisation concerned with the promotion~~,~~ or utilisation of nuclear energy, including electricity production, in order to ensure effective independence from undue influence in its regulatory decision making.

3. Member States shall ensure that the competent regulatory authority is given the legal powers and human and financial resources necessary to fulfil its obligations in connection with the national framework described in Article 4(1) with due priority to safety. This includes the powers and resources to:

   (a) require the licence holder to comply with national nuclear safety requirements and the terms of the relevant licence;

   (b) require demonstration of this compliance, including the requirements under paragraphs 2 to 5 of Article 6;

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

   (d) carry out regulatory enforcement actions, including suspending the operation of nuclear installation in accordance with conditions defined by the national framework referred to in Article 4(1).

Article 6
Licence holders

1. Member States shall ensure that the prime responsibility for nuclear safety of a nuclear installation rests with the licence holder. This responsibility cannot be delegated.

2. Member States shall ensure that the national framework in place requires licence holders, under the supervision of the competent regulatory authority, to regularly assess and verify, and continuously improve, as far as reasonably achievable, the nuclear safety of their nuclear installations in a systematic and verifiable manner.

3. The assessments referred to in paragraph 2 shall include verification that measures are in place for prevention of accidents and mitigation of consequences of accidents, including verification of the physical barriers and licence holder's administrative procedures of protection that would have to fail before workers and the general public would be significantly affected by ionizing radiations.

4. Member States shall ensure that the national framework in place requires licence holders to establish and implement management systems which give due priority to nuclear safety and are regularly verified by the competent regulatory authority.

5. Member States shall ensure that the national framework in place requires licence holders to provide for and maintain adequate financial and human resources to fulfil their obligations with respect to nuclear safety of a nuclear installation, laid down in paragraphs 1 to 4.

Article 7
Expertise and skills in nuclear safety

Member States shall ensure that the national framework in place requires arrangements for education and training to be made by all parties for their staff having responsibilities relating to the nuclear safety of nuclear installations in order to maintain and to further develop expertise and skills in nuclear safety.

Article 8
Information to the public

Member States shall ensure that information in relation to the regulation of nuclear safety is made available to the workers and the general public. This obligation includes ensuring that the competent regulatory authority informs the public in the fields of its competence. Information shall be made available to the public in accordance with national legislation and international obligations, provided that this does not jeopardise other interests such as, *inter alia*, security, recognised in national legislation or international obligations.

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 every three years thereafter, taking advantage of the review and reporting cycles under the Convention on Nuclear Safety.

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.

3. Member States shall at least every ten 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/or authorities with the aim of continuously improving nuclear safety. Outcomes of any peer review shall be reported to the Member States and the Commission, when available.

CHAPTER 3

FINAL PROVISIONS

Article 10
Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by22 July 2011. They shall forthwith inform the Commission thereof.

   When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive and of any subsequent amendments to those provisions.

Article 11
Entry into force

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Article 12
Addressees

This Directive is addressed to the Member States.
Done at Luxembourg, 25 June 2009