Legal Affairs
2009

OECD

Nuclear Law Bulletin
No. 84

Volume 2009/2

AEN
NEA

NUCLEAR ENERGY AGENCY

NUCLEAR LAW
BULLETIN No. 84

Contents

December 2009
Nuclear Energy Agency
Organisation for Economic Co-operation and Development

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where the governments of 30 democracies work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

NUCLEAR ENERGY AGENCY

The OECD Nuclear Energy Agency (NEA) was established on 1st February 1958 under the name of the OEEC European Nuclear Energy Agency. It received its present designation on 20th April 1972, when Japan became its first non-European full member. NEA membership today consists of 28 OECD member countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, Norway, Portugal, Republic of Korea, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities also takes part in the work of the Agency.

The mission of the NEA is:

- to assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes, as well as
- to provide authoritative assessments and to forge common understandings on key issues, as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development.

Specific areas of competence of the NEA include safety and regulation of nuclear activities, radioactive waste management, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information.

The NEA Data Bank provides nuclear data and computer program services for participating countries. In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

Also available in French under the title:

Bulletin de droit nucléaire n° 84

Cover credits: Simplified view of ITER Tokamak (© ITER 2008); Flamanville 3, France (Alexis Morin).

Detailed Table of Contents

Articles

Nuclear New Build – New Nuclear Law?

by Norbert Pelzer[*]

In April 2009, 61 states and seven international organisations with a total of 808 participants and observers convened in Beijing at an international ministerial conference, organised by the International Atomic Energy Agency (IAEA) in co-sponsorship with the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA), to deal with nuclear energy in the 21st century.[1] In his concluding statement, the president of that conference stressed that "the conference recognizes the positive momentum towards nuclear power and the decisions by many developed and developing states to pursue the use of nuclear energy".[2] According to the Director General of the IAEA, more than 60 countries declared their interest in launching nuclear power programmes.[3]

Those political declarations of intent may confirm a comprehensive and thorough OECD/NEA study with the title *Nuclear Energy Outlook 2008*.[4] In its Chapter 3 "Projections to 2050", the study predicts, by 2050, an increase of nuclear installed capacity in a range between 580 and 1 400 gigawatts of electric capacity as compared with 372 GWe in 2007.[5] Among the various reasons for this most considerable growth, reducing carbon dioxide emissions and security of energy supply rank at the top. Thus, nuclear renaissance is on its way.[6]

---

* Dr. jur., Consultant; University of Göttingen, Germany; University of Dundee, Scotland; Honorary President of the International Nuclear Law Association. This article is based on a talk delivered on 29 October 2009, at the Centre for Energy, Petroleum and Mineral Law and Policy (CEPMLP), University of Dundee, Scotland. The author alone is responsible for the facts and opinions expressed in this article.

1. http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=35252.

2. http://www-pub.iaea.org/MTCD/Meetings/PDFplus/2009/cn169/cn169_Concluding_Statement_E.pdf.

3. *Ibidem* (footnote 2).

4. OECD/NEA, Nuclear Energy Outlook 2008, Paris 2008 (OECD/NEA No. 6348).

5. Outlook (footnote 4) pp. 89 *et seq*. (105-109).

6. As for the United Kingdom, see: "Meeting the Energy Challenge: A White Paper on Nuclear Power", January 2008, CM 7296. See also already the White Paper on Energy of May 2007, CM 7124,

Does the projected multiplication of global nuclear capacity at the same time entail or require a likewise dramatic revision of the currently existing legal framework on nuclear power? The OECD Outlook deals with this aspect, too. It concludes that the existing legal frameworks, in principle, are well-developed but need to be "flexible" to be adapted to the changes if necessary.[7] This is certainly a correct but also a vague conclusion. It is worth looking into this issue more closely. Firstly, an overview of the current status of nuclear law is needed, which the OECD/NEA judges to be "well-developed". Only against this background can we decide if and to which extent changes are necessary in order to cope with the nuclear new build. In fact, identifying legal areas which need to be changed and establishing respective new legal frameworks is the main contribution of lawyers to the nuclear renaissance. A "legal roadmap for the responsible use of nuclear energy" has to be established, as the Second European Nuclear Energy Forum, held in Prague on 22 and 23 May 2008, concluded.[8] At the 2009 Nuclear Inter Jura Conference organised by the International Nuclear Law Association from 5 to 9 October 2009 in Toronto, nuclear new build formed an essential part of the programme.[9]

1. The Layers of Nuclear Law

Basically, the use of nuclear energy is exclusively a matter for individual states. As a consequence, the core of the existing law governing these activities is the law of states pursuing civilian nuclear programmes, *i.e.*, national law. National law is, however, to a large extent shaped or at least influenced by a comprehensive network of binding international treaties, *i.e.*, international law, and of non-binding international instruments, such as codes, standards and recommendations, *i.e.*, international soft law or international "state-of-the-art" of a non-legal nature ("best practices"). The community of states also exercises political influence on national legal frameworks governing the use of nuclear energy. Nuclear law is thus formed by a symbiosis of national law, international law and international peer control.

A proper analysis of this corpus of law with a view to assessing whether it needs to be adapted to the nuclear new build therefore requires analysing several layers of law including the political background. Within the restricted size of this article, the national layer quite obviously cannot be dealt with; extensive comparative studies would be necessary.[10] On the other hand, the more than 60 countries having declared their interest in launching nuclear programmes, as mentioned above, may have an interest in guidance on how to draft adequate national nuclear legislation. Such guidance is

---

pp. 180-215. See furthermore: Peter McDonald, "The Future of New Nuclear Energy in the UK and in the EU", in: Matthias Schmidt-Preuß (ed.), Deutscher Atomrechtstag 2008, Baden-Baden 2009, pp. 59-62.

7. Outlook (footnote 4), Chapter 10 "Legal Frameworks", pp. 295 *et seq*. (311).

8. Conclusions of the 2nd European Nuclear Energy Forum Prague, 22-23 May 2008, at http://ec.europa.eu/energy/nuclear/forum/meetings/doc/2008_05_22/2008_05_22_conclusions_enef.pdf.

9. See the programme at http://www.cnlo.ca/pdf/INLA%20Program%20MASTER%20090901.pdf. See also the Provisional Proceedings of the 2009 Nuclear Inter Jura Conference edited by the Canadian Nuclear Law Organisation CNLO, Volumes 1-3, Toronto 2009.

10. As for an example of national development, reference may be made to the description of the UK legal situation presented by Peter D. Cameron, "The Revival of Nuclear Power in the UK: An Analysis of the Legal Issues", in: AIDN/INLA (ed.), *Nuclear Inter Jura Conference 2007 Proceedings*, Brussels 2008 pp. 1273-1288; see also: Peter D. Cameron, "The Revival of Nuclear Power: An Analysis of the Legal Implications", in: *Journal of Environmental Law* 19 (2007) No. 1 pp. 71-87. On the comparative aspects of licensing regimes see: Alexandre Bredimas / William J. Nutall, "An International Comparison of Regulatory Organizations and Licensing Procedures for New Nuclear Power Plants", in: *Energy Policy* 36 (2008) No. 4, pp. 1344-1354.

offered in various forms by the Office of Legal Affairs of the IAEA[11] and by Legal Affairs of the OECD/NEA.[12] Particular reference should also be made to the International School for Nuclear Law organised by the OECD/NEA at the University of Montpellier 1 in France.[13]

The international layer is easier to access because of the limited number of relevant instruments and shall be dealt with in greater detail.

2. Main Periods of Developing Nuclear Law

Current national and international nuclear law goes back to the mid 1940s.[14] It developed gradually from that time on and reflected the political, economic and social background of its respective time. It mirrored, in particular, the extent of public acceptance of, or opposition to, nuclear energy. Two distinct periods of law-making activities may be identified which differ from each other in their basic law-making objectives: While in the first period law-making was mainly aimed at supporting and promoting the use of nuclear energy, in the second period law-making reacted to a growing sceptical attitude *vis-à-vis* nuclear energy and was mainly focused on establishing legal mechanisms to prevent and mitigate the risks of nuclear energy.

2.1. Focus on Promoting the Use of Nuclear Energy

The first period – the promotion period – covers the time from the mid 1950s to the mid 1970s. The global breakthrough of the peaceful uses of nuclear energy was launched by United States President Eisenhower's famous "Atoms-for-Peace-Speech" of 8 December 1953[15] which initiated the foundation of the IAEA,[16] entailed a fundamental revision of the 1946 U.S. Atomic Energy Act,[17] and triggered civilian nuclear programmes worldwide expressing an almost unlimited trust in the benefits of nuclear energy.[18] Numerous states enacted national atomic energy acts.[19] Landmarks at international level

11. See http://ola.iaea.org/OLA/what_we_do/legislative%20assistance.asp.

12. See http://www.nea.fr/html/law/welcome.html.

13. See http://www.nea.fr/html/law/isnl/index.html.

14. The countries involved in the development of the atomic bomb enacted the first nuclear legislation which covered both military and civilian nuclear activities. Reference has to be made to the 1946 U.S. Atomic Energy Act, the so-called MacMahon Act (Public Law 79-585, 60 Stat. 755), to the 1946 Canadian Atomic Energy Control Act (Statutes of Canada, 10 Geo VI, ch. 37), to the 1946 U.K. Atomic Energy Act, (9 & 10 Geo. 6 ch. 80). Right after the end of World War II, France embarked on peaceful nuclear activities. As early as 1945, it issued an ordinance to establish the Commissariat à l'énergie atomique (Ordonnance No. 45-2563 du 18 octobre 1945, Journal officiel du 31 octobre 1945 p. 7065). See also the 1945 Atomic Energy Act (No. 41 of 1945) of New Zealand.

15. UN GOAR 8th Session, 470th Plenary Meeting, 450.

16. The IAEA Statute entered into force on 29 July 1957 (UNTS Vol. 276 No. 3988; latest version at http://www.iaea.org/About/statute_text.html).

17. The McMahon Act was replaced by the 1954 Atomic Energy Act (Public Law 83-703, 68 Stat. 919). The 1954 Act repealed the restrictive provisions of the 1946 Act and liberalised the legal basis for the civil use of nuclear energy including co-operation with other states in this field. As of 1955, the U.S. concluded numerous bilateral agreements with other states on nuclear co-operation which enabled those states to pursue civil nuclear programmes. See on this issue Georg Erler, Die Rechtsentwicklung der internationalen Zusammenarbeit im Atombereich, Göttingen 1963, pp. 6 *et seq.*

18. A most influential event of the early times was the UN International Conference on the Peaceful Uses of Atomic Energy held in August 1955 in Geneva (First UN Geneva Conference on the Peaceful Uses of Nuclear Energy). In 1958, 1964 and 1971, three more UN conferences took place on this subject.

were the foundation of the IAEA,[20] of the OEEC European Nuclear Energy Agency (ENEA), later renamed OECD/NEA[21] and of the European Atomic Energy Community (Euratom).[22] The Paris Convention on Third Party Liability in the Field of Nuclear Energy was adopted in 1960 (1960 PC),[23] followed by the Brussels Convention Supplementary to the Paris Convention in 1963 (1963 BSC),[24] and by the Vienna Convention on Civil Liability for Nuclear Damage in 1963 (1963 VC).[25] In particular the IAEA drafted and issued numerous technical recommendations to assist states in pursuing the peaceful use of nuclear energy in a safe manner.[26]

This early period of the use of nuclear energy was a time of departure and sometimes is referred to as the euphoric phase of nuclear energy. The legal framework established at that time, clearly stressed its goal to facilitate the use of nuclear energy at national and international level. This objective is exemplarily identified in Article 1 paragraph 2 of the Treaty establishing the European Atomic Energy Community (Euratom Treaty): "It shall be the task of the Community to contribute to the raising of the standard of living in the Member States and to the development of relations with the other countries by creating the conditions necessary for the speedy establishment and growth of nuclear industries".

But on the other hand, the risks of nuclear energy were also addressed.[27] National laws were based on the concepts of the "permission principle" and of the "permanent supervision principle" which are designed to ensure initial and ongoing control of nuclear activities.[28] In the field of preventive protection against radiation risks, national and international radiation protection norms

---

19. For example: Germany: 1959 Atomgesetz (Bundesgesetzblatt 1959 I p. 814); Italy: Legge 1962 Impiego pacifico dell'energia nucleare (Gazzetta Uffiziale 1963 p. 493); Japan: 1955 Atomic Energy Basic Law (Law No. 186 of 1955); Spain: Ley 25/1964 sobre energia nuclear (Boletín del estado 1964 núm. 107); Switzerland: 1959 Atomgesetz (Amtliche Sammlung 1960 p. 541); U.K.: 1959 Nuclear Installations Act (1959 ch. 46).

20. See footnote 16.

21. http://www.nea.fr/html/nea/statute.html.

22. Bundesgesetzblatt 1957 II p. 1014, corr. p. 1678; http://eur-lex.europa.eu/en/treaties/dat/12006A/12006A.htm.

23. http://www.nea.fr/html/law/nlparis_conv.html, 16 parties.

24. http://www.nea.fr/html/law/nlbrussels.html, 12 parties.

25. IAEA Doc. INFCIRC/500, 36 parties.

26. The perhaps most famous document are the "Regulations for the Safe Transport of Radioactive Material", IAEA Safety Series No. 6 (1961). The latest version is the 2009 edition (IAEA Safety Standards Series No. TS-R-1). See a comprehensive overview of relevant IAEA documents at http://www.iaea.org/books.

27. An early risk assessment, the so-called Brookhaven Report "Theoretical Possibilities of Major Accidents in Large Nuclear Power Plants", Washington, D.C. 1957 (WASH-740) predicted, should an accident occur, potential nuclear damage of an immense magnitude. This study was corrected by a "Reactor Safety Study" of 1975, referred to as Rasmussen Report (WASH-1400), which was improved in 1991 by the study "Severe Accidents Risks" (NUREG-1150).

28. See on these concepts: Carlton Stoiber, Alec Baer, Norbert Pelzer, Wolfram Tonhauser, "Handbook on Nuclear Law", Vienna 2003, pp. 7 *et seq*., 33 *et seq.*

were enacted.[29] The international civil liability conventions, which were mentioned earlier, contributed to establishing and harmonising transboundary compensation regimes. Since the use of nuclear energy started with the atomic bomb, ensuring that nuclear material is not diverted for non-peaceful purposes was from the beginning on the international agenda. It resulted in early treaty-making[30] including the establishment of nuclear-free zones[31] and especially the adoption of the worldwide 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)[32] and, based on the NPT, the establishment of a safeguards regime through agreements concluded by the IAEA with individual states.[33]

It follows that the basic legal concepts and the concrete legal frameworks developed and established in the first phase of the history of nuclear law were definitely instruments to appropriately balance both the benefits and the risks of nuclear energy and ionizing radiation, even if sometimes slightly more emphasis was attributed to promoting nuclear energy. Those early legal frameworks and their inherent principles still form the basic substance of nuclear law today.

2.2. Focus on Restricting the Risks of Nuclear Energy

The second period of the history of nuclear law – the restrictive period – lasted from the 1980s to the beginning of the 2000s and is marked by growing scepticism regarding the benefits of nuclear energy; fear of the risks prevailed. This situation was triggered by the 1979 Three Mile Island incident and particularly by the 1986 Chernobyl nuclear accident. Public acceptance for the use of nuclear energy in many states faded away. Politicians and law-makers instantly reacted to the new situation. National legislation was amended and new international instruments were adopted.

The main emphasis of this second peak of law-making activities was the protection against nuclear risk and mitigation of damage rather than the promotion of nuclear energy. The legal frameworks were revised at both national and international level with a view to strengthening nuclear safety and security.[34] Some states formally decided to phase out the use of nuclear energy.[35]

---

29. See, as examples of binding instruments, the ILO Convention 115 concerning the Protection of Workers against Ionising Radiations of 22 June 1960 (UNTS Vol. 431 p. 41) and the Euratom Basic Norms Concerning the Protection of Health of the Population and of the Workers against Radiation Hazards of 2 February 1959 (J.O. 1959 No. 11 p. 221). On IAEA recommendations see the website reference in footnote 26.

30. See OEEC Convention on the Establishment of a Security Control in the Field of Nuclear Energy of 20 December 1957 (Bundesgesetzblatt 1959 II p. 586); Articles 77-85 Euratom Treaty (footnote 22).

31. The 1959 Antarctic Treaty (UNTS Vol. 402 p. 71, 46 parties), the 1967 Treaty of Tlatelolco (UNTS Vol. 634 p. 326, 33 parties).

32. UNTS Vol. 729 p. 161 = IAEA Doc INFCIRC/140, 191 parties. There is ample literature available on the legal problems of nuclear non-proliferation.

33. See, *inter alia*, IAEA, "The Safeguards System of the International Atomic Energy Agency", 19 pp., 2003, at http://www.iaea.org/OurWork/SV/Safeguards/safeg_system.pdf.

34. As for the development at national level, see the regular reports in the *Nuclear Law Bulletin*, available at http://www.nea.fr/html/law/nlb/index.html. On the international development see in detail the Joint OECD/NEA – IAEA Report "International Nuclear Law in the Post-Chernobyl Period", Paris 2006 (OECD No. 6146), and in particular: Norbert Pelzer, "Learning the Hard Way: Did the Lessons Taught by the Chernobyl Nuclear Accident Contribute to Improving Nuclear Law?", *ibidem,* pp. 73-118.

At the international level, the so-called "family of nuclear safety conventions" was negotiated and adopted which includes five worldwide international conventions, namely the 1986 Early Notification Convention, the 1986 Assistance Convention, the 1994 Convention on Nuclear Safety (CNS), the 1997 Joint Convention (JC) and the 1979 Convention on the Physical Protection of Nuclear Material, including its 2005 Amendment.[36] Among these instruments, the CNS is of outstanding importance for the development of nuclear law: For the first time, states agreed to subject the safety of reactors to obligations under public international law. Until the adoption of the CNS, the licensing and supervision of nuclear power plants, including the establishment of safety criteria, were a carefully guarded domain of national sovereignty and discretion. The convention finally filled a gap in the otherwise comprehensive international legal framework governing the use of nuclear energy.[37] The 1997 Joint Convention[38] and the non-binding 2004 Code of Conduct on the Safety of Research Reactors,[39] which, *mutatis mutandis*, were modelled on the Nuclear Safety Convention's approach, contributed to further filling the gap. The likewise non-binding 2004 Code of Conduct on the Safety and Security of Radioactive Sources[40] is an additional element of the new international legal instruments on safety. Recently, the European Union (EU) also issued a Directive on the safety of nuclear installation which is binding upon EU member states.[41]

The safeguards system under the NPT was strengthened by the 1997 Additional Protocol which granted the IAEA inspection rights complementary to those under the basic safeguards agreements with states.[42] In parallel, states adopted instruments on establishing regional nuclear-free zones.[43]

---

35. For example, Austria in 1978 (Bundesgesetz vom 15. Dezember 1978 über das Verbot der Nutzung der Kernspaltung für die Energieversorgung in Österreich, Bundesgesetzblatt 1978/676), confirmed by a constitutional law in 1999 (Bundesgesetzblatt I 1999/149); Sweden: Referendum in 1980, Phasing-out Act of 18 December 1997 (Svensk författningssamling 1997:13320); Germany in 2002 (Gesetz zur geordneten Beendigung der Kernenergienutzung zur gewerblichen Erzeugung von Elektrizität vom 22. April 2002, Bundesgesetzblatt 2002 I p. 1351).

36. 1986 Convention on Early Notification of a Nuclear Accident (IAEA Doc. INFCIRC/335, 103 parties); 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergencies (IAEA Doc. INFCIRC/336, 102 parties); 1994 Convention on Nuclear Safety (IAEA Doc. INFCIRC/449, 64 parties); 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (IAEA Doc. INFCIRC/546, 50 parties); 1979 Convention on the Physical Protection of Nuclear Material (IAEA Doc. INFCIRC/274/Rev.1, 141 parties), 2005 Amendment (IAEA Doc. GOV/INF/2005/10-GC(49)/INF/6, 26 parties).

37. See on the problems associated with the establishment of binding nuclear safety provisions at international level and on the pioneer nature and the merits of the Nuclear Safety Convention especially Pelzer, *op. cit.* (footnote 34), pp. 83-95 with numerous further references.

38. Footnote 36.

39. http://www-ns.iaea.org/downloads/ni/code-rr/code_conduct_March04.pdf.

40. IAEA/CODEOC/2001 and 2004 at http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004_web.pdf.

41. Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations (EU O.J. 2009 No. L 172 p. 18).

42. Model Protocol Additional to the Agreement(s) between State(s) and the IAEA for the Application of Safeguards [IAEA Doc. INFCIRC/540 (Corrected)]. 123 states plus EURATOM signed the Protocol, and it is in force for 91 states plus Euratom (http://www.iaea.org/OurWork/SV/Safeguards/sg_protocol.html).

43. 1985 Rarotonga Treaty (UNTS Vol. 1445 p. 178, 13 parties), 1995 Bangkok Treaty [35 ILM 635 (1996), 10 parties], 1996 Pelindaba Treaty [35 ILM 698 (1996), 26 parties], 2006 CANWFZ Treaty

In the field of nuclear liability, the Chernobyl lessons were reflected in a comprehensive revision of the international nuclear liability regime. The existing conventions were revised and new instruments were adopted: The 1988 Joint Protocol on the Application of the Vienna Convention and the Paris Convention (JP),[44] the 1997 Protocol to Revise the Vienna Convention (1997 VC),[45] the 1997 Convention on Supplementary Compensation for Nuclear Damage (CSC),[46] and the 2004 Protocols to Revise the Paris (2004 PC) and the Brussels Supplementary (2004 BSC) Conventions.[47] The revised regime, in particular, provided higher amounts of compensation for the victims and a broader concept of nuclear damage.[48] It considerably improved the situation of victims from non-contracting states by extending the benefits of the conventions to them provided certain prerequisites are met.[49]

2.3. Interim Summary

It is safe to state that currently, all states pursuing commercial or other nuclear programmes developed and implemented a legal framework regulating those activities. While democratic states enacted formal legislation,[50] others often use less formal administrative mechanisms.[51] The existing corpus of international treaties and other international instruments embraces the internationally agreed principles and provisions necessary to govern the use of nuclear energy. It particularly reflects the international technical state-of-the-art regarding nuclear safety and radiation protection. The international community appraises national legal frameworks by measuring them against the obligations under the international instruments.

Consequently, the statement of the OECD Outlook 2008 that the existing legal frameworks, in principle, are well-developed[52] is entirely correct. This conclusion applies to both national and international law on the peaceful uses of nuclear energy. The statement provides a first answer to the question posed in the title of this article: Nuclear new build does not necessitate the establishment of new nuclear law. A sound legal basis is already available, particularly at the international level.

(http://cns.miis.edu/stories/pdf_support/060905_canwfz.pdf, 5 parties). See also Lisa Tabassi, "National Implementation and Enforcement of Nuclear-Weapon-Free Zone Treaties", in: *Nuclear Law Bulletin* No. 83 (2009/1), pp. 29-57.

44. IAEA Doc. INFCIRC/402, 26 parties.

45. IAEA Doc. INFCIRC/566, 5 parties.

46. IAEA Doc. INFCIRC/567, not yet in force.

47. http://www.nea.fr/html/law/paris_convention.pdf, not yet in force; http://www.nea.fr/html/law/brussels_ supplem entary_convention.pdf, not yet in force.

48. See Articles I(1)(k), V of the 1997 VC; Articles I(f), III of the CSC; Articles 1(a)(vii), 2 of the 2004 PC; Articles 2, 3 of the 2004 BSC.

49. See Article I A of the 1997 VC; Article V of the CSC; Article 2 of the 2004 PC; Article 2 of the 2004 BSC; Article II of the JP.

50. There is only one exception, namely Israel. On Israel's specific situation see the critical remarks by Avner Cohen, "Nuclear Legislation for Israel", *Strategic Assessment* (Tel Aviv), Vol. 12 (2009) No. 1, pp. 7-18.

51. As an example: In the P.R. of China nuclear liability is based on a State Council Reply ("Official Reply") (Guo Han 1986 No. 44; 2007 No. 64); reproduced in: *Nuclear Law Bulletin* No. 80 (2007/2), pp. 78-79, 103-104.

52. See footnote 7.

But the OECD study adds that the existing international legal framework must be adapted to the changes due to the new build if necessary. Hence, some changes of existing nuclear law may be required. In which areas could such adaptation appear to be necessary?

In dealing with this issue, a difference has to be made between current nuclear states and future nuclear states. While the first group, as a rule, already has an adequate legal framework, the second group does not have relevant legislation and therefore has, as a first step, to catch up to the level of the first group. This applies particularly to the legal framework necessary to limit the risks of the use of nuclear energy.[53] The second group additionally has to provide legislative and other means to facilitate and foster the development of a commercial nuclear programme. Promotional measures may, as the case may be, also be useful for current nuclear states but obviously to a lesser extent. It has also been pointed out that most probably it will not be enough to improve the "classic repertoire" of nuclear law, such as liability regimes and international safety standards but a new repertoire will be needed, *e.g.*, new contractual structures to facilitate private investments and to make investors feel secure, new ways of applying intellectual property laws to protect new technologies, a guarantee of fair competition between the old market players and the newcomers, more efficient planning and permitting structures with a high level of transparency.[54]

In the following sections the main fields of nuclear law will be discussed with a view to identifying those issues where a change could be desirable.

3. Nuclear Safety

Needless to say that, in pursuing nuclear new build concepts, achieving and maintaining an appropriate level of nuclear safety and radiation protection is a key prerequisite of any nuclear activity. Respective national and international legal instruments have not only to ensure the highest possible level of safety but need to be permanently reviewed with a view to further improving safety. Safety culture is not a static goal but a dynamic and progressive concept.[55] If there is a conflict between safety and promotion of nuclear energy, safety has to prevail over economic requirements.

Nevertheless, nuclear new build demands a slight change of focus. The tendency of the "restrictive period" has to be replaced by efforts to facilitate and promote the implementation of nuclear programmes. Without any cuts in the level of safety, the respective legal instruments should be used in a way which aims at avoiding conflicts with favourable economic conditions of nuclear industry. This, at least in some states, may require a change of attitude rather than of legal provisions. Regulatory bodies have a certain extent of discretion in exercising their control of nuclear activities. They may use this discretion in favour or against the use of nuclear energy. In the 1990s, regulatory bodies of some of the German *Länder* applied the Atomic Energy Act in a clearly phasing-out

53. See on this particular question in greater detail Norbert Pelzer, "Legal Issues Associated with Preparing for a Nuclear Energy Programme", 10 pp., 2009 Beijing International Ministerial Conference (footnote 1) at http://www-pub.iaea.org/MTCD/Meetings/PDFplus/2009/cn169/Beijing_TS/TS3/3%20Pelzer%20 new text.pdf.

54. Paul Bowden as moderator of a panel on a case study "Hypothetical New Build" at the Nuclear Inter Jura 2007, in: Proceedings (footnote 10), pp. 1331-1365 (1332).

55. On safety culture see in particular the IAEA publication: "Safety Culture", A Report by the International Nuclear Safety Advisory Group, Vienna 1991 (IAEA Safety Series No. 75-INSAG-4). See also IAEA, Safety Culture in Nuclear Installations, Vienna 2002 (IAEA-TECDOC-1329).

orientated interpretation ("*ausstiegsorientierter Gesetzesvollzug*").[56] From a legal point of view, such interpretation cannot be justified. The same applies to the opposite interpretation of the law which is mainly focused on promoting nuclear energy. There has to be a sound balance between both poles.

One of the key elements to establish such balance is transparency of nuclear regulatory activities. Transparency is the main prerequisite and the basis of public acceptance of nuclear energy and of nuclear new build at the political level. Moreover, Chernobyl taught the lesson that only in a democracy with transparent regulatory structures can nuclear safety be guaranteed. Transparency can best be achieved by establishing a regime of public participation in regulatory activities. Participation of the public creates mutual trust among the public, the regulatory bodies and operators. Trust is the basis for co-operation in the field of safety. Safety issues should be frankly discussed with a view to identifying safety risks and possible gaps early. Mutual trust is also needed in relation to neighbouring states. Consequently, at international level the concepts of transparency and participation, to the extent necessary, should also guide states when pursuing a nuclear programme.

Ensuring transparency, granting participation and thus building trust primarily lie with the installation state. The installation state is, however, not entirely free in its decision about who transparency and participation are owed to and in whom trust is needed. Obviously, its citizens and residents should take advantage of these concepts. Moreover, neighbouring states should be involved. Involving those states is not only a question of political prudence with a view to preventing them from interfering with nuclear programmes, but one might very well argue that a modern interpretation of the public international law principle of good neighbourliness, at least to a certain extent, requires such involvement. Nuclear activities may have an impact on the environment, and international environmental law is governed by the principle of co-operation.[57] The roots of this principle may, *inter alia*, be traced back to the 1949 Corfu Channel case,[58] the 1956 Lac Lanoux arbitration[59] or to Principle 24 of the 1972 Stockholm Declaration.[60] Thus, there are an – emerging – international custom and numerous relevant bilateral and multilateral treaties in existence. Reference can particularly be made to the 1998 Aarhus Convention on Access to Information[61] and also to the 1991 Espoo Convention on Transboundary Environmental Impact Assessment.[62] The scope of application of both conventions explicitly covers nuclear installations.[63] Consequently, in this specific field, nuclear new build may also rely on already existing international instruments.

---

56. See in particular Horst Sendler, "Anwendungsfeindliche Gesetzesanwendung – Ausstiegsorienter Gesetzesvollzug im Atomrecht", *Die öffentliche Verwaltung*, Vol. 45 (1992), pp. 181-189.

57. See on the co-operation principle in greater detail: Shaw, Malcolm N., "International Law", 5th ed., Cambridge 2003, pp. 771-779. See also Karl Doehring, Völkerrecht, 2nd ed., Heidelberg 2004, pp. 520-524.

58. ICJ Reports 1949, pp. 4, 22.

59. RIAA Vol. XII, p. 306 paragraph 10.

60. Declaration of the United Nations Conference of 16 June 1972 on the Human Environment (UN Doc. A/CONF.48/14 = ILM Vol. 11 (1972), p. 1416.

61. Aarhus Convention of 25 July 1998 on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (UNTS Vol. 2161 p. 447), 46 parties.

62. Espoo Convention of 25 February 1991 on Environmental Impact Assessment in a Transboundary Context (UNTS Vol. 1989 p. 309), 42 parties.

63. Annex I No. 1 Aarhus Convention, Annex I No. 2 Espoo Convention.

Transparency through information and participation sets the stage for national regulatory regimes. Regarding the substance of those regimes, in particular regarding the extent of control and supervision, again international instruments provide guidance and even establish obligations. This applies *inter alia* to the conventions of the nuclear safety family mentioned above,[64] in particular to the Nuclear Safety Convention and to the Joint Convention. The latter conventions with their progressive "incentive"[65] approaches most probably will play a crucial role in ensuring safety under nuclear new build. Experience with nuclear new build will show whether additional international instruments should be negotiated and adopted.

There probably is one main field where further international harmonisation could be warranted.

It would certainly be desirable, and it would facilitate the launching of nuclear programmes, if an interested state or company could buy a nuclear power plant or components of it on the international market, as a car, *i.e.*, without applying its national licensing regime in full to the installation or to parts of it. That concept would require an agreement on standardisation and mutual acknowledgement of national licensing procedures. At the 2009 Nuclear Inter Jura Conference, international standardisation of nuclear reactor designs was one of the topics. It was quite correctly underlined that achieving this objective would require a change of existing legal and regulatory frameworks including the introduction of an "International Design Certification".[66] However, such change needs the willingness of states to accept restrictions of their sovereign regulatory rights beyond the extent of obligations agreed to by states under the Nuclear Safety Convention. That convention was adopted under the still young experience of the Chernobyl accident and therefore it is aimed at improving nuclear safety at international level. It is open to question whether new build would provide sufficient momentum for states to embark on an exercise which eventually would result in further restrictions of national sovereignty, in particular since the critical general public might misunderstand that exercise as an effort to decrease the level of safety for economic reasons. Thus, striving for an International Design Certification is a demanding goal but there are major doubts as to whether it is achievable.[67]

4. Nuclear Security and Safeguards

Preventing the diversion of nuclear material for criminal and other illegal uses, especially for producing nuclear weapons or other explosive devices, is among the main concerns of the international community. States, as well as the United Nations and the IAEA, are extremely vigilant in this field as the cases of Iran and North Korea show. States with nuclear programmes and those planning to embark on nuclear programmes are under international observation. It is certainly correct to expressly state that the international community will not accept approaches in the course of new build which could weaken the current regime of security and safeguards. On the contrary, the predictable appearance of new players will increase the international vigilance.

---

64. See above Section 2.2.

65. On this concept see Pelzer, "Learning the Hard Way", *op. cit.* (footnote 34), pp. 93-95; Tammy de Wright, "The 'Incentive' Concept as Developed in the Nuclear Safety Conventions and its Possible Extension to Other Sectors", in: *Nuclear Law Bulletin* No. 80 (2007/2), pp. 29-47.

66. See Christian Raetzke, "International Standardization of Nuclear Reactor Designs – Adapting the Legal and Regulatory Framework", *Nuclear Inter Jura 2009 Proceedings* (footnote 9), Vol. 1, pp. 157-165.

67. The so-called convoy reactors constructed and operated in Germany since the 1990s were designed to facilitate the licensing procedure. The project failed due to the German federal system and perhaps also due to the fading public acceptance of nuclear energy in Germany.

The existing network of international treaties designed to fight any misuse of nuclear energy has to be confirmed and strengthened. Basically, the international efforts to prevent the spread of nuclear weapons have been sufficiently regulated already at a fairly early stage, in particular through the Treaty on the Non-Proliferation of Nuclear Weapons and its IAEA based safeguards regime.[68] Special emphasis in this context has to be given to the international export control regime covering both nuclear related strategic goods and so-called dual-use material. Reference has to be made to the activities of the Zangger Committee[69] and of the Nuclear Suppliers Group.[70]

This field is also covered by EU regulations.[71] It is true that the export regime may sometimes be deemed exaggerated and a bureaucratic impediment to nuclear trade, but this has to be accepted and can be mitigated if companies "implement effective compliance programs to identify and address areas of concern at an early stage".[72]

The events of 11 September 2001 called for new approaches with a view to preventing and penalizing nuclear terrorism. The 2005 Amendment to the Convention on the Physical Protection[73] shall be listed here as the "basic" international instrument which obliges state parties to establish a physical protection regime, including criminal law. The 2005 Amendment extended the scope of application of the Physical Protection Convention to nuclear installations, which means major progress because the unrevised convention only covered international transport. Further reference has to be made to the UN Security Council Resolutions 1373 (2001), 1540 (2004) and 1887 (2009)[74] and to thirteen UN conventions and protocols against terrorism.[75]

Hence, it can again be stated that there is an adequate international legal framework in place which provides binding guidance to national legislators and which should also be appropriate to cope with the challenges of new build.[76]

This legal framework relies on conventional legal concepts such as administrative control and criminal prosecution. On the occasion of the 50th General Conference of the IAEA in September 2006,

---

68. See above Section 2.1.

69. See the IAEA Doc. INFCIRC/209 series.

70. See IAEA Docs. INFCIRC/254/Rev. 9 Part 1 (nuclear related material), INFCIRC/254/Rev. 7 Part 2 (dual use material). IAEA Doc. INFCIRC/539/Rev. 3 provides an overview of the origins, the role and the activities of the group.

71. See in particular Council Regulation (EC) No. 428/2009 of 5 May 2009 setting up a Community regime for the control of export, transfer, brokering and transit of dual use items (EU O.J. 2009 No. L 134 p.1).

72. Daniel Stenger, Ajay Kuntamukkula, Darshak Dholakia, "The Globalization of Nuclear Industry and the Impact of Nuclear Export Controls", *Nuclear Inter Jura 2009 Proceedings* (footnote 9) Vol. 1, pp. 263-271 (271).

73. Footnote 36.

74. UN Docs. S/RES/1373 (2001); S/RES/1540 (2004), S/RES/1887 (2009).

75. See in detail Walter Gehr, "The Universal Legal Framework against Nuclear Terrorism", *Nuclear Law Bulletin* No. 79 (2007/1), pp. 5-15. The article contains in its footnote 1 a list of the relevant conventions and protocols. See also Odette Jankowitsch-Prevor, "International Convention for the Suppression of Acts of Nuclear Terrorism", *Nuclear Law Bulletin* No. 76 (2005/2), pp. 7-27.

76. A comprehensive overview of the existing legal framework is provided by Carlton Stoiber, "Nuclear Security in International Law: Introduction to Recent Developments", Report of the (INLA) Working Group on Nuclear Security, *Nuclear Inter Jura 2009 Proceedings* (footnote 9), Vol. 3, pp. 563-571.

a new and additional concept was discussed which is aimed at internationally assuring nuclear supply and at the same time assuring non-proliferation.[77] The concept envisages restricting national activities in the field of nuclear supply by internationalising parts of the nuclear fuel cycle. A number of proposals on how to implement this concept have been submitted which, *inter alia*, include proposals of an international uranium enrichment centre and of a nuclear fuel bank.[78] It is too early yet to reliably assess whether these concepts will be realistic options for the future. The idea, however, is attractive: international supply centres, *e.g.*, uranium enrichment facilities or an international fuel stock, which guarantee fuel supply independent of the respective political or economic situation, may cause states to refrain from establishing national facilities. Thus, the risk of proliferation will be reduced. The UN Security Council in Paragraph 14 of its Resolution 1887 of 24 September 2009[79] "encourages the work of the IAEA on multilateral approaches to the nuclear fuel cycle, including assurances of nuclear fuel supply and related measures, as an effective means of addressing the expanding need for nuclear fuel and fuel services and minimising the risk of proliferation, and urges the IAEA Board of Governors to agree upon measures to this end as soon as possible". Hence, the IAEA initiative will remain on the agenda. In any case, in the context of new build, concepts of this type deserve increased attention. If there are more players in the nuclear field, reliable nuclear supply will become a crucial issue. More enrichment capacity will be needed. Obviously, the risk of proliferation will grow as well. The internationalisation of enrichment activities may therefore be an effective means of ensuring supply and at the same time preventing misuse.[80]

5. Nuclear Liability

Assuring compensation in the event of a nuclear incident causing damage to third parties quite obviously is a fundamental element of nuclear law. As has been pointed out, there has been a comprehensive body of civil nuclear liability instruments available since the beginning of the peaceful uses of nuclear energy. The Vienna, the Paris and the Brussels Supplementary Conventions, the Joint Protocol and the Convention on Supplementary Compensation for Nuclear Damage[81] provide for an international nuclear liability regime. On the basis of this regime, numerous states enacted national nuclear liability legislation. At first glance, the civil nuclear liability world seems to be well prepared to deal with the risks of nuclear energy and to meet the challenges of new build, too. Such statement, however, is correct and incorrect at the same time.

The statement is correct regarding the substance of the liability regime. It is "an exceptional regime and its scope is limited to risks of an exceptional character for which common law rules and practice are not suitable".[82] As a consequence, specific principles have been developed, namely: liability without fault (strict liability), exclusive liability of the operator of a nuclear installation (legal channelling of liability), possibility to limit liability in amount, limitation of liability in time, specific

77. 50th IAEA General Conference Special Event. New Framework on the Utilization of Nuclear Energy in the 21st Century: Assurances of Supply and Non-Proliferation. Vienna 19-21 September 2006. Reproduced at http://www-pub.iaea.org/mtcd/meetings/Announcements.asp?ConfID=147.

78. See "Possible New Framework for the Utilization of Nuclear Energy: Options for Assurances of Supply of Nuclear Fuel", Report by the Director General (IAEA Doc. GOV/INF/2007/11 of 13 June 2007).

79. Footnote 74.

80. See also Tariq Rauf, Zoryana Vovchok, "A Secure Nuclear Future. Several Mechanisms are under Consideration to Guarantee Assurances of Supply of Nuclear Fuels to States", in: *IAEA Bulletin* 51-1, September 2009, pp. 10-13.

81. See footnotes 23 and 25, 44-47.

82. Paragraph 7 Exposé des Motifs to the Paris Convention (http://www.nea.fr/html/law/nlparis_motif.html).

concept of compensable nuclear damage, mandatory financial security to cover liabilities, non-discrimination of victims, single and exclusive competent court. It is generally acknowledged that the regime so provided is suitable to deal with the compensation of nuclear damage in an adequate manner.[83]

It should, however, be noted that the principle of legal channelling recently has been questioned with express reference to the technical challenges of nuclear new build. It has been suggested to "eliminate" legal channelling and, in particular, to impose legal liability upon designers and constructors of nuclear installations.[84] The discussion on the concept of legal channelling is as old as the concept itself and there is no doubt that it is a unique and even odd concept. The concentration of liability upon one person to the exclusion of all other possibly liable persons is difficult to justify and may be called unjust. However, over the last few decades legal channelling has developed into a cornerstone of international harmonisation of nuclear liability law. It creates legal certainty for both the operator liable and particularly for the victims of a nuclear incident. Smooth and quick compensation is facilitated. It excludes costly and time-consuming deviations on the way to compensation by suing the wrong persons. It also excludes costly "pyramidizing" of insurance coverage. As a consequence, legal channelling provides benefits for all stakeholders and should not be eliminated.[85] Yet, one might consider extending the right of recourse of the operator in certain well defined and limited cases.[86]

Nuclear new build does seriously question another principle of nuclear liability law, namely, the option of limiting liability in amount which is used by all states with nuclear liability legislation with the exception of Austria, Germany, Japan, Switzerland and probably Denmark, Finland and Sweden in the near future. In the history of law, limiting liability in amount is a means to promote certain industries, *e.g.* motorcars and railways. The nuclear industry is mature and so this subsidy has become an anachronism. Obviously, unlimited liability cannot be financially secured in full because there are no unlimited assets. Coverage has to be limited to the highest amount reasonably achievable. This is the normal situation under liability law: if liability is unlimited, part of that liability cannot be covered. Introducing unlimited liability of the operator therefore is a step onwards normalising nuclear liability law.

There is another reason why the status of international nuclear liability law is not entirely satisfactory. Nuclear incidents have the potential of widespread nuclear damage affecting the territories of more than one country. Hence, transboundary damage may have to be compensated. The

---

83. There is ample literature on nuclear liability law available. See, *e.g.*, Vanda Lamm, "The Protocol Amending the 1963 Vienna Convention", in: *Nuclear Law Bulletin* No. 61 (1998/1), pp. 7 *et seq.* (9-10); "Reform of Civil Nuclear Liability", International Symposium Budapest, 31 May – 3 June 1999, Paris: OECD 2000; Susanne Kissich, Internationales Atomhaftungsrecht: Anwendungsbereich und Haftungsprinzipien, Baden-Baden 2004.

84. See Evelyne Ameye, "Channelling of Nuclear Third Party Liability towards the Operator: Is it Sustainable in a Developing Nuclear World or is there a Need for Liability of Nuclear Architects-Engineers?", in: *Nuclear Inter Jura 2009 Proceedings* (footnote 9) Vol. 2, pp. 385-411.

85. Legal channelling should neither be replaced with economic channelling as provided for in the U.S. legislation. Economic channelling complicates matters without being adequately balanced by other benefits. Although the so-called omnibus feature of the Price-Anderson Act obliges the operator liable to cover the liabilities of other persons, the other persons nevertheless suffer damage. They may be involved in lengthy lawsuits which damage their reputation.

86. See Norbert Pelzer, "Focus on the Future of Nuclear Liability Law", in: Budapest Symposium 1999, (footnote 83), pp. 421-451 (428-429).

international nuclear liability conventions are designed to exactly fulfil this purpose. They shall establish claims for compensation and shall facilitate the bringing of such claims irrespective of the place of the incident. Yet, the benefits of the conventions can only be used if states are party to the conventions. Unfortunately, only a little more than fifty states adhere to one of the conventions or, expressed in terms of nuclear power plants: Currently, in 31 countries 436 nuclear power plant units are in operation and 53 plants in 15 countries are under construction.[87] Only 243 of these plants are under the regime of a nuclear liability convention. Major nuclear states, such as Canada, China, India, Japan and Korea are not party to any of the conventions; the United States (104 nuclear power plants) is party to the Convention on Supplementary Compensation which has only 4 contracting parties and is not yet in force.

That the specific risks of nuclear damage require a global nuclear liability regime based on treaty relations does not need elaborate justification. Without such a regime, victims of a nuclear incident and the operators liable are exposed to the legal uncertainties of the general rules of private international law when transboundary nuclear damage shall be compensated. This means that there is uncertainty regarding the competent court and the law applicable.[88]

Lawyers can do little to change this situation. It is up to the politicians to create wider adherence to the conventions: but there are obstacles. A major stumbling block in the way of a global regime is the fact that there are a number of parallel nuclear liability conventions competing with each other. On the one hand, there is the worldwide Vienna Convention with currently 36 parties; on the other hand, there is the worldwide Convention on Supplementary Compensation for Nuclear Damage (CSC) with currently only 4 parties. Both contain the elements needed to form the legal basis for a global regime. There is also the Paris Convention with 16 parties, which is of a regional character but can be linked to the Vienna Convention through the Joint Protocol (26 parties). The objective of the Joint Protocol is to bridge the Vienna and the Paris Conventions by extending the benefits of one convention to victims of parties to the other convention.[89] Thus, Vienna Convention and Paris Conventions linked by the Joint Protocol form a unit which already today may be seen as the core of a global regime with currently 26 parties and up to 52 parties if all Vienna and Paris states adhere to the Joint Protocol.

The CSC is not yet in force and does not enjoy broad adherence. It is difficult to predict whether the CSC will attract a considerable number of states. The CSC establishes – like the Vienna and Paris Conventions – a basic nuclear liability regime and at the same time assures – like the Brussels Supplementary Convention – complementary compensation in excess of the operator's liability to be provided by the parties. It is a so-called free-standing instrument which means that it is – unlike the Brussels Supplementary Convention – not supplemental to a defined other liability convention. It may be supplemental to the Vienna Convention, the Paris Convention or to the national legislation of any state which complies with the provisions of the Annex to the CSC ("Annex States").[90] The main and most influential promoter of the CSC is the United States.[91] Yet, irrespective of its attractive concepts,

---

87. European Nuclear Society – info pool/glossary at www.euronuclear.org/info/encyclopedia/n/nuclear-power-plant-world-wide.htm.

88. See with numerous further references Norbert Pelzer, "On Global Treaty Relations – Hurdles on the Way towards a Universal Civil Nuclear Liability Regime", *EurUP Zeitschrift für Europäisches Umwelt- und Planungsrecht*, Vol. 6 (2008), pp. 268-280.

89. See Preamble Paragraph 5, Article II JP.

90. See Article II CSC.

91. See in particular Ben McRae, "The Compensation Convention: Path to a Global Regime for Dealing with Legal Liability and Compensation for Nuclear Damage", *Nuclear Law Bulletin* No. 61 (1998/1),

the CSC is not an instrument which seems to be acceptable for all states, particularly for European states.[92] As a matter of fact, the convention contains features which obviously are in contradiction to its objective to establish "a worldwide liability regime".[93] This applies especially to the second tier of compensation to be provided by all parties.[94] Joint compensation by all parties implies worldwide solidarity in compensating nuclear damage worldwide with national tax money. Such solidarity most probably does not exist, in particular, since the installation state is not required to contribute to the compensation. It also applies to the so-called grandfather clause which allows the United States to maintain its national nuclear liability law and thus to evade international harmonisation.[95] Finally, it is difficult to justify that, under the second tier of compensation, victims of the installation state and other victims are treated differently.[96] On the whole, the CSC is also a most complex instrument the practical application of which may cause problems.[97]

At the end, the goal of establishing a globally unified nuclear liability regime will most probably not be achieved. We will rather see two regimes: one will be based on the triad Vienna Convention – Joint Protocol – Paris Convention, the other one will be based on the CSC. It follows from this pessimistic assessment that in the future the uncertainties of the general rules of the law of conflict will also, to a large extent, continue governing nuclear compensation.[98]

6. Conclusion

The result of this stocktaking of existing nuclear law is encouraging but not in every respect entirely satisfactory. There is a sound and comprehensive corpus of specific national and international law available which is suitable to cope with the challenges of the use of nuclear energy including nuclear new build. In order to place the nuclear renaissance on safe legal ground, it is absolutely necessary to ensure that the existing status of nuclear law will be maintained in full and that new nuclear states will adopt this regime as well. Although there is currently widespread enthusiasm regarding the benefits of new build in numerous governments and in industry circles, such enthusiasm is not necessarily shared by the general public. "Public opinion on new nuclear build is mixed", the U.K. House of Commons Trade and Industry Committee concluded in its Fourth Report 2005.[99] Nuclear energy remains a most

---

pp. 25-38; Ben McRae, "Benefits of the Convention on Supplementary Compensation for Nuclear Damage", *Nuclear Inter Jura 2009 Proceedings* (footnote 9), Vol. 2, pp. 279-286.

92. See the critical appraisal by Florence Touitou-Durand, "The Convention on Supplementary Compensation for Nuclear Damage: A Solution for Europe?", in: Norbert Pelzer (ed.), Europäisches Atomhaftungsrecht im Umbruch / European Nuclear Liability Law in the Process of Change, Tagungsbericht der Regionaltagung der Deutschen Landesgruppe der AIDN/INLA Berlin 2009, Baden Baden 2010, pp. 257-274.

93. Preamble Paragraph 2 CSC.

94. Article III(1)(b) CSC.

95. Article 2(2) Annex to the CSC.

96. Articles III(1)(b), XI(1) CSC.

97. See on these issues in greater detail Pelzer (footnote 88), pp. 277-279; Norbert Pelzer, "Das Übereinkommen vom 12. September 1997 über ergänzende Entschädigung für nuklearen Schaden", in: *atw – Atomwirtschaft* Vol. 53 (2008), pp. 328-332; Touitou-Durand (footnote 92).

98. See Norbert Pelzer "Conflict of Law Issues under the International Nuclear Liability Conventions", in: Baur, J., *et al.* (eds.), Festschrift für Gunther Kühne zum 70. Geburtstag, Frankfurt a. M. 2009, pp. 819-842.

99. House of Commons, Trade and Industry Committee, "New Nuclear? Examining the Issues", Fourth Report of Session 2005 – 06, Vol. I, 2006 (HC 1122-I), No. 31, p. 11.

sensitive source of energy. New build efforts therefore must not entail a weakening of the current standard of safety, security and safeguarding, they must not even give the impression of weakening the control mechanisms for economic advantages. Initiatives to introduce new legal concepts need to be launched with utmost care.

Of course, there are fields where enhancements are desirable. In particular the difficulties regarding the establishment of a global nuclear liability regime need to be addressed. Even ten years ago, the lack of a globally unified nuclear liability regime was identified as a "continuous impediment to nuclear commerce",[100] nuclear new build will confirm this statement. As mentioned earlier, the situation can only be changed by political decisions. It is up to states, and especially to the states interested in nuclear new build, to actively contribute to ending the blockade which is caused by the competition between the Vienna, Paris Conventions and the Joint Protocol on the one hand, and the CSC on the other hand. Obviously the United States will have to play a decisive role in this context.

It is the merit of the organisers of the Nuclear Inter Jura Congress 2009 that they, for the first time, made legal problems connected with new build the main topic of an international congress.[101] The participants in the discussions of that congress voiced concerns and requests of the nuclear industry. Their views and proposals certainly will trigger reactions by the regulators and others. This discussion is needed, and it will contribute to fully recognising the requirements and the consequences of new build. In such discussion, of course, also internationally agreed principles may be questioned, and this is exactly what Ahab Abdel-Aziz and Bruce Lee-Shanok did in their contribution to the Congress.[102]

They identify in the international safety framework, as well as in national nuclear safety frameworks in Western developed nations, "precautionary biases". They argue that the imposition of these biases on developing nations is not justified, because it "retards and diminishes the accessibility of nuclear power generation in the developing world for political reasons that are not relevant to their contexts". They feel that the "Linear non-Threshold (LNT)" model and the "As-Low-as-Reasonably-Achievable (ALARA)" principle as generally used in radiation protection norms should not be used worldwide because they entail costly burdens which cannot be borne by developing countries. Regional approaches should be considered instead, in particular by the IAEA in its legislative assistance programmes, with a view to putting the radiation risk in relation to the numerous other risks people in developing countries are exposed to.[103] In other words, the authors suggest using different levels of safety *vis-à-vis* developed and developing countries if required to provide quick and affordable access to nuclear power. However, for good reasons, the international community will not accept differential treatment of developed and developing countries in matters of nuclear safety and radiation protection. It is an odd concept to suggest exposing people in developing countries to a higher radiation risk in exchange for speedy and less expensive access to nuclear energy. Moreover, if the current principles are deemed inappropriate in certain cases, it cannot be excluded that there will

100. Omer F. Brown II, "Nuclear Liability: A Continuous Impediment to Nuclear Commerce", 24th Annual International Symposium 1999 of the Uranium Institute, at http://www.world-nuclear.org/sym/1999/brown.htm.

101. See footnote 9. It has to be noted, though, that already at the Nuclear Inter Jura Congress 2007 a panel on new build was organised; see footnote 54.

102. Ahab Abdel-Aziz, Bruce Lee-Shanok, "Before the Renaissance. A Reformative Challenge to the Precautionary Dogma in Nuclear Safety Regulation". Paper presented at the Nuclear Inter Jura Congress 2009 in Toronto, 16 pp. (the paper is not part of the provisional Proceedings referred to in footnote 9 but was distributed by the organisers separately).

103. *Op. cit.* (footnote102) pp. 2, 3, 14-18.

be an erosion of the principles in other cases, too. That would entail a general decrease of the safety level. Thus, the contribution is not helpful for new build; rather it provides ammunition for the opponents to nuclear energy.

It has to be reiterated that new build can only be pursued on reliable grounds if the existing level of safety, security and safeguarding is applied to the nuclear programmes of all states in the same way. The use of nuclear energy including new build needs a "social licence" by the general public. Achieving a social licence may be endangered by requests to reconsider long held internationally acknowledged standards and practices of nuclear safety and radiation protection in order to facilitate new build. New build will most probably generate numerous initiatives and ideas to improve the legal regime. Such incentives are welcome as long as they do not interfere with the basic legal frameworks and do not challenge the public acceptance of the use of nuclear energy.

The Directive Establishing a Community Framework for the Nuclear Safety of Nuclear Installations:

The EU Approach to Nuclear Safety

*by Massimo Garribba, Amelia Chirteş and Monika Nauduzaite**

Nuclear safety is and remains an absolute priority for the European Union (EU). As of November 2009, there are 145 nuclear power plants operating in 15 member states of the EU (hereinafter referred to as "member states"). The importance of nuclear safety increases with a view to the growing number of member states which have expressed a renewed interest in nuclear energy.[1]

The EU is the largest nuclear electricity generator in the world with a mature nuclear industry which spans the entire fuel cycle. It has its own technological infrastructure and highly skilled workforce. Nuclear energy is currently the main low-carbon energy source in many member states, generating approximately one third of the electricity in the EU.[2] It has proven to be a stable and reliable electricity generation source, relatively shielded from fuel price fluctuations. Continued use of nuclear energy therefore increases the EU's energy independence, security of supply and competitiveness as well as contributing to the limitation of CO_2 emissions.

At the same time, electricity generation facilities of member states are ageing. In the context of the climate change debate, there is an opportunity to replace ageing capacities by low-carbon

* Mr. Massimo Garribba is Head of Unit H1 "Legal questions and Euratom coordination, international relations" at the Directorate General for Energy and Transport (DG TREN) of the European Commission.

Ms. Amelia Chirteş is a seconded legal expert at the European Commission, DG TREN, Directorate H "Nuclear Energy", Unit H1.

Ms. Monika Nauduzaite is a policy co-ordinator for internal co-ordination and international relations, European Commission, DG TREN, Unit H1.

The authors alone are responsible for the facts and opinions expressed in this article. The views contained herein do not necessarily reflect the official position of the European Commission.

1. Recently, there has been a shift towards more member states supporting nuclear energy (e.g. projects for new nuclear reactors are being prepared in the United Kingdom and Italy, Poland plans to build two nuclear power plants by 2020, Sweden has reviewed its moratorium on nuclear energy).

2. Communication from the Commission to the Council and the European Parliament – Nuclear Illustrative Programme [COM(2007) 565 final], updated on 13 November 2008 [COM(2008) 776 final].

electricity generation facilities (i.e. nuclear and renewable energy sources). About two fifths of the currently operating nuclear power plants will come to the end of their originally foreseen lifetime[3] before 2030. As a consequence, new investments in nuclear industry can be expected, either for the construction of new nuclear power plants or for upgrading existing plants so they can safely operate for an extended period of time.

The future of nuclear energy generation within the EU remains subject to a high level of safety of nuclear installations. As reflected in public surveys, reassurance on the safety of nuclear installations is one of the European citizens' main concerns when it comes to the construction of new nuclear power plants or the extension of their lifetimes.[4] A strong commitment of the industry to a safety culture and to investments in research and development for further progress in nuclear technology are, therefore, essential to ensure an appropriate role for nuclear energy in the energy mix of the EU.

It is broadly accepted that nuclear safety cannot be considered from a solely national perspective due to its potential cross-border impacts. A common approach for the 27 member states, built along the lines of national regulations and the results of international co-operation in the area, would better guarantee the maintenance and continuous improvement of safety at the EU level, while at the same time stimulating similar developments worldwide.

The EU has been constantly active in promoting nuclear safety at Community level e.g. by means of the technological expertise of the Joint Research Centre (JRC) and of the Framework Programme for research and technological development.[5] Nevertheless, until 2009 there was no binding Community legislative instrument governing the safety of nuclear installations.

The recent Council Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations[6] (hereinafter referred to as the "Nuclear Safety Directive"), adopted with the consent of all 27 member states following the overwhelming support of the European Parliament, creates for the first time, a binding legal framework that brings legal certainty to EU citizens and reinforces the role and independence of national regulators.

This article aims at explaining the evolution leading to the adoption of this piece of legislation. The paper is divided into three sections. The first section addresses the competence of the European Atomic Energy Community (hereinafter referred to as the "Community") to legislate in the area of nuclear safety. It focuses on the 2002 landmark ruling of the European Court of Justice (ECJ) that confirmed this competence by recognising the intrinsic link between radiation protection and nuclear safety. The second part describes the "history" of the Nuclear Safety Directive from the initial 2003 European Commission proposal to today's text in force. The third part is dedicated to a description of the content of the Directive and its implications on the further development of nuclear safety in the EU.

---

3. It is assumed that initial design lifetime of a nuclear power plant is in average 40 years.

4. Special Eurobarometer No. 271 "Europeans and nuclear safety", Fieldwork October-November 2006, Publication February 2007 http://ec.europa.eu/public_opinion/archives/ebs/ebs_271_en.pdf.

5. For an overview of the current Euratom 7th Framework Programme for nuclear research and training activities see http://europa.eu/legislation_summaries/energy/nuclear_energy/i23032_en.htm.

6. OJ L 172, 2 July 2009. The text of the directive is reproduced on pp. 139 *et seq.* of this Bulletin.

1. The Community legislative competence in the area of nuclear safety – evolutions and milestones

1.1 Radiation protection – An important body of Community acquis[7] aiming to ensure protection against ionizing radiation

The Community's competence to establish uniform safety standards to protect the health of workers and of the general public and to ensure that they are applied is explicitly regulated in the Treaty establishing the European Atomic Energy Community (hereinafter referred to as "Euratom Treaty").[8]

On this basis, a substantial corpus of Community radiation protection-related *acquis* has been adopted and updated over the years. It comprises today more than 20 legal instruments.

The central element of this legislation is Council Directive 96/29/Euratom[9] ("Basic Safety Standards Directive"). Its purpose is to ensure that the general public and workers are effectively protected against the harmful effects of ionizing radiation and its applications in industry and medicine. The Directive defines a series of specific requirements related to the safe use of radiation sources and to public and occupational exposure to those sources, including prior authorisation of practices, monitoring of the workplace and individuals, medical surveillance, training and information for workers and the protection of the general public in order to reduce, as far as reasonably achievable, the effects of such activities on the public. It confirms the three major principles underlying radiation protection: justification of practices, dose limitation and optimisation of protection which translate into the principle that doses should be as low as reasonably achievable (ALARA) taking into account social and economic considerations. The Basic Safety Standards Directive is supplemented by other legislative instruments covering:

- Medical applications of ionizing radiation: Council Directive 97/43/Euratom;[10]
- Information in case of radiological emergency: Council Decision 87/600/Euratom[11] and Council Directive 89/618/Euratom;[12]

---

7. As a general explanation, the Community *acquis* applicable to the European Atomic Energy Community (hereinafter: Community) comprises the content, principles and political objectives of the Euratom Treaty, the secondary legislation adopted in application of the Euratom Treaty (e.g. regulations, directives), the case law of the ECJ relevant for the nuclear field and the international agreements concluded by the Community and those concluded by the member states between themselves in the field of the Community's activities.

8. Article 2(b) of the Euratom Treaty: "In order to perform its task, the Community shall, as provided in this Treaty …establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied".

9. 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 (OJ L 159, 29 June 1996, p. 1). The directive is based on the 1990 Recommendations of the International Commission on Radiological Protection (ICRP) and is consistent with the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, jointly sponsored by the IAEA and five other international organisations with competence in radiation protection. For more information on radiation protection see: Lazo, T., "The International System of Radiological Protection: Key Structures and Current Challenges", *Nuclear Law Bulletin* No. 80 (2007/2).

10. Council Directive 97/43/Euratom of 30 June 1997 on health protection of individuals against the dangers of ionizing radiation in relation to medical exposure, and repealing Directive 84/466/Euratom (OJ L 180, 9 July 1997, pp. 22-27).

- Protection of outside workers: Council Directive 90/641/Euratom;[13]

- Shipments of radioactive waste and spent fuel: Council Directive 2006/117/Euratom[14] and Council Regulation (Euratom) No. 1493/93;[15]

- Foodstuffs and feeding stuffs regulations following the Chernobyl accident [Council Regulation (EC) No. 733/2008[16]] and special provisions in case of a future accident [Council Regulation (Euratom) No. 3954/87[17]];

- Control of high activity sealed radioactive sources and orphan sources: Council Directive 2003/122/Euratom[18] ("HASS Directive").

However, Community regulation of the safety of nuclear installations has not developed at the same rhythm as the radiation protection *acquis*, although the two areas are closely connected. Nuclear safety is primarily concerned with maintaining control over sources, whereas radiation protection is mainly concerned with controlling exposure to radiation and its effects. The two disciplines have a common health protection objective, namely protection against ionizing radiation. Therefore, it is not possible to achieve the protection of workers and of the general public from the dangers of ionizing radiation without controlling the potentially harmful sources of that radiation.

1.2 Nuclear Safety – non binding incentive instruments – The 1975 and 1992 Council Resolutions on the technological problems of nuclear safety

The 1975 and the 1992 Council Resolutions give a framework and working methods for the progressive harmonisation of safety requirements and practices.

---

11. 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, 30 December 1987, pp. 76-78).

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 (OJ L 357, 7 December 1989, pp. 31-34).

13. 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 (OJ L 349, 13 December 1990, pp. 21-25).

14. Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel (OJ L 337, 5 December 2006, pp. 21-32).

15. Council Regulation (Euratom) No. 1493/93 of 8 June 1993 on shipments of radioactive substances between Member States (OJ L 148, 19 June 1993, pp. 1-7).

16. Council Regulation (EC) No. 733/2008 of 15 July 2008 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station (OJ L 201, 30 July 2008, pp. 1-7), as amended by Council Regulation (EC) No. 1048/2009 of 23 October 2009 (OJ L 290, 6 November 2009).

17. Council Regulation (Euratom) No 3954/87 of 22 December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency (OJ L 371, 30 December 1987, pp. 11-13), as amended by Council Regulation (Euratom) No. 2218/89 of 18 July 1989 (OJ L 211, 22 July 1989).

18. Council Directive 2003/122/Euratom of 22 December 2003 on the control of high-activity sealed radioactive sources and orphan sources (OJ L 346, 31 December 2003, pp. 57-64).

The Resolution is a non-binding instrument which is mostly chosen to adopt conclusions of a political nature. It manifests a common political will and due to its non-binding character, the achievement of consensus is considerably easier.

In its first Resolution of 22 July 1975,[19] the Council considered that the technological problems relating to nuclear safety required appropriate action at Community level which would take into account the prerogatives and responsibilities assumed by national authorities. As a result of the 1975 Resolution, the European Commission set up several expert groups dealing with nuclear safety matters.[20]

The second Resolution of 18 June 1992[21] supported the continuation of the process of consultation and co-operation established by the mentioned Resolution of 1975; it encouraged "the Member States and the Commission to act in a co-ordinated manner in international fora on the basis of the achievements reached in the Community towards a system of internationally accepted nuclear safety criteria and requirements, in particular in the framework of the International Atomic Energy Agency (IAEA)".

1.3 The intrinsic link between radiation protection and nuclear safety – A landmark ruling of the ECJ – Case C-29/99

Chapter 3 of Title II, Articles 30 to 39 of the Euratom Treaty has been used to give effect to the objective in Article 2(b) of the said Treaty, namely to "establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied". In particular, Article 30 provides that "Basic standards shall be laid down within the Community for the protection of the health of workers and the general public against the dangers arising from ionizing radiations"; procedural aspects for their adoption are laid down in Articles 31 and 32 of the Treaty. Basic standards are defined as:

a. maximum permissible doses compatible with adequate safety;

---

19. OJ No. C 185/1 of 14 August 1975.

20. In order to pursue the objectives of the 1975 Council Resolution, the Commission set up two expert groups dealing with nuclear installation safety:

- The Nuclear Regulators' Working Group (NRWG), included representatives of nuclear regulatory authorities from EU member states and applicant states of Central and Eastern Europe. It was dissolved in 2005.

- The Reactor Safety Working Group (RSWG), which was discontinued in 1998, included all EU regulatory bodies and the industry. A new group, enlarged to all applicant states, is being launched with new terms of reference.

Following the 1992 Council Resolution, additional expert groups were established, in particular:

- Concertation on European Regulatory Tasks Group (CONCERT), created in 1992 and dissolved in 2005. It gathered representatives from regulatory authorities both from member states, Central and Eastern European Countries and the Newly Independent States.

- Regulatory Assistance Management Group (RAMG) was established in 1992 to provide support (policy advice) to the European Commission on matters related to nuclear regulatory assistance.

21. OJ No. C 172/2 of 8 July 1992.

b. maximum permissible levels of exposure and contamination;

c. the fundamental principles governing the health surveillance of workers.

Until recently, the legislation adopted under this provision concerned predominantly the field of radiation protection. In 2002, however, the ECJ recognised in its judgement in Case C-29/99[22] an intrinsic link between radiation protection and nuclear safety and the Community competence in the field of nuclear safety.

In its findings, the ECJ acknowledged that the Euratom Treaty does not contain a title relating to nuclear installations and therefore has to consult the provisions of the Euratom Treaty relating to health and safety. The Court explained that the provisions of Chapter 3 of Title II of the Euratom Treaty were to be interpreted in the light of the objectives of the Euratom Treaty as set out in the Preamble, namely "to create the conditions of safety necessary to eliminate hazards to the life and health of the public" and of Article 2(b) of the Treaty. It recalled that in the past it had interpreted them broadly in order to give them practical effect. The ECJ concluded 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 ionizing radiation".[23] It therefore found that Euratom possesses competencies in several fields covered by the Nuclear Safety Convention, namely the establishment of a legislative and regulatory framework to govern the safety of nuclear, installations, measures relating to the assessment and verification of safety, emergency preparedness, the siting of nuclear installations and the design, construction and operation of nuclear installations.

Also, in the preliminary Opinion of Advocate-General Jacobs[24] it is concluded that "in the light of the current scientific knowledge, it is neither possible nor desirable to maintain artificial boundaries between the disciplines of radiation protection and nuclear safety".[25] Furthermore, "the fact that the member states retain exclusive competence over the technological aspects of nuclear safety does not prevent the Community from adopting legislation which establishes certain safety requirements, authorisation requirements, inspection and assessment requirements or enforcement mechanisms".[26]

2. Overview of the recent legislative procedure leading to the adoption of the Nuclear Safety Directive

In 2003, the European Commission proposed a Council Directive (Euratom) setting out basic obligations and general principles on the safety of nuclear installations[27] and in 2004, it resubmitted to the Council an amended proposal.[28]

22. Judgement of 10 December 2002 in the Case C-29/99 (Commission of the European Communities *v* Council of the European Union); see also *Nuclear Law Bulletin* No. 71 (2003/1), pp. 52 *et seq*.

23. Paragraph 82 of the judgement.

24. Opinion of Advocate General Jacobs of 13 December 2001 – Case C-29/99.

25. Paragraph 166 of the opinion.

26. Paragraph 167 of the opinion.

27. COM (2003) 32 final.

28. COM (2004) 525 final.

The Council, in its June 2004 Conclusions,[29] called for a "wide ranging consultation process" that can contribute more effectively to achieving nuclear safety before any instrument would be developed in the framework of the Euratom Treaty.

As a consequence, the Council's *ad hoc* Working Party on Nuclear Safety (WPNS) engaged in an extensive and continuous consultation process during 2005 and 2006.[30]

Intensive discussions were also undertaken in the European Parliament which called on the need "to adopt concrete measures at Community level in the fields of nuclear safety" and invited the Commission "to review the relevant drafts of its legislative proposal and submit new proposals for directives on the safety of nuclear facilities".[31] The European Parliament had expressly underlined that the EU should "promote the most stringent possible [nuclear] safety principles throughout the world".[32]

Following the WPNS' final report,[33] the Council, in its May 2007 Conclusions[34] identified amongst the actions related to harmonised approaches, shared knowledge and joint efforts in the area of the safety of nuclear installations, the promotion of the practical use of internationally recognised contexts (Convention on Nuclear Safety, Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, IAEA, OECD Nuclear Energy Agency, Western European Nuclear Regulators Association).

In addition, in 2007, two initiatives were launched at Community level to further debate the future of nuclear energy and to identify requirements for its development.

The first is the European Nuclear Safety Regulators Group (ENSREG),[35] an independent expert body composed of senior officials from national regulatory or nuclear safety authorities from all 27 member states. It aims to further a common approach to the safety of nuclear installations, the safety of the management of spent fuel and radioactive waste and the financing of the

---

29. Council Conclusions on Nuclear Safety and on the Safety of the Management of Spent Fuel and Radioactive Waste (10823/04).

30. WPNS was activated by the Council, as a follow-up of the 2004 Council Conclusions on nuclear safety and safe management of spent fuel and radioactive waste. 70 experts from member states and the Commission participated in this consultation process.

31. MEP Maldeikis report on "Assessing Euratom – 50 Years of European nuclear energy policy" (A6-0129/2007), as adopted by the European Parliament.

32. MEP Reul report on Conventional energy sources and energy technology (A6-0348/2007), as adopted by the European Parliament.

33. The final WPNS Report is available at http://register.consilium.europa.eu/pdf/en/06/st15/st15475-re02.en06.pdf.

34. Council Conclusions on nuclear safety and safe management of spent nuclear fuel and radioactive waste (8784/07).

35. On 10 January 2007, the European Commission adopted a draft Nuclear Illustrative Programme which proposed the establishment of a High Level Group on nuclear safety, waste management and decommissioning. The European Council of March 2007 endorsed the Commission's proposal to establish an EU High Level Group on Nuclear Safety and Waste Management. Subsequently, the Group was formalised by Commission Decision 2007/530/Euratom of 7 July 2007 on establishing the European High Level Group on Nuclear Safety and Waste Management (OJ L 195/44, 27 July 2007).

decommissioning of nuclear installations. The ENSREG work has provided a valuable contribution to the preparation of a Community legislative instrument on nuclear safety.

The second initiative is the European Nuclear Energy Forum (ENEF),[36] gathering all relevant stakeholders in the nuclear field. It intends to provide a platform for a broad and transparent stakeholder discussion on the opportunities and risks of nuclear energy. In the conclusions of the Prague second plenary meeting, ENEF emphasised its strong support for the adoption of EU legislation on nuclear safety based on "common fundamental safety principles for nuclear installations".[37]

The European Commission also co-operated successfully with the IAEA when preparing a Community instrument on nuclear safety and reached agreement on important technicalities as well as on the definitions used in the current Nuclear Safety Directive in order to ensure that they are fully aligned with the terminology of the IAEA Safety Glossary.[38]

As a result of these consultations, on 26 November 2008, the European Commission adopted a second revision of the legislative proposal in the area of nuclear safety,[39] with the aim of re-launching the process of establishing a common EU framework on nuclear safety.

The European Parliament voted on 22 April 2009 with a large majority a legislative resolution in support of the Commission proposal for a Nuclear Safety Directive.[40] The European Economic and Social Committee adopted its own initiative complementary opinion on 10 June 2009, which supports the Nuclear Safety Directive.

Finally, the Council reached unanimity on the text of the Directive on 24 June 2009.[41]

3. Main principles of the Nuclear Safety Directive

The general objective of the Nuclear Safety Directive is to maintain and continuously improve nuclear safety and its regulation as well as to ensure that appropriate national arrangements for a high level of nuclear safety to protect the workers and the general public against the dangers arising from ionizing radiations from nuclear installations are taken (Article 1). The underlying principles on which the Directive is built are national responsibility for nuclear safety and continuous improvement of safety.

---

36. The European Commission proposal to have an exchange of views on the contribution of nuclear energy in meeting the growing concerns about security of energy supply, reduction of CO_2 emissions and competitiveness, while taking fully into account nuclear safety and security aspects, was endorsed by the European Council of March 2007. As a concrete follow-up, ENEF was established in the same year.

37. See regular report on ENEF and ENSREG's (previously High Level Group) meetings and discussions in *Nuclear Law Bulletin* Nos. 80, 81, 82, 83.

38. IAEA Safety Glossary – Terminology used in Nuclear Safety and Radiation Protection (2007 Edition).

39. COM(2008) 790 final.

40. European Parliament legislative resolution of 22 April 2009 on the proposal for a Council Directive (Euratom) setting up a Community framework for nuclear safety [COM(2008)0790 – C6-0026/2009 – 2008/0231(CNS)].

41. The text of the Council Directive 2009/71/Euratom was published in the Official Journal of 2 July 2009 and entered into force 20 days later (on 22 July 2009). It is reproduced on pp. 139 *et seq.* of this Bulletin.

It creates a flexible approach to the continuous improvement of nuclear safety requirements as member states may impose more stringent safety measures if appropriate.

The Directive is innovative in that it defines "nuclear safety" in Article 3(2) as "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".

The Directive builds primarily on the fundamental requirements and principles of the main international instruments, namely the Convention on Nuclear Safety[42] and the Safety Fundamentals established by the IAEA,[43] which were both agreed to by the member states. Thus, the Directive transforms the IAEA approach into a legally binding Community system, and thereby it establishes legal certainty.

The Nuclear Safety Directive aims to achieve several objectives, in particular:

- Setting up and continuously improving the member states' legislative, regulatory and organisational nuclear safety frameworks.
- Enhancing the role and reinforcing the independence of national regulatory authorities.
- Ensuring that the prime responsibility for nuclear safety rests with the licence holders under the control of the competent regulatory authorities.

Its scope of application covers all civilian nuclear installations operating under a licence at all stages. The Directive's definition of nuclear installations includes, beside nuclear power plants, enrichment plants, nuclear fuel fabrication 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 nuclear installations [Article 3(1)]. The scope is therefore broader than the Convention on Nuclear Safety in that it covers more types of plants, including research facilities.

Different means are foreseen in the Directive in order to achieve the objectives. In particular and in the spirit of Article 7 of the Convention on Nuclear Safety, the member states shall establish and maintain a national legislative, regulatory and organisational framework for nuclear safety of nuclear installations that allocates responsibilities and provides for co-ordination between relevant state bodies (Article 4).

In order to reinforce the role of national regulatory authorities, the Directive builds on their competencies (Article 5). It explicitly recognises the fundamental principle that solely independent and strong regulators, functionally separated from any organisation promoting or using nuclear energy, can guarantee the safe operation of the nuclear installations. Member states are therefore obliged 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

42. Convention on Nuclear Safety (INFCIRC/449 of 5 July 1994). The convention was adopted on 17 June 1994 by a Diplomatic Conference convened by the IAEA and it entered into force on 24 October 1996. All EU member states, as well as the Community, are contracting parties to this convention.

43. IAEA Safety Fundamentals: Fundamental Safety Principles, IAEA Safety Standard Series No. SF-1 (2006).

production, in order to ensure effective independence from undue influence in its regulatory decision making". The Directive requires member states to ensure that regulators are vested with adequate authority, resources and powers including the power to carry out regulatory enforcement measures.

The Directive strengthens the importance of safety assessments and requires international peer reviews of their national frameworks and regulatory authorities [Article 9(3)].

It also requires that specialised education and training opportunities should be ensured in the member states for their staff having responsibilities related to nuclear safety. This should lead to guarantee the availability of nuclear safety expertise within Europe and encourage cross border co-operation between the member states (Article 7).

Finally, the Directive promotes a high level of transparency of regulatory actions to the public, within the limits of national legislation and international obligations (Article 8).

Member states have the obligation to transmit regular reports to the European Commission on the implementation of the Directive, on the basis of which, the latter shall subsequently submit a report to the Council and the European Parliament [Article 9(1)(2)].

The deadline for the transposition of the Directive in the member states' legislation is 22 July 2011 [Article 10(1)].

4. The Community's *sui generis* enforcement instruments

The Directive is certainly a milestone within and beyond the 27 member states in that, for the first time since the inception of the Community in 1957, the Council expressed agreement on nuclear safety requirements through a legally binding instrument. It gives the Community and the member states their own legal framework to achieve common standards and harmonisation at the EU level following their instrumental participation in the creation of international laws and standards which have been adopted under many other international fora.

While the Convention on Nuclear Safety is also a legally binding instrument of international law, its weaknesses on the implementation and enforcement side have often been the subject of discussions.[44] In the case of the Directive however, the European Commission and the ECJ will guard over the adequate implementation and maintenance of its obligations which can therefore prove it to be a more effective instrument.

A Directive is binding on the member states as to the result to be achieved. However, it leaves them the choice of the form and method they adopt to realise the Community objectives within the framework of their internal legal order. If a Directive has not been transposed into national legislation in a member state, if it has been transposed incompletely or if there is a delay in transposing it, citizens – under certain pre-conditions – can directly invoke the Directive in question before the national courts.

---

44. Jankowitsch, O., "The Convention on Nuclear Safety", *Nuclear Law Bulletin* No. 54 (1994/2); de Wright, T., "The 'Incentive' Concept as Developed in the Nuclear Safety Convention and its Possible Extension to Other Sectors", *Nuclear Law Bulletin* No. 80 (2007/2); Stoiber, C., "The Review Conference Mechanism in Nuclear Law: Issues and Opportunities", *Nuclear Law Bulletin* No. 83 (2009/1).

5. Conclusions

Nuclear safety has been an absolute priority for the EU for years. The adoption of the Nuclear Safety Directive is a concrete milestone in the realisation of this objective. Its core benefits can be perceived both from the European and international sides.

Indeed, at the level of the EU member states, the Directive provides legal certainty; it reinforces the national regulatory authorities by confirming and emphasising their role and their independence.

At the same time, the Directive plays a significant role internationally: its adoption makes the EU the first major regional actor to establish binding legal rules in nuclear safety and to become an example for the rest of the world.

Harmonisation of Nuclear Liability in the European Union:

Challenges, Options and Limits

*by Jakub Handrlica**

Recent discussions have identified gaps in the existing nuclear liability regimes in a more focused fashion. The so-called *nuclear renaissance* or *nuclear new build*[1] cannot be limited to the mere multiplication of nuclear power plants. It must take place together with the creation and strengthening of legal frameworks for nuclear safety and radiation protection, security and safeguards. As the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA) highlights in its *Nuclear Energy Outlook 2008*:[2]

> "…the international community must be prepared to adapt the existing international legal framework to those new realities".

At present, discussions on the harmonisation of nuclear liability regimes have opened at the European Union (EU) level. While silent on this issue during the decades following the signing of the Treaty establishing the European Atomic Energy Community (Euratom Treaty) in 1957,[3] the attitude of the European institutions towards EU nuclear liability instruments changed considerably after the

---

* LL.M. Ph.D, assistant professor, Institute for Administrative Law and Administrative Science, Law School, Charles University in Prague. This paper was awarded the AIDN/INLA Prize 2009. The author alone is responsible for the facts and opinions expressed in this article.

1. For detailed information on *nuclear renaissance*, see projections to 2050 presented in: *Nuclear Energy Outlook*, OECD/NEA (2008), pp. 90- 110. From legal point of view, see also Cameron, P., "The Revival of Nuclear Power: An Analysis of the Legal Implications", *Journal of Environmental Law* Vol. 19, 2007, pp. 71-87.

2. Nuclear Energy Outlook, OECD/NEA, 2008, at 303.

3. See Written question No. 111/66 by M. Merten to the Commission (*Non – application of Article 98 of the Euratom Treaty*), O.J. No. 9, of 17 January 1967, p. 118; Written question No. 2489/93 by S. Kostopoulos to the Commission (*Civil liability of operators of nuclear installations*), O.J. C 240. 29 August 1994, p. 23; Written question No. 3807/97 by Ilona Graenitz to the Commission (*EU – level civil liability for nuclear power stations*), O.J. C 158, 25 May 1998, p. 191.

2004 and 2007 enlargements. A discussion on the so-called *patchwork situation* with respect to nuclear liability was opened under the aegis of the European Commission (hereinafter "Commission") in 2005 which was later halted due to strong opposition from the new Central and Eastern European member states.

On the occasion of the International Nuclear Law Association (AIDN/INLA) biennual meeting held in Brussels in October 2007, the European Commissioner for Energy, Andris Piebalgs, described the nuclear liability framework as very unsatisfactory from the Commission's point of view.[4] Commissioner Piebalgs announced further activities at the level of the European Community (hereinafter "Community") towards a harmonised nuclear liability regime. Later, in December 2007, the Commission retained a Spanish law firm to develop and distribute a questionnaire exploring the views of EU member states and EU industry on the current nuclear liability regimes, with a view towards harmonising Community law in that field.

This paper aims to describe the legal regimes and sub-regimes existing currently in the 27 member states of the European Union (hereinafter "member states") and to discuss the options proposed by the Commission. The pros and cons of these options will be shown as well as their limits, the most serious obstacles to harmonisation and the most important issues for future discussion in an effort to identify the most appropriate steps towards a uniform Community nuclear liability regime.

A. The nuclear liability patchwork in the EU member states

There is no legal framework on nuclear liability at the EU level. The nuclear liability framework in the Community is basically governed by the existing multilateral treaties in this field and by legislation that differs from one member state to the next, depending on which treaty or treaties, if any, it has signed and ratified.[5]

Prior to the 2004 enlargement, the map of the Community seemed to coincide with the map of the contracting parties to the 1960 Paris Convention on Nuclear Third Party Liability as amended in 1964 and 1982 (Paris Convention).[6] This changed when several contracting parties to the 1963 Vienna Convention on Civil Liability for Nuclear Damage (1963 Vienna Convention) joined the Community during the 2004 and 2007 enlargements.

I. *Existing nuclear liability regimes after the 2004 and 2007 enlargements*

The complicated panoply of nuclear liability rules is largely due to the following circumstances:

(1) Most of the "old" (pre-2004) member states are contracting parties to the Paris Convention.

---

4. Piebalgs, A., Keynote Speech, in: *AIDN/INLA: Nuclear Inter Jura 2007: Proceeding/Actes du Congrès,* 2008, at 1073.

5. See also Pelzer, N., "On Global Treaty Relations – Hurdles on the way towards a Universal Civil Nuclear Liability Regime", *Zeitschrift für Europäisches Umwelt- und Planungsrecht,* 2008, at 273.

6. Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as amended by the Additional Protocol of 28 January 1964, by the Protocol of 16 November 1982 and by the Protocol of 2004. Austria and Luxembourg have both signed the 1960 Convention, the 1964 Additional Protocol and the 1982 Protocol but neither country has ratified any of these instruments. Ireland never signed any of existing international treaties in the area of nuclear liability.

(2) Most of the "new" (post 2004) member states are contracting parties to the 1963 Vienna Convention.

(3) Most, but not all of the contracting parties to the Paris Convention are contracting parties to its companion convention, the 1963 Brussels Supplementary Convention on Nuclear Third Party Liability[7] as amended in 1964 and 1982 (BSC).

(4) Only some of the contracting parties to the Paris Convention are contracting parties to the Joint Protocol relating to the Application of the Vienna Convention and Paris Convention (1988 Joint Protocol) which provides a link between the Paris Convention and the 1963 Vienna Convention; on the contrary, all member states that are contracting parties to the 1963 Vienna Convention are at the same time contracting parties to the 1988 Joint Protocol.

(5) Some "new" member states have joined the 1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (1997 Vienna Protocol), and only two member states have actually ratified it.

(6) Very few member states have signed the 1997 Convention on Supplementary Compensation for Nuclear Damage (1997 CSC) and only one has ratified it.

(7) Most of the "old" member states have signed the 2004 Protocol to amend the Paris Convention (2004 Paris Protocol) and of those, most have signed the 2004 Protocol to amend the Brussels Supplementary Convention (2004 BSC Protocol); the former instrument has not been ratified while the latter has been ratified only by Spain.

As a consequence, various nuclear liability sub-regimes exist as described below.

II. *Member states before the 2004 enlargement ("old" member states)*

The 15 "old" member states of the Community are parties to the following conventions:

Paris Convention only: Greece, Portugal

Paris Convention and BSC: Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden, the United Kingdom.

1988 Joint Protocol: Denmark, Finland, Germany, Greece, Italy, the Netherlands, Sweden.

2004 Paris Protocol: Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal, Spain, Sweden and the United Kingdom have signed this instrument; none has yet ratified it.[8]

2004 BSC Protocol: Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden and the United Kingdom have signed this instrument. Only Spain has ratified it.

---

7. Convention of 31 January 1963 Supplementary to the Paris Convention of 29 July 1960, as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982.

8. Under Article 2(1) of Decision 2004/294/EC member states "shall take the necessary steps to deposit simultaneously their instruments of ratification of the Protocol, or accession to it, with the Secretary-General of the Organisation for Economic Co-operation and Development".

Austria, Ireland [9] and Luxembourg stand outside the legal framework created by the international conventions. Liability for nuclear damage is determined according to their national legislation, including Community law.[10]

III. *Member states after the 2004 and 2007 enlargements ("new" member states)*

The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic, Slovenia, Malta and Cyprus joined the EU on 1 May 2004. The accession of Bulgaria and Romania took place on 1 January 2007. During the accession process, the European Commission and the European Council took the position that achieving a high level of nuclear safety, comparable to that in the Community, is a strict condition of accession. However, there was no condition regarding nuclear liability during the accession process. [11] Consequently, discussions on harmonising the nuclear liability regimes in the Community were opened only after the accession of the new member states:

1963 Vienna Convention: Bulgaria, Czech Republic, Estonia, Hungary, Latvia,[12] Lithuania, Poland, Romania[13] and the Slovak Republic.

1997 Vienna Protocol: Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania have signed this instrument and only Latvia and Romania have ratified it.

1988 Joint Protocol: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia are party to this protocol.

1997 CSC: Only Romania has ratified this instrument which is not yet in force.

Paris Convention and BSC: Only Slovenia[14] has acceded to these instruments.

2004 Paris Protocol and 2004 BSC Protocol: Only Slovenia has signed these instruments.

Cyprus and Malta stand outside the legal frameworks created by these international conventions.

---

9. For further information on the Irish attitude toward multilateral conventions in the area of nuclear liability see: Carroll, S., "Why does Ireland not adhere to the international nuclear liability conventions?", in: Pelzer, N. (ed.), *Die Internationalisierung des Atomrechts,* 2005, pp. 229-238, and O'Higgins, P., McGrath, P., "Third Party Liability in the Field of Nuclear Law: An Irish Perspective", *Nuclear Law Bulletin* No. 70, (2002/2), pp. 7-21.

10. For further information on Austrian legal regulation of nuclear liability, see e.g.: Hinteregger, M., "The new Austrian Act on Third Party Liability for Nuclear Damage", *Nuclear Law Bulletin* No. 62 (1998/2), pp. 27-36.

11. See, however, the wording of Article 105 of the Euratom Treaty.

12. Salmins, A., "The overview on development of nuclear legislation in Latvia", in: *Soc. de Législation Comparée*, 1998, pp. 55-60.

13. Cutoiu, D., "Romanian nuclear legislation in the transition period", in: Pelzer, N. (ed.), *Die Zweckbestimmungen des Atomrechts,* 1999, pp. 125-135.

14. Slovenia originally acceded to the 1963 Vienna Convention. However, on 16 October 2001 it acceded to the 1960 Paris Convention and then, on 9 November 2001, notified the Secretary General of the International Atomic Energy Agency of its withdrawal from the 1963 Vienna Convention.

IV. *Nuclear liability sub-regimes from the point of view of the major conventions*

As illustrated above, several different legal regimes for nuclear liability are applicable in parallel within the European Community.[15]

With the discussions on *nuclear new build* or the *nuclear renaissance* in mind, we address legal challenges today similar to those which the European nuclear industry faced during the 1950s and 1960s. What has changed is that *nuclear new build* will be realised under the strong influence of the Community in both Western and Eastern Europe.

Consequently questions remain, in particular the question of how to confront a legal framework that is inconsistent, unclear and lacks common rules. Under such circumstances, public acceptance of a *nuclear renaissance* will also depend on the extent to which potential victims face differences in their rights to compensation as well as problems and uncertainties regarding their claims for damage. Therefore, any discussion on how to bridge existing gaps should be part of the discussions on *nuclear new build* within the EU.

B. Euratom and the nuclear liability framework

Currently, European secondary law is silent with respect to nuclear third party liability. Thus, the legal framework for nuclear liability in member states is that provided for under the international convention to which they have adhered.

This section identifies the reasons why explicit Euratom legislation in the field of nuclear liability is absent and outlines the possibilities for harmonising nuclear liability through a Euratom Directive.

I. *Article 98 Euratom Treaty on facilitating the conclusion of insurance contracts covering nuclear risks*

When signing the Treaty establishing the European Atomic Energy Community (Euratom Treaty) on 25 March 1957, the member states undertook to:

> "[T]ake all measures necessary to facilitate the conclusion of insurance contracts covering nuclear risks. Within two years of the entry into force of this Treaty, the Council, acting by a qualified majority on a proposal from the Commission, which shall first request the opinion of the Economic and Social Committee, shall, after consulting the European Parliament, issue directives for the application of this Article". [Article 98(1)(2) Euratom Treaty]

The interpretation of this provision suggests the following observations and consequences for nuclear liability in member states:

(1) Article 98(1) of the Euratom Treaty obliges member states to take all measures necessary to facilitate the conclusion of insurance contracts covering nuclear risks. This obligation

15. Critically see van Dyke, J., "Liability and Compensation for Harm Caused by Nuclear Activities", in Stockinger, H. *et.al.* (ed.), *Updating International Nuclear Law,* 2007, pp. 205-243.

reflects the fact that contracting parties to the treaty were already aware in 1957 that nuclear insurance is a crucial part of an appropriate nuclear liability framework.[16]

(2) By 1954-55, it was clear that the nuclear industry would not be able to develop without a special liability law due to its inability to compensate all damages arising from a nuclear accident. On the other hand, operators were aware of the fact that installations, in which they had invested vast amounts of money, could be completely damaged or destroyed in an accident. At the same time, insurers began to exclude nuclear damage from regular coverage due to the enormous risks connected with industrial use of nuclear energy and they created a special insurance system for the nuclear industry. Article 98 of the Euratom Treaty took this development into account and obliges member states to engage in the conclusion of insurance contracts.

(3) The Euratom Treaty does not mention any specific obligation of member states concerning the characteristics of a nuclear liability framework. Consequently, it is neutral on the general principles by which nuclear liability is to be imposed (strict liability *v* liability based on fault;[17] limited *v* unlimited liability amount etc.).

II. *Possible obligations arising from Article 98 of the Euratom Treaty*

1. Restrictive interpretation: Euratom's jurisdiction is restricted to the area of insurance contracts

Statements at the time of treaty negotiations[18] as well as in contemporary literature[19] point to the fact that Article 98 of the Euratom Treaty aims at the elimination of barriers. Member states shall facilitate the conclusion of insurance contracts and the setting of the framework for these insurance contracts respectively. According to this *restrictive* interpretation, the legal framework for nuclear liability does not fall within the scope of this provision.

At the time the Euratom Treaty was drafted, legislative efforts by Western European countries[20] in this area were well under way. It is possible that the fathers of the treaty deliberately

16. See Chenu, C., "Les dangers atomiques et leurs assurances", *A.D.E.A*, 1965, pp. 151-156; Gautron, R., "La responsabilité civile et la protection financière en raison des risques atomiques aux États-Unis", *A.D.E.A.*, 1965, pp. 59-80 and 167-179.

17. See Kanno, H., Gefährdungshaftung und rechtliche Kanalisierung im Atomrecht: Ein Blick zur Dogmatik der Schadenshaftung, 1967, pp. 20-24 and Kolehmainen, H., "La modernisation du régime international de la responsabilité civil nucléaire – la question de la responsabilité exclusive", OECD/IAEA, 2000, pp. 547-559. See also Pelzer, N., "Die rechtliche Kanalisierung der Haftung auf den Inhaber einer Atomanlage – ein juristischer und wirtschaftlicher Fehlgriff?", *Versicherungswirtschaft* Vol. 17, 1966, No. 41, pp. 1010-1016.

18. E.g. Haedrich, H., "Koordinierter Haftungseintritt der Staaten für Atomschäden – Eine Aufgabe für Euratom", in *atw*, Vol. 5, 1960, pp. 133-134.

19. E.g. Grünwald, J., Das Energierecht der europäischen Gemeinschaften: EGKS – EURATOM – EG: Grundlagen, Geschichte, geltende Regelungen, 2003, pp. 274-275.

20. For more details see Gautron, R., "Réflexions sur le monopole d'assurance des risques atomiques", *A.D.E.A*, Vol. 1, 1965, pp. 59-80 and Murphy, A., "The Problem of Liability for Atomic Accidents and Insurance Against Them", in: Marks, H. (ed.), Progress in Nuclear Energy: Law and Administration, Vol. 1, 1959, pp. 58-85.

omitted Euratom's competence in the area of nuclear liability with the (then) ongoing legislative efforts of member states in mind.[21]

According to this interpretation, Article 98 of the Euratom Treaty regulates exclusively the area of insurance contracts without implication for the liability framework. Such an interpretation would mean that the powers of the Council to issue "directives for the application of this article" are limited to the area of nuclear insurance.

Further, under the Memorandum of Understanding of 29 May 1958 between Euratom and the United States,[22] the Euratom Commission undertook to:

> "[S]eek to develop and to secure the adoption, by the earliest practicable date, of suitable measures which will provide adequate financial protection against third party liability. Such measures could involve suitable indemnification guarantees, national legislation, international convention, or a combination of such measures". (Article 12)[23]

However, after the adoption of the Paris Convention under the aegis of the then OEEC/ENEA, the need to facilitate insurance contracts was thought to have become obsolete.[24] On the other hand, the fairly low liability amounts under the original Paris Convention[25] were inadequate to meet Euratom's undertakings *vis-à-vis* the United States.[26]

In light of the uncertainties regarding its jurisdiction to issue a directive, the European Atomic Energy Community announced that a new multilateral convention was to be prepared under its

---

21. Another possible explanation is that the text was a compromise, resulting from the fact that at the time, the contracting parties were unsure about the future development of both the nuclear industry and the newly established Community. Consequently, the lack of clarity concerning Article 98 might well have been intentional so as to keep the door open for future negotiations on the distribution of jurisdiction in this area.

22. Memorandum of Understanding Regarding the Joint Nuclear Power Programme Proposed Between the European Atomic Energy Community (Euratom) and the United States of America, in: *The Department of State Bulletin*. 14 July 1958, No. 994, Vol. XXXIX, pp. 75-80.

23. See also Fornasier, R., "Une expérience de solidarité internationale: La Convention complémentaire à la Convention de Paris du 29 juillet 1960 sur la responsabilité civile dans le domaine de l'énergie nucléaire", *A.F.D.I,* Vol. VIII., 1962, pp. 762-772 and Fornasier, R., "The Paris Supplementary Convention", in: Weinstein, J. (ed.)*, Nuclear Liability, Progress in Nuclear Energy Series X,* Vol. 4, 1966, at 25.

24. See Huet, P., "The O.E.E.C. European Nuclear Energy Agency", Weinstein, J. (ed.), *ibid,* Vol. 3*,* 1962, pp. 180-197 and Monaco, R., "L'accordo istitutivo dell' Agenzia Europea per il Energia Nucleare"*,* in: Giuffré, A. (ed.), Il diritto della energia nucleare, 1961, pp. 105-120.

25. The 1960 Paris Convention provided for 5 million Monetary Units of the European Currency Convention as the minimum and 15 million Monetary Units as the maximum of an operator's liability. The unit of account was changed to Special Drawing Right of the International Monetary Fund by the amending Protocol of 1982. See Faure, M., Skog, G., "Compensation for damages caused by nuclear accidents: a convention as insurance", *The Geneva Papers on Risk and Insurance*, Vol. 17, 1992, at 501.

26. Haedrich, H., "Das Zusatzübereinkommen zur Pariser Atomhaftungskonvention", *atw*, Vol. 8, 1963, pp. 449-450.

authority with the aim of establishing supplementary public funds to compensate damages not covered under the limited liability regime of the Paris Convention.[27]

The idea behind this initiative was that states would create subsidiary public funds by co-operation. However, due to the rather low number of member states at that time (Belgium, France, Germany, Italy, Luxembourg and the Netherlands) it was decided to invite other countries to participate. Consequently, efforts shifted from Euratom to the OECD European Nuclear Energy Agency and as a result the Brussels Supplementary Convention was signed in 1963.[28]

2. Extensive interpretation: Euratom jurisdiction covers the whole area of nuclear third party liability

A more extensive interpretation of Article 98 of the Euratom Treaty is also possible. The obligation to "take all measures necessary to facilitate the conclusion of insurance contracts covering nuclear risks" could also be interpreted in a way that requires member states to, *inter alia,* create a nuclear liability framework which would, at the same time, facilitate the insurance of nuclear risks. The argument could be that the special legal framework for nuclear liability is itself a tool to facilitate the conclusion of insurance contracts covering nuclear risks. The following examples might be given to support such an interpretation.

The conclusion of insurance contracts may well be more difficult in states where all entities involved in the utilisation of nuclear energy for peaceful uses (operators, suppliers, construction companies etc.) could theoretically be held liable for nuclear damage as opposed to states in which liability is channelled exclusively to the operator:

(1) Under the first scenario, all entities must purchase insurance from available insurance market capacity.[29] For some, the cost of such insurance might be more than the business is actually worth.[30]

(2) In either case, the situation is much simpler where the operator is exclusively liable for nuclear damage because insurance capacity can be made available to this one entity.[31]

---

27. For further details see Bauer, R., "Les projets de L'O.E.C.E. et de l'EURATOM relatifs à une convention sur la responsabilité civile dans le domaine de l'énergie atomique", *A.D.E.A.* Vol. 1*,* 1965, pp. 81-92; Fornasier, R., *op. cit.,* 1962, pp. 762-772; Picard, N., "La Convention sur la responsabilité civile dans le domaine de l'énergie nucléaire", *Journal de droit international*, 1962, No. 2, pp. 344-367; Quagliotti Silvestri Faa, G., "La Convenzione Euratom sulla responsabilitá civile nucleare", *Diritto er economia nucleare*, 1962, No. 1, pp. 87-91; Quagliotti Silvestri Faa, G., "La Convenzione Euratom sulla responsabilitá civile nucleare", *Diritto er economia nucleare*, 1963, No. 3-4, pp. 386-389 and Schmidt, F., "Das Abkommen der Europäischen Kernenergieagentur (OECE) über die Haftpflicht auf dem Gebiet der Kernenergie", 1961, at 25.

28. For further information see Balke, S., "OEEC – Haftungskonvention und Euratom – Zusatzkonvention", *atw* Vol. 6*,* 1961, pp. 136-137; Fornasier, R., *op. cit.*, 1966, pp. 23-37; Haedrich, H., *op. cit.*, 1963, pp. 449-456; pp. 501-512 and Lagorce, M., "The Brussels Supplementary Convention and its Joint Intergovernmental Security Fund", *IAEA:* Nuclear Law for a Developing World, Vienna: IAEA, 1968, pp. 143-148.

29. Kanno, H., Gefährungshaftung und rechtliche Kanalisierung im Atomrecht: Ein Beitrag zur Dogmatik der Schadenshaftung, 1967, pp. 20-24.

30. "Liability and Compensation for Nuclear Damage: An International Overview", OECD/NEA, 1994, at 24.

> Hence, the conclusion of insurance contracts is facilitated by opting for a system of channelling nuclear liability to the operator of a nuclear installation. Under both limited and unlimited nuclear liability systems, the congruence principle is to be applied,[32] meaning that the operator's liability must be financially secured by insurance or other form of coverage,[33] subject to the caveat that the operator would have to pay the difference between the amount of compulsory coverage and the amount of actual claims from its own assets.[34]

Consequently, channelling liability and setting financial security limits have major implications for "the conclusion of insurance contracts covering nuclear risks".

According to this extensive interpretation, the obligation of member states arising from Article 98(1) of the Euratom Treaty entails both the obligation to abolish any barriers with respect to the conclusion of insurance contracts to cover nuclear risks and to establish a nuclear liability legal framework.

Two non-binding recommendations[35] were issued by the European Commission in the 1960s in order to "so far as possible harmonise the legal framework for nuclear liability and financial security for the case of a nuclear incident".

(1) Commission Recommendation 65/42/Euratom of 28 October 1965[36] aims at better protection of victims following a nuclear accident by recommending harmonised application of the 1960 Paris Convention where it allows for variations at national level.

(2) Commission Recommendation 66/22/Euratom of 6 July 1966 on the harmonisation of legislation applying the 1960 Paris Convention[37] deals with uniform national legislation under Article 7(c) and Article 3(a)(ii)(2) of the Paris Convention.

Finally, since the 1960s, jurisdiction under Article 98(2) of the Euratom Treaty has been the subject of several questions addressed to the European Commission from European Parliament deputies. The Commission often took the position that a special legal framework for insurance contracts was not needed.[38] Given the comprehensive nature of the international regime, the Commission did not see a need to develop specific legislation for the Community and noted that the

---

31. Chenu, C., "Les dangers atomiques et leur assurance", *A.D.E.A.,* 1965, pp. 151-156 and Gautron, R., "Réflexions sur le monopole d'assurance des risques atomiques", *A.D.E.A.,* 1965, pp. 167-179.

32. Schmalz, R., "Nuclear Energy Liability Insurance", *Tort Trial & Insurance Practice Law Journal,* 1966, pp. 6-15.

33. See Faure, M.; Skogh, G., *op. cit.*, 1992, pp. 499-513.

34. OECD/NEA, *op. cit.*, 1994, at 25.

35. Regarding legal character of a recommendation see Beutler, B., Bieber, R., Pipkorn, J., Streil, J., "Die Europäische Union: Rechtsordnung und Politik", 1993, at 199.

36. O.J. 196, 18 November 1965, pp. 2995-2996.

37. O.J. 136, 25 July 1966, pp. 2553-2554.

38. Written question No. 111/66 by M. Merten to the Commission (Non – application of Article 98 of the Euratom Treaty) at O.J. No. 9, of 17 January 1967, p. 118; Written question No. 2489/93 by S. Kostopoulos to the Commission (Civil liability of operators of nuclear installations) at O.J. C 240, 29 August 1994, p. 23.

Euratom Treaty, and in particular Article 98, does not impose any obligation to legislate in this field.[39] However, in its answers to questions regarding the use of powers under Article 98(2) of the Euratom Treaty, the Commission interpreted the Euratom competencies extensively, i.e. covering the whole area of nuclear liability. Consequently, the Commission identified the provision *via facti* as a dormant source of legislative power which can be used provided political will to harmonise nuclear liability among member states can be achieved.

Thus, the interpretation of the obligation to "take all measures necessary to facilitate the conclusion of insurance contracts covering nuclear risks" in an extensive fashion suggests that Euratom competencies cover the entire area of nuclear liability.

3. Powers under Article 203 of the Euratom Treaty

Another provision which could give the Community powers to set up a framework in the area of nuclear liability is Article 203 of the Euratom Treaty:

> "If action by the Community should prove necessary to attain one of the objectives of the Community and this Treaty has not provided the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures".

To better understand this provision, the interpretation of Article 308 of the Treaty establishing the European Community (EC Treaty) can be consulted.[40] In *Opinion 1/94,* the European Court of Justice ruled that Article 308 EC Treaty "enables the Community to cope with any insufficiency in the powers conferred to it, expressly or by implication, for the achievement of its objectives".[41] The same interpretation applies to Article 203 of the Euratom Treaty.[42] Thus, Article 203 contains two elements. First, its use must be necessary for the attainment of one of the *objectives* of the Community.[43]

---

39. Written question No. 3807/97 by Ilona Graenitz to the Commission (EU – level civil liability for nuclear power stations O.J. C 158, 25 May 1998, p. 191.

40. See Kapteyn, P., Verloren van Themaat, P., Introduction to the Law of the European Communities, 1998, pp. 235-240 and Verwey, D., The European Community, the European Union and the International Law of Treaties, 2004, at 42.

41. Opinion 1/94, ECR 1994, I – 5267, at paragraph 89.

42. Grünwald, J., *op. cit.*, 2003, at 288.

43. The objective to "facilitate investment and ensure, particularly by encouraging ventures on the part of undertakings, the establishment of the basic installations necessary for the development of nuclear energy in the Community", laid down in Article 2(c) of the Euratom Treaty could easily serve as a basis for Community powers under this provision. Through the harmonisation of nuclear liability, uniform minimal standards of compulsory insurance would be laid down, resulting in the same minimum obligations for operators in the Community. Consequently, the conditions of investments would be unified. It should also be kept in mind, that the two non-binding recommendations on nuclear liability were based on Article 2(g) of the Euratom Treaty. Furthermore, the Euratom Treaty was signed with the objective to "establish with other countries and international organisations such relations as will foster progress in the peaceful uses of nuclear energy". Legislative action in the area of nuclear liability could be based on this objective of the Euratom Treaty.

The question that immediately arises is whether these objectives include only those expressly listed in the introductory provisions of the treaties.[44] Some authors argue that the objectives of the Community encompass more than just those formulated in Articles 2 and 3 of the EC Treaty, or in Article 2 of the Euratom Treaty.[45] Others take the view that some of these objectives can even be deduced from the Preamble of the Euratom Treaty which declares that the signatory states resolved "to create the conditions necessary for the development of a powerful nuclear industry which will provide extensive energy resources" and "to create the conditions of safety necessary to eliminate hazards to the life and health of the public". Although the preamble of a legal instrument may help determine the instrument's objectives as well as its scope,[46] it is not considered to have any legal force, and it cannot, therefore, serve as an argument to establish powers of the Community.

The second requirement for the application of Article 203 of the Euratom Treaty is that the treaty has not already provided the *necessary powers*. This provision should not be read in a narrow fashion;[47] it is not restricted to situations where no express provisions exist. Article 203 can also be applied to situations where the existing powers do not provide for an effective and satisfactory solution.[48]

Consequently, even if Article 98 of the Euratom Treaty is interpreted in a restrictive way, giving the Community merely the right to release a directive facilitating the conclusion of insurance contracts [taking into account the objectives of the Euratom Treaty, Article 2(c), (g) and (f) in particular] Article 203 of the Euratom Treaty could serve as an authorisation of the Community's jurisdiction in the area of nuclear liability.

C. The European Community and the nuclear liability framework

The Euratom Treaty is considered to be *lex specialis* in relation to the EC Treaty.[49] Consequently, it is important to identify those provisions in the EC Treaty that can possibly empower Community initiatives in the field of nuclear liability.[50]

---

44. See Verwey, D., *op. cit.*, 2004, at 42. E.g. Kapteyn, P., Verloren van Themaat, P., *op. cit.*, 1998 argue that the use of Article 308 of the EC Treaty should not be restricted to just the general objectives in Article 2 and Article 3 of the EC Treaty. It should also include the objectives mentioned in the various provisions of the treaty.

45. See Verwey, D., *op. cit.*, 2004, note 160, at 42. With respect to the Euratom Treaty, creating harmonised rules for nuclear liability can be understood as a tool of facilitating the nuclear common market.

46. E. g. in the case 26/62 *Van Gend en Loos,* ECR 1963, 3, the Court made use of the Preamble of the EC Treaty as an additional source to confirm that the objective of the EC Treaty is *more* than a mere agreement which created mutual obligations between the contracting states. This argument can *inter alia* support the extensive interpretation of Article 98 of the Euratom Treaty.

47. See Verwey, D., *op. cit.*, 2004, at 43.

48. See also case 300/89 *Titanium Dioxide,* ECR 1991, I – 2867.

49. Article 305(2) of the EC Treaty; see Bouquet, A., "Which competition rules for nuclear energy in a (progressively) liberalised European Market Environment", in: *AIDN/INLA,* 2008, pp. 1165-1209, at 1195 and Schärf, H., Europäisches Nuklearrecht, 2008, at 166, with further reference in the note 277.

50. Regarding the division of jurisdiction between the EC and Euratom, see case C – 62/88 *Hellenic Republic/Council,* where the European Court of Justice ruled that "in the context of the organisation of the powers of the Community the choice of the legal basis for a measure must be based on objective factors which are amenable to judicial review". See ECR 1990, I – 1527, at paragraph 13. For further

I. *Freedom of establishment and freedom to provide services and nuclear liability rules*

The EC Treaty contains two principles of particular importance for nuclear liability matters. These are: freedom of establishment, set out in Article 43 of the EC Treaty, and freedom to provide services within the Community, set out in Article 49 of the EC Treaty. Besides these two principles, the EC Treaty provides that the Community shall strive for harmonisation.[51]

With regard to nuclear liability, the Community has made use of its legislative powers[52] to establish a comprehensive legal framework creating a single insurance market.[53]

However, as the European Commission pointed out:

> "A single insurance market, promoting economic efficiency and market integration, requires a common framework to allow insurers to operate throughout the EU and to establish and provide services freely… This is achieved by a common prudential framework, founded on three generations of life and non-life directives, harmonising essential rules... This framework needs to be updated, revised, completed and – where possible – simplified to respond to market developments and product sophistication".[54]

The powers of the Community in this area are limited to the prevention of obstacles to the free movement of nuclear insurers within the Community, Article 47(2) and Article 55 of the EC Treaty. These provisions are irrelevant, however, to the whole range of nuclear liability issues covered in the existing international conventions.

II. *Judicial co-operation in civil matters and nuclear liability rules*

In order to progressively establish an area of freedom, security and justice, the Council shall adopt measures in the field of judicial co-operation in civil matters, Article 61(c) of the EC Treaty. Article 65 of the EC Treaty outlines measures to be taken in the field of judicial co-operation in civil matters having cross-border implications.

Based on these Community powers, the so called Regulation I Brussels was released[55] with a view to "unify the rules of conflict of jurisdiction in civil and commercial matters and to simplify the formalities with a view to rapid and simple recognition and enforcement of judgments from member states".

---

details on this matters see also Trüe, C., "Legislative competences of Euratom and the European Community in the energy sector: The Nuclear Package of the Commission", in: *European Law Review,* 2003, pp. 664-685.

51. Article 3(h) of the EC Treaty provides for "the approximation of laws of the member states to the extent required for the proper functioning of the common market".

52. See Article 47(2) and Article 55 of the EC Treaty.

53. See Saetzu, F., Insurance in private international law: a European perspective, 2003, pp. 4-8.

54. http://ec.europa.eu/internal_market/insurance/life-nonlife_en.htm; see also Nemeth, K., "European Insurance Law: A Single Insurance Market?", 2001, at 43.

55. Council Regulation (EC) No. 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters; Official Journal L 012, 16/01/2001 P. 0001 - 0023.

However, according to Article 71(1), "this regulation shall not affect any conventions to which the member states are parties and which in relation to particular matters, govern jurisdiction or recognition or enforcement of judgments". The purpose of the exception is to ensure compliance with the rules of jurisdiction laid down in such specialised conventions, "since when those rules were enacted, account was taken of the specific features of the matters to which they relate".[56]

Nuclear liability treaties, anchoring the principle of jurisdictional unity, are such types of conventions.[57]

Nevertheless, due to the current nuclear liability patchwork, a uniform legal framework on jurisdiction in the field of nuclear liability has not been established. This can be demonstrated by the following scenarios:

(1) If an incident occurs in France (a contracting party to the Paris Convention and the BSC), victims from neighbouring Belgium, Germany, Italy, the Netherlands, Spain and United Kingdom (all of which are contracting parties to the same two conventions), can claim damages against the liable nuclear installation operator before the relevant French court. Under the BSC regime, additional compensation is to be made available to these victims, for a combined total of 300 million Special Drawing Rights (SDR).

(2) Victims from Greece and Portugal (both contracting parties to the Paris Convention only) can claim damages against the liable operator, but only up to the maximum liability amount under French law.[58]

(3) Since France has not yet ratified the 1988 Joint Protocol, the Regulation I Brussels would apply to determine which court has jurisdiction to rule on damage claims brought by victims in all other member states which are not contracting parties to the Paris Convention.

(4) Similarly, if there is a nuclear accident in the Slovak Republic (a contracting party to the 1963 Vienna Convention), the Slovak courts will have jurisdiction to rule on nuclear damage claims from victims in Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Romania (all being contracting parties to that same convention). In addition, since the Slovak Republic is party to the 1988 Joint Protocol which extends the jurisdictional unity principle to those states which are party to both the Paris Convention and the 1988 Joint Protocol, the Slovak court(s) will also have jurisdiction to determine nuclear damage claims of victims from Denmark, Finland, Germany, Greece, Italy, the Netherlands, Slovenia and Sweden.

(5) On the contrary, Regulation I Brussels is directly applicable to claims of victims from states which have neither signed the 1988 Joint Protocol (such as Austria, Cyprus, Ireland, Luxembourg and Malta) nor ratified it (Belgium, France, Portugal, Spain, United Kingdom).

---

56. See Case C – 406/92 *Tatry v Maciej Rataj,* ECR [1994], I – 5439, I – 5471 at paragraph 24.

57. See Article 13(a) of the 1960 Paris Convention and Article XI(1) of the 1963 Vienna Convention. See also Gallizi, P., "Questions of Jurisdiction in the event of a nuclear accident in a Member State of the European Union", *Journal of Environmental Law,* 1996, pp. 71-98.

58. According to French law (Loi No. 68-943 du 30 octobre 1968 relative à la responsabilité civile dans le domaine de l'énergie nucléaire, modifiée par loi No. 90-488 du 16 juin 1990 et la loi No. 2006-686 du 13 juin 2006) this limit is set at SDR 76 million.

As a result, there are considerable gaps and discrepancies in the system of judicial co-operation in nuclear liability cases within the Community. However, the question whether Article 71(1) Regulation I Brussels is applicable on the revised Paris Convention has not been fully clarified yet. Therefore, the Community could take legislative measures in matters of judicial competence based on the EC Treaty provisions in the field of judicial co-operation in civil matters.

III. *Competition rules and nuclear liability rules*

The competition rules in the EC Treaty (Articles 81 to 90) do not explicitly exclude the nuclear sector from their scope of application.[59] As the Commission stated in relation to state aid issues:

> "In relation to undertakings in the nuclear sector, it contends that the EAEC Treaty does not contain any provision on state aids. Consequently, Articles 92 and 93 of the EEC Treaty and hence the Directive are applicable to undertakings within that sector, subject to the exceptions expressly provided for in Article 4 of the Directive".[60]

More recently, statements were made that the development of nuclear liability jurisdiction in the EU must go hand in hand with a careful analysis by the Directorate General for Competition of the European Commission of the following three competition aspects:[61]

(1) The extent to which the limitation of the operator's nuclear liability could be considered anticompetitive *per se*, providing a benefit to the nuclear energy sector.

(2) The extent to which alternative financial guarantees for nuclear liability involving state intervention might amount to illegal state aid.

(3) The extent to which the organisation of the nuclear insurance sector in national pools and their mutual collaboration might be considered to amount to anti-competitive agreements.[62]

Hence, legislative involvement of the Community based on Articles 86 and 89 of the EC Treaty cannot be excluded if different national nuclear liability regimes are considered as having anti-competitive impacts on the functioning of the common market.

IV. *Environmental policy and nuclear liability rules*

The objectives of the Community's environmental policy are stipulated in Article 174(1) of the EC Treaty.[63]

---

59. See Bouquet, A., *op. cit.* 2008; and Garzaniti, L., "Competition Law in the Nuclear Sector", in: *AIDN/INLA, op. cit.,* 2008, pp. 1214-1215.

60. See Cases 188 – 190/80 *United Kingdom, France and Italy v Commission,* ECR [1982], 2545 at paragraph 29.

61. See Ameye, E., "Legal Study on Nuclear Third Party Liability for DG TREN of the European Commission", paper presented at 12th Regional Conference of the German Branch of INLA on 31 June – 1 July 2009, at 8.

62. *Ibid*.

63. See Davies, P., European Union Environmental Law: An Introduction to Key Selected Issues, 2004, pp. 36-42.

Legal instruments (regulations, directives, decisions or recommendations) to achieve the objectives referred to in Article 174(1) of the EC Treaty are to be taken by the Council and the Parliament jointly, according to the so-called co-decision procedures of Article 251 of the EC Treaty. Based on Article 175(1) of the treaty, the Directive on environmental liability and remedying of environmental damage[64] was adopted to support the implementation and enforcement of Community environmental legislation.[65] However, nuclear liability is explicitly excluded from its scope of application:

> "This Directive shall not apply to such nuclear risks or environmental damage or imminent threat of such damage as may be caused by the activities covered by the Treaty establishing the European Atomic Energy Community or caused by an incident or activity in respect of which liability or compensation falls within the scope of any of the international instruments listed in Annex V, including any future amendments thereof". [Article 4(4) of the Environmental Liability Directive][66]

Despite the fact that environmental damage resulting from a nuclear incident falls under the scope of Article 174(1) of the EC Treaty,

> "preference was given to international environmental liability arrangements for two reasons: either their scope is greater as they apply on a worldwide basis and legally bind more countries than only EU Member States… or their regime provides for additional guarantees, for example by operating with compensation funds".[67]

Consequently, the jurisdiction outlined in Articles 174(1) and 175(1) of the EC Treaty could be used to create minimum liability standards for environmental damage occurring as a result of a nuclear incident. However, Community powers under these provisions are obviously restricted to matters of environmental protection and the protection of human health. It is questionable whether a legal decision based on Article 175(1) of the EC Treaty is applicable to the whole range of nuclear liability matters. As the European Court of Justice pointed out:

> "interpretation is confirmed by the second sentence of Article 130r (2), pursuant to which 'environmental protection requirements shall be a component of the Community's other policies'. That provision, which reflects the principle whereby all Community measures must satisfy the requirements of environmental protection, implies that a Community measure cannot

64. Directive 2004/35/EC O.J., L 143/56.

65. The following types of damage are described as "environmental" under the directive: "damage to protected species and natural habitats, which is any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species; "water damage, which is any damage that significantly adversely affects the ecological, chemical and/or quantitative status and/or ecological potential, as defined in Directive 2000/60/EC, of the waters concerned; and "land damage, which is any land contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction, in, on or under land, of substances, preparations, organisms or micro-organisms". For further details see Lee, M., EU Environmental Law: Challenges, Change and Decision-Making, 2005, pp. 204-208.

66. 1960 Paris Convention, 1963 Vienna Convention, 1997 CSC, 1988 Joint Protocol and the Brussels Convention of 17 December 1971 relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material are listed in Annex V.

67. MEMO/07/157, 27 April 2007.

be part of Community action on environmental matters merely because it takes account of those requirements.[68]

As environmental protection constitutes only a part of nuclear third party liability, the use of the jurisdiction laid down in Article 175(1) EC Treaty does not seem to be appropriate to cover the entire field of nuclear liability (e.g. liability for damages on property).

V. *Jurisdiction under Articles 94 and 308 of the EC Treaty*

Finally, other powers laid down in the EC Treaty could serve as a legal basis for the adoption of Community nuclear liability legislation. Article 94 of the EC Treaty empowers the Council to issue directives "for the approximation of such laws, regulations or administrative provisions of the member states as directly affect the establishment or functioning of the common market". Article 308 of the EC Treaty states that, if "action by the Community should prove necessary to attain, in the course of the operation of the common market, one of the objectives of the Community, and this Treaty has failed to provide the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures".

However, as with Article 203 of the Euratom Treaty, Article 308 of the EC Treaty can only authorise Community acts if they are necessary for the attainment of one of the objectives of the Community and if the treaty has not provided the necessary powers elsewhere ("catch-all clause"). The Euratom Treaty is *legis specialis* in relation to the EC Treaty and the power to intervene needs to be identified primarily within that treaty. Nevertheless, taking into account the applicable provisions of the EC Treaty, it can be concluded that only a partial list of nuclear liability matters can be governed by using the EC Treaty.

D. Options for harmonising the nuclear liability regimes within the EC/Euratom

I. *The European Commissions' view on the existing nuclear liability patchwork*

The European Commission has been assessing the patchwork situation within the Community since the 2004 enlargement. The following discussions on harmonising the nuclear liability regimes can be identified in a number of recent Commission documents:

1. Communication from the Commission to the Council and the European Parliament – Nuclear Illustrative Programme presented under Article 40 of the Euratom Treaty

In its communication called "Nuclear Illustrative Programme" (PINC)[69] the European Commission stated on 10 January 2007 that:

> "Liability for nuclear accidents in the EU-15 member states is governed by the Paris Convention of 1960, which created a harmonised international system on liability for nuclear accidents, currently limiting the liability to operators in case of nuclear accidents to around EUR 700 million. The Vienna Convention, another arrangement on the same subject but linked with the Paris Convention by a Common Protocol of 1988 (creating a joint regime with mutual

68. See Case C – 62/88 *Hellenic Republic/Council,* ECR [1990], I – 1527, at paragraph 20.

69. COM (2006) 844 final.

recognition of the two Conventions), is applicable in the majority of the ten new member states. The Commission is aiming at harmonising the nuclear liability rules within the Community. An impact assessment will be started to this end in 2007.[70]

In order to finalise and improve the proposals already made, the discussion should notably focus on developing a harmonised liability scheme and mechanisms to ensure the availability of funds in the event of damage caused by a nuclear accident".[71]

2. The EESC Opinion of 12 July 2007

In its "*Opinion on the Communication from the Commission to the Council and the European Parliament: Nuclear Illustrative Programme, presented under Article 40 of the Euratom Treaty*",[72] the European Economic and Social Committee (EESC) pointed out that:

"A harmonised liability scheme, including a mechanism to ensure the availability of funds in the event of damage caused by a nuclear accident without calling on public funds, is in the view of the EESC also essential for greater acceptability of nuclear power. The current system (liability insurance of $ 700 million) is inadequate for this purpose. The insurance problem of an extremely low probability of an accident combined with potentially very serious and costly damages needs to be addressed in an open, constructive and practical way. One possibility could be an insurance pool scheme".[73]

3. EC Commissioner for Energy

The Commissioner for Energy, *Andris Piebalgs,* expressed the following thoughts during a speech in Brussels on 3 October 2007:

"Finally, on nuclear liability, as noted by the European Economic and Social Committee in its Opinion on the Commission's Nuclear Illustrative Programme, a harmonised liability scheme, including a mechanism to insure the availability of funds in the event of damage caused by a nuclear accident is essential to the long-term acceptability of nuclear power. Third party liability for nuclear damage does also fall within the scope of the Euratom Treaty. In its early years, the Community chose to rely on the OECD's Paris Convention on nuclear liability as a common basis of an insurance and compensation regime in its member states. Since the 2004 enlargement, many new member states rely on the IAEA's Vienna Convention for their nuclear liability regimes. The co-existence of two major third party nuclear liability regimes with several sub-

---

70. The statement regarding the liability limits in the Commission paper is questionable. Currently, under the 1960 Paris Convention, nuclear liability is to be limited to SDR 15 million. Nevertheless, the Convention explicitly refers to the possibility of a contracting party establishing higher liability amounts if they can be secured by the insurance alternatives market. In addition, in 1990 the Steering Committee of the OECD Nuclear Energy Agency recommended that Paris Convention states set the *maximum* liability limit to SDR 150 million. Most have done so.

71. COM (2006) 844 final, at p. 22.

72. O.J. 27 October 2007, C 256, pp. 51-61.

73. Opinion on the Communication from the Commission to the Council and the European Parliament: Nuclear Illustrative Programme, presented under Article 40 of the Euratom Treaty, O.J. 27 October 2007, C 256, at 5. 1. 8.

regimes does not guarantee the same level of compensation for nuclear damage everywhere within the Community".[74]

4. Identifying reasons for the Commission's involvement

From the European Commission's point of view, the following deficits in the current nuclear liability patchwork can be identified:

(1) Due to different liability limits and variations in the availability of supplementary funds to cover nuclear damage, an inequality can be observed between claims for nuclear damage under the Paris/Brussels and Vienna regimes respectively. Victims in member states party to the Paris Convention and the BSC can rely on a financial capacity of SDR 300 million while financial capacities are rather lower for victims in member states party the 1963 Vienna Convention. Because of the trans-boundary impact of nuclear accidents, victims in the "old" member states are disadvantaged in that there is no guarantee that their damages, caused by a nuclear incident in a "new" member state, will be compensated.

(2) Furthermore, different prescription periods imply that in the case of a nuclear incident, victims in different member states will have different time periods within which to bring their claims.

(3) Nuclear power plant operators are in different positions with respect to liability amounts, the amount they must financially secure and the time period for which they can be held liable. The existence of different provisions on additional state compensation and state guarantees makes these divergences even more complex.

(4) Neither the Paris Convention nor the 1963 Vienna Convention address liability for environmental damages caused by a nuclear accident, while the 1997 Vienna Protocol, as well as the 2004 Paris Protocol have modified the definition of "nuclear damage" to cover certain environmental damage.[75] This suggests that, depending on progress made in the ratification process, an environmental nuclear liability patchwork will be established in addition to the already existing differences. Furthermore, not all new member states are contracting states to the 1997 Vienna Protocol [76] and even by ratifying both the 1997 Vienna Protocol and the 2004 Paris Protocol this problem will not be resolved.[77]

---

74. Piebalgs, A., in: *AIDN/INLA Proceedings,* 2008, at 1073.

75. For further information see Rustand, H., "Updating the concept of damage, particularly as regards environmental damage and preventive measures, in the context of ongoing negotiations on the revision of the Vienna Convention – some comparative aspects", in: *OECD/NEA, Nuclear Accidents, Liabilities and Guarantees*, 1993, pp. 218-238.

76. Bulgaria, Estonia and the Slovak Republic did not sign the 1997 Vienna Protocol.

77. For further details on the problem of exclusion of nuclear damage from the scope of application of the environmental liability directive see Danzi, E., "Some reflections on the exclusion of nuclear damage from the scope of application of the environmental liability directive", contribution to the 12th Regional Conference of the German Branch of AIDN/INLA, 2009, pp. 2-24.

II. *The 2007 Questionnaire of the Commission: a critical assessment*

The European Commission's activity in the field of nuclear liability moved forward in December 2007 when it commissioned solicitors to prepare a questionnaire, a so-called *Impact Assessment Study*, which was then sent out to member states, industries and others within the Community.

The questionnaire aimed at learning the attitudes of the nuclear sector towards legal regulations in the field of nuclear third party liability within all 27 member states.[78] Although the results of the study have not yet been reported, five options mentioned in the questionnaire will be discussed below.

1. Preservation of the status quo

Under this scenario, 13 member states would remain party to the Paris Convention,[79] 9 member states would remain party to 1963 Vienna Convention and 5 member states would remain outside the existing convention regimes.

This scenario assumes that the Community will not take any legislative action in the field of nuclear liability. The solution to the issues outlined above would be left to international law instruments and ratification of the 2004 Paris Protocol and 2004 BSC Protocol would be assumed to continue in Western European member states.

This option implies that differences in existing liability regimes in individual states will be preserved or exacerbated.[80]

2. Harmonisation through ratification of the Paris Convention revised by the 2004 Paris Protocol (together referred to as the "revised Paris Convention") by all member states

Obviously, this scenario would result in harmonisation of the legal framework within the Community but accomplishing this option requires overcoming a range of barriers.

Essentially, the revised Paris Convention is only open to OECD member countries. The government of any OECD member country or associate country may accede thereto by notification addressed to the Secretary-General of the Organisation. OECD non-member countries may also accede but only with the unanimous assent of the existing contracting parties. Currently, Bulgaria, Cyprus, Lithuania, Latvia, Malta and Romania are not OECD member countries; Estonia and Slovenia are candidate accession countries.

---

78. For further details on this questionnaire, stakeholder consultation and on preliminary conclusions of the consultation process, see Ameye, E., *op. cit*. (2009), pp. 2-8.

79. Furthermore, 11 member states will remain under the BSC regime.

80. As examples, the new Danish Nuclear Liability Act provides for unlimited liability and an obligation to financially secure EUR 700 million; the new Finish Nuclear Liability Act provides for unlimited nuclear liability where funds provided under the BSC are exhausted and nuclear damage has not been compensated entirely. Neither Act has entered into force yet. Should the *status quo* be preserved, the discrepancies in the nuclear liability framework in the Community will grow. While the revised Paris and BSC Protocols will ensure compensation for nuclear damages in the amount of EUR 1.5 billion, victims in states party to the 1963 Vienna Convention, or even the 1997 Vienna Protocol will have to rely on lower amounts of compensation, that is a *minimum* of SDR 300 million, with no public funds to ensure supplementary compensation.

In this scenario, member states which are currently party to the 1963 Vienna Convention or to the 1997 Vienna Protocol would have to "phase-out" or withdraw from those instruments.[81]

Certain member states which are not party to any international nuclear liability convention, especially Ireland, Luxembourg and Austria (all states without nuclear power plants) have taken the view that victims are better protected under the existing international and European legal frameworks governing jurisdiction in civil matters than under those international conventions. They refer specifically to the Brussels Convention on Jurisdiction and the Enforcement of Judgments in Civil and Commercial Matters of 1968 (recently replaced by Regulation I Brussels)[82] or their own national legislation. This is particularly the case for Austria which has established special nuclear liability rules in its national legislation that are not compatible with the principles underlying the international conventions.[83]

Yet, even if all member states were parties to the revised Paris Convention, their interactions with non-member states which are not contracting parties to the Paris Convention remains an issue. Harmonisation of those interactions could only be reached with countries party to the 1963 Vienna Convention or the 1997 Vienna Protocol, provided both they and all of the member states have ratified the 1988 Joint Protocol.[84]

The Questionnaire did not address the issue of supplementary funding under the BSC or the 2004 BSC Protocol (together referred to as the "revised BSC") as it is not a central issue for new member states. However, it should be kept in mind that harmonising nuclear liability frameworks in member states can only be reached if uniform supplementary compensation rules, such as those found in the revised BSC, are adopted.

3. Partial harmonisation of the nuclear liability framework

A partial harmonisation could be reached if the 9 contracting parties to the 1963 Vienna Convention would join the revised Paris Convention and the 13 contracting parties to the Paris Convention would ratify the 2004 Paris Protocol. However, 5 member states[85] would still remain outside the convention framework.

---

81. The same way, as Slovenia proceeded in 2001. See Škraban, A., "Recent Developments: New Legislation and Adherence to Conventions (Slovenia)", in: *OECD/IAEA Reform of Civil Nuclear Liability, Budapest Symposium*, 2000, pp. 547-559.

82. For further information on Luxembourg's and Austria's attitudes towards the Paris Convention see also Sands, P., Gallizi, P. (1999), "The 1968 Brussels Convention and Liability for Nuclear Damage", *Nuclear Law Bulletin* No. 64 (1999/2), pp. 7-28. For Ireland's attitude see Carroll, P., *op. cit*, 2005, pp. 229-238, and O'Higgins, P., McGrath, P., "Third Party Liability in the Field of Nuclear Law: An Irish Perspective", *Nuclear Law Bulletin* No. 70 (2002/2), pp. 7-21.

83. Hinteregger, M., Kissich, S., "The Paris Convention 2004 – a New Nuclear Liability System for Europe", *Environmental Liability* Vol. 12, 2004, pp. 47-58.

84. The 1988 Joint Protocol has been ratified by all 9 member states which are contracting parties to the 1963 Vienna Convention (Bulgaria, Czech Republic, Estonia, Lithuania, Latvia, Hungary, Poland, Romania and Slovak Republic) and by 8 member states which are contracting parties to the Paris Convention (Denmark, Finland, Germany, Greece, Italy, the Netherlands, Slovenia and Sweden).

85. Austria, Cyprus, Ireland, Luxembourg and Malta.

This option is *via facti* a modification of the above mentioned 2nd option and implies:

(1) consent of all Paris Convention states to several non-OECD member countries joining the Paris Convention,

(2) 9 member states phasing out of the 1963 Vienna Convention,

(3) an approval in accordance with Article 300(2) and (3) EC Treaty and Article 103(2) Euratom Treaty,

(4) 9 member states accepting the increased liability amounts under the 2004 Paris Protocol.

Harmonisation of the nuclear liability framework in the Community through the revised Paris Convention requires the strong political will of all member states. For the time being, EU institutions do not have the authority to oblige any member state to join it. In addition, this option would *via facti* result in only a partial harmonisation of nuclear liability regimes within the Community so it can be seen as being only partially effective in meeting the challenges outlined above.

4. Euratom as a contracting party to the revised Paris Convention

This option was proposed in the 2007 Questionnaire; however it also faces major challenges.

According to Article 21(a) of the Paris Convention, only "countries" are eligible to accede to the treaty.[86] However, there is a *tendency* in international treaties to invite Euratom as a regional organisation to participate actively in international conventions.[87]

Even if the wording of the convention were changed to enable Euratom to accede to the revised Paris Convention, OECD membership or the consent of all Paris Convention states would still be a precondition for accession.[88]

---

86. According to the Article 184 of the Euratom Treaty, the Community has legal personality and, consequently, it is a subject of international law. See also Hahn, H., "Euratom: The Conception of an International Personality", *Harward Law Review*, 1958, pp. 1001-1011.

87. See Article 18(4) of the Convention on the Physical Protection of Nuclear Materials, Article 30(4) of the Convention on Nuclear Safety, Article 29(3) of the Joint Convention on the Safety of Spent Fuel Management and on Safety of Radioactive Waste Management, Article 12(5) of the Convention on Early Notification of a Nuclear Accident and Article 14(5) of the Convention on Assistance in the case of Nuclear Accident or Radiological Emergency. Regarding this problem see Herrmann, C., "Rechtsprobleme der parallelen Mitgliedschaft von Völkerrechtssubjekten in Internationalen Organisationen (Eine Untersuchung am Beispiel der Mitgliedschaft der EG und ihrer Mitgliedstaaten in der WTO)", in Bauschke, G. *et al.* (ed.), *Pluralität des Rechts – Regulierung im Spannungsfeld der Rechtsebenen*, 2003, pp. 139-161 and Ruffert, M., "Zuständigkeitsgrenzen internationaler Organisationen im institutionellen Rahmen der internationalen Gemeinschaft", *Archiv für Völkerrecht*, 2000, pp. 129-168.

88. See Article 21(a) of the 1960 Paris Convention. According to Article 13 of the Convention on the Organisation for Economic Co-operation and Development of 14 December 1960, "Representation in the Organization of the European Communities established by the Treaties of Paris and Rome of 18th April, 1951, and 25th March, 1957, shall be as defined in Supplementary Protocol No. 1 to this Convention". In a Supplementary Protocol to the OECD Convention of 14 December 1960, the signatory states decided that "the Commissions of the European Economic Community and of the European Atomic Energy Community as well as the High Authority of the European Coal and Steel Community shall take part in

Moreover, it would be necessary to identify which provision of the Euratom Treaty would be the basis for accession to the revised Paris Convention and what legal consequences Euratom's accession would have for its member states. Articles 101 and 102 of the Euratom Treaty, which contain rules for entering into obligations under international law, shall be briefly discussed in this regard.

Article 101 of the Euratom Treaty provides for Euratom entering into obligations with third parties:

> "The Community may, within the limits of its powers and jurisdiction, enter into obligations by concluding agreements or contracts with a third state, an international organisation or a national of a third state. Such agreements or contracts shall be negotiated by the Commission in accordance with the directives of the Council: they shall be concluded by the Commission with the approval of the Council, which shall act by a qualified majority. Agreements or contracts, whose implementation does not require action by the Council and can be effected within the limits of the relevant budget shall, however, be negotiated and concluded solely by the Commission; the Commission shall keep the Council informed".

Euratom's jurisdiction in external matters goes hand in hand with its internal jurisdiction: it has the power to enter into agreements and arrangements on any matter on which it is entitled to act exclusively within the Community.[89] Until now, the European Court of Justice has held that Euratom, under primary law, has exclusive powers in three areas: first with regard to supplies of ores, source materials and special fissile materials coming from outside the Community, secondly with regard to safeguards, and thirdly Euratom is the exclusive owner of nuclear materials to which the treaty applies.[90]

Since nuclear liability does not fall under either category, the general rules of implied exclusive powers will apply to determine whether Article 101 of the Euratom Treaty can be relied upon for the Community's accession to the revised Paris Convention.

In the landmark decision, the so-called ERTA Case, the European Court of Justice stated that the authority to conclude international agreements "arises not only from an express conferment by the Treaty […] but may equally flow from other provisions of the Treaty and from measures adopted, within the framework of those provisions, by the Community institutions".[91]

---

the work of that Organization". See also Article 304 of the EC Treaty. Based on the current observations, a fully-fledged Community membership in the OECD is not a probability in the next few years, and the new governance structure of the OECD adopted in 2006, does not alter the modalities of the Commission's participation. See Wouters, J.; Vidal, M., "The OECD Model tax Convention Commentaries and the European Court of Justice: Law, Guidance, Inspiration?", in: *Legal Status of the OECD Commentaries 2008*, at 199.

89. See Macleod, I., Hendry, D., Hyett, S., *op. cit.*, at 392. For further information see also Raux, J., "La procedure de conclusion des accords externes de la Communauté européenne de l'énergie atomique", *Revue Générale de Droit International Public,* 1965, pp. 1019-1026 and Usher, J., "International Competence of Euratom", *European Law Review* Vol. 4*,* 1979, pp. 306-308.

90. *Ruling* 1/78 *Draft Convention of the International Atomic Energy Agency on the Physical Protection on Nuclear Material, Facilities and Transports,* at paras. 13-18 and at paras. 19-23.

91. Case 22/70 *Commission of the European Communities v Council of the European Communities* (*ERTA Case)*, ECR 1971, at 263, para. 16. For a detailed analysis of the ERTA case see Macleod, I., Hendry, D.,

Several preconditions have been laid down by this (and consequent decisions of the court)[92] in order to define exclusive and implicit competencies in a particular field:

(1) To the extent that the Community has adopted extensive common rules for the attainment of the objectives of the Euratom Treaty ("has occupied the field"), the member states are precluded from entering into international commitments capable of affecting those rules or altering their scope.[93] This is obviously not the case in the realm of nuclear liability, where there is neither Euratom nor EC rules.

(2) Moreover, there must be an exercise of Community powers in order to interpret any exclusive authority of the Community.[94] Obviously, this is not the case with nuclear liability as there is no legislation on this issue in Euratom or in EC Law.

At present, taking these preconditions into account, Article 101 of the Euratom Treaty cannot be considered a provision enabling the Community to accede to the revised Paris Convention.

Article 102 of the Euratom Treaty also deals with treaty-making powers of the Community:

> "Agreements or contracts concluded with a third state, an international organisation or a national of a third state to which, in addition to the Community, one or more member states are parties, shall not enter into force until the Commission has been notified by all the member states concerned that those agreements or contracts have become applicable in accordance with the provisions of their respective national laws".

As the European Court of Justice pointed out, "where it is apparent that the subject-matter of an agreement or convention falls in part within the competence of the Community and in part within that of the member states, it is essential to ensure close co-operation between the member states and the Community institutions, both in the process of negotiation and conclusion and in the fulfilment of the commitments entered into. This obligation to co-operate flows from the requirement of unity in the international representation of the Community".[95]

In this case, the issue of nuclear liability would be considered as a matter of a shared competence[96] and the application of Article 102 of the Euratom Treaty will be relevant. In this

---

Hyett, S., *op. cit.*, pp. 47-53; Eeckhout, P., "External Relations of the European Legal and Constitutional Foundations, 2004, pp. 59-64.

92. E.g. *Opinion 2/91 (Re ILO Convention 170)*, ECR 1993, I -1061, at paras. 9 ff.

93. See Kaniel, M., The exclusive treaty-making power of the European Community up to the period of the Single European Act, 1996, pp. 44-46; Macleod, I.; Hendry, D.; Hyett, S., *op. cit.*, 1996, at 394.

94. See Kaniel, M., *ibid*, pp. 46-48.

95. See para. 108-109 of the Opinion 1/94 *Competence of the Community to conclude international agreements concerning services and the protection of intellectual property,* ECR 1994, 5267. See also para. 34-36 of the *Ruling* 1/78, ECR 1978, 2151.

96. Regarding the division of competencies between the Community and the member states, see paragraph 35 of the *Ruling* 1/78: "[I]s further important to state, as was correctly pointed out by the Commission, that it is not necessary to set out and determine, as regards other Parties to the Convention, the division of powers in this respect between the Community and the member states, particularly as it may change in the course of time, it is sufficient to state to the other Contracting Parties that the matter gives rise to a division of powers within the Community, it being understood that the exact nature of that division is a domestic question in which third parties have no need to intervene". Furthermore, competencies may be shared in several ways: Some of the obligations in the agreement may relate to matters in respect of

relation, it must be pointed out that procedures in accordance with this provision would assume the ratification of international conventions by individual member states and then *basically*[97] implies the necessity to fulfil all requirements outlined above in the second and third issue. As a result, for the time being the Community cannot take steps towards acceding to the revised Paris Convention (and the revised BSC respectively) without both clarifying the question of its *authority* in the field of nuclear liability and exercising such powers.

Therefore, the next section will deal with the options of how to address matters of nuclear liability by the means of secondary Community law.

5. European Nuclear Liability Directive

Finally, the possibility of harmonising the nuclear liability framework in all member states by a European Nuclear Liability Directive (the "directive") shall be outlined.[98]

With regard to this option, it could be relevant that most recently the European Commission decided to target liability matters through a directive in other fields that have traditionally been governed by international treaties. This is the case of liability for maritime claims, which are currently governed by a framework of international conventions under the aegis of the International Maritime Organization.

As the European Commission stated in its proposal for a directive on ship owner civil liability and financial guarantees:

> "A number of international conventions on the civil liability of ship owners have been adopted. These conventions all have limitations, starting with the fact that most have not entered into force, and that those which have entered into force have done so only in some countries… For this reason the Commission is herewith proposing to follow a pragmatic two-step approach. As a first step, it is proposed that all member states become contracting parties to the umbrella international convention on liability for maritime transport which is the 1996 Convention on the Limitation of Liability for Maritime Claims. The directive would also incorporate this convention into Community law in order to ensure its full and uniform application all over the EU… It is to be noted that in parallel to this directive, member states are anyhow preparing for the ratification of the above-mentioned conventions on hazardous and noxious substances and

---

which the Community is exclusively competent, while others relate to matters for which the member states are exclusively competent. Or the agreement may relate to matters where the powers of the member states and the Community run in parallel, so that each has a separate and independent interest in participating in it. Or the Community may be potentially competent for the entire subject matter of the agreement, although at present the member states retain residual competence to act. Where the competence for the subject matter of an agreement is shared between the Community and the member states, the full implementation of the obligations in the agreement will usually require the participation in the agreement of the Communities and the member states together, each in respect of their powers and interests. See Macleod, I., Hendry, D., Hyett, S., *op. cit.*, at 143.

97. However, discussions regarding the complete and incomplete mixed agreements (and consequently regarding the legal implications of a participation of the Community in an agreement for the obligations of non – party member states) will be of relevance in the case of any legislative action of the Community in this field. See also Granvik, L., "Incomplete Mixed Environmental Agreements of the Community and the Principle of Bindingness", in: Koskenniemi, M. (ed.), *International Law Aspects of the European Community*, 1998, pp. 255-271.

98. A Regulation based on Article 203 Euratom Treaty is another possibility.

on bunker oil. As a second step, the Commission will seek a mandate for negotiating within the IMO the revision of the above-mentioned 1996 Convention in order to review the level at which ship owners lose their right to limit their liability".[99]

The Commission also had to deal with the question of whether to rely exclusively on the framework created by existing international conventions and the future development of this framework or to address existing problems with an initiative under European Law:

> "The two options are: to promote the implementation of international conventions. The relatively slow pace of national ratification processes makes the date of entry into force and the geographical scope of these conventions uncertain. This directive would be the most proper binding instrument under which these conventions can be swiftly and uniformly applied at EU level… In addition, it should be noted that this approach would presuppose that the member states which are contracting parties to the 1996 Convention denounce it in good time and at the latest by the end of the transposition period for this Directive… Action at the level of the International Maritime Organization has limitations… In addition, the objectives of the conventions may not correspond to citizens' current expectations and do not follow the trends of modern law... The approach is therefore to establish a new, uniform legal framework at European Union level which will fully enforce the internationally recognized principles and will adapt them where necessary".[100]

As with all previous scenarios, a number of questions must be addressed before any steps forward can be made. Current developments in the field of ship-owners liability can be considered as a precedent, although the application of lessons learned from this field is limited. In comparison to nuclear liability, no major jurisdiction conflicts in matters of ship-owner liability have been established in the Community.[101] Furthermore, the Community has to deal with only one international organisation involved in these matters.

This section presumes that a directive will be issued under the authority of the Euratom Treaty, based on its Article 98 or in particular on Article 203. As a consequence, member states would be obliged to implement the provisions of this directive into their national legislation. In this respect, Article 105 of the Euratom Treaty should be kept in mind in that it deals with the pre-existing treaties of the member states:

> "The provisions of this Treaty shall not be invoked so as to prevent the implementation of agreements or contracts concluded before its entry into force by a Member State, a person or an undertaking with a third State, an international organisation or a national of a third State where such agreements or contracts have been communicated to the Commission not later than 30 days after the entry into force of this Treaty".

However, the Euratom Treaty lacks any provision concerning possible conflicts with regard to provisions arising from pre-Community agreements and commitments from EC primary law. Taking into account the relation between the EC Treaty and the Euratom Treaty as *lex generalis* and *lex*

---

99. COM (2005) 593 final, sub paragraph 120.

100. COM (2005) 593 final, sub paragraphs. 230, 324 and 325.

101. Currently, Belgium, Estonia, the Netherlands and Poland are contracting parties to the 1976 Convention on Limitation of Liability for Maritime Claims. Furthermore, Bulgaria, Cyprus, Denmark, Finland, France, Germany, Hungary, Latvia, Lithuania, Luxembourg, Malta, Norway, Romania and the United Kingdom are parties to both the 1976 Convention and to the 1996 Protocol.

specialis,[102] provisions of the EC Treaty must also be applied on matters governed by the Euratom Treaty. Article 307(1) and (2) of the EC Treaty are of particular importance:

> "The rights and obligations arising from agreements concluded before 1 January 1958 or, for acceding States, before the date of their accession, between one or more Member States on the one hand, and one or more third countries on the other, shall not be affected by the provisions of this Treaty.
>
> To the extent that such agreements are not compatible with this Treaty, the Member State or States concerned shall take all appropriate steps to eliminate the incompatibilities established. Member States shall, where necessary, assist each other to this end and shall, where appropriate, adopt a common attitude".

Article 307(1) of the EC Treaty and Article 105 of the Euratom Treaty have a rather similar content to which the *lex specialis derogat legi generali* principle applies.[103] One could therefore suggest that the obligation in Article 307(2) of the EC Treaty to eliminate incompatibilities is also subsidiary in relation to matters governed by the Euratom Treaty.[104] In the case C – 62/98 *Commission v Portugal,* the Commission took the position that the subordination clause contained in Article 307(1) of the EC Treaty must be interpreted in a restrictive manner because it had the effect of making an exception to the principle of supremacy of Community law.[105] Therefore, member states are obliged to take such steps which will ensure compliance of their obligations under international treaties to which they are parties, with commitments arising from Community law. Member states therefore have the obligation to align their international treaty commitments[106] and as *ultima ratio* terminate their participation in treaties that are in conflict with Community laws.[107]

a. Advantages of harmonising the nuclear liability framework by means of European Law

The scenario of harmonising the nuclear liability framework through a directive has several advantages in comparison to the scenario in which all member states would ratify the revised Paris Convention:

(1) As mentioned above, the Community does not have authority to oblige "new" member states (currently contracting parties to the 1963 Vienna Convention) to join the revised Paris Convention, the revised BSC or the 1997 Vienna Protocol. If a directive anchors

---

102. Bouquet, A., *op. cit.*, pp. 1193-1199; Garzaniti, L., *op. cit.*, at p. 1241.

103. However, Article 305(1) EC Treaty, as opposed to Article 105 Euratom Treaty, lacks any provision on the communication of pre – Community agreements to the Commission. See Schmalenbach, K., "Art. 307 (ex – Art. 234)", in Calliess, C.; Ruffert, M. (eds.), Kommentar zum Vertrag über die Europäische Union und zum Vertrag zur Gründung der Europäischen Gemeinschaft, 1999, at 2533.

104. In general concerning the "pre – Community agreements" see Pache, E.; Bielitz, J., "Das Verhältnis der EG zu den völkerrechtlichen Verträgen ihrer Mitgliedstaaten", *Europarecht*, 2006, pp. 316-339; Manzini, P., "The Priority of Pre – Existing Treaties of EC – Member States within the Framework of International Law", *European Journal of International Law*, 2001, pp. 781-792 and Voss, R., "Die Bindung der Europäischen Gemeinschaft an vorgemeinschaftliche Verträge ihrer Mitgliedstaaten", *Schweitzerische Zeitschrift für Internationales und Europäisches Recht*, 1996, pp. 161-189.

105. Opinion to joined cases C – 62/98 and 89/98 at paragraph 29. See also Manzini, P., *ibid*, at 789.

106. See Opinion 1/76 *Stilllegungsfonds für die Binnenschifffahrt,* ECR 1977, 741, at paragraph 6.

107. See Manzini, P., *op. cit.*, at pp. 788-792.

common features of these newer instruments, those member states which are contracting parties to the 1963 Vienna Convention could comply with obligations arising from a directive by giving effect to the 1997 Vienna Protocol.

(2) The timeframe under this scenario may be considered more optimistic compared to the ratification procedures of the revised Paris Convention in the "old" as well as in the "new" member states which follows domestic legal procedures and the political willingness of member states.

(3) There are considerably more effective enforcement measures with regard to obligations under the Euratom Treaty than under international law. Community legislation in the field of nuclear liability will better guarantee that states will transform and execute its provisions to protect potential victims of a nuclear incident in their legal systems.

(4) Finally, Euratom's legislative activity in this field can, at least, lead to a clarification of authorities in the field of nuclear liability, or to establishing exclusive jurisdiction in this field *by occupying* it. This would further allow the Community to use its treaty-making powers based on the parallelism of competencies.[108]

Thus, legislative activity under the Euratom Treaty can be considered both a first step towards being externally active as a contracting party to existing international conventions and towards effectively implementing the principles of the revised conventions within the Community.

b. Options to address the existing nuclear liability patchwork by Euratom secondary law

Irrespective of the likelihood of a directive in the field of nuclear third party liability, it is interesting to envisage the possible content of such a directive. Basically, there are two rather different approaches which the Community can choose in order to resolve the existing nuclear liability patchwork.

Acceleration approach

First, the Community could choose an *acceleration approach*. This would take into account that harmonisation of nuclear liability rules will be achieved to a certain level through the ratification of the revised Paris Convention by all contracting parties to the Paris Convention, by the ratification of the 1997 Vienna Protocol by all contracting parties to the 1963 Vienna Convention and by the ratification of the 1988 Joint Protocol by all member states that are contracting parties to either regime.[109]

Thus, under this approach the directive would reflect the common features of both the revised Paris Convention and the 1997 Vienna Protocol regime and a minimum standard of nuclear liability (the minimum limit of liability in particular) can be set up within the Community. The directive would represent a powerful incentive to speed up the ratification (accession) process to the existing instruments of international law.

---

108. See Macleod, I.; Hendry, D.; Hyett, S., *op. cit.*, 1996, at 392.

109. This observation was pointed out in the speech of Reyners, P., "Liability Problems Associated with the Current Patchwork Nuclear Liability Regime within the EU Member States", presented on the 12th Regional Conference of the German Branch of AIDN/INLA held in Berlin, 30 June – 1 July 2009.

Taking into account the subsidiary character of the EC Treaty on matters governed primarily in the Euratom Treaty [as well as applying the basic postulates of the European Court of Justice rulings with regard to Article 307(2) EC Treaty], the member states will be chiefly obliged to find a solution to the conflict by means of international law.

As a consequence of this *acceleration approach*, the OECD and the IAEA would remain guardians of their respective nuclear liability regimes, but within the scope of the directive, it would be the responsibility of the Commission to ensure the minimum standard in liability frameworks. However, it is obvious that this approach is *unable* to resolve existing gaps with regard to supplementary funds which are available under the Paris/Brussels regime but are missing under the Vienna regime. It is further not able to achieve full harmonisation with respect to those member states that are not party to any nuclear liability regime and would most likely negotiate an exemption from the application of the directive.

Creating a European nuclear liability framework

The second option can be described as a *European nuclear liability framework*, intended to be based on the liability provisions laid down in the more ambitious revised Paris Convention. Keeping in mind that such a framework needs to be channelled into existing international conventions, this scenario needs to be realised together with the above described fourth option, namely that Euratom accedes to the revised Paris Convention and to the 1988 Joint Protocol.

In order to realise this scenario the directive must first reflect the obligations laid down in the revised Paris Convention. Such obligations should not provide a major challenge to those member states that signed the 2004 Protocol and are currently proceeding towards its ratification. However, as compliance with both the 1963 Vienna Convention and the revised Paris Convention is considered legally impossible, the reflection of the obligations of the Paris regime in the directive will, in the majority of the "new" member states, result in a conflict between Community obligations and international law. In application of the requirements arising from the subsidiary use of Article 307(2) of the EC Treaty and Article 192 of the Euratom Treaty, the "new" member states would have to phase out the 1963 Vienna Convention.[110] However, in reality, diplomatic efforts will have priority over such intervention into the treaty-making powers of member states.

Under this scenario, parallel to the process of adopting a directive, the process of amending the major international conventions would need to begin, enabling Euratom to accede to these treaties (revised Paris Convention, revised BSC and 1988 Joint Protocol in particular).[111] The target should be to *occupy the field* of nuclear liability and to *exercise the powers in this area* within the meaning of the ERTA doctrine.[112] As the European Court of Justice ruled in the ERTA Case, "in particular, each time the Community, with a view to implementing a common policy envisaged by the Treaty, lays down common rules, whatever form these may take, the Member States no longer have the right acting individually or even collectively, to contract obligations towards non-Member States affecting these rules".[113] Furthermore, as the Court of Justice pointed out, "to the extent that such common

110. See also C – 84/98 *Commission v Portugal*, ECR 2000, I – 5215, at paragraph 58.

111. Similar to the Euratom participation in the Convention on Physical Protection of Nuclear Materials, the Convention on Nuclear Safety, the Joint Convention on the Safety of Spent Fuel Management and on Safety of Radioactive Waste Management, the Convention on Early Notification of a Nuclear Accident and in the Convention on Assistance in the case of Nuclear Accident or Radiological Emergency.

112. See Macleod, I., Hendry, D., Hyett, S., *op. cit.*, 1996, pp. 47-53.

113. *Ibid*, at paragraph 17.

rules come into being, the Community alone is in the position to assume and carry out contractual obligations towards non-member sates affecting the whole sphere of application of the Community legal system".[114] As a consequence, Community jurisdiction will be possible in the area of nuclear liability after the adoption of secondary legislation which will vest the Community with exclusive authority to use the treaty-making powers anchored in Article 101 of the Euratom Treaty.[115]

If Euratom makes use of its treaty-making powers pursuant to Article 101 Euratom Treaty and accedes to the revised Paris Convention, the text of the treaty will become part of the Community law.[116] A *European nuclear liability framework* clearly implies a number of further legal questions. The realisation of this option would also be time-consuming. However, the same applies to the scenario for harmonisation through the existing instruments of international law. On the other hand, under this scenario, the EU institutions would become the major player in the field of nuclear third party liability and its development.

In comparison with the *acceleration approach*, it is of crucial importance that matters of supplementary funds be addressed. Therefore, this scenario can be divided into two stages; the adoption of a directive for general matters of nuclear liability in the first stage and the adoption of a directive on supplementary funds in the second stage. Under this scenario, the whole area of nuclear liability would be addressed, including Euratom's participation in both the Paris/Brussels regime as well as the 1988 Joint Protocol. Moreover, the directive would not differentiate between member states that are outside the existing nuclear liability regimes and those that are parties to either the Vienna or the Paris regime

E. Conclusions

(1) An appropriate legal framework should be part of *nuclear new build* discussions.

The current discussions with regard to nuclear new build or nuclear renaissance evoke difficult questions related to public acceptance. The creation of a sound nuclear liability legal framework is one of the basic cornerstones of such acceptance. As the OECD Nuclear Energy Agency pointed out in its 2008 Nuclear Energy Outlook, the further development of the peaceful uses of nuclear energy cannot be reduced to an increase in the number of nuclear power plants, but must also include the establishment of an appropriate legal framework which covers all aspects of the peaceful use of nuclear energy.

(2) Harmonisation within the Community could – to a certain degree – be reached if all member states would adhere to and ratify the existing revised conventions which, with respect to the current absence of legal instruments in the European Community, assume a political consensus among all member states. This option would require strong political will and is, from the Community's point of view, a rather passive one even though it requires action on the part of individual member states, especially "new" member states.

(3) Harmonisation through a European Nuclear Liability Directive based on the provisions of the Euratom Treaty will have some advantages *vis-à-vis* the conventions.

---

114. *Ibid*, at paragraph 18.

115. See Macleod, I., Hendry, D., Hyett, S., *op. cit.*, 1996, at 392.

116. See case 181/73 *Haegeman,* ECR 1974, 449, at paras. 4-5.

Harmonisation through a Euratom Directive would require the initiative of the European Commission. The regulation of nuclear third party liability by a Community directive as secondary law will also have the advantage that the Community has, compared to the existing international conventions, stronger and more effective enforcement mechanisms with the European Commission acting as the guardian of primary and secondary Community legislation.

(4) Full harmonisation of nuclear liability regimes must also cover the supplementary funding scheme under the BSC.

Even the accession of Central and Eastern European member states to the revised Paris Convention would not eliminate all of the existing differences between themselves and the contracting parties to the 1960 Paris Convention, to the BSC and to the 2004 Paris and BSC Protocols.

(5) Relations to third states need to be taken into account.

The harmonisation of nuclear liability regimes within the Community on the basis of the revised Paris and Brussels Supplementary Conventions or on the basis of Euratom secondary law does not resolve the question of relations towards third states where nuclear damage is suffered as a result of a nuclear incident in an EU member state. If such states are contracting parties to both the 1963 Vienna Convention and the 1988 Joint Protocol, it is possible to cure this deficiency by having all member states or Euratom itself join the latter Protocol. In the case of third states standing outside of all the conventions, the possibility of resolving the situation depends upon their engagement in existing multilateral conventions.

Resurgence of Nuclear Energy in Italy

*by Fabrizio Iaccarino**

The centre-right Italian Government, headed by Prime Minister Silvio Berlusconi,[1] has taken the first steps to pave the way for the resurgence of nuclear energy in Italy, the most serious attempt since the 1987 moratorium on nuclear power production. At the moment, Italy faces the legal, economic, technical and societal challenges of launching a new nuclear programme, and all players involved are aware of the fact that redefining the nuclear legal framework will be a crucial part to this endeavour.

In order to shed light on recent developments, as well as on future steps, this paper will first analyse the history of nuclear power production in Italy and the reasons for the decision to re-embark upon a nuclear power programme. It will briefly describe the legislation which governed nuclear activities before this decision, introduce the latest legislative changes and legislative projects and, finally, aim to demonstrate what else is necessary to realise this ambitious project in the near future.

This analysis will be particularly focused on the current Italian legislation following the recent approval of Act No. 99 of 23 July 2009,[2] which lays down milestones for the new national nuclear legal framework.

The implementation of a nuclear power programme is an enormous challenge. However, it can be successful if appropriate and timely steps are taken in the months and years to come. The national nuclear framework will play a key role in managing and regulating the peaceful uses of nuclear energy in a consistent and rational manner. It is therefore crucial that the foundation for this framework is set accurately so that it provides a sound basis for activities related to the peaceful uses of nuclear energy in Italy.

---

* Fabrizio Iaccarino is in-house counsel on nuclear matters for the Institutional Affairs Department of ENEL S.p.A. The author alone is responsible for the facts and opinions expressed in this article.

1. The fourth Government under Prime Minister Silvio Berlusconi was established on 7 May 2008. It is the 62nd Government of the Italian Republic since 1945.

2. "Legge 23 luglio 2009, n. 99 – Disposizioni per lo sviluppo e l'internazionalizzazione delle imprese, nonché in materia di energia", Official Journal No. 176, 31 July 2009, Ord. Suppl. No. 136. Relevant articles of the law are reproduced on pp. 147 *et seq.* of this Bulletin.

A. History

The recent history of nuclear power in Italy shall be considered in order to better illustrate latest actions.

In 1986, Italy had four nuclear power plants operating on its national territory[3] and another one was in an advanced phase of construction.[4] At the time, the generation of electricity was a government monopoly whose only player was the national public entity called ENEL (*Ente Nazionale per l'Energia Elettrica*), which owned all of the above mentioned nuclear power plants.

In March 1986, the Italian Parliament adopted a new energy plan which called for the doubling of electricity generating capacity in one of the existing nuclear power plants[5] and for the installation of additional 4 000 MW power stations in the Regions of Veneto, Sicily, Campania and Basilicata.

A month later, on 26 April 1986, the reactor accident at the Chernobyl nuclear power plant took place. As a consequence, in February 1987, the Italian Parliament announced a National Conference on Energy to look into the energy plan's compliance with Italy's safety and environmental protection requirements. The outcome of the Energy Conference was that it broadly favoured the continuation of the nuclear programme. However, in the meantime, a referendum had been called with respect to a number of legal provisions on the location of nuclear power plants. The voting took place in November 1987. Approximately 80% of voters affirmed all topics under discussion.

The results of the three questions can be considered as having been strongly influenced by Chernobyl. They led to the abolishment of one provision in Act No. 856/73[6] allowing ENEL to participate in international agreements for the construction and operation of nuclear plants abroad and two provisions of Act No. 8/83,[7] one of which dealt with compensation to municipalities hosting nuclear and coal power plants and the second granting power to CIPE (Interdepartmental Committee for Economic Planning) to decide on the site of power plants in cases where local authorities do not offer their territory.[8] In fact, the abolition of these provisions had a "devitalizing" effect on the legal provisions necessary for the development of new nuclear power plants in Italy. It is interesting that the referendum did not explicitly cover nuclear power plants in operation or under construction. However, with regard to power plants under construction, Parliament's Resolution of 18 December 1987 forced the Government, *inter alia*, to suspend ENEL's work at the site Montalto di Castro. At the same time,

---

3. Two of the four nuclear power plants – Trino Vercellese and Caorso – were located in the northern part of Italy, one – Latina – in the centre and another – Garigliano – in the South. The nuclear power plant in Latina was the first nuclear power plant in Italy. It was a magnox reactor designed in France and the United Kingdom which employed natural uranium and produced both electrical energy and plutonium. This 160MW plant supplied the first nuclear energy produced kilowatt to the Italian electricity grid in January 1964. At the time, it was the largest nuclear power plant in Europe.

4. Montalto di Castro, in the centre of Italy.

5. Trino Vercellese.

6. "Legge 18 dicembre 1973, n. 856. Modifica all'art. 1, comma settimo, della legge 6 dicembre 1962, n. 1643, sull'istituzione dell'Ente nazionale per l'energia elettrica", Official Journal No. 1, 2 January 1974.

7. "Legge 10 gennaio 1983, n. 8. Norme per l'erogazione di contributi a favore dei comuni e delle regioni sedi di centrali elettriche alimentate con combustibili diversi dagli idrocarburi", Official Journal No. 13, 14 January 1983.

8. The three questions were approved by 71,9%, 79,7% and 80,6% respectively with an overall turnout of 65,1% of total.

a five year moratorium on the use of nuclear fission was deliberated. The four nuclear power plants in operation were shut down despite the fact that, following the Chernobyl accident, they had passed severe safety controls and reviews.

The abrupt end of the nuclear power programme opened up the issues of waste management and decommissioning in Italy. Although it has been more than 20 years since the country decided to suspend electricity generation in nuclear power plants, decommissioning activities began only eight years ago. Until the establishment in 1999 of Sogin, the state owned company in charge of radioactive waste management and decommissioning of the "old" nuclear energy facilities, plants were passively protected during the shut-down period. This situation was certainly influenced by the unavailability of final national repositories and of temporary storage facilities for nuclear waste and materials.

The creation of Sogin set the stage for a new strategy on accelerated decommissioning, and it was decided to opt for dry storage of irradiated fuel on sites. Later on, at the end of 2004, the Government decided to send spent fuel abroad for reprocessing purposes.[9] Following an agreement between the Governments of Italy and France signed in November 2006, Sogin entered into a contract with the French company Areva for the reprocessing of its spent fuel in La Hague. Fuel removal operations began at the end of 2007 and are expected to end within a time period of five years.

B. Reasons for the step back

Since 1987, nuclear energy has been banned from the energy mix in Italy. As a result of the decision to immediately phase-out nuclear energy, the Italian energy system suffers from an unbalanced energy generation mix largely based on the most expensive sources of energy.

Approximately 60% of the country's electricity is generated from costly fuels, namely gas and oil, which is more than twice the average rate in the European Union (EU). Renewable energy sources represent approximately 15% of the total energy production (mostly provided by hydro power generation). Moreover, 13% of total energy production is being imported. Consequently, electricity bills are, on average, higher than in Italy's European neighbours.

Moreover, Italy is particularly vulnerable from a security of supply point of view because of its low diversity of fuel sources and the countries from which it obtains fuel supplies. Recent political tensions between Russia and the Ukraine, for example, affected gas supplies to Italy. In that instance the country's reserves were sufficient to bridge the crises. However, there may be serious consequences following crises in other regions from which Italy imports fuel, such as Eastern Europe or North Africa.

Over the past years, the idea of resuming nuclear energy took shape with the realisation that it was an important way for Italy to diversify its range of fuel sources. Italy would be able to obtain nuclear fuel from countries other than those from which it buys fossil fuels, such as Canada and Australia, and thereby reduce the risks associated with importing raw materials.

9. Reprocessing is not a completely new option for the Italian nuclear industry. In the 70s, while nuclear power plants were still operating, spent fuel was sent to British Energy's reprocessing facility in Sellafeld, (United Kingdom).

Nuclear energy is also being re-discovered as a "clean" source of energy. It is one of the cheapest low carbon energy sources which could contribute to the fight against climate change and to the achievement of the EU's 2008 "Climate and energy package" goals.[10]

Furthermore, paradoxically, within 200 km of Italy's borders, 27 nuclear power generating units produce a total electricity output of approximately 24 000 MW.[11]

In conclusion, all the reasons put forward to boost the so called "nuclear renaissance", such as security of supply, energy price stabilization and the fight against climate change, are valid in the case of Italy.

C. The first steps

The events that turned Italy, Enrico Fermi's home country, from "the Western world's number three electronuclear power generator, after the United States. and Great Britain"[12] into one of the very few industrialised nations that renounced the use of this technology for electricity generation might soon be reversed with regard to Italy's peculiar energy situation. The first step in this direction is that, after twenty years, nuclear energy is back on the agenda.

The process for the revival of nuclear energy began a couple of years ago. In 2004, the first of the three results of the 1987 referendum – substantially preventing Italian companies from participating in international agreements for the construction and operation of nuclear plants abroad, was overruled by Parliament: Article 1, par. 42 of Act No. 239/2004[13] provides that "national producers of electricity can, potentially also in partnership with companies from other countries, carry out construction and operation of facilities located abroad, also in order to import the electricity produced".

The Italian utility company ENEL currently owns approximately 5 500 MW of installed nuclear capacity and 1 080 MW under construction in three European countries.[14]

---

10. Communication from the Commission to the European Parliament, the Council, the European Social and Economic Committee and the Committee of the Regions – 20 20 by 2020, Europe's Climate Change Opportunity, COM(2008) 30 final.

11. France: 17 generating units producing a total of around 15 500 MW; Switzerland: 5 generating units producing a total of around 3 000 MW; Germany: 4 generating units producing a total of around 5 000 MW; Slovenia: 1 generating unit producing a total of around 600 MW.

12. Quote from the 1964's Third World Conference on the Peaceful Uses of Nuclear Energy, held in Geneva.

13. "Legge 23 agosto 2004, n. 239 – Riordino del settore energetico, nonché delega al Governo per il riassetto delle disposizioni vigenti in materia di energia", Official Journal 13 September 2004, No. 215.

14. ENEL operates in Spain, where its Endesa subsidiary runs seven nuclear units that generate around 3 640 MW in total and in the Slovak Republic, where through Slovenské Elektràrne it manages four generating units that produce over 1 850 MW. Moreover, ENEL is involved in the construction of two of the three nuclear generating units currently being built in Europe. In France, ENEL works with Electricité de France on the advanced third-generation EPR unit at Flamanville, where ENEL has a 12.5% stake in the project, corresponding to 200 MW. In the Slovak Republic, ENEL works on the construction of units three and four at the Mochovce plant, which uses Russian VVER technology to generate a total of 880 MW.

At present, the key reason for returning to nuclear energy is the political decision of the Italian Government to have a new, more balanced energy mix by 2020 as evidenced by statements from both Mr. Scajola, the Minister for Economic Development, and Mr. Saglia, the Undersecretary for Energy at the same ministry.

According to the Government's plan, nuclear energy should play a key role in the new mix, comprising 25% of the energy consumption, in order to ensure security of supplies, reduction of greenhouse gas emissions and energy price stabilisation. The remaining energy needs will be covered by renewable energy sources (25%) and fossil fuels (50%). The Government plan to build new nuclear capacity in order to cover 25% of the country's electricity demand by 2020 will require, considering a load factor of around 90%, 13 000 MW of nuclear power installed capacity, capable of generating around 100 TWh of electricity per year of a total estimated energy need of 400 TWh.[15]

Just after winning the election in the summer of 2008, the centre-right Government paved the way for the Italian nuclear law rebirth with Article 7 of the Law Decree No. 112/2008.[16] Article 7(1)(d) characterises the construction and operation of nuclear power plants as one of the priority targets for the next national energy strategy.

This was the starting point for a new nuclear legal framework in Italy.

D. Concrete initiatives for fostering the nuclear programme

In addition to the legislative process, the Government has decided to sign and implement bilateral agreements with nuclear countries such as France and the United States in order to benefit from the experience of foreign partners. This should allow for a more rapid recovery of the expertise in the nuclear sector, following the 1987 Referendum.

On 24 February 2009, at the Franco-Italian summit in Rome, French President Sarkozy and Italian Prime Minister Berlusconi signed a framework agreement for nuclear co-operation. The agreement covers all aspects of nuclear power: collaboration on safety issues, technological co-operation in the fields of research and training, decommissioning of installations, industrial collaboration in third countries and promotion of co-operation between energy companies.

During that same France-Italy summit, the energy utilities ENEL and EDF signed two Memoranda of Understanding (MoU) which lay the foundations for the joint development of nuclear energy in Italy and France.

The first MoU, the scope of which is co-operation on nuclear energy projects in Italy, provides that when the legislative and regulatory framework for nuclear power in Italy is completed, the two companies will develop, build and bring into operation at least four generating units using Areva's EPR reactor (European Pressurized Water Reactor) as a technological reference. The goal is to have the first Italian unit operating commercially no later than 2020. ENEL and EDF undertook to form a

15. This means that if, for instance, Italy decided to replace its gas power stations (currently its lowest CO_2 emitting thermoelectric plants, generating around 13 000 MW) with nuclear power stations, CO_2 emissions would be reduced by around 53 million metric tonnes per year.

16. "Decreto Legge 25 giugno 2008, n. 112 – Disposizioni urgenti per lo sviluppo economico, la semplificazione, la competitività, la stabilizzazione della finanza pubblica e la perequazione tributaria", Official Journal No. 147, 25 June 2008.

joint venture (50/50) which will be responsible for the development of feasibility studies for the implementation of EPR nuclear generating units.[17] Following these studies and the necessary investment decisions, *ad hoc* companies will be set up for the construction, ownership and operation of each unit. The collaboration of the two companies is based on the following characteristics: i) majority stake of ENEL in the ownership of facilities and energy output, ii) operation leadership by ENEL, iii) opening of the ownership to third parties, with the retention of ENEL and EDF's majority of stakes.

In a second MoU, ENEL has expressed interest in participating in the construction of five EPR reactors in France.

A few months later, on 30 September 2009, two agreements were signed by Minister Scajola and U.S. Energy Secretary Steven Chu: one was in the field of industrial and trade co-operation in nuclear energy and the other was for co-operation in research and development in nuclear energy for civilian use. It is interesting to note that the first of the two agreements, in particular, is based on the assumption of nuclear energy as a carbon-free resource. In the agreement, nuclear power is, in fact, regarded as a "safe", "secure" and "environmentally sustainable" source of energy which can contribute "to reducing the harmful effects of greenhouse gases on climate".

E. The legislative challenge

The commitments by both the Government and the companies can lead to success only if a sound legal framework exists to support their undertakings, and yet the nuclear legal framework has not been substantially developed for the last 22 years. This is why, together with the energy policy statement concerning the return to nuclear, the Government is working actively to introduce important legislative reform which will update the Italian nuclear legal framework in order to keep it in line with the latest international best practices.

It is clear that after a gap of 22 years it is a complicated task to translate the new political strategy into a set of comprehensive laws able to govern all issues related to the use of nuclear technology including siting and authorisation processes, safety and security of nuclear activities, radioactive waste management and decommissioning, plus the allocation and separation of responsibilities.

There have been many developments in the national and international legislative framework and it has become a body of complex provisions which is different from that which existed in the 1980s. First, the Italian energy sector is widely liberalised and there is no longer space for Government participation in the nuclear sector. Secondly, a few relics of the past nuclear regulatory framework have survived. The old nuclear energy provisions have never been formally abolished. Thirdly, during the long period of "denuclearisation", many new laws were introduced in order to implement European Directives and to ensure the regulation and control of nuclear technologies in medical and

17. The joint venture – in which ENEL and EDF have equal stakes – is called "Sviluppo Nucleare Italia S.r.l." (SNI) and was founded on 31 July 2009. SNI is a limited liability company established under Italian law, with its headquarters in Rome. Management of the new company is entrusted to a board composed of eight members: four appointed by EDF, including the President and the Vice President and the other four appointed by ENEL, among which is the Chief Executive Officer of SNI.

scientific research. Given this situation, a simple upgrade or streamlining of the existing regulatory framework on nuclear energy, although theoretically possible, would not be sufficient.[18]

From a constitutional point of view, the reintroduction of nuclear power raises the question of whether or not the new nuclear legislative framework is constitutional in light of the 1987 referendum results. In 1997, the Constitutional Court[19] clearly stated the unconstitutionality of a law that reproduced a law repealed by referendum treating it as a violation of Articles 1 and 75 of the Constitution.[20]

The court stated that a referendum produces indeed a constraint on the legislator and a limit to the validity of the law, but it clarified at the same time that this constraint can neither be considered absolute[21] nor unlimited in time. It is, in fact, not possible that a positive referendum outcome forever prevents legislative action to the contrary. In the case under examination, it should be noted that the constraint imposed by the outcome of the 1987 Referendum has been subject to a progressive weakening, until there was complete cessation of any preclusive effect against the legislator. According to both interpretations, the first arguing that five years after the referendum the legislator may reverse the outcome of a referendum and the second holding the view that the reversal of a referendum is possible at the end of the legislative period during which such referendum has taken place or following changes in social, economic and technological contexts, the reintroduction of legislation allowing for the construction and operation of nuclear power is a constitutional legislative action.[22]

F. The legislative path

The Italian Government in charge took the second fundamental concrete step towards the Italian *rinascimento nucleare* when it issued in the summer of 2009, following a Parliamentary process lasting approximately one year, Law No. 99 of 23 July 2009. This law entered into force on 15 August 2009.[23]

The provisions related to nuclear are embedded into a framework law which contains several articles regulating very different matters and aims at boosting the economic development of the country (so called "Development Law"). In fact, the number and variety of subjects dealt with in the law slowed down the approval of the nuclear provisions during the Parliamentary discussions.

Following the final approval of Act 99/2009, Mr. Scajola stated that the Development Law is a

18. See Laura Ammannati and Alessandro Spina, "Il ritorno al nucleare. Il contesto regolatorio e l'Agenzia per la Sicurezza Nucleare", published on "Amministrare" No. 2/2009, pp. 231-257.

19. See Constitutional Court's Ordinance No. 9 of 1997.

20. Article 1(2) states that "The sovereignty belongs to the people and is exercised in the forms and limits of the Constitution", while Article 75 regulates referendum procedure and effects.

21. Constitutional Court Decision No. 32 and No. 33 of 1993.

22. See Alfonso Celotto and Loredana De Angelis "La fattibilità giuridica del nucleare in Italia", published on Diritto e pratica amministrativa No. 12, December 2007.

23. "Legge 23 luglio 2009, n° 99 - Disposizioni per lo sviluppo e l'internazionalizzazione delle imprese, nonché in materia di energia", Official Journal No. 176, 31 July 2009. Relevant provisions of the act reproduced on pp. 147 *et seq.* of this Bulletin.

"historical act" and described it as "a provision that will define the activity of the Ministry of Economic Development in the years to come"; an act that brings about "structural measures to help the country and the productive system to leave its difficulties behind and start processes of competitiveness, modernisation and efficiency that will give shape to the Italy of the future".[24]

G. Elements of the new nuclear legal framework

Act No. 99/2009 entered into force on 15 August 2009, and includes three articles, No. 25, 26 and 29 that constitute the foundation of the new nuclear energy legal framework in Italy.

The first article (Article 25 – "*Delegating tasks to the Government in the nuclear field"*) is an enabling provision, empowering the Government to issue one or more implementing decrees providing i) rules for siting of new nuclear power plants, of nuclear fuel fabrication plants, of spent fuel and radioactive waste temporary storage facilities and of the final repository for radioactive waste, ii) the licensing process requirements for the construction, operation and dismantling of those plants, iii) the compensation to be paid to the population living in the vicinity of the sites.

The second article (Article 26 – "*Nuclear energy*") empowers the Interdepartmental Committee for Economic Planning (CIPE), a Governmental structure under the Prime Minister, to issue two implementing decisions defining i) which kind of nuclear power plants can be constructed and operated and ii) criteria and measures to be adopted in order to promote the creation of consortia for the construction and operation of nuclear power plants, formed by electrical energy producers and industries.

The third article (Article 29 – "*Nuclear Safety Agency*") establishes a new regulatory body, the Nuclear Safety Agency. For the first time, a body is being created in Italy which will be exclusively focused on nuclear matters and which will be in charge of ensuring nuclear safety and security of activities related to the peaceful uses of nuclear energy. According to Act No. 99/2009, the agency is in charge of radiation protection, the adoption of technical regulations, the management of radioactive waste and nuclear materials and it will supervise the construction, operation and safeguarding of nuclear power plants and nuclear materials. Further, the agency has a duty to verify compliance of licence holders with national nuclear safety requirements and the terms of the relevant licences, also through regulatory assessments and inspections, and to carry out regulatory enforcement actions, including the suspension of the operation of a nuclear installation.

Apart from these three articles, Act No. 99/2009 includes two other provisions, Article 27(8)(9) ("*Measures for safety and empowerment of the energy sector*"), and Article 38 ("*Promotion of innovation in the energy sector*") that deal with nuclear matters.

The first provision concerns Sogin, the Italian state owned company in charge of waste management and decommissioning of old power plants in Italy. It states that a strategic decision will be issued by the Minister of Economic Development and the Minister of Economy and Finance, the aim of which is to redefine the tasks and functions of Sogin. The strategic decision will allow for Sogin to transfer assets or entire business divisions to "one or more companies owned by the state for not less than 20 percent of the shares in the energy sector". It also provides for the substitution of the

24. www.governo.it/GovernoInforma/Dossier/collegato_sviluppo/index.html.

Board of Directors with three commissioners whose task is to manage the company in the transition phase until the strategic decision regarding the new tasks and functions of Sogin will be issued.[25]

Finally, Article 38 provides for the adoption of a governmental plan aimed at promoting research in the energy sector with particular reference to the development of new nuclear power reactors. The plan shall provide financial resources for the promotion of research and development and for rebuilding capacity in this sector through active participation in international programmes aimed at implementing both demonstrative devices and future power reactors. The plan shall also implement research programmes, with particular attention to EU projects in the field of treatment and storage of spent fuel, especially in the area of separation and transmutation of waste.[26]

H. Authorisation (siting and licensing) process under the new law

Article 25 provides that one or more implementing decrees concerning siting and licensing procedures of new nuclear power plants, as well as other nuclear facilities such as those for temporary storage of waste and a final repository for nuclear waste, shall be issued within six months from the date of entry into force of this act (i.e. by mid February 2010).

The enabling act sets out criteria and general principles which represent guidelines to be followed by the Government in drafting secondary legislation, especially with regard to the licensing process. The Government has, in particular, to ensure high levels of safety when it drafts the requirements for the siting process in order to protect public health and the environment [Article 25(2)(b)].

A key principle of the site selection process concerns the compulsory application of Strategic Environmental Assessment (SEA). The SEA, as implemented in Italian law,[27] aims at the environmental assessment of plans and programmes which can have a significant impact on the environment. It has to guarantee high level of environmental protection and to contribute to the integration of environmental considerations in such plans and programmes, ensuring that they are consistent with sustainable development principles.[28]

---

25. The provision regarding the appointment of Sogin's commissioners has already been implemented, Decree of the President of the Council of Ministers, issued on 16 August 2009.

26. The initiatives referred to in Article 38 are: Generation IV International Forum (GIF), Global Nuclear Energy Partnership (GNEP), International Project on Innovative Reactors and Nuclear Fuel Cycles (INPRO), Italy-U.S. bilateral agreement on energy co-operation, International Thermonuclear Experimental Reactor (ITER) and Broader Approach. According to the law, the list is not exhaustive, and the plan could also finance other bilateral and international agreements in the field of nuclear energy co-operation.

27. "Decreto Legislativo 3 aprile 2006, n° 152 – Norme in materia ambientale", Official Journal No. 88, 14 April 2006.

28. The SEA process begins with the drafting of an environmental report which identifies, describes and assesses the significant impacts which the implementation of the plan or the proposed programme could have on the environment and cultural heritage, and the reasonable alternatives that may be taken into account considering the objectives and the geographical scope of the plan or programme. This environmental report is then finalised with the assistance of institutions and the public through a formal consultation process. The latter is key to the SEA in order to ensure broad public participation in decisions which can affect the quality of life of a large population. The SEA process ends with the assessment of the environmental report by the competent authority and with the approval of the plan or programme.

Apart from the SEA, the act does not require further measures with respect to the site selection process. The act is silent, in particular, on who will issue the site authorisation or on the administrative process to be implemented in order to obtain it.

Act No. 99/2009 focuses more on the licensing of nuclear power plants.

First, it stipulates that the licence shall be a combined construction and operation licence (COL),[29] granting the right to construct and operate the infrastructure in accordance with the approved design. The combined licence shall incorporate every permit necessary to construct and operate the nuclear facility [Article 25(2)(g)]. Article 25(2)(h) clarifies that in the licence every administrative order, authorisation, concession, licence, clearance, consent and notice of administrative action regarding both the plant and all related facilities should be considered, exemption given for the results of the Environmental Impact Assessment (EIA) and the Strategic Environmental Assessment (SEA).

It is the first time that Italian nuclear law provides for a combined construction and operation licence process.[30] The purpose is probably both a more streamlined process and the limitation of regulatory uncertainties that could discourage nuclear investments. However, the COL process is not entirely new to Italian energy law. According to Article 1(1) of Act No. 55/2002,[31] "the construction and operation of power generation plants with a capacity exceeding 300 MW are subject to a single authorisation".

Secondly, the authorisation for the construction and operation of a nuclear power plant shall be issued at the end of a single, integrated process [Article 25(2)(h)], in which all authorities concerned should participate. This principle is indeed consistent with the aim of simplification that pervades the enabling act and leads to a single, integrated process, co-ordinated with both SEA and EIA procedures.

Thirdly, the act requires that the COL shall be issued by decree of the Minister of Economic Development, in consultation with the Minister for the Environment, Land and Sea and the Minister for Infrastructure and Transport, with the agreement of the Conference of the Regions and the binding opinion of the Nuclear Safety Agency.

With respect to the licensing process, it is worth mentioning that another principle [Article 25(2)(f)] empowers the Government to establish procedures of substitution in case the various local authorities involved in the process fail to achieve the necessary arrangements under Article 120 of the

---

SEA differs from the better-known Environmental Impact Assessment (EIA). Act No. 99/2009 provides also for the compulsory application of EIA in the authorisation process. The scope of the SEA is to ensure an appropriate examination in the early phase and aims, thus, at avoiding changes to policy choices at a later stage. On the other hand, according to Italian law ("Decreto Legislativo 3 aprile 2006, No. 152 - Norme in materia ambientale") the EIA process is focused on projects and their actual feasibility according to environmental criteria, cultural heritage and the location chosen.

29. See on application of COL in the U.S. Burns, S., "Looking Backward, Moving Forward: Licensing New Reactors in the United States", *Nuclear Law Bulletin* No. 81 (2008/1), pp. 7 *et seq*.

30. Under the previous Law 1860/1962, regulating licensing process before 1987's referendum, there was a two-step licensing process, with construction permit review followed by operating licence review.

31. "Legge 9 aprile 2002, No. 55 – Conversione in legge, con modificazioni, del D.L. 7 febbraio 2002, No. 7, recante misure urgenti per garantire la sicurezza del sistema elettrico nazionale", Official Journal No. 84, 10 April 2002.

Italian Constitution.[32] This power is granted by the Italian Constitution and it is indeed quite usually referred to in laws dealing with key infrastructural projects. Nevertheless, the exercise of such a power should be seen as *ultima ratio* and avoided if possible.[33] On the contrary, a modern strategy should be implemented, based on public participation in decision making and consensus through a participative and inclusive approach of both the public and the institutions.

I. International standardisation of design under the new law?

There is one fundamental principle in the enabling act that can be interpreted as an effort to strengthen the international co-operation of regulators in design assessment and licensing, as well as providing the means to fill the gap resulting from the regulatory body's lack of experience.

According to this principle [Article 25(2)(i)], the implementing decree on the licensing process must consider that "approvals relating to the requirements and technical specifications of nuclear power plants, already granted in the last ten years by the competent authorities of member countries of the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA) or the competent authorities of countries with which bilateral agreements on technological and industrial co-operation in the nuclear field are established, are considered valid in Italy, with the approval of the Nuclear Safety Agency".

It is first of all important to note that this general endorsement of design approvals or design certifications released by nuclear safety agencies of countries other than Italy deals with one part of a nuclear power plant licensing procedure only. It does not apply to the other two important components of the construction authorisation procedure, i.e. that of site selection and the future operator's

32. Under the Italian Constitution, the relationship between the state, regions, provinces and municipalities is based on the principle of fair co-operation. This principle, which is referred to in Articles 118 and 120 of the Constitution, seeks to avoid formalistic separations of power between the two tiers of government (central and local) in order to ensure that their respective functions are performed in an efficient and co-ordinated manner, and in accordance with the constitutional principle of well-managed public administration.

    According to Article 120 of the Constitution "The government may act as a substitute for regional, metropolitan city, provincial or municipal authorities whenever those should violate international rules or treaties or community law, whenever there is a serious danger for the public safety and security, and whenever such substitution is required in order to safeguard the legal or economic unity of the nation, and particularly in order to safeguard the basic standards of welfare related to civil and social rights, irrespective of the boundaries of the local governments. The law defines appropriate procedures in order to guarantee that substitution powers are exercised within the limits set by the principles of subsidiarity and fair co-operation".

    The Constitutional Court stated that decisions concerning power stations should be taken at central government level in respect of state legislation; consequently, administrative decisions belong to the state authorities. However, they must be taken in co-operation with regional and local governments. Therefore, even if the state has an important role, the regions should take part in the related decision-making process by reaching a general agreement in the State-Regions Conference; without this, the process could not reach a valid legal result.

33. The lesson learnt following the so-called Scanzano case in 2003 should be kept in mind. The Government had identified, by urgent decree, the site for geological disposal, without involving local authorities or the population living in the vicinity in the decision-making process. This had the result that the site, although qualified as technically suitable for the final repository, was not utilised because of the strong opposition of local entities.

qualifications. It is recognised that initial siting and licensee qualification procedures are project-specific and secondly, that the design assessment, or at least some aspects of it, represents a more "objective" and "replicable" activity. In other words, it is more likely to be standardised at the international level.

The introduction of such a principle clearly demonstrates the will to strengthen international co-operation among regulators. In fact, the principle that regulatory design reviews, which are central to the national licensing processes, would be improved in both effectiveness and efficiency by sharing methods and data arising from safety evaluations is indeed nowadays largely recognised.[34] The same applies to the concept that knowledge transfer on all regulatory issues, including regulatory practice, could greatly facilitate the development of civil nuclear energy in new or emerging nuclear countries such as Italy which have yet to develop well-established and trained regulatory regimes on operational aspects.[35]

Although the procedure concerning this "validation" of other regulatory body's approvals has not yet been set up, it is possible to envisage that it should be drafted in such a way that the Italian Nuclear Safety Agency approves such designs in order to respect the sovereignty of regulators while at the same time not being a full scale assessment.[36]

Article 26 "*Nuclear energy*" ("*Energia nucleare*") provides that the Interdepartmental Committee for Economic Planning (CIPE) shall issue, within six months from the entry into force of the law,[37] a decision defining "the types" of nuclear power plants that could be constructed in Italy. There is, however, no provision on generic safety assessments during the authorisation procedure as is provided for in the United States or the United Kingdom.

It is not completely clear what CIPE's decision will look like since it is not a "nuclear body" with specific technical competence in this field. CIPE will more probably just identify the benchmarks in terms of technology or minimum safety requirements with which the new plants will have to comply.

J. Provisions aimed at promoting the nuclear programme

There are several principles in Act No. 99/2009 which have been adopted with a view to boosting the nuclear programme.

First, Article 25(2)(m) empowers the Government to identify tools for financial coverage against the risk of delays during the construction of nuclear power plants for reasons beyond the

34. In this respect, there are initiatives such as the Multinational Design Evaluation Programme (MDEP), where the OECD/NEA performs the Technical Secretariat functions, and the World Nuclear Association Working Group on Co-operation in Reactor Design Evaluation and Licensing (CORDEL).

35. Similarly, Article 25(2)(l) which states that the new Italian Nuclear Safety Agency could put in place safety reviews and controls "also benefiting from support and advice of experts with similar safety organisations in Europe" tries to capitalise on the benefits of international co-operation.

36. See Raetzke, C., "International Standardization of Nuclear Reactor Designs – Adapting the Legal and Regulatory Framework", delivered on 5 October 2009 at the International Nuclear Law Association's Nuclear Inter Jura Congress 2009 in Toronto.

37. Namely by mid-February 2010.

licensee's responsibility. Such tools are indeed major measures to support the project since they help to mitigate the financial risks of such a capital intensive investment. This coverage should, in particular, be aimed at protecting companies against bureaucratic and legal procedures that could delay the start-up of the nuclear power plant.[38]

Secondly, Article 25(2)(c) of the enabling act states that compensation must be granted to residents, local authorities and companies in the area where the future nuclear power plant will be built. The law says that their costs shall be entirely borne by companies involved in the construction and operation of nuclear facilities and related infrastructures. This provision can be considered as an opportunity for operators to reach out to the local population and find consensus for the nuclear new build. There is indeed room to address this issue in a way which illustrates that the nuclear power plant will also be a source of benefits for the local population. Secondary legislation will have to provide for real and stable socio-economic measures, such as the creation of employment and economic development in the area, in order to maximise the benefits resulting from the presence of the nuclear power plant.

In another interesting provision, Article 25(2)(a) of Act No. 99/2009 allows for the area around the site to be declared as one of national strategic interest which would enable the implementation of special forms of supervision and protection.

Finally, Article 25(2)(q) requires the Government to run a national information campaign on nuclear matters and to implement appropriate information procedures for the population involved in the construction of new nuclear power plants. It also states, in Article 25(2)(o), that appropriate and broad forms of information should be implemented, especially for people living in areas where nuclear power plants will be built, in order to ensure suitable conditions during the construction and operation of such plants.

The fact that there has been an absence of nuclear activities for more than 20 years makes the information campaign clearly a key point for the success of the new nuclear programme.

Still with a view to funding the nuclear programme, Article 26 ("*Energia nucleare*") provides that CIPE shall issue the criteria and the measures to be adopted in order to promote the creation of consortia for the construction and operation of nuclear power plants. According to the text of the law, these consortia should be formed by electrical energy producers and industries. This interesting provision recalls the model known as "Finnish" or "Mankala", i.e. the creation of a consortium whose shareholders are energy companies and energy intensive end users.[39]

---

38. With the same view to avoid delays, Act No. 99/2009 provides for the application of a short-schedule judicial review [Article 25(3)] for lawsuits in front of administrative courts regarding planning, approval and execution of works, infrastructure and production plants in the nuclear energy sector. This judicial procedure is laid down by Article 246 of the Italian Code of Public Contracts, i.e. Legislative Decree No. 163 of 12 April 2006.

39. In this kind of consortia, the production is sold to owners at cost, while the owners cover the price risk. Owners receive heat or electricity in proportion to their ownership with the price of fixed and variable costs. This model allows small companies to participate in large investments and also brings large-scale production benefits to small shareholders. In addition, it usually ensures cheaper loans due to lower credit risk for banks, as many investors are local public utilities, and facilitates long term planning due to price and volume stability.

K. The new Nuclear Safety Agency

Another key provision to ensure the success of the nuclear programme is provided by Article 29 which establishes a new Nuclear Safety Agency, the "*Agenzia per la sicurezza nucleare*". As stated before, it is the first time that Italy has a regulatory body solely focused on nuclear matters.

The agency is a collegial board composed of a President appointed by the Prime Minister and four members, two of which are appointed by the Minister for the Environment and two by the Minister of Economic Development. They will be appointed for a term of seven years by Presidential Decree, on the proposal of the Prime Minister. It is provided that members shall have adequate competence, knowledge and experience in the nuclear field.

The *Agenzia* is in charge of ensuring, in general, the safety of activities related to the peaceful uses of nuclear energy, particularly of radiation protection, technical regulations, control over the management of radioactive waste and nuclear materials and over the construction, operation and the safeguarding of nuclear power plants and nuclear materials. It has to apply existing national, European and international norms and procedures, best practises and efficient available technologies, within the framework of national priorities and guidelines.

Every licence dealing with nuclear energy matters will be subject to the new Italian nuclear regulatory body's prior binding opinion. The *Agenzia* will thereby be a key player in the siting and licensing processes.

Moreover, the *Agenzia* has been granted inspection, assessment and specific enforcement powers including the power to levy fines, to suspend and revoke authorisations in case of non-compliance with the agency's provisions, non-fulfilment of requests, documents and access to installations and in case of false information in documents received.

The *Agenzia* will establish requirements and technical regulations and it will issue reports on new technologies. The nuclear watchdog also has the duty to provide transparent information to all stakeholders, such as the public, the media, the legislator, local government and industry, about nuclear activities and radiation protection issues. It also presents an annual report on nuclear safety to the Parliament.

A statute will define the agency's rules and regulations which shall be approved within three months from the date of entry into force of the law.

According to the law, the *Agenzia* will have a staff of 100 people. Fifty of them will be chosen from the current regulatory body, the Nuclear Department of ISPRA "High Institute for the environmental protection and research" and the other half from ENEA, the "Agency for new technologies, energy and environment".

The agency's board can be dissolved for severe and justified reasons, by Presidential Decree, upon proposal of the Prime Minister, with the consent of both Ministers for Environment and Economic Development. In case of dissolution, an extraordinary commissioner is appointed by decree of the Prime Minister. The commissioner will run both the President's and the commissioners' functions for a period not exceeding eighteen months with the assistance of two vice commissioners, if necessary.

It is important to highlight that the regulatory body is authorised to develop relations with regulatory bodies of other countries, European institutions and international bodies. This provision is paramount in light of the possibility of recognising the results of licensing processes of other regulatory bodies which are linked to Italy by bilateral agreements.

L. Proposals for the authorisation process to be implemented

According to Act No. 99/2009, all implementing provisions should be put in place within six months from the date of entry into force of the law, i.e. by mid-February 2010. The deadline is the same for implementing decrees regarding new nuclear power plants, waste management and decommissioning, the statute and the regulations of the new Nuclear Safety Agency and CIPE's decision concerning the technology criteria of new nuclear power plants. This entails that the complete new nuclear legal framework should be "up and running" by the beginning of 2010.

With respect to the licensing procedures, two implementing decrees will be issued: one regulating siting and licensing procedures for new nuclear power plants and another fixing the rules for waste management and decommissioning, including siting and licensing of storage facilities and a final repository for spent fuel and radioactive waste.

In the implementing decree concerning new build, particular issues will need to be addressed in order to establish a sound, new, nuclear legal framework, ensuring the safety of the population and the environment as well as facilitating investments in the nuclear energy sector.

Reference is made, in particular, to the need for good co-ordination of the Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) during the nuclear authorisation process, and for a participative approach with adequate public consultation. When tackling this issue, the experience and lessons learnt in other European countries, such as the United Kingdom and France should be taken into account.

The licensing process could be structured in the form of a single authorisation process, based on the principles of transparency and public participation in decision-making. It could progressively build consensus through a participative and inclusive approach of both the public and the institutions by means of, e.g. information campaigns at national and local level. The other founding element should be the effective integration of the SEA into the authorisation process, especially concerning the site selection stage.

Similar to the U.K.'s White Paper,[40] the Government could launch a strategy on the national nuclear programme which would deal with, *inter alia*, the importance of nuclear energy to meet Italy's goals to cut greenhouse gas emissions, to ensure security of supply and to provide for lower and reliable energy costs. Such a strategy paper could be useful in order to have a clear and structured governmental position on nuclear issues which could also engage all stakeholders involved. Further, the national nuclear programme could be subject to SEA, to assess it against environmental considerations.

40. Department for Business Enterprise and Regulatory Reform, "A White Paper on Nuclear Energy", January 2008, available at www.berr.gov.uk/files/file43006.pdf.

In parallel to this process, the Nuclear Safety Agency should give technical support to all stakeholders involved, as it is the body in charge of assessing whether a nuclear power plant project is technically sound in terms of nuclear safety.

Conclusions

Following the publication of Act No. 99/2009, Italy is definitely on the threshold of returning to nuclear power in conjunction with a worldwide nuclear energy revival.

Italy is a country with good chances for new nuclear build to be realised. This option is being considered in terms of social, cultural, economic and industrial importance. At the moment, the fight against climate change and energy issues are on the top of the Italian political agenda as is the case almost everywhere around the world. Nuclear energy, together with increased use of renewable energy sources and energy efficiency, has become a key element to tackle the difficult binomial of economic growth and environmental sustainability.

The attitude towards nuclear power is changing drastically in Italy. Recent opinion polls show that opposition to nuclear power is no longer the prevalent point of view in Italy. A significant and growing number of people is in favour of the peaceful uses of nuclear energy. A comparison of Eurobarometer[41] surveys shows that Italy has undergone the EU's greatest shift of opinion from opposition to support. In 2005, around 30% of the survey respondents were in favour of nuclear energy. Today that figure is 43%, a significant increase of 13%.

Whether or not the Italian nuclear programme will be successful depends on many factors, one of the most important being consensus among national and local stakeholders. The programme commits the country to a construction period of at least ten years and around a century of operation. It is therefore crucial to gather the broadest possible support.

It may be Italy's opportunity to reverse the hasty choices of the past, to boost the country's entire economic system through a major infrastructure development programme and to bring the country's medium to long term energy strategy in line with strategies adopted by all other major industrial nations.

In this context, the national nuclear legislative framework requires strong and systematic consistency and coherency as well as a high degree of reliability and stability. The absence of these conditions could negatively impact both economic factors, such as lack of private investments and increase of costs, and public opinion.

41. Public Opinion Analysis sector of the European Commission which looks into the opinions of citizens in different European countries.

International Legal Instruments Promoting Synergies in Nuclear Safety, Security and Safeguards:

Myth or Reality?

*by Alexis Vasmant**

With the discovery of radioactivity and ionizing radiation at the turn of the twentieth century, mankind broke new ground in science and technology. These discoveries, which we now call the "dawn of the nuclear age",[1] paved the way for hundreds of scientists and engineers in their quest to improve our standard of living through progress in science. During the last century, the research they carried out and the tools they designed have provided modern societies with unprecedented progress in a variety of fields, from medicine and agriculture to electricity production and industrial uses.[2] Unfortunately, this progress came at a high price to humanity: the making of an atomic bomb.

The harmful effects of ionizing radiation and radioactive material were known long before the introduction of nuclear weapons. The first deaths caused by ionizing radiation were among the scientific pioneers themselves.[3] At that time, there was little need for a set of rules as the risks concerned only persons exposed to radiation during their work. The first rules to regulate human

---

* Alexis Vasmant is a Safeguards Inspector, Department of Safeguards, International Atomic Energy Agency. The author alone is responsible for the facts and opinions expressed in this article; the views contained herein do not necessarily reflect the official position of the International Atomic Energy Agency.

1. Slowiczek, F., Peters, P.M., The Discovery of Radioactivity: The Dawn of the Nuclear Age, www.accessexcellence.org/AE/AEC/CC/radioactivity.php.

2. Stoiber, C., Baer, A., Pelzer, N., Tonhauser, W., Handbook on Nuclear Law, IAEA 2003, page 3.

3. Fajardo, L.F., Berthrong, M., Anderson, R.E., Radiation Pathology, Oxford University Press, 2001, page 97.

activities in this area were limited to recommendations and guidelines following the establishment of the International Commission on Radiological Protection in 1928.[4]

Legal instruments to regulate activities related to nuclear energy and ionizing radiation started to emerge more than two decades later, first at the national level and then, at the international level. Motivations for promoting the adoption of internationally binding instruments by states were multiple. The fear of a nuclear holocaust led the international community to commit to nuclear non-proliferation and strive for disarmament. The inherent risks in a broader use of nuclear energy for electricity production and ionizing radiation in health care led to the adoption of new international conventions and standards. Finally, terrorist attacks since 2001 have led to international commitments in the area of nuclear security.

The purpose of this article is to assess the existing synergies between nuclear safety, nuclear security and non-proliferation/safeguards resulting from the adoption of international legal instruments. Keeping in mind that a synergy is the extra success achieved by two or more elements of a system working together instead of on their own, this paper will try to evaluate the possibility of a so-called "3S approach" to optimise the benefits so defined. To achieve this, Part 1 focuses on the history of the three regimes and their major features, while Parts 2, 3, and 4 explore the various benefits of, and limits to, synergies between the nuclear safety, nuclear security and safeguards regimes. Part 5 describes the potential "3S approach" in international nuclear law.

1. History of international legal instruments in nuclear safety, security and safeguards

A historical approach to the three regimes illustrates clearly that they developed independently. Despite the fact that most experts commonly refer to the synergies in nuclear law in a specific order – safety, security and safeguards – a historical point of view forces one to tackle chronologically the three areas in the following order: nuclear safeguards, nuclear safety and nuclear security.

1.1 Nuclear safeguards

The concept of nuclear safeguards refers to "institutional, legal and technical mechanisms to prevent the misuse of nuclear technologies and nuclear materials for military applications".[5]

The first political commitment came three months after the first nuclear explosion in Hiroshima when the United States of America, the United Kingdom and Canada issued an Agreed Declaration on Atomic Energy.[6] The declaration described for the first time the rationale for international control of nuclear activities and suggested that the United Nations should provide a framework for further negotiations. The Group of Three stated that they would be willing "to proceed with the exchange of fundamental scientific literature for peaceful ends with any nation that will fully reciprocate" but only

4. Lindell, B., Dunster, J. and Valentin, J., International Commission on Radiological Protection: History, Policies, Procedures, page 2.

5. Doyle, J., Nuclear Safeguards, Security and Non-proliferation, Butterworth-Heinemann, 2008, page 17.

6. Declaration 26, "Agreed Declaration by the President of the United States of America, the Prime Minister of the United Kingdom of Great Britain and Northern Ireland and the Prime Minister of Canada relating to Atomic Energy, 15 November 1945, www.untreaty.un.org/unts/1_60000/1/2/00000055.pdf.

when "it is possible to devise effective reciprocal and enforceable safeguards acceptable to all nations" against its use for destructive purposes.[7]

During the 1950s, while negotiations on international legal instruments to prevent nuclear weapons proliferation were stalling, nuclear research and development projects for civilian purposes boomed. Various bilateral and regional agreements were initiated to compensate for the lack of international consensus on this matter. The first controls were national safeguards systems developed by the major nuclear states for their own programmes. In some cases safeguards were also applied through bilateral agreements, when nuclear material or equipment was exported to other countries. Two regional organisations set up safeguards systems. The European Atomic Energy Community (EURATOM) established a control system which covered all peaceful nuclear installations in its member states.[8] The European Nuclear Energy Agency (ENEA) of the Organisation for Economic Co-operation and Development (OECD) developed security controls for its own projects, and subsequently for material emanating from these projects.

However effective these national, bilateral and regional systems may have been, they were limited in their international impact as they did not apply to countries outside the system. In order to inspire confidence in the world community, a complete and truly international system of verification was required. Such a system was envisaged for the IAEA by its founders in 1957.

At the end of the 1950s, Russia, the United Kingdom and France had joined the United States of America in the club of nuclear weapons owners. China was to join soon after. In the meantime, the safeguards system prescribed in the IAEA Statute and designed mainly to cover individual nuclear plants or supplies of fuel was clearly inadequate to deter proliferation.[9] At the General Assembly (UNGA) in 1961, the United Nations adopted a resolution[10] calling upon all states to work towards the conclusion of an international agreement "whereby the nuclear states would undertake to refrain from relinquishing control of such weapons and states not possessing such weapons would refrain from manufacturing them".[11]

In 1968, after four years of detailed negotiations, the Eighteen-Nation Committee on Disarmament (ENDC) submitted to the UNGA the draft of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). The combined aims of the NPT to prevent the increase of the number of countries possessing nuclear weapons and to ensure non-nuclear weapons states access to all peaceful uses of atomic energy would make it almost universal.[12] To achieve this, the NPT openly discriminates between non-nuclear weapon states[13] and nuclear weapon states.[14]

---

7. Fisher D., History of the International Atomic Energy Agency, 1997, page 18.

8. According to Article 2(e) of the Treaty establishing the European Atomic Energy Community, the Community shall make certain, by appropriate supervision, that nuclear materials are not diverted to purposes other than those for which they are intended.

9. Fisher, D., History of the International Atomic Energy Agency, 1997, page 1.

10. United General Assembly Resolution 1665 (XVI), December 1961.

11. "The Non-Proliferation Treaty and the IAEA", *IAEA Bulletin* Volume 10 Number 4, page 3.

12. To date, only India, Israel and Pakistan have not signed the NPT.

13. NPT Article III(1): "Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency's safeguards system, for the exclusive purpose of verification of the fulfilment of its obligations assumed under this

The negotiation and signing of the NPT[15] marked a major milestone in the evolution of the non-proliferation regime and international nuclear safeguards. With the requirements that all non nuclear weapon state parties to the treaty place under IAEA safeguards all their peaceful nuclear activities, the treaty provided further support to enhance the still embryonic international safeguards system. At the time the NPT was negotiated, the IAEA safeguards system was conducted according to procedures described in an IAEA document known as Information Circular (INFCIRC)/66.[16] However, a number of states wanted to revisit the Agency safeguards system to be implemented under the NPT. The result of extensive negotiation was a new document, INFCIRC/153, which became the cornerstone of international nuclear safeguards.[17] This document remains today the model for all Comprehensive Safeguards Agreements (CSA) mandatory for NPT states parties and the IAEA.

Another incentive for preventing nuclear proliferation is described in Article VII of the NPT, affirming the right of countries to establish specified zones free of nuclear weapons.[18] In 1967, even before the conclusion of the treaty itself, the Latin American nations led the way by opening for signature the Treaty of Tlatelolco designed to create a nuclear-weapon-free zone in that region.[19] Within these nuclear-weapon-free zones, countries may use nuclear energy solely for peaceful purposes. Other regions followed the Latin initiative: the South Pacific with the Treaty of Rarotonga and Southeast Asia with the Treaty of Bangkok have prohibited nuclear weapons in their regions. African countries also agreed to prohibit nuclear weapons on their continent with the 1996 Treaty of Pelindaba which came into force on 15 July 2009.[20]

During the 1970s, while technology and expertise to implement safeguards were improving considerably within the IAEA, the first setback in the non-proliferation regime appeared. By carrying out a "peaceful" nuclear explosion in 1974, India demonstrated that certain non-weapon specific nuclear technology could readily be turned into nuclear weapons development. This event spurred greater interest in controlling nuclear trade in that it prompted the emergence of what was to become

---

Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Procedures for the safeguards required by this article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The safeguards required by this article shall be applied to all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere".

14. NPT Article I: "Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices".

15. Very good overview of the consequences of the NPT on international nuclear safeguards: Tape, J. and Pilat, J., "Nuclear Safeguards and the Security of Nuclear Materials", in: Doyle, J., *op. cit*.

16. The Agency's Safeguards System, INFCIRC/66/Rev.2.

17. IAEA INFCIRC/153: The Structure and Content of Agreement Between the Agency and States Required in Connection with the Treaty of the Non-Proliferation of Nuclear Weapons.

18. NPT, Article VII: "Nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories".

19. The treaty entered into force in 2002 after the last country in the region ratified it (Cuba).

20. See Tabassi, L., "National Implementation and Enforcement of Nuclear-Weapon-Free Zone Treaties, *Nuclear Law Bulletin* No. 83 (2009/1).

the Nuclear Suppliers Group (NSG).[21] The NSG is, an association of states exporting nuclear technology that would agree to enforce similar rules and require similar commitments to non-proliferation from recipient states.[22]

Later, three additional, major events prompted the strengthening of the nuclear safeguards system: the discovery of a clandestine nuclear weapons programme in Iraq in 1991; the withdrawal from the NPT by the Democratic People's Republic of Korea after the failure to successfully implement safeguards on their territory; and the decision of the South African Government to give up its nuclear weapons programme and join the NPT. These events have all played a role in an ambitious effort by the international community to design a strengthened system to detect states' efforts to conduct undeclared nuclear activities.

In 1993, the Agency launched a programme to propose ways to tighten the verification regime for states with full-scope safeguards. The programme's initial deadline was to be the NPT Review and Extension Conference two years later in 1995 – hence its name Programme "93+2". The Conference's principles and objectives supported the programme, stating that "...the Agency's capability to detect undeclared nuclear activities should be increased". However, just before the deadline, the Agency made the important decision to divide the proposed measures into two categories: those for which legal authority was considered to be contained within the existing full-scope safeguards agreement (Part I measures); and those which were considered as requiring additional bilateral legal authority (Part II).[23]

The IAEA Secretariat was authorised to put into effect the Part I measures in 1995. In 1997, the Board approved the so-called Additional Protocol (AP)[24] to existing Comprehensive Safeguards Agreements (CSA) that provided the legal authority for several safeguards measures going beyond the existing system; for instance, access by the IAEA to more information about a state's nuclear activities, more intensive inspections, access to any installation within the perimeter of a nuclear site, and access to plants engaged in nuclear related activities such as those manufacturing components of enrichment plants.

The CSA provides the legal authority for the Agency to verify that declared nuclear material is not diverted to nuclear weapons and that there is no undeclared nuclear material in a state. However, it is only for a state with both a CSA and an AP in force that the IAEA has not only the legal authority but also the practical tools to do so. Today, the combination of these two legal instruments is considered to be the optimum legal tool to prevent nuclear proliferation.

Currently, the nuclear safeguards regime is still not universally implemented. Today, 24 NPT states have still to bring into force their required CSA and more than 90 states have not yet concluded an AP.[25]

---

21. IAEA INFCIRC/539/Rev.1 (Corr.), "The NSG: Its Origins, Roles and Activities", 2000.

22. Doyle, J., *op. cit.*, page 23.

23. Moyland, S. van, "The IAEA's Safeguards Programme '93+2': Progress and Challenges", *Disarmament Diplomacy*, Issue 11, 1996.

24. "Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards", IAEA INFCIRC/540 (Corrected), 1997.

25. IAEA Website for the Status of Safeguards Agreements and Additional Protocol.

1.2 Nuclear safety

The primary objective of nuclear safety is to protect individuals, society and the environment from harm by establishing and maintaining in nuclear installations effective defences against radiological hazards.[26]

The need for international legal instruments for the peaceful use of nuclear energy emerged as a result of the transboundary effects of accidents involving nuclear installations, such as that of Chernobyl.[27] A major difference between the safety and non-proliferation regimes lies in the common understanding that the legal framework for conducting activities related to the peaceful use of nuclear energy was strictly considered as a matter of national concern.

During the 1950s, many countries considered that nuclear power would promote rapid economic growth. However, potential investors were reluctant to act because of legal uncertainties and fears of potentially ruinous liability claims if an accident should occur. The main international nuclear liability conventions were concluded in the early 1960s to ensure that the nuclear energy sector could develop in the best possible circumstances and under an adequate legal framework that would protect important investments.[28]

In parallel, international organisations were entrusted to promote the adoption of standards. Under Article III.A.6 of its Statute, the IAEA is authorised "to establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property". The first IAEA Basic Safety Standards were published in 1962 and continually evolved since then.[29] These standards are jointly sponsored by a number of international organisations such as EURATOM, NEA, PAHO, FAO, WHO, ILO and UNEP, giving them a universal recognition but no legal basis.

However, by the mid-1980s, there had been little progress in the adoption of legally binding instruments in the field of nuclear safety at the international level. The Chernobyl accident's significant transboundary consequences brought a new vision for a global nuclear safety regime. The international community no longer considered that the safety of nuclear power plants was strictly of national concern.

The first response to the call for an international regime was an unprecedented and prompt negotiation of internationally binding commitments to notify, and provide assistance, in case of a

---

26. IAEA Safety Standards, Safety of Nuclear Power Plants: Design, Requirements, No. NS-R-1.

27. Horbach, N. and Bekker, P., "The Concept of Sovereignty within Nuclear Energy Law", in: Gerard Kreijen, State, Sovereignty and International Governance, Oxford University Press, 2002, page 459.

28. Convention on Third Party Liability in the Field of Nuclear Energy, OECD 1982; Vienna Convention on Civil Liability for Nuclear Damage, IAEA INFCIRC/500, 1996; Joint Protocol Relating to the Applica–tion of the Vienna Convention and the Paris Convention, IAEA INFCIRCR/567, 1998.

29. In 1996, the IAEA Secretariat introduced a uniform preparation and review process for safety standards. To this end, it created a set of advisory bodies with harmonised terms of reference to assist it in preparing and reviewing all documents. The Safety Standards Series documents fall into: (1) Safety Fundamentals which state the basic objectives, concepts and principles involved in ensuring protection; (2) Safety Requirements, which specify requirements that must be satisfied in order to ensure safety for particular activities or applications; and (3) Safety Guides, which supplement Safety Requirements by presenting recommendations, based on international experience, regarding measures to ensure the observance of safety requirements.

nuclear accident.[30] The Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency were prepared, adopted and signed within a few months following the Chernobyl accident.[31]

It took policymakers a further four years to call for an international conference on the "Safety of Nuclear Power: Strategy for the Future" which, in the end, led to the adoption of the Convention on Nuclear Safety (CNS) on 17 June 1994.

The CNS is the first international legal instrument which directly addresses the issue of safety of nuclear power plants. In that sense, it represents "a milestone in the development of international law of nuclear energy".[32]

The obligations of the CNS are based, to a large extent, on internationally accepted principles for the safe operation of nuclear installations. They include, in particular, the obligation of the parties to establish and maintain a legislative and regulatory framework for nuclear installations and the obligation to implement a number of measures based on general safety considerations such as the availability of financial and human resources, the assessment and verification of safety, quality assurance and emergency preparedness. Other obligations concern technical aspects of the safety of nuclear installations, including siting, design, construction and operation.

As a result of a compromise achieved during the negotiations, the scope of the CNS is limited to the safety of land based nuclear power plants.[33] However, this international binding instrument was adopted with the understanding that a concomitant political commitment would be made to initiate negotiations on an international instrument on the safe management of radioactive waste.[34] Following the impetus created by the adoption of the CNS, the adoption of a Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention)[35] was another important step towards a comprehensive international safety regime.

---

30. Rautenbach, J., Tonhauser, W. and Wetherall, A., "Overview of the International Legal Framework Governing the Safe and Peaceful Uses of Nuclear Energy", *International Nuclear Law in the Post-Chernobyl Period*, A Joint Report by the NEA and the IAEA, 2006, page 2 and 3.

31. The Convention on Early Notification of a Nuclear Accident, IAEA INFCIRC/335, 1986. The Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, IAEA INFCIRC/336/Add.1, 1986.

32. Jankowitsch, O., Flakus, F.N., "International convention on nuclear safety: A legal milestone", *IAEA Bulletin* 3/1994, 1994, page 37.

33. CNS Article 2(i): "nuclear installation" means for each contracting party any land-based civil nuclear power plant under its jurisdiction including such storage, handling and treatment facilities for radioactive materials as are on the same site and are directly related to the operation of the nuclear power plant. Such a plant ceases to be a nuclear installation when all nuclear fuel elements have been removed permanently from the reactor core and have been stored safely in accordance with approved procedures, and a decommissioning programme has been agreed to by the regulatory body. CNS Article 3: This Convention shall apply to the safety of nuclear installations.

34. CNS Preamble ix: Affirming the need to begin promptly the development of an international convention on the safety of radioactive waste management as soon as the ongoing process to develop waste management safety fundamentals has resulted in broad international agreement.

35. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, IAEA INFCIRC/546, 1997.

The Joint Convention covers spent fuel from nuclear power plants and research reactors as well as radioactive waste from the nuclear industry, medicine and industrial applications of radioactive materials, including disused sealed sources and radioactive discharge into the environment. The Joint Convention also contains requirements related to the transboundary movement of spent fuel and radioactive waste.[36] As with the CNS, parties to the Joint Convention are obliged to take appropriate legislative, regulatory and administrative measures to govern the safety of the spent fuel and radioactive waste management.

In addition to these legally binding instruments, the international community has sought to enhance the safe use of nuclear energy through the adoption of non-legally binding norms.[37] The adoption of codes by the IAEA can be considered as a significant part of the international nuclear legal framework by offering a flexible and efficient way to respond to a common problem.[38]

The Code of Conduct on the Safety of Research Reactors was adopted in 2004 to address concerns relating to the decommissioning of research reactors and the safety review of older reactors not under the control of an independent national regulatory authority.

Over the years, the international legal framework relating to nuclear safety and radiation protection evolved from promoting international standards to the adoption of legally binding instruments, such as the CNS and the Joint Convention. Similarly to the non-proliferation regime, particular events such as the Chernobyl accident accelerated progress in the establishment of an international nuclear safety regime.

1.3 Nuclear security

The objective of the nuclear security regime is to prevent the intentional misuse of nuclear or radioactive material by non-state actors.

As with nuclear safety, but probably even more so, protecting nuclear material and facilities from the risk of theft or other unauthorised diversion and from sabotage has traditionally been considered a matter within the domestic jurisdiction of sovereign states. States have been reluctant to expose their national security and law enforcement practices to external scrutiny.[39]

Nevertheless, concerns about terrorism and its impact on the nuclear industry started growing in the 1970s with the birth of international terrorism (e.g. attacks during the Munich Olympics in 1972). The international community became conscious that illicit trafficking and theft of nuclear material can lead to nuclear weapons proliferation and the possible fabrication of improvised nuclear devices. The need for co-operation between states to ensure adequate physical protection of nuclear material and the necessity for an appropriate international legal instrument were therefore quickly recognised.

The idea of an international legally binding undertaking for the protection of nuclear material was first discussed among member states of the IAEA in the mid-1970s. In 1979, the Convention on

---

36. See Article 27 of the Joint Convention.

37. See Wetherall, A., "Normative Rule Making at the IAEA: Codes of Conduct", *Nuclear Law Bulletin* No. 75 (2005/1), for a detailed analysis of non-legally binding instruments.

38. Once approved by the IAEA Board of Governors and endorsed by the IAEA General Conference, a code is a legal instrument of non-binding nature prepared at the international level to offer guidance to states for the development and harmonisation of policies, law and regulations.

39. Stoiber, C., *et. al.*, *op. cit.*, page 145.

the Physical Protection of Nuclear Material (CPPNM)[40] was adopted. The scope of this convention was, however, limited to physical protection of nuclear material during international transports, international co-operation between states and exchange of information. It took more than twelve years and the dissolution of the USSR, which left Russia and most other successor states with inadequate legal and technical systems, for the convention to enter into force.

Only a few years later, with new terrorist threats identified, questions relating to the adequacy of the convention arose among members of the international community. Notably, the CPPNM did not cover the protection of nuclear material in domestic use, storage and transport. In addition, it did not include any commitment with regard to the protection of nuclear materials and facilities against sabotage.[41] The strengthening of the convention was addressed in open-ended negotiations with very little progress until 2001.

The sophisticated logistics behind the attacks of 11 September 2001 challenged many assumptions regarding the seriousness of the terrorist threat to nuclear facilities. In the aftermath of these attacks, it became evident that the prospect of terrorist attacks concerns all states. This tragic event and the followings attacks in Madrid and London fostered more international co-operation and the establishment of an international regime for nuclear security.

In July 2005, the Amendment of the CPPNM was adopted covering the deficiencies identified in the beginning of the 1990s. Although the amendment is not yet in force, it provides an expanded regime and strengthens the CPPNM in three main areas: (1) the reinforcement of a national legislative framework for the physical protection of nuclear material, (2) the addition of offenses relating to sabotage of nuclear facilities and (3) new arrangements for co-operation, assistance and co-ordination among states in case of a credible threat of sabotage. Besides the CPPNM, non-binding recommendations for the physical protection of nuclear material were developed by a panel of experts under the auspices of the IAEA. These guidelines, entitled "The Physical Protection of Nuclear Material and Nuclear Facilities",[42] reflect international consensus, procedures and definitions going beyond those of the CPPNM.[43] The latest version of this document provides recommendations on the elements of a state's system of physical protection of nuclear material and nuclear facilities and on the requirements for a state's legislation in this field. It also specifies technical requirements related to physical protection of nuclear material and facilities.

In order to prevent accidents involving radioactive sources, as well as the theft or unauthorised use of radioactive material, the Code of Conduct on the Safety and Security of Radioactive Sources was adopted in September 2000. It was revised in 2003 in order to reflect the changes in perception of risks following the terrorist attacks of 11 September 2001. The Code of Conduct attempts to develop, harmonise and implement national policies, legislation and regulations in order to achieve a high level of safety and security in the use of radioactive sources. A primary objective of the code is to prevent unauthorised access to radioactive sources, as well as their loss, theft or unauthorised transfer, to reduce the likelihood of accidental exposures. The code is recognised as the first safety-security cross-over instrument in international nuclear law.

---

40. Convention on the Physical Protection of Nuclear Material, IAEA INFCIRC/274/Rev.1, 1979.

41. Vez Carmona, M., "The International Regime on the Physical Protection of Nuclear Materials and the Amendment to the Conventions on the Physical Protection of Nuclear Material", *Nuclear Law Bulletin* No. 76 (2005/2), page 36.

42. IAEA document INFCIRC/225/Rev. 4 (Corrected).

43. Stoiber, C., *et. al.*, *op. cit.*, at 146.

In April 2004, the U.N. Security Council adopted Resolution 1540,[44] a decision binding on member states. The resolution is an anti-terrorist measure, requiring member states to refrain from supporting, by any means, non-state actors in developing, acquiring, manufacturing, possessing, transporting, transferring or using nuclear, chemical or biological weapons and their delivery systems. Resolution 1540 imposes binding obligations on all states to establish domestic controls to prevent the proliferation of nuclear, chemical and biological weapons and their means of delivery, including by establishing appropriate controls over related materials.

More recently, in July 2007, the International Convention on the Suppression of Nuclear Terrorism entered into force.[45] This convention, adopted in 2005 after 8 years of negotiations, applies to nuclear material and facilities covering both military and peaceful applications. The key provisions of the convention are the criminalisation of offenses relating to the planning, threatening or carrying out of acts of nuclear terrorism; and the requirement for states to take all practicable measures to prevent and counteract preparations for offenses inside or outside their territories.[46]

As with its two "sister" regimes, the international nuclear security regime has undergone profound evolution since initial discussions on the adoption of a legally binding instrument in the 1970s. Recognising that nuclear security is not solely a matter of national interest, states initiated international negotiations with results impacting nuclear law significantly.

1.4 Nuclear safety, security and safeguards: three different regimes following their own agenda

The decision to adopt binding instruments at the international level has often been triggered by major events perceived *a posteriori* as having been potentially avoidable if adequate legal norms had been enacted and enforced.[47] Nuclear law is no exception to the rule.

The nuclear age is already loaded with unexpected events: the explosion of an atomic bomb in Hiroshima, the spread of non-peaceful uses of nuclear energy, a severe nuclear accident at Chernobyl, serious nuclear terrorist threats and multiple incidents involving radioactive sources. These events were strong catalysts for change, resulting in important milestones for strengthening the non-proliferation, safety and security regimes. However, as shown by the historical outline above, each regime has evolved according to its own specific agenda regardless of the evolution of the others.

Unlike the non-proliferation regime, the nuclear safety and security regimes, although based on legally binding treaties and conventions, have soft enforcement mechanisms. Moreover, states are not legally obligated to adhere to the provisions of the codes of conduct and standards established by the IAEA and other institutions. Mandatory monitoring, verification and compliance are practically non-existent. As a result, national governance in respect of nuclear safety and security is more diffuse than the non-proliferation regime and includes a broader range of institutions.

---

44. Resolution 1540, adopted by the Security Council at its 4956th meeting on 28 April 2004.

45. For the full text of the convention, see http://untreaty.un.org/English/Terrorism.asp.

46. For further information on the legal framework see Jankowitsch-Prevor, O., "The International Convention on the Suppression of Acts of Nuclear Terrorism", *Nuclear Law Bulletin* No. 76 (2005/2); Gehr, W., "The Universal Legal Framework against Nuclear Terrorism", *Nuclear Law Bulletin* No. 79 (2007/1).

47. Jankowitsch, O., "The Convention on Nuclear Safety", *Nuclear Law Bulletin* No. 54 (1994/2), page 156.

This may also explain why establishing synergies between nuclear safeguards, safety and security did not appear as a major concern until recently.

2. International legal obligations promoting synergies in safety, security and safeguards

Over the last fifty years, states have developed their own national legal infrastructures depending on which nuclear activities they had decided to allow. At the same time, a large number of international legal instruments have been developed to cover nuclear safety, security and safeguards. The adherence to international instruments by contracting states has had a significant impact on their national legal frameworks. As a result, defining nuclear law has become a complex task.

Nuclear law can be defined as "the body of special legal norms created to regulate the conduct of legal or natural persons engaged in activities related to fissionable materials, ionizing radiation and exposure to natural sources of radiation". Its overall objective is to "provide a legal framework for conducting activities related to nuclear energy and ionizing radiation in a manner which adequately protects individuals, property and the environment".[48] This definition does not distinguish between the types of activities involving sources of radiation. Thus, safety, security and safeguards can be included in one comprehensive legal system as they have the common aim to protect individuals and the environment.

With the exception of the Code of Conduct on the Safety and Security of Radioactive Sources, during the negotiation process of international legal instruments governing the peaceful and the non-peaceful uses of nuclear energy, drafters show little concern about already existing obligations in other fields of nuclear law. The adoption of some legal instruments may have led to the creation of overlaps or gaps within the global nuclear legislative framework.

The next section will analyse the existing synergies between international legal instruments governing nuclear safety, nuclear security and safeguards, with the objective of identifying which legal provisions promote more than two regimes.

2.1 The legislative and regulatory framework

A major provision in virtually all international legal instruments governing nuclear safety and security is the obligation to establish and maintain a legislative and regulatory framework.

Article 7 of the CNS and Article 19 of the Joint Convention impose similar obligations; the CNS requires a regulatory framework "to govern the safety of nuclear installations" and the Joint Convention requires one to "govern the safety of spent fuel and radioactive waste management".

Article 2A(2) of the amended CPPNM contains a similar obligation, to "establish and maintain a legislative and regulatory framework to govern physical protection".

The obligations relating to the legislative and regulatory frameworks for nuclear safety and nuclear security have four common components: (1) the establishment of applicable national requirements and regulations, (2) a system of licensing (or authorisations), (3) a system of regulatory

48. Stoiber, C., *et. al.*, *op. cit.*, pages 4 and 5.

inspections to verify compliance with applicable requirements and conditions of the licence, and (4) the enforcement of applicable requirements and of the terms of licence.[49]

International legal instruments relating to nuclear non-proliferation do not contain such obligations. However, Article 7 of a Comprehensive Safeguards Agreement between a state and the IAEA under the terms of INFCIRC/153 must provide that "... the State shall establish and maintain a system of accounting for and control of all nuclear material (SSAC) subject to safeguards under the Agreement". Such a system serves as the basis for applying safeguards pursuant to the CSA. The fundamental elements of an SSAC are set out in Paragraph 32 of INFCIRC/153, and consist of procedures and requirements related to the provision of information to the IAEA for its mandatory verification activities. The ability of a state to provide accurate information depends on a SSAC capable of tracking relevant material. Although not explicitly required, the establishment of a legislative and regulatory framework is strongly suggested by this obligation.

Moreover, a nuclear material accountancy and control system may serve national objectives to account for and control nuclear material, contributing directly to the detection of possible losses, or unauthorised use or removal of nuclear material. While international and national objectives are different in nature, there are many elements of each system which could contribute to the achievement of both objectives.[50] For example, the national measures to be taken by states parties to the NPT to satisfy the requirement of a system of accountancy and control of nuclear material may also satisfy or reinforce a nuclear security regime whose objective is to reduce the risk of illicit trafficking and theft of nuclear material.

2.2 The regulatory authority

The regulatory authority constitutes another common feature of international legal instruments governing nuclear safety and security.

Article 8(1) of the CNS and Article 20(1) of the Joint Convention impose similar obligations related to the regulatory authority. They state that "each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework (…) and provided with adequate authority, competence and human resources to fulfil its assigned responsibilities".

Fundamental principle D of Article 2A(3) of the amended CPPNM establishes a similar obligation; the competent authority is "responsible for the implementation of the legislative and regulatory framework, and is provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities".

---

49. See Article 7 of the CNS for obligations related to the legislative and regulatory framework for the nuclear safety of nuclear installations, Article 19 of the Joint Convention for obligations related to legislative and regulatory framework for the safety of spent fuel management and the safety of radioactive waste management, and fundamental principle C stated in Article 2A.3 of the Amended CPPNM for the legislative and regulatory framework related to the physical protection of nuclear material and nuclear facilities.

50. See IAEA GC Resolution GC(52)/RES/10 preamble (n): "Noting the central contribution of the Agency's safeguards system, and also of States' Systems of Accounting for and Control of Nuclear Materials, to preventing illicit trafficking and to deterring and detecting the diversion of nuclear materials, to the extent to which such control procedures are applicable", October 2008.

For nuclear safeguards, the concept of regulatory authority is less obvious. In order to fulfil the international obligation to establish and maintain a SSAC, a state may establish an authority vested with similar attributes to the ones described under the nuclear safety and the nuclear security frameworks: adequate legal authority, competence, financial and human resources. The provisions of the NPT and INFCIRC/153 provide incentives to states to designate a regulatory authority in charge of nuclear safeguards.

An important attribute of a regulatory authority is to ensure that its decisions are not subject to undue influence from entities involved in the development, promotion or utilisation of nuclear energy.[51] This so called "independence principle" has been developed in a number of international conventions.

Article 8(2) of the CNS states that "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". Article 20(2) of the Joint Convention is drafted according to the same principle of independence from "other functions where organizations are involved in spent fuel or radioactive waste management and in their regulation".

Similarly in nuclear security, Article 2A(3) of the amended CPPNM states that the "State should take steps to ensure an effective independence between the function of the State's competent authority and those of any body in charge of the promotion or utilisation of nuclear energy".

There is no provision in an international legal instrument on nuclear safeguards which ensures the independence of the authority in charge of nuclear accountancy and control. In this area, the principle of independence is less fundamental since the objective of international nuclear safeguards is not directly associated with regulations of activities related to nuclear energy and ionizing radiations.

2.3 The role of the International Atomic Energy Agency

The IAEA plays a unique role in the international legal framework related to the uses of nuclear energy. The non-proliferation regime grants the IAEA the power to verify the peacefulness of a state's nuclear programme. Article III(1) of the NPT requires states to "accept safeguards, as set forth in an agreement (…) to be concluded with the International Atomic Energy Agency (…) with the exclusive purpose of verification of its obligation assumed under this Treaty".

The IAEA is also the depositary of all legally binding instruments governing the safety of nuclear installations and the physical protection of nuclear material and installations. The Notification and Early Assistance Conventions, the CNS, the Joint Convention, the CPPNM and the Amendment to the CPPNM were all negotiated and adopted under the IAEA's auspices. Moreover, both the International Convention for the Suppression of Acts of Nuclear Terrorism and the UNSCR 1540 recognise the unique role, expertise and knowledge of the Agency.

As a consequence, the Agency has developed over the years an ability to build consensus as well as a capacity to establish international norms and standards concerning nuclear matters. Nowadays, the IAEA is considered as the world's centre for nuclear co-operation and its very existence constitutes *de facto* a clear synergy between the nuclear safety, security and safeguards regimes.

---

51. See the independence principle Stoiber, C., *et. al.*, *op. cit.*, pages 9 and 26 to 28.

3. Synergy between nuclear safety and nuclear security

Nuclear safety principles aim to protect people and the environment from the hazardous effects of radioactivity whereas nuclear security principles aim to protect nuclear and radioactive material from human malicious acts. However, the basic principles to reduce both risks share common ground.

In both regimes, the licence holder has the prime responsibility for the safety and security of its nuclear installations and this responsibility cannot be delegated. Article 9 of the CNS,[52] Article 21(1) of the Joint Convention[53] and fundamental principle E of the amended CPPNM[54] are all relevant in this regard.

To a large extent, the text of the CNS and the Joint Convention are based on safety objectives addressed in IAEA Safety Series documents.[55] These documents – called "Safety Fundamentals" – present an international consensus on the basic concepts for managing the safe operation of nuclear installations and the safe management of both spent fuel and radioactive waste.[56] Safety objectives of both Safety Fundamental documents follow the same three-part structure: (1) a general nuclear safety objective, (2) a radiation protection objective and (3) a technical safety objective. The latter consists in preventing accidents with radiological consequences and mitigating such consequences.[57] "Defence in depth" is considered by the IAEA Fundamental Safety Principles[58] to be the primary means of preventing and mitigating the consequences of an accident. It is implemented through the combination of a number of consecutive and independent levels of protection that would have to fail before harmful effects would be suffered by people or the environment. If one level of protection or barrier were to fail, the subsequent level or barrier would be available. The independent effectiveness of the different levels of defence is a necessary element of defence in depth. Elements of defence in depth which relate to safety are containment structure (walls, doors and confined space) or redundancy of equipment.

---

52. Article 9 of the CNS: "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".

53. Article 21(1) of the Joint Convention: "Each Contracting Party shall ensure that prime responsibility for the safety of spent fuel or radioactive waste management rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility". It is worth noting that the Joint Convention includes in Article 21(2) a provision assigning responsibility to the contracting party in case no licence holder or responsible party can be identified.

54. Paragraph 3 of Article 2A of the amended CPPNM reads: "Fundamental Principle E: Responsibility of the License Holders. The responsibilities for implementing the various elements of physical protection within a state should be clearly identified. The state should ensure that the prime responsibility for the implementation of physical protection of nuclear material or of nuclear facilities rests with the holders of the relevant licenses or of other authorizing documents (e.g. operators or shippers)".

55. Article 1 of the CNS follows the "safety objectives" of the IAEA document, "The Safety of Nuclear Installations", Safety Series No. 110, IAEA, Vienna (1993). Article 1 of the Joint Convention strictly follows the CNS as well as the IAEA document, "The Principles of Radioactive Waste Management", Safety Series No. 111-F, IAEA, Vienna (1995). It is worth noting that these two documents were superseded in 2006 by a single IAEA document (56). A thorough analysis of these provisions can be found in Jankowitsch, O., *op. cit.*, pages 156-161.

56. Jankowitsch, O., *op. cit.,* page 159.

57. Article 1(iii) of the CNS and the Joint Convention.

58. IAEA Safety Standards, "Fundamental Safety Principles", No. SF-1, Vienna, 2006, page 13.

A similar approach was adopted when developing standards for the physical protection of nuclear material and nuclear facilities. Defence in depth, considered as a fundamental principle of physical protection, is defined as "a concept of several layers and methods of protection (structural or other technical, personnel and organisational) that have to be overcome or circumvented by an adversary in order to achieve his objectives".[59] Elements of defence in depth for physical protection are fences, access control, doors, zoning etc. Although this definition refers to a different risk than the one defined with respect to nuclear safety, the defence in depth principle benefits both nuclear safety and nuclear security.

Both nuclear safety and nuclear security take into account the risk of inadvertent human error. Promoting a culture of safety and security that governs the attitudes and behaviour of all organisations and individuals can limit this risk and international legal instruments governing nuclear safety and security have supported this premise. Preambles (iv) of the CNS and (v) of the Joint Convention reflect the desire of contracting parties to "promote an effective nuclear security culture" worldwide. The basic principles governing the safety and security of radioactive sources as stated in Article 7(b) of the Code of Conduct encourage "the promotion of safety culture and of security culture with respect to radioactive sources". Similarly, the amended CPPNM includes the concept of security culture[60] in its fundamental principles.

As seen previously, the safety and security of radioactive sources are not covered by any international legally binding instruments.[61] The international community has, however, recognised that "the key common element which would have the greatest part to play both in the avoidance of "orphan" sources – with their potential for misuse or accidents – and in the achievement and maintenance of safe and secure operating conditions is effective national regulatory authorities operating within suitable national infrastructures".[62] The development of the Code of Conduct on the Safety and Security of Radioactive Sources, although not binding, is based on this principle making the code a case of obvious safety-security synergy.

4. Synergy between nuclear security and safeguards

As noted earlier, nuclear security and safeguards regimes share a common goal to secure nuclear material. However, the threat against which nuclear material is protected differs. One of the primary objectives of nuclear safeguards is to ensure that nuclear material declared by states has not been diverted from its peaceful use. The nuclear security regime focuses on preventing, detecting and responding to intentional misuse of nuclear material from non-state actors. With the appreciation that

59. Article 2A.3 of the Amendment to the CPPNM states that: "In implementing the obligations under paragraphs 1 and 2, each State Party shall, without prejudice to any other provisions of this Convention, apply insofar as is reasonable and practicable the following Fundamental Principles of Physical Protection of Nuclear Material and Nuclear Facilities. (…) Fundamental Principle I: Defence in Depth. The state's requirements for physical protection should reflect a concept of several layers and methods of protection (structural or other technical, personnel and organizational) that have to be overcome or circumvented by an adversary in order to achieve his objectives".

60. See paragraph 3 of Article 2.A of the Amendment of the CPPNM.

61. The use of sealed radioactive sources is not covered by the CNS, the Joint Convention (except for disused sealed sources) or the CPPNM (except for sources containing nuclear material). It is however, covered by the International Convention for the Suppression of Acts of Nuclear Terrorism.

62. Paragraph 3, "Measures to Strengthen International Co-operation in Nuclear Radiation and Waste Safety," GC(42)/INF/15, September 1998.

illicit trafficking and theft of nuclear material can lead to nuclear weapons proliferation and the construction of improvised nuclear devices, legal provisions to limit these risks benefit both nuclear security and non-proliferation regimes.

As a consequence, the first synergy between nuclear security and safeguards can be found in the scope of the international legal instruments themselves. Article III(1) of the NPT stipulates that procedures for required safeguards should apply "on all source or special fissionable material[63] in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere" for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices. The CPPNM applies to "nuclear material used for peaceful purposes in use, storage and transport and to nuclear facilities used for peaceful purposes".[64] The definition of nuclear material in CPPNM as stated in Article 1(a) is consistent with the one provided in Paragraph 112 of INFCIRC/153.[65]

In both regimes, the relevant international legal instruments apply to the same type of nuclear material the definition of which is purely legal: radioactive materials used in nuclear technology systems, such as nuclear reactors and nuclear weapons.[66]

There are other synergies as well. The safeguards system has three basic features reinforcing nuclear security: nuclear material accounting,[67] physical inventory and containment and surveillance.[68] Nuclear material accounting establishes the quantities of nuclear material present within defined areas and the changes in those quantities that take place within defined periods of time. Containment and surveillance measures are designed to take advantage of physical barriers such as walls, containers, tanks or pipes, in order to restrict or control the movement of or access to nuclear materials. Such measures help to reduce the probability that undetected movements of nuclear material or equipment take place. Surveillance is used to detect undeclared movements of nuclear materials, tampering with containment, fabrication of false information or interference with safeguards devices. By setting up an international legal system of accounting and control of nuclear materials, the international safeguards regime facilitates the implementation of physical protection measures and reduces the risk of illicit trafficking or theft of nuclear material.

Similarly, the CPPNM requires states to ensure the physical protection of nuclear material in international nuclear transport[69] and to co-operate in returning nuclear material seized in trafficking.[70]

---

63. Article XX of the IAEA Statute defines "source material" as "uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound, or concentrate..." According to the same article, "The term 'special fissionable material' means plutonium-239; uranium- 233; uranium enriched in the isotopes 235 or 233; any material containing one or more of the foregoing...".

64. Article 2(1) of the amended CPPNM.

65. Paragraph 112 of INFCIRC/153 refers to nuclear material as "any source or any special fissionable material as defined in Article XX of the Statute (see footnote 61).

66. Not all radioactive materials are nuclear material (e.g. Cobalt is a radioactive material but not a nuclear material). On the contrary, all nuclear materials are radioactive.

67. INFCIRC/153, paras 32 and 59-69.

68. INFCIRC/153, para 29.

69. Article 3 of the CPPNM: "Each State Party shall take appropriate steps within the framework of its national law and consistent with international law to ensure as far as practicable that, during international nuclear transport, nuclear material within its territory, or on board a ship or aircraft under its jurisdiction

The physical protection measures consist of access control, containment and surveillance.[71] Moreover, UNSCR 1540 obliges states to establish effective monitoring to detect trafficking in nuclear materials by developing and maintaining "appropriate effective measures to account for and secure" nuclear material in use, storage or transport.[72]

Nuclear security and nuclear safeguards also promote similar practices. An important part of the safeguards system is the combination of material accountancy with inventory control measures. Material accountancy measures provide knowledge of the type of nuclear materials while inventory control provides continuity of knowledge of the location of these materials. These measures are also described in the Code of Conduct on the Safety and Security of Radioactive Sources. According to Article 11 of the code, every "State should establish a national register of radioactive sources". Such a register is similar to a nuclear material accountancy ledger. Article 22(h) of the code recommends that the regulatory body ensure that "inventory controls are conducted on a regular basis by persons with authorizations". Although the nuclear safeguards system and the code have little else in common, they both call for measures to ensure a safe and secure use of radioactive sources containing nuclear material.

5. The limits of international legal instruments in promoting synergies

As shown above, synergies between nuclear safety and nuclear security on one hand and between nuclear security and safeguards on the other can be easily identified through various provisions in the aforementioned international legal instruments. However, very few international legal instruments promote synergies between all three regimes. In some cases the principles of the regimes and specific legal provisions of relevant international instruments may actually hamper further linkages between the three systems.

5.1 Safeguards and safety not necessarily promoting each other

A major difference between the nuclear safety and nuclear safeguards regimes lies in their scope of application. The nuclear safety regime focuses on the management of activities at nuclear facilities which pose a risk to individuals and the environment, whereas the nuclear safeguards regime focuses on the diversion of nuclear material and the type of nuclear activities carried out in a state to ensure the peacefulness of its nuclear programme. Legal provisions applicable to nuclear safeguards are totally dissociated, for example, from those applicable to the reduction of environmental risks. The prevention and promotion principles developed to balance the risks and benefits of nuclear energy do not exist in the nuclear safeguards regime.

The obligation to establish and maintain a SSAC and the potential role of a SSAC at national level provide a unique incentive for state parties to the NPT to establish and maintain a legislative and regulatory framework to govern nuclear safeguards. However, the legal provisions of the international safeguards regime are not directly beneficial for the nuclear safety regime.

---

insofar as such ship or aircraft is engaged in the transport to or from that State, is protected at the levels described in Annex I".

70. Article 5(2) of the CPPNM.

71. Annex I of the CPPNM describes the levels of physical protection to be applied in the international transport of nuclear materials according to categories defined in Annex II of the convention.

72. Article 3(a) of the UNSCR 1540.

The responsibility principle – a fundamental principle of nuclear safety – does not exist in the international safeguards regime. Article 9 of the CNS[73] and Article 21(1) of the Joint Convention[74] state in clear terms that the licence holder is responsible for the safety of the nuclear installation and the management of spent fuel and radioactive waste respectively. The burden borne by the licensee for ensuring that its activities meet applicable safety and environmental protection standards cannot be found in the international safeguards regime. On the contrary, the NPT places upon states the responsibility to accept safeguards "for the exclusive purpose of the verification of the fulfilment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapon or other nuclear explosive devices".[75]

International legal instruments in the area of nuclear safety and nuclear safeguards focus on balancing different risks and different benefits. They do not mutually reinforce each other even though both participate in the promotion of safe and secure use of nuclear energy.

5.2 Nuclear safety and nuclear security principles opposing each other

Nuclear safety and nuclear security regimes, although aimed at reducing different risks, share common basic principles. The responsibility of states to establish and maintain a legislative and regulatory framework, to designate a regulatory body, to establish the prime responsibility of the licensee as well as, for example, adopting the defence in depth principle are common to both. The implementation of these various principles may, however, differ and sometimes be even contradictory.

In the nuclear safety regime, a comprehensive and systematic safety assessment of a nuclear installation considers environmental factors as well as unexpected events affecting operational activities. The risk assessment is carried out by operators when applying for an authorisation, while the review of the safety assessment is carried out by the regulatory body.[76]

Protection against malicious acts however, requires more direct involvement of the state in the security regime. The obligation to ensure an effective nuclear security system is found in the amended CPPNM and in the Code of Conduct on the Safety and the Security of Radioactive Sources. The fundamental principle G – called Threat – of the amended CPPNM requires physical protection to "be based on the State's current evaluation of the threat".[77] Article 16 of the Code of Conduct is even more explicit: "Every State should define its domestic threat, and assess its vulnerability with respect to this threat for the variety of sources used within its territory, based on the potential for loss of control and

---

73. Article 9 of the CNS: "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".

74. Article 21(1) of the Joint Convention: "Each Contracting Party shall ensure that prime responsibility for the safety of spent fuel or radioactive waste management rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility". It is worth noting that the Joint Convention includes in Article 21(2) a legal provision which imposes a responsibility on the contracting party in case a licence holder cannot be identified.

75. Article III(1) of the NPT.

76. Article 14(i) of the CNS: "Each Contracting Party shall take the appropriate steps to ensure that: 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".

77. Fundamental Principle G, paragraph 3 of Article 2A.3 of the amended CPPNM.

malicious acts involving one or more radioactive sources". The state therefore plays a more crucial role in relation to security. The security of a nuclear installation depends, among other things, on the country's political, social and economic environment which can be quite unstable. Moreover, the state is directly involved in the assessment of the risk of malicious acts that may affect nuclear installations.

The state also plays a determining role in responding to certain malicious acts through the intervention of law enforcement agencies (police or gendarmerie). Crisis management response to malicious acts also demands the contribution of a greater number of state bodies than managing a purely safety related crisis. In addition to the services already mobilised by a safety crisis, law enforcement agencies and special forces may be involved in a security crisis.

On a more technical level, protection against sabotage[78] may actually contradict the "priority to safety principle".[79] Access controls that are imposed for security reasons can inhibit safety by limiting access for maintenance or surveillance activities or egress to escape a fire or explosion. If an attack occurs, safety considerations may require access to an area while security forces might seek to deny access. Similarly, the shutdown of equipment for safety reasons might inappropriately disable security-related equipment, such as monitoring equipment. In short, there can be a synergy or an antagonism between safety and security.[80]

In addition, since security deals with deliberate acts, a security culture requires different attitudes and behaviour on the part of organisations and individuals, such as protecting the confidentiality of information and efforts to deter malicious acts.[81] The security culture can therefore promote a strong culture of confidentially that may, in certain circumstances, clash with the transparency principle of nuclear safety. A balance between transparency in nuclear safety and the need to protect sensitive security information from disclosure may be difficult to achieve in an environment with a strong safety and security culture.

6. The "3S" concept of nuclear law: an attempt of a definition

Adopting a synergetic approach to nuclear risks has become a common subject of discussion in the international arena.[82] The concept, however, still lacks a clear definition. A "3S" approach to nuclear energy can apply to various subject matters such as policy, legal matters or technical specifications. Recalling that the context of a "3S" approach may differ significantly from one area to another, one should therefore refer to a "3S approach to nuclear law" when referring specifically to legal matters.

As noted above, legal instruments governing nuclear safety, security and safeguards can promote synergies to a limited extent. They are, however, unlikely to promote simultaneous synergies

78. See the graded approach principle as described in the amended CPPNM.

79. The "priority to safety" principle is stated in article 10 of the CNS: "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.

80. Extract of the annual assessment letter from the International Nuclear Safety Advisory Group to the IAEA Director General, 25 August 2008.

81. For a detailed analysis of nuclear security culture, see IAEA Nuclear Security Series No. 7, Implementing Guide, "Nuclear Security Culture", 2008.

82. The IAEA will organise an International Symposium on Nuclear Security in 2009 addressing inter alia the safety, security and safeguards interfaces. See IAEA website.

in all three areas and may sometimes even seem to contradict each other. In addition, a total synergetic approach to nuclear law might be complex to define and to set up. Recognising that the concept of nuclear law must cover all aspects of nuclear energy, national nuclear law should be consistent with international legal instruments.

At the international level, the "3S" approach to nuclear law should aim at reaching an international consensus on the interface and interrelations between nuclear safety, security and safeguards. According to its statutory functions,[83] the Agency could establish guidance or promote the adoption of non-legally binding instruments recognising the synergies in nuclear safety, security and safeguards.

Three sets of synergies can be identified: (1) the synergy related to the general legislative and regulatory framework of nuclear law, (2) the synergy between nuclear safety and nuclear security regimes and (3) the synergy between nuclear security and non-proliferation regimes.

The first set of recommendations could focus on the legislative architecture and the regulatory framework. It would include the definition of the regulatory body and the various responsibilities of states and operators. Recognising that the IAEA is a "hub" for sharing knowledge and experience in the three areas, states would reaffirm the role of the Agency as a centre for international nuclear co-operation. The second set would aim at identifying the areas where the nuclear safety and nuclear security regimes reinforce each other as well as the major differences in the application of international legal instruments governing them. The third set would identify how the legal provisions of the non-proliferation regime are of benefit to the nuclear security regime. Particular emphasis on the synergy related to illicit trafficking as well as to the provisions of the International Convention on the Suppression of Acts of Nuclear Terrorism could be given.

At a national level, the "3S" approach to nuclear law should aim to avoid inconsistent, incompatible or incomplete pieces of legislation. International considerations could be taken into account as guidance in the drafting of nuclear laws. The decision whether to cover all aspects of nuclear energy with a comprehensive nuclear law or to cover them in a number of separate laws should remain solely with the state. Such a decision should not only consider national legal traditions[84] but also the intended use of nuclear energy in the respective country. States with minimal nuclear activities may decide to adopt a comprehensive law in order to avoid complexity or overlaps.

The benefits of adopting a "3S" approach to nuclear law at the national level could be multiple. A single comprehensive nuclear law, a "Nuclear Energy Act", can cover all aspects of nuclear law.[85] This type of legislation could include general provisions for a single competent authority for nuclear safety, security and safeguards, a consistent system of authorisations in the three areas, the definition of responsibilities of licensees, operators and users in respect of each field and a comprehensive system of inspection. In addition, technical provisions related to nuclear safety (including radiation protection measures), nuclear security and nuclear safeguards (including import and export of radioactive material and nuclear equipment) could be included.

---

83. Under Article III.A.6, the IAEA is authorised to "establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property".

84. Stoiber, C., *et. al., op. cit.,* page 16.

85. An example of a structure of a comprehensive nuclear law can be found on the website of the Vietnam Atomic Energy Commission, www.vaec.gov.vn.

One of the challenges of a comprehensive nuclear act is to assure coherence between the various provisions governing nuclear safety, security and safeguards and the proper embodiment of the law in general legislation. Cross-cutting relationships with other legislation, such as that addressing environmental law, criminal law, general tax law or foreign trade law, have to be considered carefully. In addition, legislative procedures in nuclear matters require strong interaction between lawyers and technicians. In the case of a "3S" approach to nuclear law, the active involvement of both may present a challenging task as a wide range of technical expertise would have to find common ground.

Conclusions

The "3S" approach to nuclear law: an asset to meet future challenges of nuclear energy

Since its development in the 1950s, nuclear energy has been considered as requiring special legal arrangements at the national level to ensure that it is properly managed.[86] The Three Mile Island and Chernobyl accidents opened a period of recession in nuclear power expansion[87] but not with regard to international nuclear law. Numerous international legal instruments have been developed as a consequence of these accidents.

Over the years, international legal instruments related to nuclear technology have become extremely vast and complex. Some states have integrated their provisions in the course of building up their nuclear infrastructures and expanding their national legislative framework related to nuclear energy and ionizing radiation. Others, now considering first steps towards the development of nuclear power, have to face the integration of technical and complex provisions into their domestic legal framework. Incorporating most of the provisions of international legal instruments in a national legislative framework has therefore become even more challenging.

A significant change now appears to be on the horizon. For the first time in 20 years, states might be turning to nuclear power as a potential solution to meet future demands resulting from population growth, higher energy needs and demands for more sustainable energy supplies. In the next decade, nuclear power is projected to undergo a dramatic expansion, to such an extent that some have predicted a nuclear "renaissance".[88] The transition from a policy decision to embark on a nuclear power programme to the concrete decision to construct a first nuclear power plant will require the implementation of an adequate legal framework. It is incumbent upon states to ensure that complete technical and institutional competence has been attained before embarking upon such an undertaking.

In a context of economic recession, public trust, effectiveness and financial efficiency are now more crucial than ever. Stakeholders involved in the peaceful use of nuclear energy such as governments, technology providers, operators and users, will not want to lose time and money. Even though the risks and benefits of nuclear energy are well known, the decision to develop nuclear technologies at a national level will depend on a thorough assessment of the balance of both at the international level. By limiting the risks while maximising the benefits, nuclear law could play a significant role in promoting nuclear energy.

---

86. Stoiber, C., *et. al., op. cit.,* page 4.

87. "Energy, Electricity and Nuclear Power: Developments and Projections – 25 Years Past and Future", IAEA Publication 1304, page 1.

88. "20/20 Vision for the Future", IAEA, February 2008, page 7.

As a matter of fact, the synergies presented in this article could represent a strong asset in establishing an effective and efficient legislative and regulatory framework for the safe and secure use of nuclear energy. They can act to help avoid loopholes or pitfalls which are common in such interrelated, technical and complex legislation.

Synergies between nuclear safety, security and safeguards are not a myth. However, for they become reality, the need for international consensus on the subject seems essential. The International Atomic Energy Agency is well positioned to promote the adoption of guidelines on a "3S" approach to nuclear law and provide assistance to member states who wish to take advantage of these synergies in their national legal framework.

The International Thermonuclear Experimental Reactor (ITER) International Organisation:

Which Laws Apply to this International Nuclear Operator?

*by Laetitia Grammatico-Vidal**

ITER is a research project the purpose of which is to demonstrate the scientific and technical feasibility of fusion as a new source of energy. After construction of large Tokamaks,[1] such as the JT60 in Japan, TFTR (Tokamak Fusion Test Reactor) in the United States, JET (Joint European Torus) in the United Kingdom and Tore Supra in France, this project is the last stage of research to be conducted before construction of an industrial prototype using fusion reactions to produce electricity, planned for the 2040-2050 timeframe.

ITER is being carried out by way of international collaboration between seven partners – the European Atomic Energy Community (Euratom), China, India, Japan, Russia, South Korea and the United States – which together represent more than half the world's population. From a project organisation point of view, it is supported by both financial and in-kind contributions (components, equipment, materials and other goods as well as seconded staff),[2] provided by each of the partners.

Each member makes its contribution through a special legal entity called a "domestic agency", to an international organisation which was set up by the Agreement on the Establishment of an International Fusion Energy Organization for the Joint Implementation of the ITER Project (hereinafter referred to as the "ITER Agreement"),[3] signed in Paris on 21 November 2006, and which

---

* Mrs. L. Grammatico-Vidal, who has a PhD in Law, is the Head Legal Advisor at the ITER-France Agency within the Atomic Energy Commission. The author alone is responsible for the facts and opinions expressed in this article.

1. Tokamak is the Russian acronym for Toroidalnaya Kamera s Magnitnymi Katushkami, which means toroidal magnetic chamber, invented in the early 1950s by Igor Tamm and Andreï Sakharov, involving the innovative idea of circulating a very strong current within the plasma.

2. Article 8 of the ITER Agreement.

3. O.J.E.U. L. 358/62 of 16 December 2006.

entered into force on 24 October 2007 after ratification by each of the partners.[4] This international agreement is to remain in effect for a period of 35 years and may be renewed for a period of 10 years without any change to its content. It is supplemented by an agreement of the same date on the privileges and immunities of the organisation and of its staff.

The function of the ITER Organisation is to construct, commission, operate, and permanently shutdown the ITER facilities, to encourage their exploitation by laboratories, other institutions and personnel participating in the fusion energy research and development programmes of its members and to promote public understanding and acceptance of fusion energy.[5]

The unique institutional structure for this project will be described briefly in the introduction before analysing the law applicable to this international organisation, a French nuclear operator, unique in France today.

1. Institutional structure of the ITER project

Organising this project required setting up a legal structure at several levels:

- At the international level, an international organisation was set up with the privileges and immunities attached thereto; the ITER Organisation is the nuclear operator of this future basic nuclear installation, as defined in French nuclear law (*installation nucléaire de base – INB*), and the employer of its personnel. Its headquarters is located at Cadarache, in the commune of Saint-Paul-les-Durance, Bouches du Rhône.

- At the level of each partner, a domestic agency was set up to take charge of the partner's contribution to the project.

- At the European level, a joint undertaking within the meaning of Article 45 of the Treaty establishing the European Atomic Energy Community (Euratom Treaty), *Fusion for Energy*, was set up by Council Decision No. 2007/198/Euratom of 27 March 2007,[6] Europe being the host partner (i.e. the one whose site was adopted and the major contributor).

- At the French national level, co-ordination of the ITER project has been conducted on behalf of the French Government since 2005 by a High Representative for completion of the ITER project in France (hereinafter referred to as "HRFI"), appointed by the Prime Minister.[7]

4. Euratom ratified the Agreement on 5 February 2007, India on 29 March 2007, South Korea on 13 April 2007, Japan on 29 May 2007, the United States on 4 June 2007 and China on 24 September 2007. Article 22 of the ITER Agreement provides that its entry into force will be effective one month after the last ratification.

5. Article 3 of the ITER Agreement.

6. O.J.E.U., 30 March 2007, L 90/58.

7. Since 2007, the Representative in question has been Bernard Bigot, also the General Administrator of the CEA since January 2009.

HRFI

The main task of the HRFI is to co-ordinate both central and local French Government services, to implement the commitments undertaken by France in relation to the ITER project. The HRFI also co-ordinates the various structures set up by the host country: *Agence ITER-France*, the ITER Prefectoral mission, the ITER Industrial Committee, and the educational and research federations whose work supports thermonuclear fusion and the ITER project.

The HRFI prepares the positions adopted by France and helps represent France in the relevant international bodies and before other project members, the European Union and its member states.

Agence ITER France

A French entity, *Agence ITER-France* was set up by Decree No. 2006-752 of 29 June 2006 and is responsible for monitoring the development of the project, as far as France's share of responsibility for it is concerned.[8] It enjoys administrative and budgetary independence from the Atomic Energy Commission (CEA),[9] its tasks being to ensure technical and operational interface with international and European bodies; to conduct public participation procedures; to prepare and present safety and security reports for the ITER project and undertake any other tasks entrusted to it; to collect the French contributions (funds and contributions in-kind) from the state, regional authorities or the CEA; to carry out preparatory work at the site of the ITER project; to oversee operations for the dismantling of the installation on the basis of special contributions from the international partners; and to monitor, for the French Government, the assessment of dismantling costs and the setting up of corresponding provisions and assets by the international body.

Supporting role: ITER Mission

A supporting role under the Prefect of the Region was established, by letter of 29 June 2005, in order "to facilitate as far as possible the setting up of the ITER Project in the PACA region". This mission involves co-ordinating all the administrative procedures within operational deadlines, while ensuring that this international scientific project attracts economic and local development for the "Provence/Alpes Côte d'Azur" region.

Within this general organisation, we shall concentrate more particularly on the legal structure created at the international level, the ITER Organisation. It is governed by international law but nevertheless, in its capacity as a French nuclear operator it remains subject to national law in certain particularly important areas of safety pursuant to Article 14 of the ITER Agreement which reads as follows:

8. Since 2006, the Director of *Agence ITER France* has been François Gauché (Order of 8 September 2006 appointing the Director of *Agence ITER France* within the Atomic Energy Commission, J.O.R.F. of 21 September 2006).

9. For more information on the CEA, see: Grammatico-Vidal. L., "Changes in the Legal Status of the Commissariat à l'énergie atomique", *Nuclear Law Bulletin* No. 83 (2009/1), p. 77.

"The ITER Organization shall observe applicable national laws and regulations of the Host State in the fields of public safety and security, occupational health and safety, nuclear safety, radiation protection, licensing, nuclear substances, environmental protection and protection from malevolent acts".

2. The ITER Organisation: A French nuclear operation with international status

The legal structure chosen to conduct the ITER project, an international organisation enjoying privileges and immunities, is unique on French territory for the operation of a basic nuclear installation.[10]

The ITER Organisation is an international organisation under public law being the owner, nuclear operator and scientific and technical leader of the project, all at the same time. As such, it is no different from any other international organisation subject to international law. It has an international legal personality capable of having rights and obligations, whether in its relations with other international law entities or when performing its functions on national territory. Under the ITER Agreement, it enjoys the legal capacity necessary to conclude agreements with states and international organisations, to conclude contracts, to acquire, hold and dispose of immovable property, to obtain licences and to institute legal proceedings.[11]

The ITER Organisation has a traditional institutional and managerial structure; essentially it comprises a Council composed of representatives of the seven parties to the agreement and a Director-General.

- The ITER Council is the principal organ of the ITER Organisation, comprising (up to four) representatives from each member and appointing a Chair and Vice-Chair from amongst its members.

- The ITER Council is responsible for the promotion, overall direction and supervision of the activities of the ITER Organisation. It may make recommendations or take decisions on any matters concerning the ITER Agreement.

- The Director-General is the chief executive officer and the representative of the organisation in the exercise of its legal capacity. Responsible to the Council for the execution of his duties, the Director-General is appointed for a period of five years which may be renewed once, and is assisted by the organisation's staff.

- The staff of ITER is made up of two categories: direct employees of the organisation and personnel seconded by the members.

  The secondment agreement between the domestic agency and the ITER Organisation lays down the working conditions, disciplinary procedures, function and responsibilities of the organisation with regard to seconded staff. They enjoy privileges and immunities and are subject to certain expressly listed social provisions. Such personnel, seconded in a

10. Basic nuclear installations are defined by Decree No. 2007-830 of 11 May 2007 on the nomenclature of basic nuclear installations, J.O.R.F. No. 110 of 12 May 2007, p. 8766, text No. 82.

11. For further information on the legal status of international organisations, see Instalment 112-3 of the Jurisclasseur Droit international, "Principes communs aux organisations internationales: statut juridique" as well as Instalment 112-20 on "Les éléments constitutifs des organisations internationales".

permanent and continuous fashion, are nevertheless considered as staff of the ITER Organisation.

- Staff sent by domestic agencies outside this framework (for example, in the context of contractual services between an enterprise and a domestic agency) do not fall into the category of ITER Organisation staff. This has legal consequences since they do not benefit from the legal status of an international organisation nor from its privileges and immunities and are subject to ordinary law.

As for the privileges and immunities granted within France under the Headquarters Agreement between the Government of France and the ITER Organisation, they are based on usual practice in this respect for international organisations and adapted to the situation of the ITER project. These privileges are justified because it is necessary to guarantee the independence of the organisation *vis-à-vis* the host country in its territorial sovereignty.[12]

Their content and scope were laid down in an Agreement on the privileges and immunities of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project (hereinafter referred to as "P&I Agreement"), also signed on 21 November 2006 in Paris and entered into force on 24 October 2007.[13]

Since France is not directly party to the ITER Agreement, the European partner being Euratom, application of the privileges and immunities required the conclusion of a Headquarters Agreement between the Government of the French Republic and the ITER International Organisation as provided for in Article 12(7) of the ITER Agreement.

It should be noted that, as of 17 November 2006, the host partner Euratom decided to apply provisionally the ITER Agreement and the P&I Agreement within the territory of the European Community pending the entry into force of the Agreement subject to the ratification procedures of the partners.[14] However, a question mark remained as to whether Euratom could, by its signature alone, commit one of the member states in an area such as this and whether such a commitment could be introduced into France's internal legal system. This question was of fundamental practical importance because the French courts do not take account of immunities which have not been properly introduced into the domestic legal system. This being so, the Headquarters Agreement between France and the ITER Organisation was a response to this question providing a legal basis for the privileges and immunities of ITER, as recognised for international treaties by Article 55 of the French Constitution.

---

12. The principle of the legal equality of members constitutes one of the grounds for the attribution by France of such privileges and immunities without which, indeed, the host country would enjoy a dominant position *vis-à-vis* the other members, see Memorandum of the legal service of the United Nations on fiscal immunity, UNJY, 1972, p. 165.

13. O.J.E.U. of 16 December 2006, L 358/82.

14. This decision was taken on the basis of an arrangement between the partners as to the provisional application of the Agreement on the establishment of the ITER International Fusion Energy Organization with a view to the joint implementation of the ITER project of 21 November 2006, published in the O.J.E.U. of 16 December 2006, L 358/81 and of Commission Decision of 17 November 2006 on the provisional application of the Agreement on the establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project and of the Agreement on the privileges and immunities of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project, 2006/943/Euratom, O.J.E.U. of 16 December 2006, L 258/60.

This Headquarters Agreement, signed in Cadarache on 7 November 2007, entered into force on 9 April 2008 after parliamentary ratification by Act No. 2008-135 of 13 February.[15]

The consequence of this ratification was to introduce the privileges and immunities into the French internal legal system and to define the rules of domestic law to which this international organisation was subject, notably inspections and controls, conducted in accordance with French legislation, that the ITER Organisation carries out in the areas falling within the scope of application of Article 14 of the said ITER Agreement.[16]

The legal rules on privileges and immunities concern both the international organisation as a legal person and its staff, as well as experts and representatives of its members.

The Headquarters Agreement confers legal capacity on the ITER Organisation to enable it to manage the resources necessary for its functioning. It guarantees the inviolability of its buildings and premises, archives and correspondence. It confers jurisdictional immunity and immunity from execution for all acts performed in the course of its functions, except for the cases specifically laid down in the agreement. In the framework of its official activities and in respect of the goods or services required for its functioning, the ITER Organisation also benefits from tax exemptions.

In particular, its staff enjoy jurisdictional immunity and inviolability with regard to official papers and documents, and facilities with regard to exemptions from restrictive immigration measures and the registration of foreigners.

The Director-General and the Principal Deputy Director-General of the ITER Organisation enjoy the privileges and immunities accorded to heads of diplomatic missions.

Under Article 12 of the Headquarters Agreement, the representatives of the member countries and experts also enjoy privileges and immunities (jurisdictional immunity, immunity from arrest and inviolability of all official papers and documents, customs facilities with regard to their personal luggage). Under the agreement, they may enter the national territory and stay there without the need for registration formalities.

Lastly, it should be noted that the privileges and immunities are not in any way geographical; they do not create a special territory within which legislation different from that applicable in the host country applies. As a result, other employees working in France who do not fall within the categories of persons benefiting from the status of the ITER Organisation remain subject to ordinary law.

Thus, the ITER Organisation applies the rules adopted pursuant to its founding document, i.e. the ITER Agreement, and general international law, notably the Vienna Convention of 1969 on the Law of Treaties, and not the domestic law of the host country except where that has been expressly provided for in its founding treaty and except for contractual clauses applying domestic law and accepted by the organisation.

---

15. The Headquarters Agreement was approved by Act No. 2008-135 of 13 February 2008 (J.O.R.F. of 15 February 2008, p. 2778) and entered into force on 9 April 2008. It was published in the Official Journal of the French Republic by Decree No. 2008-334 of 11 April 2008, J.O.R.F. of 13 April 2008, p. 6191.

16. Article 14: “The ITER Organization shall observe applicable national laws and regulations of the Host State in the fields of public and occupational health and safety, nuclear safety, radiation protection, licensing, nuclear substances, environmental protection and protection from acts of malevolence”.

3. The ITER Organisation: An international organisation subject, in part, to national law

In view of the objectives pursued by the ITER Organisation and of the classification of the experimental installation as a basic nuclear installation, ITER undertook to comply with national laws and regulations in the fields of public and occupational health and safety, nuclear safety, radiation protection, licensing, nuclear substances, environmental protection and protection from acts of malevolence (Article 14 of the ITER Agreement). The areas concerned are essentially those which are important to safety, such as nuclear safety, in almost all its aspects,[17] and occupational safety.

In order to give effect to the host country's laws, it became apparent that a provision allowing for a waiver of immunity had to be included in the ITER Agreement inasmuch as the immunities of international organisations are absolute, failing express renunciation, and no rule of domestic law can provide to the contrary.

Given what is at stake (the operation of a nuclear installation), the ITER Organisation is in a very different situation from other international organisations, and the waiver of immunities and privileges was expressly provided for in Article 12(3) of the ITER Agreement, i.e. "in any case where the authority competent to waive the immunity considers that such immunity would impede the course of justice and that waiver would not prejudice the purposes for which it was accorded and where, in the case of the ITER Organization, the Director-General, and the Staff, the Council determines that such a waiver would not be contrary to the interests of the ITER Organization and its Members". Article 12(4) provides that these privileges and immunities must not diminish or affect the duty of the ITER Organisation, the Director-General or the staff to comply with the laws and regulations referred to in Article 14.

It was then necessary to define the arrangements for co-operation between the parties on the provisions of national law which the ITER Organisation would apply, inasmuch as it benefits from the inviolability of its premises, consisting of a ban on host country agents, whether administrative or judicial, entering the premises of the organisation or its annexes without the organisation's consent.

a. The international organisation and nuclear safety

Apart from Article 14 of the ITER Agreement, the Headquarters Agreement and its Annex have also provided for the application of French nuclear safety law and arrangements for co-operation between the ITER Organisation and the French authorities, notably with regard to nuclear safety and radiation protection inspections.

- The application of French nuclear safety law to the ITER research installation means that France's regulations relating to nuclear safety, radioactive substances and radiation protection are applicable to it. Its design, construction and operation, as well as its permanent shutdown and dismantling are subject to Act No. 2006-686 of 13 June 2006 on nuclear transparency and safety and to its implementing texts.[18]

17. Section 1 of Act No. 2006-686 of 13 June 2006 on nuclear transparency and safety defines nuclear safety as: "nuclear safety includes nuclear security, radiation protection, the protection from, and fight against, acts of malevolence, and public safety measures in the event of an accident".

18. For a commentary on this act, see M. Léger and L. Grammatico, "Nuclear Transparency and Safety Act: What Changes for French Nuclear Law?", *Nuclear Law Bulletin* No. 77 (2006/1); for more extensive

A safety option report and a request for a construction licence from the competent French administrative authority were therefore prepared in respect of the installation.

This situation is all the more unique in legal terms in that research installations in the field of fusion are not always governed by national nuclear law, but rather by industrial environmental law (this is the case with JET in England, for example and with Tore Supra in France). There may be two reasons for this: first, differences in nomenclature between countries as to whether an installation qualifies as a basic nuclear installation and secondly, the activity level of the radionuclides which may not reach the threshold required for classification as a basic nuclear installation.

The ITER Organisation became a nuclear operator from the day on which its request for a construction licence was submitted, in accordance with Section 7 of Decree No. 2007-1557 of 2 November 2007 and, as such, must comply with all the regulations applicable to nuclear operators.

- As regards radiation protection, the ITER Organisation is also bound to comply with the national rules laid down in the Labour Code and the Public Health Code. The purpose of these rules being are to protect workers and the public from ionising radiation. They are based on the standards and recommendations issued by the International Atomic Energy Agency (IAEA) and, at the European Community level, on the Euratom Treaty and the Directives adopted thereunder. The same is true for French environmental provisions, which the organisation also applies.

This legal situation is very different from that applicable to other organisations of the same type. If one compares ITER to the European Organization for Nuclear Research (hereinafter referred to as "CERN"), which is also a governmental organisation (with only European Community partners and Switzerland), one sees that CERN is not a nuclear operator within the meaning of French law since the installation concerned has not been classified as a basic nuclear installation as defined by Decree No. 2007-830 of 11 May 2007.[19] However, given the objective of CERN (construction and operation of installations such as the large electron positron collider (LEP), the large hadron collider (LHC), and the super protron synchrotron (SPS), it was agreed with France in July 2000[20] that these objectives should be carried out with guarantees equivalent to those applying under French nuclear safety legislation for basic nuclear installations. Nevertheless, ITER's articles provide for its being subject to French nuclear law which is not the case for CERN.

Another basic nuclear installation in France which is operated by a non-national operator is the reactor used by the Institut Max von Laue - Paul Langevin, a non-commercial partnership created by agreement between France and Germany in 1967, amended for the accession of the United Kingdom in 1974 and whose partners currently are the CEA, CNRS, Science and Technology Facilities Council and Forschungszentrum Jülich. However, this is a non commercial entity in partnership with ten other European members, and not an international organisation with the associated legal status.

---

information on the French nuclear regime, see the Instalment of the Dictionnaire Permanent Environnement et Nuisances, *Installations et activités nucléaires*, May 2008 – Legislative Editions.

19. And previously by Decree No. 63-1228 of 11 December 1963 on Nuclear Installations.

20. Agreement between the Government of the French Republic and the European Organization for Nuclear Research (CERN) on the safety of installations relating to the large hadron collider (LHC) and the super protron synchrotron (SPS) of 11 July 2000, which entered into force on 11 September 2000 and was published by Decree No. 2000-1065 of 25 October 2000, J.O.R.F. of 1 November 2000, p. 17362.

At the European Community level, there are several partnerships under which nuclear installations are operated by non-national legal structures: the Joint Research Centre, for example, is one of the Directorates-General of the European Commission comprising seven research institutes located in five member states of the European Union (Belgium, Germany, Italy, Netherlands and Spain) which also operate nuclear installations in Europe with a view to assessing the nuclear safety and security of innovative or future systems. Set up in 1957 under the Euratom Treaty as a "Joint Nuclear Research Centre", the JNRC dropped the adjective "nuclear" from its title in the early 1970s following restructuring measures which resulted in a diversification into other fields of scientific research. It is administered at Community level with the 27 member states of the Union but does not have any international partners outside Europe.

The rules relating to the protection and control of nuclear materials as well as those relating to protection against acts of malevolence are also applicable. The rules in question are codified in the Defence Code in Articles L. 1333-1 *et seq*. and L. 1332-1 *et seq*., and in the corresponding regulatory Articles (Articles R. 1333-1 *et seq*. and R. 1332-1 *et seq*.).

While there is no doubt that French nuclear law is applicable to the ITER installation from its conception until its dismantling, the question remains whether the nuclear third party liability regime established by the Paris Convention on Nuclear Third Party Liability of 29 July 1960[21] applies to ITER. The first issue to be decided was whether fusion installations were subject to this regime. A comparative reading of the Paris Convention, and more precisely its Article 1 dealing with definitions[22] of its Exposé des Motifs and of the official interpretations which have been given by the contracting parties and the Nuclear Energy Agency (NEA) of the OECD, have led to this question being answered in the negative.[23]

The ITER installation is excluded from the scope of application of the convention because the definition of "nuclear fuel" technically limits the application of the convention to installations using

21. The regime of the Paris Convention is based on the following principles: the channeling of liability to the operator who is alone liable for damage to persons and property, covered by this regime, caused by a nuclear accident. The corollary of this approach is that the possibilities for operators or their insurers for recourse, notably against suppliers, are strictly regulated and limited, as are cases of exoneration from liability; the strict liability of the operator, victims being dispensed from having to bring proof of fault at the origin of their prejudice; limitation of the liability in amount and in time; the obligation, for the operator, to maintain insurance or other financial guarantee covering his liability; a single court with jurisdiction, so as to concentrate actions for compensation in a single court; non-discrimination between victims on grounds of nationality, domicile or residence.

22. Article 1(a)(i) of the Paris Convention defines "*nuclear installation*", as follows: "*Nuclear installation*" means reactors other than those comprised in any means of transport; factories for the manufacture or processing of nuclear substances; factories for the separation of isotopes of nuclear fuel; factories for the reprocessing of irradiated nuclear fuel; facilities for the storage of nuclear substances other than storage incidental to the carriage of such substances; and such other installations in which there are nuclear fuel or radioactive products or waste as the Steering Committee for Nuclear Energy of the Organisation (hereinafter referred to as the "Steering Committee") shall from time to time determine; any Contracting Party may determine that two or more nuclear installations of one operator which are located on the same site shall, together with any other premises on that site where radioactive material is held, be treated as a single nuclear installation". Article 1(a)(iii) of the Paris Convention: "*Nuclear fuel*" means fissionable material in the form of uranium metal, alloy, or chemical compound (including natural uranium), plutonium metal, alloy, or chemical compound, and such other fissionable material as the Steering Committee shall from time to time determine".

23. Note by the Secretariat of the NEA, "Liability and Financial Security for Risks Posed by Nuclear Fusion Installations", 2-3 November 2005, NEA/NLC/DOC(2005)4.

fission reactions; in addition, the Exposé des Motifs of the Convention specifies, in its revised version approved by the OECD Council on 16 November 1982, that with regard to fusion, "… given that the possible applications of nuclear fusion are not yet clear, it does not seem possible or necessary to take this form of nuclear activity into consideration in the Convention".

The realisation of the ITER project nevertheless makes it necessary to think about whether it would now be desirable to include nuclear fusion installations in the Paris Convention. The development of such a branch of energy production could indeed only be envisaged if the operators of such installations could have their nuclear third party liability covered within the framework of a known regime and if they could make use of nuclear liability insurance. In the absence of any such regime, operators would risk being held fully liable for unlimited nuclear damage for which insurance would be impossible since insurers refuse to cover such risks outside a nuclear third party liability regime such as that set up by the Paris Convention or the Vienna Convention on Civil Liability for Nuclear Damage.

Applying such a regime would be of great advantage to the organisation since it could then benefit from the regime's general principles, i.e. strict liability,[24] channelling of liability to the operator (exclusive liability), the limitation of liability both in amount and in time with the corollary of an obligation on the operator to arrange a financial guarantee – a guarantee which it could then find on the insurance market – and the jurisdiction of a single court.

There remain today several questions about the desirability of such an amendment and what procedural arrangements could be used to achieve it.

From a procedural point of view, including nuclear fusion installations within the scope of the application of the Paris Convention would require an amendment of the convention which, in turn, needs the agreement of the contracting parties by means of a relatively cumbersome procedure which could take several years but which, from the legal point of view, would not raise insurmountable difficulties.

As the texts stand, in the absence of the application of any such regime to the ITER Organisation, it is the organisation's non-contractual liability which applies, as a result of Article 15(2) of the ITER Agreement which provides: "in the case of non-contractual liability, the ITER Organisation shall compensate appropriately or provide other remedies for any damage caused by it, to such extent as the ITER Organisation is subject to a legal liability under the relevant law, with the details of compensation arrangements to be approved by the Council. This paragraph shall not be construed as a waiver of immunity by the ITER Organisation". Moreover, "in case the costs of compensation for damage referred to in paragraph 2 exceed funds available to the ITER Organisation in the annual budget for operations and/or through insurance, the Members shall consult, through the Council, so that the ITER Organisation can compensate, according to paragraph 2 by seeking to increase the overall budget by unanimous decision of the Council in accordance with Article 6(8)".

Article 15(5) also provides that "[m]embership in the ITER Organisation shall not result in liability for members for acts, omissions, or obligations of the ITER Organisation" while Article 15(6) specifies that "[n]othing in this Agreement shall impair, or shall be construed as a waiver of, immunity that members enjoy in the territory of other States or in their territory".

---

24. This means that victims do not need to prove fault at the origin of their prejudice. On the main principles of nuclear third party liability, see Schwartz, J.A., "International Nuclear Third Party Liability Law: The Response to Chernobyl", *International Nuclear Law in the Post-Chernobyl Period*, A Joint Report by the NEA and the IAEA, 2006.

It should be noted that amending the Paris Convention in order to include fusion installations should lead, in parallel, to a waiver of the immunities on this subject so that the provisions of the convention can be applied.

b. The ITER Organisation subject to national occupational health and safety regulations

The ITER project brings together seven partners who will provide most of their contributions in kind. The project will therefore ultimately involve employees of over thirty different nationalities working together at the ITER site, a collaboration which will have to be rendered as safe as possible.

In this respect, Article 14 of the ITER Agreement provides that French occupational health and safety provisions are applicable. An Additional Protocol to the Headquarters Agreement was therefore prepared in order to define the arrangements for allowing occupational inspectors access to the site, having regard to the privileges granted to the ITER Organisation, notably the inviolability of the site. In principle this means that any person who is not a member, and this includes inspectors, requires authorisation for access.

This Protocol was signed in January 2009 by means of an exchange of letters between the Director-General of the ITER Organisation and the French Minister for Higher Education and Research, and is in the course of being ratified by Parliament.

This means that all those working at the ITER site are subject to the same provisions with regard to occupational health and safety, essentially those applicable under the French Labour Code.

It should also be noted that the ITER Organisation has drafted internal rules and a document concerning working conditions at the ITER site which are applicable to all those working at the site under the responsibility of the international organisation, irrespective of their employer. The legislative provisions take precedence, however, over those contained in these documents for workers who are not employed by the international organisation.

Conclusions

The ITER International Organisation was created two years ago, and the project is in the course of being implemented; work will begin on the construction of buildings and offices, and the staff of the organisation works on the scientific aspects.

ITER is the most important research project to date carried out in the framework of international co-operation. It is also the first basic nuclear installation in France to be operated by an international organisation, which explains the special nature of the law applicable to it. Its status as an international organisation under public law might suggest that host country law would not be applied in this area. By accepting Article 14 of the ITER Agreement, however, and in light of the challenges involved, the project partners indicated their desire for the project to be governed by French nuclear safety regulations.

The legal problems relating to the setting up of an international organisation as a nuclear operator have now largely been resolved. Now others arise relating to how this status applies in practice and how the domestic agencies should provide their contributions in kind, within France, to an international organisation through the intermediary of foreign companies.

Case Law

Canada

R. v Bruce Power Inc.*[1] *(2009)

By decision dated 17 July 2009, the Ontario Court of Appeal has ruled on the scope of solicitor-client privilege and the protections that may be afforded to privileged internal investigation reports. The decision reaffirms the Canadian court system's view of the importance of the protection of solicitor-client privilege to the administration of justice.

The court found that when the Crown prosecutor comes into possession of a defendant's document that is protected by solicitor-client privilege and litigation privilege, it will be presumed that prejudice will be caused by use of the document.[2] This is a rebuttable presumption; however, the Crown in this case did not seek to rebut it. Since the presumption of prejudice to Bruce Power had not been rebutted and, on the facts, the court was satisfied that there had been an abuse of process, the court was satisfied that the appropriate remedy in this matter was a stay of the charges laid against Bruce Power.

Background

Bruce Power Inc. operates a nuclear power plant at Tiverton, Ontario. In January 2002, an employee of a subcontractor at the plant was seriously injured in a fall. An investigation into the accident was begun by the provincial Ministry of Labour (MOL). At the same time, Bruce Power commenced an internal investigation of the accident which produced a report for use by Bruce Power counsel in advising the company and for use in the defence of charges that the counsel anticipated would be laid against the company under Ontario's Occupational Health and Safety Act. This internal investigation included terms of reference which expressly provided that it was being done in contemplation of litigation and that the resulting report would remain in the custody of Bruce Power's legal department where its confidentiality would be maintained.

During the MOL investigation, the investigator learned of the existence of the internal investigation report. Bruce Power counsel advised the investigator that the report was privileged and no steps were taken by the government to require its production. Charges were laid in December 2002, and thereafter, the trial of the charges was adjourned to November 2004. In April 2004, MOL and Crown prosecution officials came into possession of Bruce Power's internal report. It became clear to Bruce Power that the prosecution had the intention of tendering the report as part of the prosecution's evidence at trial, on the understanding that they had been given the report by a Bruce Power employee

1. Submitted by Lisa Thiele, Deputy Director, Legal Services at the Canadian Nuclear Safety Commission, with assistance from Anna Mazur, student-at-law, for which the author is grateful. Opinions expressed in this summary are those of the author alone and do not purport to represent the views or the policies of the Canadian Nuclear Safety Commission or of the Government of Canada.

2. *R. v Bruce Power Inc.*, 2009 ONCA 573 *per* Armstrong J.A.

who had been involved in the internal investigation. The employee in question had not followed through on his promise to destroy his copy of the report.

Bruce Power sought a stay of proceedings, arguing that the report was privileged, the Crown knew this, and that to use a document covered by privilege would amount to an abuse of process by the Crown. A justice of the peace agreed with Bruce Power in a March 2005 decision finding that the report was subject to both solicitor-client privilege and litigation privilege. She concluded that the privilege had not been waived by Bruce Power despite the actions of the one employee.

The Crown conceded that taking the report had constituted an unreasonable search and seizure that violated the defendants' constitutional rights. Finding as facts that the MOL inspector knew of the report and the claim of privilege by Bruce Power, and that the Crown had used the report to prepare the case against the defendants, the justice of the peace concluded that the prosecutor's conduct breached the defendants' right to a fair trial and constituted an abuse of process. She determined that it would not be possible to discern whether knowledge of the content of the report had been the basis for any evidence at trial even if the report itself were excluded from evidence. She concluded that a stay of the charges was the appropriate remedy:

> "There is evidence before this court that the prosecution not only reviewed and retained the privileged document in question … but that the prosecution was well aware of the value of that document to their case and the prejudice of that document to the defendants. Although this court is aware of the contents of the document and may be able to curtail its use in the trial proper it is apparent that other persons who will be called to give evidence have had possession of and reviewed the document in question. It would seem to be a situation where it will not be possible for the court to make a determination in some instances whether the knowledge of the document specifically forms the basis for the evidence being presented".

On appeal of this decision, the Ontario Court of Justice found that the rulings with respect to the existence of the privilege and its not having been waived were correct. However, the appeal judge set aside the stay, finding that exclusion of the report from the evidence at trial was the appropriate remedy for a breach of the right against unreasonable search and seizure, and that the trial judge could determine the appropriate remedy for the other allegations respecting constitutional rights. She found that the abuse of process application was premature and should be dealt with at trial.

The Ontario Court of Appeal granted leave to appeal this decision. Upon hearing the matter, it restored the decision of the justice of the peace.

The Findings

(i) Solicitor-client privilege

The Court of Appeal outlined the fundamental importance of solicitor-client privilege to the administration of justice in Canada. It quoted Supreme Court of Canada *dicta* from *Canada (Privacy Commissioner) v Blood Tribe Department of Health*,[3] as follows:

3. [2008] 2 S.C.R. 574, at para. 9.

> "Solicitor-client privilege is fundamental to the proper functioning of our legal system. The complex of rules and procedures is such that, realistically speaking, it cannot be navigated without a lawyer's expert advice. It is said that anyone who represents himself or herself has a fool for a client, yet a lawyer's advice is only as good as the factual information the client provides. Experience shows that people who have a legal problem will often not make a clean breast of the facts to a lawyer without an assurance of confidentiality "as close to absolute as possible".

Noting that solicitor-client privilege is a general principle of substantive law, and not just an evidentiary rule, the court emphasised the importance of considering the facts of this case in the context of this framework. Armstrong J.A. found that it was "simply not conceivable that the [MOL] Inspector, in particular, could have been justified in taking the report into his possession given the finding by the justice of the peace that he knew of its status".

(ii) Presumption of prejudice

The court concluded that prejudice will be presumed to flow from an opponent's access to relevant solicitor-client confidences. In this case, where the Crown came into possession of documents belonging to Bruce Power that were protected by solicitor-client privilege, prejudice to Bruce Power as defendant would be presumed.

While this presumption is considered to be rebuttable by evidence, no such evidence of a lack of prejudice to Bruce Power had been led by the Crown.

(iii) Appropriate remedy

The fundamental question of whether there must be a stay of proceedings in a case such as this, or whether some lesser measure could be taken in order to remedy the prejudice while still serving the public interest was important to the appeal. On this issue, the court noted that a stay was definitely the "remedy of last resort", given that there is generally a public interest in proceeding to a trial. The court stated:

> "Common sense suggests that every breach of solicitor-client privilege does not attract the ultimate remedy. Some breaches of privilege are trivial and would not call for a stay of proceedings".

In this case, however, the court found that the appeal judge had erred in reversing the decision of the justice of the peace, and in concluding that her decision to issue the stay was premature. The court found that:

> "… if the Crown had been able to lead evidence to rebut the presumption of prejudice, it would have done so. To let the trial proceed in these circumstances is, in effect, to permit the Crown to have a second chance to disprove prejudice when the record to date suggests it is incapable of doing so".

The Court of Appeal noted that, in some circumstances, the preferred course might be to have a trial proceed and to defer the issue of a stay to the end of a trial. However, the circumstances of this case, where the Crown had not sought to rebut the presumption of prejudice and where the justice of the peace had found that the report contained information that could well be used at trial to the

disadvantage of Bruce Power, were such that the stay was the appropriate remedy. The court allowed the appeal and restored the stay of proceedings on the charges against Bruce Power.

Conclusion

This case reflects the fundamental importance of solicitor-client privilege to the Canadian justice system. The protection of such a privilege is concomitant with important aspects of the individual rights that are constitutionally protected in the Canadian Charter of Rights and Freedoms;[4] the right against unreasonable search and seizure (s.8), the right to retain and instruct counsel (s.10), as well as the right to a fair trial [s.11(d)], *inter alia*, were addressed in this matter in relation to the issue of the solicitor-client privilege.

It is of fundamental importance to the Canadian justice system that adequate protection of, and respect for, the privilege between a solicitor and his or her client are reflected in its jurisprudence.

The potential value of conducting an internal investigation, on which legal advice may be based, is undeniable. Such a course of action, it could be noted, would not affect any statutory or other regulatory obligations that might fall on a person with respect to reporting on, or investigation of a matter. For example, the Nuclear Safety and Control Act[5] requires licensees and prescribed persons to "make the prescribed reports and file them in the prescribed manner"; the regulations then prescribe various reporting requirements and the manner of their filing. Reports so required would not benefit from a privilege such as was found in this case, as the purpose for such reports would be regulatory in nature.

In this case, however, it was clear that the purpose of the internal investigation was to prepare a strategy for litigation in contemplation of charges. In those circumstances, the court has made it clear that it is abusive to seek to use such information against a person, the sanctioning of which could be seen to erode the notion of solicitor-client privilege.

European Union

Judgement of the European Court of Justice in the Case Land Oberösterreich v ČEZ[6]

In Austria, a landowner may prohibit his neighbour from causing nuisance, emanating from the latter's land, in so far as it exceeds normal local levels and significantly interferes with the usual use of the land. However, if the interference is caused in excess of that level by an officially authorised installation on the neighbouring land, the landowner is entitled only to bring court proceedings for compensation for the damage caused.

The Land Oberösterreich (Province of Upper Austria) is the owner of land used for agriculture and agricultural trials on which there is an agricultural college. The land is situated about 60 km from

4. Part I, *Constitution Act, 1982*, enacted as Schedule B to the *Canada Act 1982*, (U.K.) 1982, c. 11, which came into force on 17 April 1982.

5. S.C. 1997, c.9.

6. Information taken from: Court of Justice of the European Communities, Press Release No. 96/09 of 27 October 2009 regarding the Judgement in Case C-115/08 *Land Oberösterreich v ČEZ.*

the Temelín nuclear power plant which itself is situated in the Czech Republic and operated by the Czech energy company, ČEZ. The construction and operation of that nuclear power plant were authorised by the Czech authorities in 1985 and it has been operating at full capacity since 2003.

According to the Land Oberösterreich, the radioactivity generated by the normal functioning of the Temelín nuclear power plant or the risk of contamination caused by the operation and potential malfunction of the plant cause a lasting interference with the normal use of its land.

For that reason, the Land Oberösterreich, and other private owners applied to the Landesgericht Linz (Regional Court, Linz), seeking an order that ČEZ put an end to the actual or potential nuisance relating to the ionizing radiation potentially emanating from the Temelín nuclear power plant and adapt it according to the prevailing technical standards or close it if the required adaptations cannot be made.

The Austrian court found that, in Austria, there is discrimination between industrial installations which have been granted official authorisation by the national authorities and those which have been granted authorisation by the authorities of another member state in that authorisations granted by the latter are not taken into account in an action for cessation of nuisance brought against their owner.

It therefore asked the European Court of Justice (ECJ) whether the prohibition of discrimination on grounds of nationality allows such a difference in treatment and whether the authorisation granted by the Czech authorities for the operation of the Temelín nuclear power plant should be recognised in Austria in such legal proceedings.

The ECJ finds, first of all, that the industrial activity pursued at the Temelín nuclear power plant falls within the scope of application of the Treaty establishing the European Atomic Energy Community (EAEC Treaty).

Next, the ECJ observes that undertakings which operate an installation situated in a member state are usually undertakings established under the law thereof and that their situation is comparable to that of a national of that member state. Consequently, a difference in treatment which works to the detriment of installations which have received official authorisation in a member state other than Austria must be regarded as a difference in treatment on grounds of nationality. Moreover, the principle of prohibition of any discrimination on grounds of nationality is a general principle of Community law which is also applicable under the EAEC Treaty.

The court notes that under the EAEC Treaty, the Community possesses legislative competence to establish, for the purpose of health protection, an authorisation system which must be applied by the member states. The granting of official authorisations for the construction and operation of nuclear installations, in their various aspects relating to health protection against the dangers of ionizing radiation for the general public, therefore comes within the scope of application of the EAEC Treaty. It follows that a difference in treatment to the detriment of nuclear installations which have received official authorisation in another member state must be examined in the light of that treaty.

Next, the court notes that aims of a purely economic nature, such as protection of the interests of domestic economic operators, cannot justify discrimination on grounds of nationality.

The court observes, in particular, that basic standards for health protection for the general public against the dangers arising from ionizing radiation have been adopted at Community level, compliance

with which at Temelín was checked by the Commission following the accession of the Czech Republic. Moreover, the questions relating to safety at that power plant were evaluated by the Commission and were the subject matter of recommendations and monitoring by the Commission, with a view to bringing it up to a level of nuclear safety comparable to that prevailing in the European Union.

The court further states that, in the event of malfunction of the protection system introduced under the EAEC Treaty, the member states have a number of remedies at their disposal for obtaining the corrections necessary in the circumstances.

Under those circumstances, Austria cannot justify the discrimination practised in respect of the official authorisation granted in the Czech Republic for the operation of the Temelín nuclear power plant on the ground that it is necessary for protecting life, public health, the environment or property rights. The existing Community legislative framework, of which that authorisation forms a part, contributes precisely and essentially towards ensuring the protection of those values. Thus, that difference in treatment cannot be regarded as either necessary or proportionate for the purposes of protection.

United States

Judgement of a U.S. Court of Appeals on the design basis threat security rule (2009)

This case concerns a challenge to the U.S. Nuclear Regulatory Commission's (NRC) revised design basis threat (DBT) rule, which was adopted in 2007 (*Nuclear Law Bulletin* No. 80). The petitioners Public Citizen, Inc., San Luis Obispo Mothers for Peace and the State of New York filed a lawsuit in the U.S. Court of Appeals for the Ninth Circuit alleging that the NRC acted arbitrarily and capriciously and in violation of law by refusing to include the threat of air attacks in its final revised DBT rule. On 24 July 2009, a panel of three Ninth Circuit judges ruled 2-1 that the NRC acted reasonably in not including an air threat in its DBT rule.

By law, the NRC is responsible for ensuring that the operation of commercial nuclear facilities is "in accord with the common defence and security and will provide adequate protection to the health and safety of the public".[7] As interpreted by the courts, the NRC has "broad responsibility"[8] to achieve this objective and may "permit ... some level of risk" because "[s]afe is not the equivalent of risk-free".[9] Under this authority, the NRC has issued a DBT rule which outlines the security threats that nuclear power reactor licencees must be prepared to engage and defend against, and defines specific adversary characteristics and specific physical protection requirements to addresses these characteristics.[10] The DBT rule was first issued in 1979.[11]

---

7. 42 U.S.C. § 2232(a).4.

8. *Siegel v Atomic Energy Commission*, 400 F.2d 778, 783 (D.C. Cir. 1968).

9. *Union of Concerned Scientists v NRC*, 824 F.2d 108, 118 (D.C. Cir. 1987).

10. *Public Citizen, San Luis Obispo Mothers for Peace, and State of New York v U.S. Nuclear Regulatory Commission*, 573 F.3d 916, 919 (9th Cir. 2009) [citing 72 Fed. Reg. 12,705 (19 March 2007), 10 C.F.R. Part 73].

Following the 1993 vehicle bomb attack on the World Trade Centre, the NRC strengthened its DBT to require protection against certain land-based terrorist attacks. But the NRC reaffirmed its "enemy of the state rule", adopted in 1967,[12] which does not require licencees to protect against more advanced attacks by enemies of the United States. Other government agencies are responsible for defending against such attacks, and the NRC recognised "a significant difference in the practicality of defending against a missile attack" or indeed "the full range of the modern arsenal of weapons" and "constructing a vehicle barrier".[13]

After the attacks of 11 September 2001, the NRC issued non-public emergency orders to its licensees requiring a variety of safety improvements and began to consider "potential vulnerabilities of nuclear power plants to deliberate attacks involving large commercial aircraft". In June 2004, the NRC announced plans to revise its DBT rule to incorporate actions taken in response to the 9/11 attacks. The agency then received a petition for rulemaking asking it to, among other things, amend the DBT rule to require increased protections against air attacks. Shortly thereafter, Congress passed the Energy Policy Act of 2005, which included a provision directing the NRC to consider "the potential for water-based and air-based threats" among other criteria in its DBT rulemaking.[14]

The NRC issued its final, revised DBT rule in March 2007. The new rule increased the number of threats considered within the scope of the DBT, including land-based group attacks and water-based assaults. But the NRC explained that the rule only incorporated "adversary characteristics against which a private security force can reasonably be expected to defend". The NRC determined that air-based attacks were beyond the scope of the DBT rule because the federal government was responsible for defending against such threats. But the NRC did not cite the "enemy of the state" rule as the basis for its decision, emphasising that "the DBT rule does not focus on the identity, sponsorship, or nationality of the adversaries", but rather on the "range of attacks and capabilities" against which private nuclear facilities can be "reasonably expected to defend".[15] The agency denied the petition for rulemaking.

In its decision reviewing the agency's actions, the Ninth Circuit recognised that the DBT rule was "animated by considerations of the credibility of the threat at issue and whether private forces can reasonably be expected to actively engage that threat". Under this theory, the court concluded that the agency acted lawfully "in concluding that air-based threats were beyond the scope of the DBT rule".[16]

The court accepted that the NRC had determined that its post 9/11 security orders had been effectively implemented, an airborne terrorist attack would be "unlikely", "there would be time to implement the required on-site mitigating actions" if this occurred, and there was a "low likelihood of damaging the reactor core and releasing radioactivity that could affect public health and safety". The court also recognised that the NRC had increased its level of co-ordination with other government

---

11. 44 Fed. Reg. 68,184 (28 November 1979).

12. 32 Fed. Reg. 13,445 (26 September 1967).

13. *Public Citizen*. 573 F.3d at 919-20, *citing* 59 Fed. Reg. 38,889 (1 August 1994).

14. *Ibid* at 920-21 [citing 42 U.S.C. § 2210e(b)(6)].

15. *Ibid* at 922, *citing* 72 Fed. Reg. 12,705 (19 March 2007).

16. *Ibid* at 924.

agencies, taking part in attack exercises and clarifying protocols for inter-agency communication, including emergency planning involving local law enforcement agencies.[17]

Furthermore, the court reasoned that an "airplane attack is different in kind than attacks by militant individuals or vehicles", and is more analogous to a missile attack which a private force could not reasonably engage without using weapons that were "best left to [the] government". The court agreed that "relying on other governmental bodies to address a risk is not equivalent to ignoring the risk", especially where the NRC was "an active participant in coordinating for protection of nuclear facilities". The court also referenced the impracticality of requiring nuclear facilities to maintain "a private standing army" to defend against advanced threats and noted that other agencies, including the "Department of Defense have acted more than once to protect airspace above nuclear power plants from what were thought to be credible threats against specific sites".[18]

The court also rejected the petitioners' challenges to the NRC's use of non-public information in formulating the DBT rule and the agency's decision not to discuss airborne attacks in its environmental analysis of the rule's impacts. The court noted that the law allowed the NRC to protect non-public security related "safeguards" information and withhold such non-public information from the public during the rulemaking process, and the NRC could not fulfil its statutory duty to maintain the common defence and security if it revealed this information. Given that the NRC acted properly in concluding that airborne attacks were outside the scope of the DBT rule, the court also held that the agency did not need to consider their negative environmental impacts, particularly when the overall DBT rule increased environmental protection. In conclusion, the court found that the NRC's decision was consistent with its past practices and legally reasonable under its statutory obligations.[19]

One judge on the panel partially dissented from the majority decision to approve NRC's decision to exclude air-based threats from the DBT rule. He objected to the adequacy of the NRC's analysis of the effects of successful airborne attacks and sought a more explicit justification of the rule, considering some past studies on the risks of airborne attacks, along with a comparison to the risk of truck attacks.[20]

Judgement of a U.S. Court of Appeals on consideration of the environmental impacts of terrorist attacks on nuclear facilities

This case concerns the scope of the U.S. Nuclear Regulatory Commission's (NRC) environmental analysis during its review of applications to relicence commercial nuclear power plants. A New Jersey state agency intervened in an NRC proceeding to relicence a nuclear power plant located in that state. New Jersey urged the NRC to consider the environmental impacts of an airborne terrorist attack on the power plant, arguing that such analysis was required by the National Environmental Policy Act (NEPA).[21] NEPA is a procedural law designed to ensure "a fully informed and well-considered decision" by directing federal agencies to consider the potential environmental impacts of proposed

17. *Ibid* at 920-21.

18. *Ibid* at 924-27, n.9, *citing Riverkeeper, Inc. v Collins*, 359 F.3d 156, 169-70 (2d Cir. 2004).

19. *Ibid* at 928-29.

20. *Ibid* at 929-30.

21. 42 U.S.C. § 4321 *et seq.*

agency actions.[22] It does not prohibit agencies from taking environmentally harmful actions. Rather, NEPA "merely prohibits uninformed, rather than unwise, agency action".[23]

In July 2005, AmerGen Energy Company applied for the renewal of the operating licence for its Oyster Creek nuclear power plant in New Jersey. In November 2005, the New Jersey Department of Environmental Protection challenged the NRC's review of the Oyster Creek application charging that the NRC's environmental analysis should have considered core melt sequences caused by terrorists using aircraft to attack the plant. The NRC rejected New Jersey's contentions, holding that terrorism was outside the scope of NEPA generally, and licence renewal specifically, because terrorism is not a natural or expected consequence of NRC action and particularly not a relicensing issue related to the aging of the facility. In addition, the Commission concluded that its existing efforts to enhance security at nuclear power plants and its past generic environmental analysis rendered further study of terrorist attacks redundant and unnecessary. The NRC's NEPA analysis had already identified 92 potential environmental impacts resulting from relicensing nuclear power plants. According to the NRC, sabotage was one impact that could be analysed generically, its risk was small, and its impacts were comparable to those discussed in its generic study of severe internal accidents.[24]

New Jersey petitioned the U.S. Court of Appeals for the Third Circuit to overturn the NRC's decision and support an earlier opinion issued by the U.S. Court of Appeals for the Ninth Circuit, which stated that the NRC was required to perform such analysis. On appeal before the Third Circuit, New Jersey referred to the 11 September 2001 attacks on nearby New York City and the NRC's efforts to increase security at nuclear plants as evidence that there is a foreseeable risk of environmental harm caused by terrorist attacks on relicenced nuclear power plants. The NRC responded that increased security made such attacks less likely and pointed out that the U.S. Supreme Court had directed lower courts to "draw a manageable line" and interpret NEPA to apply only where there was a "reasonably close causal relationship between a change in the physical environment and the [federal action] at issue".[25]

On 31 March 2009, a panel of three Third Circuit judges declined to follow the Ninth Circuit opinion and affirmed NRC's decision 3-0, ruling that NRC was not required to consider terrorism in its NEPA analysis because NRC relicensing would not be a reasonably close cause of terrorist attacks and their resulting environmental effects. In its decision, the Third Circuit determined "that a terrorist aircraft attack lengthens the causal chain beyond the 'reasonably close causal relationship' required" because it would involve "at least two intervening events: (1) the act of a third party criminal and (2) the failure of all government agencies specifically charged with preventing terrorist attacks". Analogising the "causal relationship" to "proximate cause" principles from tort law, the court also indicated that NRC's decision to relicence a nuclear power plant would not create criminal "temptations to which a reasonable percentage of humanity is likely to yield" or take place "where persons of [a] peculiarly vicious type are likely to be". Moreover, a terrorist attack would be extraordinarily unusual, wrongful, independent of the NRC and far more responsible for resulting harms than the NRC's decision to relicence a nuclear plant. Finally, the court predicted that if the

22. *Vermont Yankee Nuclear Power Corp. v NRDC*, 435 U.S. 519, 558 (1978).

23. *Robertson v Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989).

24. *New Jersey Dep't of Env. Prot. v NRC*, 561 F.3d 132, 134-36 (3d Cir. 2009), *citing In re Amergen Energy Co.*, 65 N.R.C. 124 (2007).

25. *Ibid* at 137-39, *citing Metro. Edison Co. v People Against Nuclear Energy*, 460 U.S. 766, 774, n.7 (1983).

NRC expended considerable time and resources analysing risks of terrorist attacks over which it had little control, its review "would not likely aid its other assigned functions to assure the safety and security of nuclear facilities". The court therefore concluded that "this causation chain is too attenuated to require NEPA review" of terrorist aircraft attacks.[26]

The Third Circuit opinion also confronted a Ninth Circuit panel's earlier decision in a similar case, *San Luis Obispo Mothers for Peace v NRC*.[27] In that case, the Ninth Circuit decided not to apply the Supreme Court's "reasonably close causal relationship" test to consideration of the impacts of terrorist attacks at nuclear facilities and instead concluded that "the possibility of terrorist attack is not so 'remote and speculative' as to be beyond NEPA's requirements".[28] But the Third Circuit explicitly disagreed with the Ninth Circuit, finding that the "reasonably close causal relationship" test should apply, and that the NRC's "relicensing of Oyster Creek does not have a 'reasonably close causal relationship' with the environmental effects that would be caused in the event of a terrorist attack".[29]

Finally, the Third Circuit opinion briefly explained that even if NEPA did require an environmental analysis of hypothetical terrorist attacks on nuclear facilities, the NRC's generic study of sabotage and severe accidents was sufficient to satisfy this requirement. This is because the petitioner did not cast any doubt upon the conclusion that terrorism's effects would be comparable to sabotage or severe accidents.[30]

Judgement of a U.S. District Court on interstate compacts' authority to restrict private disposal of foreign low-level radioactive waste (2009)

This case concerns the limits of authority granted by the U.S. Congress to the states collectively forming the Northwest Interstate Compact on Low-Level Radioactive Waste Management (NW Compact).[31] The NW Compact claimed that Congress gave them the authority to restrict private disposal facilities operating inside the NW Compact from accepting for disposal low-level radioactive waste (LLW) generated outside the member states, including foreign waste. Specifically, the NW Compact sought to block EnergySolutions, a company operating a private LLW disposal facility in Utah (a Compact member state), from accepting foreign, non-Compact LLW for disposal there. EnergySolutions filed a lawsuit in the federal district court in Utah, which ruled that Congress did not grant the NW Compact any authority over non-Compact LLW disposed in private facilities. The NW Compact and Utah have appealed this decision.

Under the U.S. Constitution, Congress has plenary power to regulate interstate commerce.[32] Congress can transfer some of this power to groups of states called interstate compacts, but the compacts cannot regulate or otherwise burden interstate commerce in the absence of unambiguous,

---

26. *Ibid* at 139-141, *citing Riverkeeper, Inc. v Collins*, 359 F.3d 156, 161 (2d Cir. 2004) *and* Restatement (Second) of Torts, §§ 442, 448).

27. 449 F.3d 1016 (9th Cir. 2006).

28. *Ibid* at 1029-1031.

29. *New Jersey Dep't of Env. Prot. v NRC*, 561 F.3d at 142-43.

30. *Ibid* at 143-44.

31. 42 U.S.C. § 2021d note, Pub. L. No. 99-240, § 221, 99 Stat. 1842, 1860 (1986).

32. U.S. Const., Art. I, §§ 8, 10.

explicit consent from Congress.[33] In the realm of nuclear waste, Congress granted interstate compacts some power to regulate interstate LLW disposal in the 1980 Low-Level Radioactive Waste Policy Act (1980 LLW Act)[34] and the 1986 Low-Level Radioactive Waste Policy Amendments Act (1986 LLW Act).[35]

The 1980 LLW Act allowed states to form regional interstate compacts to manage LLW disposal subject to Congressional approval. It also declared that beginning in 1986, any approved compacts could "restrict the use of the regional disposal facilities under the compact to the disposal of low-level radioactive waste generated within the region".[36] The 1986 LLW Act defined a "regional disposal facility" as a "non-Federal low-level radioactive waste disposal facility in operation on 1 January 1985 or subsequently established and operated under a compact". It also declared that LLW disposal was "most safely and effectively managed on a regional basis" and that to accomplish this, Congress gave the states permission to "enter into such compacts as may be necessary to provide for the establishment and operation of regional disposal facilities" for LLW. Congress also stated that any approved compacts' authority "to restrict the use of the regional disposal facilities under the compact to disposal of low-level radioactive waste generated within the compact region" would not take effect until 1 January 1986.[37]

The Omnibus Low-level Radioactive Waste Interstate Compact Consent Act (1986 Consent Act) was attached to the 1986 LLW Act. It stipulated that Congress consented to the compacts "subject to" the provisions of the 1986 LLW Act and "only for so long as the ... compact complies with all the provisions" of the 1986 LLW Act.[38] The 1986 Consent Act specifically approved the NW Compact. The NW Compact charter gave it authority to restrict non-Compact LLW disposal at any "facility" in the Compact states and defined "facility" broadly to include "any site" used for LLW disposal".[39]

Two years after Congress passed the 1986 laws, a company (now EnergySolutions) applied for a licence for a LLW disposal facility in Utah (Utah site) which was licenced in 1991. The NW Compact consented to the Utah site and passed several resolutions regarding LLW disposal at the facility. However, the Compact did not individually licence or operate the privately owned Utah site. Although the facility's original licence included a condition restricting the licensee's ability to import non-Compact waste for disposal at the Utah site, the current licence has no such conditions.

In 2007, EnergySolutions, the Utah site's current owner, applied to NRC for a licence to import LLW from Italy. In response, the NW Compact passed a 2008 Resolution prohibiting EnergySolutions from importing foreign LLW for disposal at the Utah site. EnergySolutions reacted by suing the NW Compact in the Utah Federal District Court, and the NRC then held the licensing proceeding in

33. *New York v United States*, 505 U.S. 144, 171 (1992).

34. Pub. L. No. 96-573.

35. Pub. L. No. 99-240, Title I (1986).

36. Pub. L. No. 99-240 at § 4(a)(2)(B).

37. 42 U.S.C. §§ 2021b(11), 2021d(a). 2021d(c).

38. Pub. L. No. 99-240, Title II at §§ 211, 212(2)-(3) (1986).

39. Pub. L. No. 99-240 at § 221, Art. II(1), Art. IV(2).

abeyance.[40] The parties agreed that the court only needed to decide legal questions on the meaning of the 1980 and 1986 laws and the extent to which they granted the NW Compact the ability to restrict the Utah site's importation of foreign LLW. On 15 May 2009, the court issued an order resolving three basic legal issues: (1) whether the Utah site is a "regional disposal facility" under the 1980 LLW Act and the 1986 LLW Act; (2) whether the NW Compact has authority under those laws to restrict non-Compact waste disposal; and (3) whether the Compact may restrict disposal of non-Compact waste at the Utah site.

The court noted that the 1986 LLW Act defined "regional disposal facilities" and that the statutory definition does not include any and all LLW disposal facilities in the Compact region, indicating that Congress did not intend to label every LLW facility a "regional disposal facility". Moreover, the court pointed out, a Congressional report on the 1986 LLW Act implied that the law's definition of "regional disposal facilities" would exclude some disposal facilities that were "not under the auspices of a Compact region".[41]

The court contrasted the Utah site with a recognised "regional disposal facility" in Hanford, Washington. It reasoned that the Hanford site is a regional disposal facility under the 1986 LLW Act because it was open before 1985 and is operated by a NW Compact contractor on land specifically leased for NW Compact use. On the other hand, the court stressed that the Utah site was not in operation in 1985 and is owned and operated by a private company on private land. Therefore, the court determined that the Utah site was not "established" and is not "operated" under the NW Compact so it is not a "regional disposal facility" under federal law.[42]

Next, the court considered whether the NW Compact could restrict interstate commerce in LLW. It first stated that the 1980 LLW Act, "in granting the right to limit access, does so with respect to 'regional disposal facilities' *under* the Compact". The court pointed out that the 1986 LLW Act did not disturb the 1980 LLW Act's limits on non-Compact waste. According to the court, these laws set forth a narrow definition of regional disposal facilities and a narrow state/Compact authority to exclude non-Compact waste, limited to facilities operated "under" the Compact. As the court determined that the Utah LLW site was not a "regional disposal facility", and was not established "under" an interstate compact's authority, it concluded that under the 1980 LLW Act and the 1986 LLW Act, the NW Compact lacked authority to restrict non-compact waste from the Utah site.[43]

The court also considered the NW Compact's argument that the 1986 Consent Act changed the outcome, at least with respect to the NW Compact. According to the NW Compact, its charter's broad definition of "facility" – approved by Congress – and its accompanying grant of regulatory authority over any "facility" in NW Compact states, provided it with the power to restrict non-Compact waste disposal at the Utah LLW site. But the court rejected the NW Compact's argument, finding that the 1980 LLW Act, which remained in effect, showed that Congress did not wish to give compacts

40. *EnergySolutions, LLC*, 68 N.R.C. 491 (2008).

41. *EnergySolutions, LLC v Northwest Interstate Compact on Low-Level Radioactive Waste Management, Michael Garner, the State of Utah, and the Rocky Mountain Low-Level Radioactive Waste Compact*, slip op. at 15-17 [citing H.R. Rept. 99-314, pt. 1 at 24 (1985)].

42. *Ibid* at 16-18.

43. *Ibid* at 19-21.

unlimited authority over all LLW disposal within their member states as it implicitly limited compacts' power over non-regional disposal facilities.

Finally, the court was troubled by the implications of recognising an interstate compact's unfettered power to restrict or bar any LLW disposal at any facility within a compact region which would effectively shut down the targeted facility. The court feared that such powers could severely interfere with interstate commerce and stated that, under the Constitution, it could not recognise those powers without a clear expression of Congressional intent to permit such interference, which it did not find.[44]

The NW Compact, joined by Utah and the Rocky Mountain Interstate Compact, disagreed with the trial judge's ruling, arguing that it was not consistent with Congressional intent. In June 2009, those parties appealed to the U.S. Court of Appeals for the Tenth Circuit asking it to overturn the Utah district court's decision. As of November 2009, the Tenth Circuit had not issued a decision on the appeal.

44. *Ibid* at 27-29.

National Legislative and Regulatory Activities

Belarus

Organisation and structure

The Statute on the State Supervision in the Field of Nuclear Safety and Radiation Protection (2008)

This statute has been adopted pursuant to the Law on Radiation Protection of the Public, and it defines the main features of state supervision activities (competence, responsibilities and legal penalties). It was approved by the Government on 31 December 2008 (No. 2056).

The Department for Nuclear Safety and Radiation Protection (Gosatomnadzor)[1] is the body responsible for state supervision in the field of radiation protection, under the Ministry for Emergency Situations. Its jurisdiction extends to the safety of activities in which radiation sources are involved and controlling the implementation of safety and security requirements by operators.

Radiation Protection

Amendment to the Law on Radiation Protection of the Public (2008)

The amendment to the 1998 Law on Radiation Protection of the Public (see *Nuclear Law Bulletin* Nos. 60 and 61) aims at defining the responsibilities of authorities, the arrangements for transboundary movements of radiation sources, the prevention of radiation source trafficking and the general requirements for the management of radioactive waste. The law provides for notification and authorisation procedures. Other acts in this field are the Law on the Legal Status of the Contaminated Territories due to the Accident at the Chernobyl Nuclear Power Plant and the Law on the Sanitary and Epidemic Well-being of the Population.

State authorities in the field of radiation protection have, *inter alia*, the following obligations:

The President of the Republic of Belarus defines the overall state policy.

The Government:

- implements the overall state policy as defined by the President;
- defines, in accord with the President, the list of radiation sources whose transboundary transport should be limited and their authorisation;
- stipulates the roles and interactions of state authorities in situations where orphan radiation sources are found or after incidents during unauthorised activities;

1. See *Nuclear Law Bulletin* No. 81 (2008/1), No. 82 (2008/2).

- defines the conditions and roles of state supervision authorities in the field of radiation protection;
- determines the rules for state registration and accounting of radiation sources;
- approves the Statute of the National Commission on Radiation Protection and its staff;
- takes decisions on the siting of radioactive waste facilities.

The Ministry for Emergency Situations:

- co-ordinates the activities of state authorities in the field of radiation protection;
- supervises the implementation of radiation protection provisions;
- authorises transboundary transport of radiation sources.

The Ministry for Public Health:

- carries out state sanitation supervision in the area of radiation protection;
- ensures the proper functioning of the state dose register.

The Ministry of Natural Resources and Preservation of the Environment:

- carries out state control in the field of environmental protection;
- organises radiation monitoring on the territory of Belarus.

A National Commission on Radiation Protection has been established at the government level. The Commission prepares recommendations on radiation protection for state authorities, and assesses scientific data in order to recommend further application of nuclear technologies.

Article 10-1 of the Law on Radiation Protection of the Public differentiates between state supervision (the responsibility of the Ministry for Emergency Situations) and state sanitation supervision (the responsibility of the Ministry for Public Health). *State supervision* includes regulation of radiation sources management, of the licensing requirements for radiation sources, of radioactive waste management, of the security of radiation sources and radioactive waste facilities and of protection measures for the safety of personnel and the public in the event of a radiological incident. *State sanitation supervision* includes controlling compliance with sanitation norms, rules and regulations for radon influence and natural gamma-radiation, food production and drinking water consumption, medical exposure, radiation sources and radioactive waste management.

With regard to the transport of radiation sources, it should be noted that it is only possible to store or dispose of radioactive waste which originates from activities within Belarus. According to the polluter pays principle, it is the operator which has to compensate damages which may occur as a result of radiation exposure during the transport of radiation sources.

The general requirements in the act with respect to radioactive waste management impose the following obligations on the operator:

- to generate radioactive waste at the minimal practically achievable level;
- to collect and separate radioactive waste according to regulations;
- to provide for the isolation of radioactive waste from the environment;
- to arrange for the environmental impact assessment of a particular facility;
- to take appropriate measures for the protection of the public.

The operator of a radioactive waste facility is required to prepare and agree upon a scheme for the management of radioactive waste in co-operation with the Ministry for Emergency Situations, the Ministry of Natural Resources and Preservation of the Environment, the responsible state sanitation supervision institution and local administrative authorities.

Environmental protection

Environmental impact assessment laws (2009)

There are two laws in the field of environmental impact assessment (EIA): the 1992 Act on the Preservation of the Environment and the 1993 Act on State Ecological Expertise. Belarus ratified the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) in 2001 and the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) in 2006. A regulation on EIA for certain economic activities with a list of these activities is being applied in Belarus as required by the Act of the Ministry of Natural Resources and Preservation of the Environment (the contact point) from 17 June 2005 (No. 30).

The Statute on the Discussion of Questions of the Public in the Field of Atomic Energy (2009)

This statute has its basis in the Law on the Use of Atomic Energy[2] and defines the main arrangements for stakeholders' activities and interactions as well as public hearings, including the "public" in foreign countries which may be affected by an eventual nuclear incident. It was approved by the Government on 4 May 2009 (No. 571).

Communication with the public is an obligation of local authorities, the Ministry of Energy and other state authorities in the field of atomic energy. The relevant bodies must explain the possible adverse consequences of economic activities, prepare and publish safety reports in the media including on the internet, until 1 March of every year. The operator, by contrast, must publish its application to engage in a particular economic activity, provide access to ecological information and send the environmental impact assessment report to concerned foreign authorities etc.

For nuclear energy projects, a public hearing must take place and notification thereof must be provided 30 days in advance. During this period, the operator or designer of the facility must attach an environmental impact assessment to its application. As a rule, public hearings are not to take longer than one month.

2. See *Nuclear Law Bulletin* No. 82 (2008/2).

Belgium

Radiological protection

Decree regarding the minimum criteria for X-ray apparatus use in veterinary medicine (2009)

Royal Decree of 20 July 2001 concerning the protection of the public, workers and the environment against the dangers of ionising radiation stipulates that, as from 1 January 2001, equipment exclusively destined for the use in veterinary medicine must comply with the international norm IEC 60601-1-3:2008. In accordance with the transitional measure stipulated in this royal decree, applications to exclusively use equipment in veterinary medicine will continue to be approved by the Federal Agency for Nuclear Control until 2011, and it will therefore define the acceptability criteria. In this transitional period no distinction is made between applications that are new and those already in use.

The decree of 29 July 2009[3] is an update of the Agency's Decree of 17 July 2008 regarding the minimum criteria for X-ray apparatus use in veterinary medicine.

Decree of the Federal Agency for Nuclear Control on the determination of exemption levels (2009)

This decree of 9 July 2009[4] is supplementary to Table A (Annex IA) of the general regulation on the protection of the public, workers and the environment against the dangers of ionising radiation (Royal Decree of 20 July 2001) and provides the exemption levels which determine whether or not a facility is exempted from an authorisation or notification.

For radionuclides not listed in the table, the Federal Agency for Nuclear Control determines appropriate levels of activity which are supplementary to those stipulated in the Royal Decree of 20 July 2001.

Estonia

General legislation

National Development Plan (2009)

The Estonian Government approved the National Development Plan for Radiation Protection for 2007-2017 (NRPDP) in April 2008. The plan sets out both measures designed to guarantee radiation protection and the primary tasks of radiation protection in four main sections: radioactive waste management, medical exposure, emergency preparedness and natural radiation.

3. Published in the Belgian Law Gazette of 29 July 2009, entered into force on 8 August 2009.

4. Published in the Belgian Law Gazette of 20 August 2009, entered into force on 20 August 2009.

Organisation and structure

New Radiation Safety Department (2009)

On 1 February 2009, the Estonian Radiation Protection Centre (ERPC) was merged into a new organisation, the Environmental Board, as the Radiation Safety Department. The Environmental Board is a governmental agency which reports to the Ministry of Environment. It is the regulatory body for licensing of radiation practises and qualified experts. The Environmental Board has about 420 staff members, 15 of which work in the Radiation Safety Department. The tasks of the department include:

- licensing and inspecting (together with the Environmental Inspectorate) radiation practices;
- keeping the registers of radioactive sources, radioactive waste and radiation practice licences;
- radiation monitoring;
- emergency preparedness; and
- analytical measurements.

Radiation protection

Amendment to the Radiation Protection Act (2009)

The Radiation Protection Act was amended in 2009 in order to take into account changes in the regulatory system. In 2006, the Radiation Protection Act had been amended in order to transpose the requirements of 2003/122/Euratom Directive of 22 December 2003 on the control of high-activity sealed radioactive sources and orphan sources. The amendments included three new definitions – spent sealed source, container of the radioactive source and high activity sealed source. There are now additional requirements for the licence holder of high activity sources:

- To keep records about radioactive sources, including giving each source a unique identification number and an overview of the source, container, transportation package and, in case of need, information about related equipment.
- To ensure that every sealed source which is no longer in use, will be handed over to another radiation practice licence holder or to the radioactive waste management organisation
- In the procurement process for sealed sources with an activity level higher than 10 MBq. at least for 15 years after importation, preference must be given to suppliers who agree to take the source back.

Germany

Radioactive waste management

Ordinance on the Shipment of Radioactive Waste or Spent Fuel (2009)

Ordinance on the Shipment of Radioactive Waste or Spent Fuel of 30 April 2009[5] implements Council Directive 2006/117/EURATOM of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel.[6] It repeals the 1998 Ordinance on the Shipment of Radioactive Waste (*Nuclear Law Bulletin* No. 68 p. 59) and entered into force on 7 May 2009.

Transport of radioactive material

Amendments to Acts and Ordinances on the Transport of Dangerous Goods (2009)

On 7 July 2009, a consolidated version of the Act on the Transport of Dangerous Goods of 29 September 1998 as last amended by Article 1 of the Act of 6 July 2009[7] was published in *Bundesgesetzblatt* 2009 I p. 1774. The act regulates the transport of dangerous goods by all means of transport. The amended act will enter into force on 1 January 2010.

A new version of the Ordinance on the inland and transboundary transportation of dangerous goods by road, railroad and internal waterways was published on 17 June 2009.[8] The Ordinance implements Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods.[9] It replaces the 2006 version of the Ordinance [see *Nuclear Law Bulletin* No. 79 (2007/1), p. 53].

Regulations on nuclear trade (including non-proliferation)

Amendments to the 1961 Foreign Trade Act and 1993 Foreign Trade Ordinance (2009)

The Foreign Trade Act of 1961 (*Nuclear Law Bulletin* No. 79, p.64) and the 1993 Foreign Trade Ordinance were amended[10] and a new consolidated version of the act was published on 27 May 2009 in *Bundesgesetzblatt* 2009 I p. 1150.

The Foreign Trade Ordinance was further amended by Ordinance of 25 June 2009 (*Bundesanzeiger* 2009 p. 2237) and by Ordinance of 24 August 2009 (*Bundesanzeiger* 2009 p. 2944). The latter Ordinance, *inter alia*, implements Council Regulation (EC) No. 428/2009 of 5 May 2009 setting up a Community regime for the control of export, transfer, brokering and transit of dual use items (EU O.J. 2009 No. L 134 p.1).

---

5. *Bundesgesetzblatt* 2009 I p. 1000.
6. EU O. J. 2006 No. L 337 p. 21; *Nuclear Law Bulletin* No. 79 (2007/1), p. 77.
7. *Bundesgesetzblatt* 2009 I p. 1704.
8. *Bundesgesetzblatt* 2009 I p. 1389.
9. EU O. J. 2008 No. L 260 p. 1389.
10. 13th Act of 18 April 2009 to Amend the Foreign Trade Act and the Foreign Trade Ordinance (*Bundesgesetzblatt* 2009 I p. 770).

A new version of the Export List – Annex AL to the Foreign Trade Ordinance – was published by the Ordinance to Amend the Foreign Trade Ordinance of 14 July 2009 (*Bundesanzeiger* 2009 p. 2585). At the time of its drafting, Section C of the Export List was identical in substance to the current version of Annex I of the EC Dual Use Ordinance. Meanwhile, the then applicable EC Ordinance was replaced by EC Ordinance No. 428/2009. Since EC Ordinances are directly applicable in the member states, Annex I of the EC Ordinance will apply in Germany as long as the Export List is not adjusted to the EC Ordinance.

A new version of the Import List, Annex AL to the Foreign Trade Act, as last amended by the Ordinance to Amend the Import List of 16 December 2008 (*Bundesanzeiger* 2008 p. 4805) was published by the Ordinance of 1 March 2009 (*Bundesanzeiger* 2009 p. 826).

Italy

General legislation

Law No. 99 of 23 July 2009 including provisions on the resurgence of nuclear energy (2009)

On 23 July 2009, the Italian Government issued Law No. 99 which entered into force on 15 August 2009 (published in the Official Journal No. 176 of 31 July 2009). With regard to nuclear energy, Articles 25, 26 and 29 of that law are of major relevance (reproduced on pages 147 *et. seq.* of this Bulletin).[11]

Article 25 provides that implementing decrees shall be issued within six months from the date of entry into force of this law (i.e. by February 2010). The legislative decrees shall provide, *inter alia*, detailed rules for the siting of nuclear power plants, nuclear fuel fabrication plants, temporary storage facilities for spent fuel and radioactive waste, and of a final repository for radioactive waste, as well as rules on related licensing processes and qualification criteria for investors.

Further, secondary legislation shall implement, *inter alia*, the compulsory application of strategic environmental assessment and environmental impact assessment, the principle of providing for a combined construction and operation licence, and the principle of strengthening international co-operation of regulators in design assessment and licensing.

In implementing the legislation, the government has to guarantee high standards of safety and security, public health and environmental protection. The government also has a duty to carry out a national information campaign on nuclear matters and to implement appropriate information procedures for the population involved in the construction of new nuclear power plants.

Article 26 provides that the Interdepartmental Committee for Economic Planning (CIPE) shall issue, within six months from the entry into force of the law, a resolution defining which kind of nuclear power plants may be constructed and operated in Italy. The CIPE shall also issue the criteria and the measures to be adopted in order to promote the creation of consortia for the construction and operation of nuclear power plants in Italy formed by electricity producers and industries.

Finally, Article 29 of the law establishes a Nuclear Safety Agency, the "*Agenzia per la sicurezza nucleare*". It is a collegial board composed of a President, nominated by the Prime Minister,

11. For more ample information see Iaccarino, F., "Resurgence of Nuclear Energy in Italy", pp. 65 *et seq.* of this Bulletin.

and four members (two nominated by the Minister for the Environment and two by the Minister for Economic Development). They will serve for a term of seven years. They must have adequate capability, knowledge and experience in the nuclear field.

The Agency is in charge of ensuring, in general, the safety of all activities related to the peaceful uses of nuclear energy. It is specifically in charge of radiation protection, technical regulations as well as the control of the management of radioactive waste and nuclear materials and the construction, operation and safeguarding of nuclear power plants and nuclear materials. Each authorisation concerning nuclear energy matters will be subject to the agency's prior binding opinion. The agency has inspecting, assessing and specific enforcement powers including the power to levy monetary fines and to suspend and revoke licences.

Romania

General legislation

Decision on the prohibition of dangerous labour for children (2009)

On 29 June 2009, the Romanian Government adopted Decision No. 867 on the prohibition of dangerous labour for children.[12] This act implements the provisions of Article 4(1) of the Convention Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour. It stipulates that labour which exposes children to ionizing radiation risks is a type of work which is likely to harm the health, safety and morals of children as referred to in Article 3(d) of the convention.

Organisation and structure

Amendment to the regulations on the organisation and operation of CNCAN (2009)

By Decision No. 623 of 20 May 2009,[13] the Romanian Government approved amendments to the regulations on the organisation and operation of the National Commission for Nuclear Activities Control (CNCAN).[14] According to the amended regulation, CNCAN becomes a public institution of national interest, a legal entity subordinated to the Government, fully financed from its own funds and co-ordinated by the Prime Minister through a state counsellor. The President of CNCAN reports annually or at any time the Prime Minister so requests, on the state of control of nuclear activities in Romania.

Regime of radioactive materials (including physical protection)

Decision on the repatriation of nuclear material to the Russian Federation (2009)

Government Decision No. 750 of 24 June 2009[15] approves the repatriation of nuclear material which contains highly enriched non-irradiated and unused uranium of Russian origin back to the Russian

12. The decision was published in the Official Journal of Romania, Part I No. 568 of 14 August 2009.

13. Published in No. 364 of Part I of the Official Gazette of Romania of 29 May 2009.

14. As approved by Government Decision No. 1627 of 2003.

15. Published in the Official Gazette of Romania Part, I No. 452 of 1 July 2009.

Federation. The material is currently held by the Autonomous Regie for Nuclear Activities (RAAN) – Pitesti Nuclear Research Branch (SCN). The repatriation can be realised based on an export contract concluded between the two parties.[16]

Decision on the processing of uranium stocks (2009)

On 2 September 2009, the Romanian Government adopted Decision No. 1009 on the processing of uranium concentrates stocks established in the period from 1993 to 2008.[17] According to this decision, stocks will be reprocessed at the National Uranium Company – Feldioara Branch, in order to recover the sintered uranium dioxide powder for the fabrication of nuclear fuel, necessary for Units 1 and 2 of Cernavoda Nuclear Power Plant.

Environmental protection

General requirements on environmental impact assessment (2009)

Decision No. 445 of 8 April 2009 of the Romanian Government sets up the general requirements for environmental impact assessments of certain private and public projects that can have major effects on the environment. The environmental impact assessment is an integral part of the construction authorisation procedure.

The environmental impact assessment identifies, describes and assesses in an adequate manner the direct and indirect consequences of a project on the following factors: humans, fauna and flora, ground, water, air, climate and landscape, material goods and cultural patrimony, and interaction between these factors.

The environmental impact assessment is managed by the central public authorities or by the territorial public authorities for the protection of the environment. Interested persons have the right to take part in the procedure in due time, to inform themselves and to send proposals and/or recommendations to the relevant public authorities, when all options are possible and before making a decision on the development approval.

Where a project in Romania may have a significant impact on the environment of another state or when another state which might be significantly affected requires information on the project, the central public authority is to send to that state, as soon as possible but no later than when its own public is informed, at least the following information: a description of the project together with available information on its possible transboundary impact and on the type of decision which might be taken. Further, it must offer that state a certain period of time in which to decide if it wants to take part in the procedure.

Paragraph 2(b) of "The List of Projects Subject to the Assessment of the Impact upon the Environment", the Appendix to the Decision, enumerates nuclear reactors and other nuclear plants, including their decommissioning or disabling, except for research installations for producing and transforming fissionable and fertile materials, with a maximum power which does not exceed a kilowatt of continuous thermal energy. Paragraph 3 enumerates installations for reprocessing

16. Contract concluded between the Nuclear Research Institute from Pitesti – subsidiary of the Romanian Authority for Nuclear Activities – and the Joint Stock Company "State Scientific Centre Research Institute of Atomic Reactors" from the Russian Federation.

17. The decision was published in the Official Journal of Romania, Part I No. 641 of 29 September 2009.

irradiated nuclear fuel, for producing and enriching nuclear fuel, for treating irradiated nuclear fuel or high-level radioactive waste, for final storage of nuclear irradiated fuel, for final storage of radioactive waste and for installations exclusively intended for storing nuclear irradiated fuel or radioactive waste for a period exceeding ten years, located elsewhere than at its place of production.

Spain

Radioactive waste management

Regulation on the transboundary shipments of radioactive waste and spent fuel (2009)

Royal Decree[18] on the supervision and control of shipments of radioactive waste and spent nuclear fuel among member states, or with origin or destination to a third state transposes Directive 2006/117/Euratom[19] and the Decision of the Commission 2008/312/Euratom which establishes the uniform document for the control of shipments of radioactive waste.

Under the new regime, based on Directive 2006/117/Euratom, supervision and control includes the shipment of spent fuel for its reprocessing while the previous directive (92/3/Euratom) only dealt with the shipment of radioactive waste. Apart from that, the new regime offers simplified procedures for the shipment of radioactive waste among member states and it ensures the consistency with other community and international laws particularly the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

The Royal Decree reproduces the content of the mentioned directive and repeals former Royal Decree 2088/1994. The competent authority in Spain for supervision and control of these shipments is the General Direction for Energy Policy and Mines at the Ministry of Industry, Tourism and Trade.

Radiological protection

Regulation on installation and use of X-ray devices for medical diagnostic purposes (2009)

Royal Decree 1085/2009[20] approves this regulation which enables government authorities to monitor the proper functioning of such devices. They may regulate the use of equipment, the licensing regime, the qualification of workers in charge of these devices and the certification of technical characteristics by the technical units of radiological protection.

The competent authorities in Spain as regards the implementation of this regulation are: the autonomous communities which are competent to register enterprises in the regional register and to issue licences, after a favourable report by the Nuclear Safety Council; the Ministry of Industry, Tourism and Trade which manages the central register; and the Nuclear Safety Council which authorises radiological protection services and accredits adequate knowledge to monitor and operate these installations.

18. No. 243/2009 of 27 February 2009 published in the Official Gazette of 2 April 2009.

19. On the supervision and control of shipments of radioactive waste and spent fuel.

20. Of 3 July 2009, published in the Official Gazette of 18 July 2009 repeals former Royal Decree 1891/1991 on the same matter.

United Arab Emirates

General legislation

Federal law on the peaceful use of nuclear energy (2009)

On 4 October 2009, UAE President issued Federal Law No. 6 of 2009 on the peaceful uses of nuclear energy. The law represents a key component of the legal infrastructure necessary for the successful implementation of a peaceful nuclear energy programme.

The law establishes a national nuclear regulatory authority, the "Federal Authority of Nuclear Regulation" to oversee the nuclear energy sector in the UAE and to promote the highest standards of nuclear safety, nuclear security and radiological protection.

It also provides for a system of licensing and control of nuclear material in accordance with criteria set by the International Atomic Energy Agency (IAEA). It prohibits the development, construction or operation of uranium enrichment or spent fuel reprocessing facilities in the UAE. Instead, the UAE will obtain nuclear fuel from international suppliers, in line with co-operation agreements with the USA, signed on 15 January 2009.

The law further establishes a system of civil and criminal penalties for violations, including unauthorised use, theft, transport or trade in nuclear materials.

The UAE's Cabinet of Ministers has adopted a resolution appointing the members of the board of management to the new regulatory body. It will be headed by Dr. Ahmed Al Mazroui as Chairman and Dr. William Travers, former senior technical advisor at the IAEA and former Executive Director for Operations of the U.S. Nuclear Regulatory Commission, will be the first Director-General of the regulatory body.

Under the law, members of the Board of Management enjoy significant legal protections designed to prevent any conflicts of interests with their role as regulators, as well as to preserve their independence in making regulatory or licensing decisions.

United States

Regime of nuclear installations

Final regulations criminalising unauthorised introduction of dangerous weapons (2009)

On 14 October 2009, the U.S. Nuclear Regulatory Commission (NRC) issued final regulations criminalising the wilful unauthorised introduction of dangerous weapons, explosives or other dangerous instruments likely to produce substantial personal injury or property damage in certain NRC-regulated nuclear facilities. The regulations become effective on 12 April 2010.[21]

Section 654 of the Energy Policy Act of 2005 authorised the NRC to issue regulations that make it a Federal crime to wilfully introduce, without authorisation, weapons or explosives into facilities

21. Unauthorized Introduction of Weapons, 74 Fed. Reg. 52,667 (14 October 2009).

regulated by the NRC.[22] Prior to this act, Federal criminal law only covered facilities owned or occupied by the NRC or the U.S. Department of Energy. Before the enactment of Section 654 and the final implementing regulations, when individuals brought unauthorised weapons into NRC-regulated facilities, the NRC could take enforcement action against its licensees for violating security requirements but could not refer the individuals for Federal criminal prosecution. Applicable state criminal laws, if any, were the only available source of criminal liability.

The act also allows NRC regulations to specify which types of NRC-regulated facilities would be covered. The new regulations apply to nuclear reactors, uranium enrichment, uranium conversion and nuclear fuel fabrication facilities, high-level radioactive waste storage and disposal facilities and independent spent fuel storage installations. At these facilities, the regulations will apply only in protected areas or other areas where security plans are required under other NRC rules. NRC licensees are also required to post conspicuous warning signs at the entrances to facility areas covered by the new regulations in order to notify plant personnel and visitors of the new rules. Other areas and facilities containing regulated nuclear materials, including hospitals, are not covered by the new regulations. State criminal laws, however, may still apply in those areas. In addition, states may continue to apply their own criminal laws to prosecute crimes covered under the new NRC regulations. Punishment for those individuals convicted of the new Federal crime includes criminal fines and imprisonment.

The new NRC regulations define “dangerous weapon” broadly to include any device that is used for, or readily capable of, causing death or serious bodily injury. The NRC explained that these regulations are intended “to criminalize the introduction of items” that “would pose a legitimate security threat if brought into a protected facility”. The NRC further noted that “licensee security plans should already be prohibiting” these items “as part of their existing security efforts”. The agency clarified that “unremarkable personal items such as pocket knives (with blades less than 2.5 inches long) attached to key chains, butter knives in lunch boxes etc. are not intended to be covered by this rule”.

Under pre-existing NRC regulations, NRC licensees are already required to promptly report to the NRC any completed or attempted unauthorised introductions of contraband. This would include dangerous weapons, explosives or other dangerous instruments or materials introduced into protected areas of their facilities. Licensees are also encouraged to report such incidents to law enforcement authorities.

22. P.L. 109-58, 119 Stat. 812 (8 August 2005) (codified at 42 U.S.C. § 2278a).

Texts

European Atomic Energy Community

Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations

Official Journal L 172 , 02/07/2009 P. 0018 – 0022

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,[1]

Having regard to the opinion of the European Parliament,[2]

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

1. Opinion of 10 June 2009 (not yet published in the Official Journal).

2. Opinion of the European Parliament of 22 April 2009 (not yet published in the Official Journal).

ionizing radiation[3] 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,[4] the Community shares competences, together with its member states, in fields covered by the Convention on Nuclear Safety.[5]

(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.

(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[6] 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[7] 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.

---

3. OJ L 159, 29.6.1996, p. 1.

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

5. OJ L 318, 11.12.1999, p. 21.

6. OJ L 371, 30.12.1987, p. 76.

7. OJ L 357, 7.12.1989, p. 31.

(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[8] 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 Waste Management[9] 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 fifth meeting ENSREG adopted 10 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

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

9. OJ L 195, 27.7.2007, p. 44.

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 Interinstitutional Agreement on better law-making,[10] member states are encouraged to draw up, for themselves and in the 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.

10. OJ C 321, 31.12.2003, p. 1.

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 co-ordination 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 10 years arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and/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 by 22 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 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.

For the Council

The President

L. Miko

Italy

Law No. 99 of 23 July 2009

Provisions for the development and internationalisation of firms, with particular reference to energy

(Published in the Ordinary Supplement to Official Journal No. 176 of 31 July 2009)

Article 25

(Delegating tasks to the Government in the nuclear field)

1. Within six months of the entry into force of this Law, the Government is authorised to adopt, in compliance with the regulations on environmental impact assessment and the notification of pertinent procedures, one or more legislative decrees recasting the rules for the siting on national territory of nuclear power generating plants, fuel fabrication plants, storage systems for spent fuel and radioactive waste, repositories for radioactive materials and wastes, as well as procedures for establishing measures regarding the compensation to be provided and paid to the populations concerned. The decrees shall be passed in accordance with the procedures and guidelines set out in *Article 20 of Law No. 59 of 15 March 1997*, and subsequent amendments, and in compliance with the guiding principles and criteria specified in paragraph 2 of this Article, at the proposal of the Minister for Economic Development, in conjunction with the Minister for the Environment, Land and Sea and the Minister of Infrastructure and Transport, subject to the opinion of the Unified Conference referred to in *Article 8 of Legislative Decree No. 281 of 28 August 1997*, and subsequent amendments, and further to the opinion of the Parliamentary Committees responsible for nuclear matters and the financial consequences thereof. The Parliamentary Committees shall issue an opinion within sixty days of the draft of the legislative decrees being sent to them. The said decrees shall also set out the licensing procedures and subjective requirements applicable to the construction, operation and decommissioning of the plants mentioned in the opening sentence to this paragraph.

2. The delegation of tasks referred to in paragraph 1 shall be exercised in accordance with the following principles and criteria:

a) provision must be made for the possibility of declaring sites to be areas of national strategic interest requiring special forms of oversight and protection;

b) high levels of security meeting the requirements for the safeguard of the health of the population and the environment must be specified for sites;

c) direct benefits to residents, local authorities and firms operating on the territory surrounding the site must be established at the expense of the firms involved in the construction or the operation of plants and structures which shall be prohibited from passing on such expense to end users;

d) provision must be made for procedures which the holders of licences to carry out activities must adopt with regard to the disposal of radioactive waste and irradiated nuclear materials and the dismantling of plants at the end of the life cycle;

e) technical and scientific data from public research bodies, including the Institute for Environmental Protection and Research (ISPRA) and universities, must be acquired;

f) procedures must be laid down for the exercise of the Government's powers of substitution in the event of failure to meet the necessary agreements with the various local bodies involved, in accordance with the provisions of *Article 120 of the Constitution*;

g) provision must be made whereby the construction and operation of plants for the generation of nuclear power, radioactive waste safe management or the dismantling of nuclear plants at the end of the life cycle, and all related activities, are considered to be activities of compelling interest to the state and, as such, subject to a single licence, issued at the request of the applicant and subject to compliance with the Unified Conference referred to in *Article 8 of Legislative Decree No. 281 of 28 August 1997*, and subsequent amendments, and with the decree issued by the Minister for Economic Development, in conjunction with the Minister for the Environment, Land and Sea and the Minister of Infrastructure and Transport;

h) provision must be made for the single licence to be issued through a single procedure in which the administrations concerned shall participate and which shall be carried out in compliance with the principles of administrative streamlining and the procedures set out in *Law No. 241 of 7 August 1990*; this licence must include the declaration of public utility, must state that the works are urgent and cannot be postponed and, where appropriate, must include the declaration of non-transferability and posting of the expropriation order for the assets contained therein; the single licence replaces all and any administrative measures, authorisations, concessions, licences, permits, deeds of consent and administrative deeds, regardless of their denomination, with the exception of the procedures for the environmental impact assessment (EIA) and strategic environmental assessment (SEA) with which compliance is required under the legislation in force, thereby conferring entitlement to construct and operate infrastructure in accordance with the approved project;

i) provision must be made for approvals of requirements and technical specifications applicable to nuclear power plants which have already been granted within the past ten

years by the competent authorities of member countries of the OECD Nuclear Energy Agency (NEA), or by the competent authorities of states with which bilateral agreements for technological and industrial co-operation in the nuclear sector have been signed, to be considered valid in Italy, subject to the approval of the Nuclear Safety Agency;

l) provision must be made for responsibilities regarding safety and radiation protection inspections which are also designed to ensure that maximum transparency prevails in dealings with citizens and local administrative bodies, to be charged to nuclear power plant operators who may also avail themselves of the support and guidance of experts of comparable European safety organisations, and capable of being carried out within specific time frames that are compatible with the complex planning of activities;

m) instruments providing financial and insurance cover against the risk of failure to meet construction deadlines for reasons independent of the will of the licence holder must be specified;

n) procedures which the operators of nuclear power plants must follow to set up a "decommissioning" fund must be put in place;

o) provision must be made wide-ranging and detailed information to be given to the general public in appropriate formats, and particularly to persons involved in nuclear activities, with the aim of creating suitable conditions for the performance and management of plants;

p) sanctions must be put in place to punish breaches of the provisions of legislative decrees;

q) provision must be made for a timely information campaign, within the limits of the budgetary resources available for that purpose, to inform the Italian population about nuclear energy, with particular reference to its safety and low cost.

3. In hearings before administrative legal bodies with regard to procedures for the planning, approval and performance of works, infrastructure and production plants relating to the nuclear energy sector and related expropriation, occupation and easement activities, the provisions of *Article 246 of the Code of public contracts for works, services and supplies, referred to in Legislative Decree No. 163 of 12 April 2006*, shall apply.

4. In paragraph 4 of *Article 11 of Legislative Decree No. 79 of 16 March 1999*, the following text has been inserted after the words: "renewable sources of energy": "nuclear energy produced on the national territory".

5. Provisions made to correct and integrate the legislative decrees mentioned in paragraph 1 may be issued, in compliance with the procedures, principles and criteria mentioned in paragraphs 1 and 2, within one year from their entry into force.

6. Implementation of this Article must not give rise to new or greater burdens on public finances. The relevant obligations shall be fulfilled with the human, instrumental and financial resources available under current legislation.

7. In *Article 3 of Legislative Decree No. 52 of 6 February 2007*, the following text is to be inserted after paragraph 2: "2-bis. The financial guarantee mentioned in sub-paragraph d) 1) of paragraph 2 shall be set out in a decree issued by the Minister for Economic Development, in

conjunction with the Minister of Economy and Finance, after hearing the Minister for the Environment, Land and Sea."

Article 26

Nuclear energy

1. The decision by the CIPE (Interministerial Economic Planning Committee), which must be adopted within six months of the entry into force of this Law and subject to the opinion of the Unified Conference referred to in *Article 8 of Legislative Decree No. 281 of 28 August 1997*, and subsequent amendments, at the proposal of the Minister for Economic Development, after hearing the Minister for the Environment, Land and Sea and after hearing the competent Parliamentary Committees, shall specify the type of nuclear power plant which can be built on the national territory. The Unified Conference shall express its opinion within sixty days of receiving a request; the opinion shall be considered to have been acquired after said period.

2. The decision by the CIPE, at the proposal of the Minister for Economic Development, shall set out, without placing new or additional burdens on public finances or reducing public revenues, criteria and measures capable of encouraging the creation of consortia for the construction and operation of the plants referred to in paragraph 1 established by power generation operators and by industrial parties established in consortia.

Article 29

Nuclear Safety Agency

1. The Nuclear Safety Agency is hereby established. The Agency shall carry out the functions and tasks of a national authority for the technical regulation, oversight and licensing from a safety standpoint of activities relating to the peaceful use of nuclear energy, the management and disposal of radioactive waste and nuclear materials produced by both power generating plants and medical and industrial activities, radiation protection as well as the functions and tasks relating to the oversight of the construction, operation and safeguard of nuclear power plants and materials, including their infrastructure and logistics.

2. The Agency shall comprise the structures of the current Nuclear, Technological and Industrial Risks Department of ISPRA and the resources of ENEA (National Agency for New Technologies, Energy and Sustainable Economic Development) which are currently in charge of the activities that will fall within the scope of the Agency.

3. The Agency shall carry out the functions specified in paragraph 1 without placing new or additional burdens on public finances or reducing public revenues and within the limits of the human, instrumental and financial resources available under the current legislation referred to in paragraph 17.

4. The Agency shall monitor nuclear safety and radiation protection in compliance with current legislation and procedures at the national, EU and international level, by making use of the most effective and efficient technologies available in accordance with the priorities and directions of national energy policy and in compliance with the right to health and the environment and in pursuance of the precautionary principles suggested by EU bodies. The Agency shall present an

annual report on nuclear safety to Parliament. The Agency shall maintain and develop relations, and also enter into co-operation agreements, with comparable agencies in other countries and with the European and international organisations that can assist it in the performance of its assigned tasks and duties.

5. The Agency is the sole national authority responsible for nuclear safety and radiation protection. In particular:

a) licences issued by public administrations with regard to the activities referred to in paragraph 1 are subject to the prior opinion of the Agency which shall be mandatory and binding;

b) the Agency shall be responsible for environmental oversight and verification with regard to the management of radioactive waste;

c) the Agency shall carry out inspections of national nuclear facilities and their infrastructure in order to ensure that the activities do not generate risks for the general public and the environment and that operating conditions are complied with;

d) when carrying out their duties, the Agency's inspectors shall be authorised to enter facilities and consult documents and participate in the tests requested;

e) for the purposes of checking the safety and the guarantees of quality, the Agency shall ask the persons responsible for the design, construction and operation of nuclear facilities, as well as the pertinent infrastructure, to provide the Agency with data, information and documents;

f) the Agency shall draw up and propose regulations, standards and technical procedures and shall publish reports on new technologies and procedures, in compliance with EU and international legislation relating to nuclear safety and radiation protection;

g) the Agency may impose requirements and corrective measures, issue warnings to licence-holders and, in the event of non-compliance with its measures or in the event of failure, on the part of the said persons, to produce the required documents and issue access passes to plants, or to comply with requirements related to the performance of inspections, or in the event that the information or documents obtained are not truthful, the Agency may impose, provided that the licence-holder's action does not constitute an offence, administrative fines ranging from a minimum of EUR 25 000 to a maximum of EUR 150 million, may also order that the activities covered by the licences be suspended, and may suggest to the competent authorities that they revoke the said licences. The provisions of *Article 16 of Law No. 689 of 24 November 1981*, and subsequent amendments, shall not apply to fines. Fines imposed by the Agency shall be used to fund the operation of the Agency and shall be paid into the single treasury opened in the name of the Agency with the State treasury pursuant to *Article 1(1) of Law No. 720 of 29 October 1984*. The Agency shall submit an annual report on total receipts from fines to its supervisory body and to the Ministry of Economy and Finance. The ordinary funding it receives annually from the state budget referred to in paragraphs 17 and 18 of this Article shall consequently be reduced commensurately. The Agency shall remit to the State budget, both within the same financial year and also subsequent to the start of its ordinary activity, any sums received from the payment of fines in excess of the amount of annual ordinary funding it receives under current legislation;

h) the Agency shall provide the public with transparent information regarding the impact on the general public and the environment of ionising radiation arising from the operation of nuclear power plants and the use of nuclear technologies under both ordinary and extraordinary circumstances;

i) the Agency shall design and verify the procedures which the holders of licences to operate or dismantle nuclear power plants, or to keep and hold safe radioactive material, must follow for the emplacement of radioactive waste and irradiated nuclear materials and the dismantling of plants at the end of the life cycle, in compliance with the best international standards established by the International Agency for Atomic Energy (IAEA);

l) the Agency is empowered to propose to other institutions that they instigate punitive measures.

6. In the performance of its functions the Agency may, subject to establishing the appropriate agreements, and provided that is does not place new or additional burdens on public finances or reduce public revenues, avail itself of the collaboration of regional environmental agencies.

7. For the performance of activities relating to the tasks and functions of the Agency, the operators concerned shall pay a charge based on the costs actually incurred to carry out the services, in accordance with the decree of the Minister of the Economy and Finance, in conjunction with Minister for Economic Development and the Minister for the Environment, Land and Sea, having heard the opinion of the competent Parliamentary committees.

8. The Agency is a collegial body made up of a Chairman and four Members. The Members of the Agency shall be appointed by Presidential decree, at the proposal of the President of the Italian Council of Ministers, subject to a decision by the Council of ministers. The President of the Italian Council of Ministers shall appoint the Chairman of the Agency, two Members shall be appointed by the Minister for the Environment, Land and Sea, and two by the Minister for Economic Development. Before the Council of Ministers makes its decision, the competent Parliamentary Committees shall express their opinion and may organise a hearing of the persons whose names have been put forward. In no case may appointments be made without the approval of the above Committees. The Chairman and Members of the Agency selected shall be persons of unquestioned moral character and independence, proven professionalism and must possess high qualifications and skills in the nuclear technology sector, the management of technological plants, nuclear safety, radiation protection, environmental protection and health and safety. The office of Agency Member is incompatible with the holding of an elected political office; likewise, persons with interests of any type that conflict with the functions of the Agency shall not be appointed. The Government shall submit an annual report to Parliament on the nuclear safety measures put in place by the Agency.

9. The Chairman of the Agency shall be the legal representative of the Agency and shall convene and chair its meetings. In order for meetings to be valid, the presence of the Chairman and a quorum of at least two Members are required. The decisions of the Agency shall be taken by a majority vote of those present.

10. The Chairman and the Board of Auditors are bodies of the Agency. The Director-General shall be appointed collectively and unanimously by the Members of the Agency and shall be responsible for the management, co-ordination and oversight of its structure. The Board of Auditors, appointed by the Minister of Economy and Finance, shall be made up of three serving

Members, one of whom shall act as Chairman and shall be chosen from among the Directors of the Department for National General Accounting of the Ministry of Economy and Finance, and two Deputy Members. The Board of Auditors shall monitor, pursuant to Article 2403 of the Civil Code, compliance with the legislation and shall make sure that the Agency is managed with all due diligence.

11. The fees payable to the Members of the Agency and its bodies shall be determined by decree of the President of the Italian Council of Ministers, in conjunction with the Minister of Economy and Finance, the Minister for the Environment, Land and Sea and the Minister for Economic Development. The said decree shall also specify the location of the headquarters of the Agency. The expenditure arising from implementation of the provisions of this paragraph shall be covered by the funding currently available to ISPRA and ENEA pursuant to paragraph 18.

12. The bodies of the Agency and its members shall remain in office for seven years.

13. Under penalty of dismissal, the Chairman, Members of the Agency and the Director-General may not carry out, either directly or indirectly, any professional activity or consultancy, hold the post of managing director or employee of a public or private entity, nor may they hold other public offices of any nature, including elective offices or offices of representation in political parties, nor have direct or indirect interests in enterprises which operate in the sector. Employees of public administrative bodies shall be relieved of their duties or placed on leave, in all cases without pay, for the entire duration of their office.

14. For a period of at least twelve months after being discharged from their office, the Chairman, Members of the Agency and the Director-General may not, either directly or indirectly, collaborate with, provide consulting services to or work for firms operating in the sector for which they were formerly responsible, nor with related associations. Any breach of this ban, unless the act constitutes an offence, shall be punished by an administrative fine equal to a yearly payment of the amount received. An administrative fine equal to 0.5 percent of turnover, and in all cases of no less than EUR 150 000 and no more than EUR 10 million, shall be imposed on any entrepreneur who violates such a ban; in more severe cases, or when the unlawful conduct has been repeated, the entrepreneur's licence shall be revoked. The maximum and minimum limits of such fines shall be reviewed in line with the annual variation in the consumer prices index for families of workers and employees, determined by the ISTAT (Italian National Institute of Statistics).

15. Within three months of this Law entering into force, under a decree issued by the President of the Italian Council of Ministers, at the proposal of the Minister for the Environment, Land and Sea and of the Ministry for Economic Development, in conjunction with the Minister of Economy and Finance and the Minister for Public Administration and Innovation, the Agency's Statute, establishing the criteria governing the organisation, operation, regulation and oversight of the Agency in accordance with the institutional tasks specified in the Law, shall be approved.

16. Within three months of the date of issuance of the decree referred to in paragraph 15, and in accordance with the criteria it lays down, the regulations governing the organisation and internal operation of the Agency shall be approved by a decree issued by the President of the Italian Council of Ministers, at the proposal of the Minister for the Environment, Land and Sea, in conjunction with the Minister for Economic Development, the Minister of the Economy and Finance and the Minister for Public Administration.

17. The Minister for the Environment, Land and Sea shall issue a decree specifying the staff resources, up to a maximum of 50 employees, which will be transferred to the Agency from the Nuclear, Technological and Industrial Risks Department of ISPRA. The Minister for Economic Development shall issue a decree specifying the staff resources, up to a maximum of 50 employees, which will be transferred to the Agency from ENEA and its subsidiaries. Staff shall continue to work under the legal and economic conditions that they enjoyed at the time of the transfer. Under a decree issued by the Minister of the Economy and Finance, in conjunction with the Minister for Public Administration and Innovation, the Minister for the Environment, Land and Sea and the Minister for Economic Development, the funding currently awarded to the transferring administrations, needed to cover the expenditure arising from implementation of the provisions of this paragraph, shall be transferred to the Agency ensuring in all cases that there is no variation in expenditure by making a commensurate reduction in the expenditure authorisations specified in paragraph 18. The same decree shall provide for commensurate reductions in the number of staff employed by the transferring administrative bodies.

18. In the event of delays in the start of the ordinary activity of the Agency and the ensuing inflow of resources arising from the fees which the Agency is authorised to charge and collect for the services referred to in paragraph 5, as well as the charges relating to the Agency's operation which are set at EUR 500 000 for 2009 and at EUR 1 500 000 in both 2010 and 2011, a provision of EUR 250 000 is made for the year 2009 and EUR 750 000 for both 2010 and 2011, subject to a commensurate reduction in the authorised expenditure specified in *Article 38 of Legislative Decree No. 300 of 30 July 1999*, and subsequent amendments, as recalculated in Table C in the annex to *Law No. 203 of 22 December 2008,* amounting to EUR 250 000 for the year 2009 and EUR 750 000 in both 2010 and 2011, subject to a commensurate reduction in the authorised expenditure specified in *Law No. 282 of 25 August 1991*, as recalculated in Table C in the annex to *Law No. 203 of 22 December 2008*.

19. With regard to the administration and accounts of the Agency, the provisions of the regulations mentioned in *Presidential Decree No. 97 of 27 February 2003* shall apply. The budget forecasts, related adjustments and final accounts shall be submitted to the Ministry of Economy and Finance. The annual report on the financial management of the Agency shall be approved by 30 April of the following year and shall be subject to verification by the Court of Auditors. The budget and annual report on financial management shall be published in the Official Journal.

20. Until the date of publication of the regulations mentioned in paragraph 16, the nuclear safety functions transferred to the Agency under this Article shall continue to be performed by the Agency's Nuclear, Technological and Industrial Risks Department for the protection of the environment and for technical services which are already governed by *Article 38 of Legislative Decree No. 300 of 30 July 1999*, and subsequent amendments, or by the organisational structures at ISPRA, which may have been specified in the meantime under the decree referred to in *Article 28 (3) of Decree-Law No. 112 of 25 June 2008*, converted, with amendments, from *Law No. 133 of 6 August 2008*. This does not apply to deeds adopted and proceedings initiated or concluded by the above-mentioned Department or by the organisational structures mentioned in the previous sentence up to the same date.

21. The Agency may be wound up for serious and substantiated reasons, relating to the proper functioning of the Agency or the pursuit of its institutional goals, by Presidential decree, at the proposal of the President of the Italian Council of Ministers, in conjunction with the Ministry for the Environment, Land and Sea and with the Ministry of Economic Development. In such an event, an extraordinary commissioner shall be appointed by decree issued by the President of

the Italian Council of Ministers, for a period not exceeding eighteen months, who shall perform the functions of the Chairman and Members of the Agency with the assistance of two Deputy Commissioners if necessary.

22. The Minister of Economy and Finance is authorised to issue decrees to make any budget adjustments that may be required.

Japan

Act on Compensation for Nuclear Damage

(Act No. 147 of 1961)

As Amended by Act No. 19 of 17 April 2009

Contents

PART I

General Provisions

Section 1 Purpose

The purpose of this act is to protect persons suffering from nuclear damage and to contribute to the sound development of the nuclear industry by establishing the basic system regarding compensation in case of a nuclear damage caused by reactor operation etc.

Section 2 Definitions

As used in this act, "reactor operation etc." means any activity which comes under any one of the following cases below as well as any incidental transport, storage and disposal of nuclear fuel or material contaminated by nuclear fuel [including nuclear fission products; this applies also to sub-paragraph (v)], as provided by Cabinet Order:

i) reactor operation;

ii) production;

iii) reprocessing;

iv) use of nuclear fuel;

(iv-2) storage of spent fuel;

(v) waste disposal of nuclear fuel or material contaminated by nuclear fuel (referred to as "nuclear fuel etc." in the following paragraph and in Section 3, paragraph 2).

2. As used in this act, "nuclear damage" means any damage caused by the effects of the fission process of nuclear fuel, or of the radiation from nuclear fuel etc., or of the toxic nature of such materials (which means effects that give rise to toxicity or its secondary effects on the human body by ingesting or inhaling such materials); however, any damage suffered by the nuclear operator who is liable for such damage pursuant to the following Section, is excluded.

3. As used in this act, "nuclear operator" means any person as specified under any one of the following sub-paragraphs (including a person who had been deemed so previously).

(i) A person who is granted a permit as provided in Section 23 paragraph 1 of the Act for the Regulation of Nuclear Source Material, Nuclear Fuel and Reactors (Act No. 166 of 1957; hereinafter referred to as "the Regulation Act") (including a national licence under the provisions of the same paragraph applying instead by virtue of Section 76 of the Regulation Act) (including a person who is regarded as a reactor operator pursuant to Section 39, paragraph 5 of the Regulation Act);

(ii) A person who is granted a permit as provided in Section 23-2, paragraph 1 of the Regulation Act;

(iii) A person who is granted a licence as provided in Section 13, paragraph 1 of the Regulation Act (including a national licence under the provisions of the same paragraph applying instead by virtue of Section 76 of the Regulation Act);

(iv) A person who is granted a licence as provided in Section 43-4, paragraph 1 of the Regulation Act (including a national licence under the provisions of the same paragraph applying instead by virtue of Section 76 of the Regulation Act);

(v) A person who is granted a licence as provided in Section 44, paragraph 1 of the Regulation Act (including a national licence under the provisions of the same paragraph applying instead by virtue of Section 76 of the Regulation Act);

(vi) A person who is granted a licence as provided in Section 51-2, paragraph 1 of the Regulation Act (including a national licence under the provisions of the same paragraph applying instead by virtue of Section 76 of the Regulation Act);

(vii) A person who is granted a licence as provided in Section 52, paragraph 1 of the Regulation Act (including a national licence under the provisions of the same paragraph applying instead by virtue of Section 76 of the Regulation Act);

4. As used in this Act, "reactor" means a reactor as provided in Section 3, paragraph 4 of the Basic Atomic Energy Act (Act No. 186 of 1955), "nuclear fuel" means nuclear fuel as provided in Section 3, paragraph 2 of the Basic Atomic Energy Act (including spent fuel as provided in Section 2, paragraph 8 of the Regulation Act), "production" means production as provided in Section 2, paragraph 7 of the Regulation Act, "reprocessing" means reprocessing as provided in Section 2, paragraph 8 of the Regulation Act, "storage of spent fuel" means the storage of spent fuel as provided in Section 43, paragraph 4(1) of the Regulation Act; "waste disposal of nuclear fuel or material contaminated by nuclear fuel", means the underground disposal of waste and waste management as provided in Section 51, paragraph 2(1) of the Regulation Act**;** "radiation" means radiation as provided in Section 3, paragraph 5 of the Basic Atomic Energy Act, and "nuclear ship" and "foreign nuclear ship" mean nuclear ship and foreign nuclear ship as provided in Section 23-2, paragraph 1 of the Regulation Act.

PART II

Liability for Nuclear Damage

CHAPTER 1

Financial Security

Liability without fault, channelling of liability etc.

Section 3

Where nuclear damage is caused as a result of reactor operation etc. during such operation, the nuclear operator who is engaged in the reactor operation etc. on this occasion shall be liable for the damage, except in the case where the damage is caused by a grave natural disaster of an exceptional character or by an insurrection.

2. Where nuclear damage is covered by the preceding paragraph and if the damage is caused as a result of the transport of nuclear fuel etc. between nuclear operators, the nuclear operator who is the consignor of the nuclear fuel etc. shall be liable for the damage unless there is a special agreement between the nuclear operators.

Section 4

Where nuclear damage is covered by the preceding section, no person other than the nuclear operator who is liable for the damage pursuant to the preceding section shall be liable for the damage.

2. Where nuclear damage is covered by paragraph 1 of the preceding section, the liability of a nuclear operator who furnishes the financial security as provided in Section 7-2, paragraph 2 and wants a foreign nuclear ship to enter into Japanese territorial waters shall be limited to the amount as provided in Section 7-2, paragraph 2.

3. The provisions of Section 798, paragraph 1 of the Trade Act (Act No. 48 of 1899), the Act relating to the Limitation of the Liability of Shipowners (Act No. 94 of 1975) and the Products Liability Act (Act No. 85 of 1994), shall not apply to nuclear damage which is caused as a result of reactor operation etc.

Section 5 Rights of recourse

Where nuclear damage is covered by Section 3 and if the damage is caused by the wilful act of a third party, the nuclear operator who has compensated the damage pursuant to Section 3 shall retain a right of recourse against such third party.

The provisions of the preceding paragraph shall not prevent a nuclear operator from entering into a special agreement with any person regarding rights of recourse.

PART III

Financial Security

CHAPTER 1

Financial Security

Section 6 Duty to provide financial security

A nuclear operator is prohibited from reactor operation etc. unless financial security for compensation of nuclear damage (hereinafter referred to as “financial security”) has been provided.

Details of financial security

Section 7

Except when the provisions of the following section are applicable, financial security shall be provided by the conclusion of a contract of liability insurance for nuclear damage and an indemnity agreement for compensation of nuclear damage or by a deposit, approved by the Minister for Education, Culture, Sport, Science and Technology (MEXT) as an arrangement that makes available for compensation of nuclear damage, 120 billion yen (in case of such reactor operation etc. The Cabinet Order may provide for a lesser amount than 120 billion yen; hereinafter this amount is referred to as "financial security amount") for each installation or site or nuclear ship, or by an equivalent arrangement approved by MEXT.

2. Where the amount available for compensation of nuclear damage falls below the financial security amount because the nuclear operator has paid compensation for nuclear damage pursuant to Section 3, MEXT may, if it deems it necessary to ensure full compensation of nuclear damage, order the nuclear operator to bring the amount available for compensation of nuclear damage up to the financial security amount by a given time.

3. In the case provided for in the preceding paragraph, the preceding section shall not apply until the Order is made pursuant to the preceding paragraph (until the time designated by the Order, where such an Order has been made pursuant to the preceding paragraph).

Section 7-2

Where a nuclear operator wants a nuclear ship to enter into foreign territorial waters, financial security shall be provided by the conclusion of a contract of liability insurance for nuclear damage and an indemnity agreement for compensation of nuclear damage or by other financial security, approved by MEXT as an arrangement that is sufficient for the compensation of nuclear damage, in the amount agreed between the Government of Japan and the Government of such foreign country and subscribed by the nuclear operator of the nuclear ship who is liable for the compensation of nuclear damage.

2. Where a nuclear operator wants a foreign nuclear ship to enter into Japanese territorial waters, the financial security shall be that approved by MEXT as an arrangement that is sufficient for the compensation of nuclear damage, in the amount (not less than 36 billion yen in respect of nuclear damage caused by any one incident) agreed between the Government of Japan and the Government of such foreign country and subscribed by the nuclear operator of the foreign nuclear ship liable for the compensation of nuclear damage.

CHAPTER 2

Contract of Liability Insurance for Nuclear Damage

Contract of Liability Insurance for Nuclear Damage

Section 8

The contract of liability insurance for nuclear damage (hereinafter referred to as "liability insurance contract") shall be the contract under which an insurer undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage, where the nuclear operator becomes liable for such nuclear damage, and under which the insurance policy holder has undertaken to pay a premium to the insurer (this provision applies only to a person who is authorised to engage in liability insurance activities pursuant to the Insurance Business act [Act No. 105 of 1995], such as a risk insurance company under Section 2, paragraph 4 of this same act, or a foreign risk insurance company under paragraph 9 of the same section, this being the meaning given to the term insurer used hereafter).

Section 9

Any person suffering from nuclear damage shall, with regard to his claim for such nuclear damage, have priority over other creditors in respect of compensation from the amount provided by the liability insurance contract.

2. The insured may request the insurer to make the insurance payment only to the extent of the amount of compensation which the insured has paid or to the extent to which the insured has acquired the consent of persons suffering from nuclear damage.

3. The right to request insurance payment under the liability insurance contract shall not be assigned, mortgaged or seized; however, a person who has suffered nuclear damage may proceed with a seizure with regard to his claim for nuclear damage.

CHAPTER 3

Indemnity Agreements for Compensation of Nuclear Damage

Indemnity agreements for compensation of nuclear damage

Section 10

An indemnity agreement for compensation of nuclear damage (hereinafter referred to as "indemnity agreement") shall be the contract by which the Government undertakes to indemnify a nuclear operator for his loss arising from compensating nuclear damage not covered by the liability insurance contract or other financial security for compensation of nuclear damage, where the nuclear operator becomes liable for such damage, and under which that operator has undertaken to pay an indemnity fee to the Government.

2. Provisions relating to indemnity agreements shall be laid down in another act.

Section 11

The provisions of Section 9 shall apply mutatis mutandis to the indemnity payment under the indemnity agreement.

CHAPTER 4

Deposit

Section 12 Deposit

A deposit for financial security shall be made in the Legal Affairs Bureau or the District Legal Affairs Bureau nearest to the main office of the nuclear operator, either in cash or in securities as provided by MEXT [including electronic securities specified in the Act on the Transfer of Securities such as shares, company bonds etc. (Act No. 75 of 2001) Section 278, paragraph 1. This provision applies also to what follows in this Chapter].

Section 13 Payment from deposit

Any person suffering nuclear damage may, with regard to his claim for compensation, receive compensation from the cash or securities deposited by the nuclear operator pursuant to the preceding section.

Section 14 Withdrawal of deposit

A nuclear operator may, in the following cases, withdraw the cash or securities deposited pursuant to Section 12 with the approval of MEXT where:

(i) the nuclear damage has been compensated;

(ii) financial security other than the deposit has been provided;

(iii) reactor operation etc. has ceased.

2. When MEXT grants an approval under the preceding sub-paragraphs (ii) or (iii), it may, to the extent that it deems it necessary to ensure full compensation of nuclear damage, designate the time when the nuclear operator may withdraw cash or securities, as well as the amount of such withdrawal.

Section 15 Specifications by Orders

Provisions regarding deposits other than those provided in this Chapter shall be promulgated by Orders of MEXT and the Ministry of Justice.

PART IV

Measures taken by the State

Section 16

Where nuclear damage occurs, the Government shall give a nuclear operator (except the nuclear operator of a foreign nuclear ship) such aid as is required for him to compensate the damage, when the actual amount which he should pay for the nuclear damage pursuant to Section 3 exceeds the financial security amount and when the Government deems it necessary in order to attain the objectives of this act.

2. Aid as provided for in the preceding paragraph shall be given to the extent that the Government is authorised to do so by decision of the National Diet.

Section 17

Where the provision for exoneration in Section 3, paragraph 1 applies or where nuclear damage is deemed to exceed the amount provided under Section 7-2, paragraph 2, the Government shall take the necessary measures to relieve victims and to prevent the damage from spreading.

PART V

Dispute Reconciliation Committee for Nuclear Damage Compensation

Section 18 Dispute Reconciliation Committee for Nuclear Damage Compensation

The Dispute Reconciliation Committee for Nuclear Damage Compensation (hereinafter referred to as "Reconciliation Committee") may be established as an organisation attached to MEXT, pursuant to the provisions laid down by Cabinet Order; this Committee shall be in charge of mediating reconciliation of any dispute arising from compensation of nuclear damage and of preparing general instructions to help operators reach a voluntary settlement of such disputes.

2. The Reconciliation Committee shall:

(i) mediate reconciliation of any dispute arising from compensation of nuclear damage;

(ii) in the event of a dispute arising from compensation of nuclear damage, draft instructions establishing the scale of the nuclear damage and other general instructions to help operators reach a voluntary settlement of the said dispute;

(iii) investigate and assess nuclear damage as necessary for dealing with the matters mentioned in (i) and (ii) above.

3. Provisions regarding the organisation and operation of the Reconciliation Committee as well as procedures for a request for, and conduct of, mediation other than those provided in paragraphs 1 and 2 shall be promulgated by Cabinet Order.

PART VI

Miscellaneous Provisions

Section 19 Presentation of reports and written opinions to the National Diet

Where nuclear damage occurs on a comparatively large scale, the Government must report to the National Diet as soon as possible on the extent of the damage and on the measures it has taken pursuant to this act.

2. When nuclear damage occurs, the Government must present to the National Diet the written opinion regarding mitigation, prevention etc. of the damage, which the Atomic Energy Commission or the Nuclear Safety Commission has submitted to the Prime Minister.

Section 20 Application of Section 10, paragraph 1 and Section 16, paragraph 1

The provisions of Section 10, paragraph 1 and Section 16, paragraph 1 shall apply to nuclear damage arising from reactor operation etc. in respect of which the activity, falling under any one of sub-paragraphs mentioned in Section 2, paragraph 1, has begun by 31 December 2019.

Section 21 Submission of reports and inspections

MEXT may, if it deems it necessary to ensure execution of the provisions of Section 6, require a nuclear operator to present any necessary reports or allow his officials to enter the latter's office, installation or site or his nuclear ship, to inspect his books, documents and other necessary objects, or to ask questions of the persons concerned.

2. When an official enters premises pursuant to the preceding paragraph, he shall carry an identification card and present it if requested by the persons concerned.

3. The right to conduct an inspection pursuant to paragraph 1 shall not be construed as a right to investigate a criminal offence.

Section 22 Consultations with the Minister for the Economy, International Trade and Industry (METI) or with the Minister for Regional Development, Infrastructure, Transport and Tourism (MLIT)

When MEXT takes action pursuant to Section 7, paragraph 1 or Section 7-2, paragraphs 1 or 2, or makes Orders pursuant to Section 7, paragraph 2, it shall hold prior consultations with the Minister for the Economy, International Trade and Industry (METI) in cases concerning reactors for the production of electricity, the production, reprocessing or storage of spent nuclear fuel or the disposal of waste consisting of nuclear fuel or materials contaminated by nuclear fuel, or the Minister for Regional Development, Infrastructure, Transport and Tourism (MLIT) in cases concerning reactors installed in vessels.

Section 23 Exclusion of application to the state

The provisions of Part III, Section 16 and Part VII shall not apply to the state.

PART VII

Penal Provisions

Section 24

A person who breaches the provisions of Section 6 shall be punishable by imprisonment of not more than one year, or by a fine not exceeding 1 000 000 yen, or both.

Section 25

A person shall be punishable by a fine not exceeding 1 000 000 yen for:

(i) failing to present a report pursuant to Section 21, paragraph 1, or presenting a false report;

(ii) refusing access to inspectors or interrupting or evading them, or refusing to answer a question pursuant to Section 21, paragraph 1 or giving a false answer to such a question.

Section 26

When the representative of a legal entity, or the agent or other employee of a legal entity or of a natural person commits any one of the offences referred to in Sections 24 and 25 in connection with the business of the legal entity or the natural person, the legal entity or the natural person shall, in addition to punishment of the actual offender, be punishable by a fine as provided in the said sections.

Supplementary Provisions (Omitted)

Date of entry into force

Section 1

This act shall enter into force on the date laid down by Cabinet Order and at the latest, nine months after the date of its promulgation.

Section 3

The penal provisions relating to acts committed before the entry into force of this act or to acts committed before the provisions laid down in Section 26, paragraph 1 of the Compensation Act cease to apply shall, before amendment by the provisions of this act and after its entry into force (this concerns the part relating to Section 23, paragraph 2 (9) of the said act), remain applicable.

Section 4 Adjustment of indemnities pursuant to other legislation

In the circumstances referred to in the preceding section, when the employees of a nuclear operator suffer nuclear damage and the nuclear operator is liable for such damage pursuant to the said section (designated simply, in the rest of this section, as "nuclear operator"), such employees or the families of the deceased shall receive an indemnity as laid down by Cabinet Order in the form of an indemnity under the provisions of the Insurance Act for the Compensation of Work Accidents (Act No. 50 of 1947) and equivalent to the compensation of such damage, or any other indemnity governed by other provisions of the act (hereinafter referred to in this section as "compensation for work accidents"). In such cases, any compensation of nuclear damage paid to employees or the families of the deceased shall be temporarily subject to the following provisions:

(i) the nuclear operator shall be entitled not to pay indemnification, and that during a period which may extend to the extinction of the right of employees or families to receive compensation for work accidents, up to an amount equal to the value of the said compensation for work accidents calculated at the legal rate in force between the time when the damage occurred and the date on which the compensation for work accidents was paid;

(ii) where the circumstances of the preceding paragraph apply, when compensation for work accidents has been paid, the nuclear operator shall be exonerated from his indemnification obligation up to an amount equal to the value of the said compensation for work accidents calculated at the legal rate in force between the time when the damage occurred and the date on which the compensation for work accidents was paid.

2. Where the employees of a nuclear operator have suffered nuclear damage and such damage was caused intentionally by a third party, the nuclear operator who has paid compensation for work accidents to the employees or families of the deceased shall retain a right of recourse against such third party.

Supplementary Provisions (Act No. 19 of 17 April 2001)
This act shall enter into force on 1 January 2010.

Act on Indemnity Agreements for Compensation of Nuclear Damage

(Act No. 148 of 1961)

As Amended by Act No. 19 of 17 April 2009

Section 1 Definitions

As used in this act, "reactor operation etc." means reactor operation etc. as provided in Section 2, paragraph 1 of the Act on Compensation for Nuclear Damage (Act No. 147, 1961, hereinafter referred to as "the Compensation Act"), "nuclear damage" means nuclear damage as provided in Section 2, paragraph 2 of the Compensation Act, "nuclear operator" means nuclear operator as provided in Section 2, paragraph 3 of the Compensation Act [except the nuclear operator as provided in Section 2, paragraph 3, sub-paragraph (i) 2], "nuclear ship" means nuclear ship as provided in Section 2, paragraph 4 of the Compensation Act, "financial security" means financial security as provided in Section 6 of the Compensation Act, "financial security amount" means the financial security amount as provided in Section 7, paragraph 1 of the Compensation Act, and "liability insurance contract" means liability insurance contract as provided in Section 8 of the Compensation Act.

Section 2 Indemnity agreements for compensation of nuclear damage

The Government may conclude an agreement with a nuclear operator under which the Government undertakes to indemnify the nuclear operator for his loss arising from compensating nuclear damage not covered by a liability insurance contract or other means for compensating nuclear damage in case the nuclear operator becomes liable, and under which the nuclear operator undertakes to pay an indemnity fee to the Government.

Section 3 Indemnified loss

The loss which the Government indemnifies under the agreement as provided in the preceding Section (hereinafter referred to as "indemnity agreement") shall be the loss suffered by the nuclear operator as a result of compensating nuclear damage in the following cases:

i) nuclear damage caused by an earthquake or volcanic eruption;

ii) nuclear damage caused by normal operation (which means reactor operation etc. performed under the conditions provided by the Cabinet Order*);

iii) nuclear damage which can be covered by a liability insurance contract, but for which the persons suffering therefrom have not claimed compensation within a period of ten years from

---

* Note by the Secretariat: Cabinet Order No. 45 of 6 March 1962 is referred to throughout the act.

the day of the occurrence of the event (with regard to the nuclear damage appearing in such period, this shall apply only to the case where there is a justifiable reason for their failure to claim compensation within such period);

iv) nuclear damage which occurs due to the visit of a nuclear ship in foreign territorial waters, but which cannot be covered by the financial security or other arrangements for compensation of nuclear damage as provided in Section 7, paragraph 1 of the Compensation Act (limited to the financial security approved as a part of the financial security provided for in Section 7-2, paragraph 1 of the Compensation Act);

v) nuclear damage as provided in the Cabinet Order other than that mentioned in the preceding sub-paragraphs.

Section 4 Indemnity agreement amount

The contracted amount concerning an indemnity agreement for the nuclear damage mentioned in the preceding Section sub-paragraphs (i) to (iii) and (v) (hereinafter referred to as "indemnity agreement amount") shall be the amount equivalent to the amount of the financial security as provided in Section 7, paragraph 1 of the Compensation Act (where the financial security includes an arrangement other than the conclusion of a liability insurance contract and an indemnity agreement, this amount shall be reduced by the amount available for compensation of nuclear damage by means of such other arrangement; where an indemnity agreement other than the indemnity agreement concerned has been concluded, this amount shall be reduced by the amount available for compensation of nuclear damage by means of such other indemnity agreement).

2. The indemnity agreement amount for the nuclear damage mentioned in Section 3, sub paragraph (iv) shall be the amount equivalent to the amount of the financial security as provided in Section 7-2, paragraph 1 of the Compensation Act (where the financial security and other arrangements for compensation of nuclear damage as provided in Section 7, paragraph 1 of the Compensation Act are approved as a part of the financial security provided for in Section 7-2, paragraph 1 of the Compensation Act, this amount shall be reduced by the amount available for compensation for nuclear damage by means of such other financial security).

Section 5 Period of indemnity agreement

The period of the indemnity agreement concerning the nuclear damage mentioned in Section 3, sub paragraphs (i) to (iii) and (v) shall run from the time of its conclusion to the time when the reactor operation etc. has ceased.

2. The period of the indemnity agreement concerning the nuclear damage mentioned in Section 3, sub paragraph (iv) shall run from the time when the nuclear ship leaves Japanese territorial waters to the time when it arrives back in Japanese territorial waters.

Section 6 Indemnity fee

The annual amount of the indemnity fee shall be equivalent to the amount computed by multiplying the indemnity agreement amount by the rate as provided in the Cabinet Order, taking into account the probability of the occurrence of damage covered by the indemnity agreement and the expenditures of the Government in relation to the indemnity agreement and other conditions concerned.

Section 7 Payment under the indemnity agreement

The Government shall, under an indemnity agreement, indemnify up to the indemnity agreement amount for the loss suffered by the nuclear operator as a result of compensating nuclear damage caused by the reactor operation etc. during the period covered by the indemnity agreement concerned.

2. Where the Government indemnifies the loss suffered by a nuclear operator as a result of compensating the nuclear damage mentioned in Section 3, sub paragraphs (i) to (iii) and (v), if there is any amount to be covered by the liability insurance contract, the total sum paid from the indemnity agreement shall not exceed the amount computed by deducting the amount paid from the liability insurance contract from the financial security amount (or the amount computed by deducting the amount paid from the liability insurance contract from the financial security amount further reduced by the amount available for compensation of nuclear damage by means of other arrangements, which the financial security concerned includes, excepting the liability insurance contract and the indemnity agreement).

Section 8 Financial limit of indemnity agreements

The Government shall conclude indemnity agreements to the extent that the total sum of the indemnity agreement amount does not exceed the budget amount approved by the National Diet for each year.

Section 9 Duty to notify

When concluding an indemnity agreement, a nuclear operator shall, pursuant to the provisions of the Cabinet Order, notify the Government of important facts regarding reactor operation etc. The same shall apply where there is a change in the notified facts.

Section 10 Specifications by Cabinet Order

The conclusion of an indemnity agreement, and the date of payment of the indemnity fee, the date of payment under the indemnity agreement and other necessary matters regarding the payment of the indemnity fee and payment under the indemnity agreement shall be regulated by Cabinet Order.

Section 11 Prescription

The right to receive payment from an indemnity agreement shall be extinguished three years after the nuclear operator has paid compensation.

Section 12 Subrogation etc.

Where the Government has indemnified under an indemnity agreement, if the nuclear operator who is a party to the indemnity agreement has a right of recourse against a third party, the Government shall take over that right up to the smaller of the two amounts following:

(i) the amount indemnified by the Government; or

(ii) the amount of the said right of recourse (where the amount mentioned in the preceding paragraph does not cover the amount of the loss giving rise to indemnification under the said indemnity agreement, the said amount of the right of recourse shall be reduced by the amount not covered).

2. Where the nuclear operator who is party to the indemnity agreement has received a payment by virtue of his right of recourse, the Government shall be exonerated from its indemnification obligation up to the smaller of the two amounts following:

(i) the amount of the payment the said nuclear operator has received by virtue of his right of recourse; or

(ii) the amount paid by the Government under its indemnification obligation laid down in Section 7 relating to the loss giving rise to indemnification under the said indemnity agreement (where the amount mentioned in the preceding paragraph does not cover the amount of the loss giving rise to indemnification, the said amount paid by the Government pursuant to its indemnification obligation shall be reduced by the amount not covered).

Section 13 Reimbursement of the sum paid under an indemnity agreement

Where the Government has indemnified the loss suffered by a nuclear operator as a result of compensating the nuclear damage mentioned in the following sub paragraphs, the Government shall require the nuclear operator to reimburse the amounts received, pursuant to the provisions of the Cabinet Order, for the compensation of:

i) nuclear damage arising from a fact which the nuclear operator who is a party to the indemnity agreement has failed to notify pursuant to Section 9, or which he has notified falsely;

ii) nuclear damage caused by the reactor operation etc. during the period from the day when the nuclear operator received from the Government notice of cancellation of the indemnity agreement pursuant to Section 15, to the day prior to the day when the cancellation comes into force.

Cancellation of an indemnity agreement

Section 14

Where the nuclear operator who is a party to the indemnity agreement has provided financial security other than that which was taken into account at the time of the conclusion of the indemnity agreement concerned, the Government may accept an offer for the cancellation of the indemnity agreement, or may cancel it itself.

2. Cancellation of the indemnity agreement as provided in the preceding paragraph shall take effect immediately.

Section 15

The Government may cancel the indemnity agreement where the nuclear operator who is a party to the indemnity agreement has committed one of the following offences:

i) breached the provisions of Section 6 of the Compensation Act;

ii) failed to pay the indemnity fee;

iii) failed to notify pursuant to Section 9 or notified falsely;

iv) failed to take the measures pursuant to Section 21-2, Section 35, Section 43-18, Section 48, Section 51-16, Section 57, paragraph 1 or 2, Section 57-4, Section 57-5, Section 58, paragraph 1, or Section 59, paragraph 1 of the Act for the Regulation of Nuclear Source Material, Nuclear Fuel and Reactors (Act No. 166 of 1957);

v) breached the provisions of the indemnity agreement laid down in accordance with the Cabinet Order.

2. Cancellation of an indemnity agreement pursuant to the preceding paragraph shall take effect upon a lapse of 90 days from the day when the nuclear operator, who is a party to the indemnity agreement, has received notice of the cancellation.

Section 16 Fines

Where the nuclear operator, who is a party to the indemnity agreement, breaches a provision of the indemnity agreement laid down in accordance with the Cabinet Order, the Government may impose a fine pursuant to the said Order.

Section 17 Administrative aspects

The interests of the Government as provided in this Act shall be taken in charge by the Minister for Education, Culture, Sport, Science and Technology (MEXT).

2. The Minister for Education, Culture, Sport, Science and Technology (MEXT) shall, on the occasion of the cancellation of an indemnity agreement as provided in Section 15, ask the prior

opinion of the Minister for the Economy, International Trade and Industry (METI) in cases concerning the operation of reactors for the generation of electricity (which means reactors as defined in Section 3, paragraph 4 of the Basic Atomic Energy Act (Act No. 186 of 1955, the term "reactor" being hereinafter given this meaning), the production (as defined in Section 2 paragraph, 7 of the Regulation Act), the reprocessing (as defined in Section 2, paragraph 8 of the Regulation Act), the storage of spent nuclear fuel (as defined in Section 43, paragraph 4 (1) of the Regulation Act) or the disposal of waste consisting of nuclear fuel or materials contaminated by nuclear fuel (meaning the underground disposal of waste and waste management as defined in Section 51, paragraph 2 (1) of the Regulation Act), or the prior opinion of the Minister for Regional Development, Infrastructure, Transport and Tourism (MLIT) in cases related to reactors installed in vessels.

Section 18 Mandate

The Government may, as laid down by Order, grant a mandate for the performance of some of its operations under an indemnity agreement. The authorised agent may, in particular, be a risk insurance company under Section 2, paragraph 4 of the Insurance Act (Act No. 105 of 1995), or a foreign risk insurance company under paragraph 9 of the said Section (this provision applies solely to persons authorised to conduct liability insurance activities).

2. When a mandate is granted under the preceding paragraph, the Minister for Education, Culture, Sport, Science and Technology (MEXT) must communicate the identity of the authorised agent and any other conditions required by a Ministerial Order issued by his department.

Supplementary Provisions

This act (No. 19 of 17 April 2009) shall enter into force on 1 January 2010.

Order for the Execution of the Act on Compensation for Nuclear Damage

(Cabinet Order No. 44 of 6 March 1962)

As Amended by Cabinet Order No. 201 of 7 August 2009

The Cabinet has enacted this Cabinet Order pursuant to the provisions of Section 2, paragraph 1 and Section 7, paragraph 1 of the Act on Compensation for Nuclear Damage (Act No. 147 of 1961).

Section 1 Reactor operation etc.

The activities provided for in the Cabinet Order referred to in Section 2, paragraph 1 of the Act on Compensation for Nuclear Damage (hereinafter referred to as "the Compensation Act") shall be the following [each of the activities mentioned in paragraphs (i) to (v) includes the incidental operations of transport, storage and disposal of waste referred to in sub paragraphs a), b) and c) performed in the installations or on the sites of the said activities or, in the case of reactors installed in nuclear vessels, such incidental operations performed on board the vessel. This provision also applies subsequently]:

(i) reactor operation;

(ii) the production of the following nuclear fuels:

a) uranium or its compounds in which the ratio of uranium 235 to uranium 235 and uranium 238 is higher than that of natural uranium but lower than five-hundredths, and any material which contains one or more of these nuclear materials, whenever these contain 2 000 grams or more by weight of uranium 235;

b) uranium or its compounds in which the ratio of uranium 235 to uranium 235 and uranium 238 is higher than five-hundredths, and any material which contains one or more of these nuclear materials, whenever these contain 800 grams or more by weight of uranium 235;

c) plutonium or its compounds, and any material which contains one or more of these nuclear materials, whenever these contain 500 grams or more by weight of plutonium;

(iii) reprocessing;

(iv) the use of the nuclear fuels mentioned in sub paragraphs (ii) (a), (b) and (c);

(iv-2) the storage of spent fuel;

(v) underground disposal and management of waste as provided in Section 51-2, paragraph 1, sub paragraph (iii) of the Act for the Regulation of Nuclear Source Material, Nuclear Fuel and Reactors (Act No. 166 of 1957, hereinafter referred to as "the Regulation Act") (hereinafter referred to as "the underground disposal of waste" and "waste management");

(vi) the transport, storage and disposal of waste consisting of the following materials, undertaken outside installations or sites and in the context of each of the activities mentioned in the sub paragraphs above:

a) the nuclear fuels mentioned in sub paragraphs (ii) (a), (b) and (c),

b) spent fuel, as provided in Section 2, paragraph 8 of the Regulation Act (hereinafter referred to as "spent fuel"),

c) materials contaminated by nuclear fuel (including nuclear fission products; the same applies to the following provisions).

Section 2 Amount of financial security

The cases of reactor operation etc. and their corresponding amount as provided in the Cabinet Order referred to in Section 7, paragraph 1 of the Compensation Act are set out in the following table. However, when reactor operation etc. being performed at one and the same installation or site (or vessel in the case of reactors installed in a vessel, a provision which also applies to heading (i) of the table) involves activities coming under two or more of headings (i) to (xvii) of the table, the amount of financial security for the overall reactor operation etc. shall be the highest individual amount required under the relevant headings of the table.

(i)	Operation of a reactor with a maximum thermal rating of less than 10 000 kWth [including any transport, storage or disposal of materials referred to in Section 1, paragraph 6, sub paragraphs a), b) or c) (hereinafter referred to as "nuclear fuel etc.") performed within the installation or on the site and incidental to operation of the reactor in question, to the exclusion of the operations referred to under any of the headings of the table (ii) or (iii) below].	Yen 120 billion
(ii)	Transport, storage and disposal of nuclear fuel etc., performed within the installation or on the site and incidental to operation of the reactor in question, as defined in heading (i) of the table [concerns solely the shutdown of the said reactor as well as operations subsequent to removal of the nuclear fuel etc. from the reactor core. This provision applies also to headings (iii) and (v) of the table, to the exclusion of operations referred to under heading (iii) of the table].	Yen 24 billion
(iii)	Transport, storage and disposal of nuclear fuel etc., as referred to in Section 1, sub paragraph 2(a) or of elements such as those referred to in paragraph 6(c) of the same section, performed within the installation or on the site and incidental to operation of the reactor in question, as defined under heading (i) of the table.	Yen 4 billion

(iv)	Operation of a reactor with a maximum thermal rating of more than 100 kWth, without however exceeding 10 000 kWth [including any transport, storage or disposal of nuclear wastes etc., performed within the installation or on the site and incidental to operation of the reactor in question, to the exclusion of the operations referred to under heading (v) of the table].	Yen 24 billion
(v)	Transport, storage and disposal of nuclear fuel etc., as referred to in Section 1, sub paragraph 2(a) or of elements as referred to in sub paragraph 6(c) of the same Section, performed within the installation or on the site and incidental to operation of the reactor in question, as defined under heading (iv) of the table.	Yen 4 billion
(vi)	Operation of a reactor with a maximum thermal rating of 100 kWth (including any transport, storage or disposal of nuclear fuel etc., performed within the installation or on the site and incidental to operation of the reactor in question).	Yen 4 billion
(vii)	Production of nuclear fuel as referred to in Section 1, sub paragraph 2(a) (including any transport, storage or disposal of nuclear fuel etc., performed within the installation or on the site and incidental to the production of the reactor in question).	Yen 4 billion
(viii)	Production of nuclear fuel as referred to in Section 1, sub paragraphs 2(b) and 2(c) (including any transport, storage or disposal of nuclear waste etc., performed within the installation or on the site and incidental to the production in question).	Yen 24 billion
(ix)	Reprocessing (including any transport, storage and waste disposal of nuclear fuel etc., performed within the installation or on the site and incidental to the reprocessing in question).	Yen 120 billion
(x)	Use of nuclear fuel etc., as referred to in Section 1, sub paragraph 2(a) [including any transport, storage or disposal of nuclear fuel, etc., performed within the installation or on the site and incidental to the use of the nuclear fuel in question, to the exclusion of the operations referred to under headings (i), (iv), (vi), (vii) and (ix) of the table].	Yen 4 billion
(xi)	Use of the nuclear fuel etc., as referred to in Section 1, sub paragraphs 2 (b) or (c) [including any transport, storage and disposal of nuclear fuel etc., performed within the installation or on the site and incidental to the use of the nuclear fuel in question. This provision applies also to heading (xii) below, and excludes the operations referred to under headings (i), (iv), (vi), (viii) and (ix) of the table].	Yen 24 billion

(xii)	Transport, storage and disposal of nuclear fuel etc., as defined in Section 1, sub paragraph 2(a) or of elements as defined in sub paragraph 6(c) of the same section, performed within the installation or on the site and incidental to the use of nuclear fuel as defined under heading (xi), above.	Yen 4 billion
(xiii)	Storage of spent fuel [including any transport, storage or disposal of spent fuel, performed on the site and incidental to the storage of the spent fuel in question, to the exclusion of the operations referred to under headings (i), (ii), (iv), (vi) and (ix) to (xi) of the table].	Yen 24 billion
(xiv)	Underground disposal of waste [including any transport or disposal of the waste, performed on the site and incidental to the underground disposal of the waste in question consisting of nuclear fuel, etc., to the exclusion of the operations referred to under each of the preceding headings and under heading (xv) of the table].	Yen 4 billion
(xv)	Underground disposal of the waste consisting of the vitrified materials obtained from the liquid effluents remaining after separating the nuclear fuel and other useful materials from spent fuel solutions, as defined in Section 1, sub paragraph 6(b) [including any transport or disposal of the waste, performed on the site and incidental to the underground disposal of the waste in question consisting of nuclear fuel etc., to the exclusion of the operations referred to under heading (ix) of the table].	Yen 24 billion
(xvi)	Waste management [including any transport or waste disposal of waste consisting of nuclear fuel etc., on the site and incidental to the waste management in question, to the exclusion of the operations referred to under each of the preceding headings and heading (xvii) of the table].	Yen 4 billion
(xvii)	Management of the waste consisting of the vitrified materials obtained from the liquid effluents remaining after separating the nuclear fuel and other useful materials from spent fuel solutions, as defined in Section 1, sub paragraph 6(b) [including any transport or disposal of the waste, performed on the site and incidental to the underground disposal of the waste in question, consisting of nuclear fuel, etc., to the exclusion of the operations referred to under headings (ix) and (xv) of the table].	Yen 24 billion
(xviii)	Transport of nuclear fuel etc., incidental to the reactor operation, production, reprocessing, or use of the nuclear fuel, the storage and underground disposal of spent fuel, or waste management [to the exclusion of the operations referred to under any one of the preceding headings, under heading (xix), following, and heading (xxii) of the table].	Yen 4 billion

(xix)	Transport of nuclear fuel material, etc., as referred to in Section 1, sub paragraphs 2(b) and (c) incidental to the reactor operation, production, reprocessing or use of nuclear fuel, the storage and underground disposal of spent fuel, or the management of waste or spent fuel, as defined in the same Section, sub paragraph 6(b), and of vitrified materials obtained from the liquid effluents remaining after separating nuclear fuel and other useful materials from spent fuel solutions, as defined in the same Section 1, sub paragraph 6(b) [excluding the operations referred to under any of headings (i), (ii), (iv), (vi), (viii) to (xi), (xiii), (xv) or (xvii) of the table].	Yen 24 billion
(xx)	Storage of nuclear fuel etc., incidental to the reactor operation, production, reprocessing or use of nuclear fuel and the storage of spent fuel [to the exclusion of the operations referred to under any of headings (i) to (xiii) or the following heading (xxii) of the table].	Yen 4 billion
(xxi)	Storage of nuclear fuel etc., as referred to in Section 1, sub paragraphs 2(b) or (c), incidental to the reactor operation, production, reprocessing or use of nuclear fuel or the storage of spent fuel, as defined in the same Section, sub paragraph 6(b) as well as the vitrified materials obtained from the liquid effluents remaining after separating nuclear fuel and other useful materials from spent fuel solutions, as defined in the same Section 1, sub paragraph 6(b) [to the exclusion of the operations referred to under any of headings (i), (ii), (iv), (vi), (viii) to (xi), (xiii) of the table].	Yen 24 billion
(xxii)	Disposal of waste consisting of nuclear fuel etc., incidental to the reactor operation, production, reprocessing or use of nuclear fuel, the storage and underground disposal of spent fuel or waste management [including any transport of nuclear fuel, etc., incidental to the disposal of the waste in question, and to the exclusion of the operations referred to under any of headings (i) to (xvii) of the table].	Yen 4 billion

Section 3 Compensation for work accidents

Compensation for work accidents, provided for by Cabinet Order pursuant to Section 4, paragraph 1 of the supplementary provisions of the act, shall be as follows:

1. Indemnities as defined by the Act on Compensation for Work Accidents of Government Civil Servants (Act No. 191 of 1951);

2. Indemnities as defined by the Act on the Insurance of Seamen (Act No. 73 of 1939) and subject to professional conditions.

Supplementary Provisions (omitted)

1. This Cabinet Order shall enter into force as from the date of the entry into force of the act (15 March 1962).

Supplementary Provisions (Order No. 201 of 7 August 2009)

This act shall enter into force on 1 January 2010.

Order for the Execution of the Act on Indemnity Agreements for Compensation of Nuclear Damage

(Act No. 45 of 1962)

Amended by Cabinet Order No. 201 of 7 August 2009

The Cabinet has enacted this Cabinet Order pursuant to the provisions of the Act on Indemnity Agreements for Compensation of Nuclear Damage (Act No. 148 of 1961).

Indemnified loss

Section 1

The conditions laid down by Cabinet Order as defined in Section 3, paragraph ii) of the Act on Indemnity Agreements for Compensation of Nuclear Damage (hereinafter referred to as "the act") must meet the requirements laid down in each of the following paragraphs:

(i) The event triggering the occurrence of nuclear damage cannot be a breach of the Sections mentioned below of the Act for the Regulation of Nuclear Source Material, Nuclear Fuel and Reactors (Act No. 166 of 1957): Sections 21-2, 22(4), 22-6(2) in application of Section 12-2(4), 35, 37 (4), 43-2(2) in application of Section 12-2(4), 43-18, 43-20(4), 43-25(2) in application of Section 12-2(4), 48, 50(4), 50-3(2) in application of Section 12-2(4), 51-16, 51-18(4), 51-23(2) in application of Section 12-2(4), 56-3(4), 57(1) or 57(2), 57-2(2) in application of Section 12-2(4), 57-4, 57-5, 58(1), 59(1) and 60(1) or 60(2).

(ii) The event triggering the occurrence of nuclear damage cannot be damage to an installation for reactor operation etc.

(iii) The event triggering the occurrence of nuclear damage cannot be a natural cataclysm or the act of a third party.

Section 2

Nuclear damage, as defined in Section 3, paragraph 5 of the act and laid down by Cabinet Order, shall be that resulting from a tidal wave.

Section 3 Indemnification rate

The rate of indemnification, as defined in Section 6 of the act and laid down by Cabinet Order (hereinafter referred to as the "indemnification rate") shall be 3 for 10 000 (1.5 for 10 000 for indemnity agreements relating to the operation etc. of a reactor in universities and technical colleges).

2. Where, at the time the indemnity fee is paid, the amount available for indemnifying nuclear damage under an indemnity agreement is insufficient to cover the amount laid down by the said agreement, the indemnification rate under the said agreement shall be determined, notwithstanding the provisions of the previous paragraph, by dividing the said amount available by the amount laid down in the indemnity agreement, and multiplying the value obtained by the indemnification rate as defined in the previous paragraph.

Section 4 Duty to notify

In accordance with the provisions of Section 9 of the act, a nuclear operator must notify the Government of the following:

(i) Indemnity agreement relating to reactor operation:

a) what the nuclear reactor is being used for;

b) type, thermal rating and number of nuclear reactors;

c) name and address of the installations or sites equipped with a nuclear reactor (in the case of a vessel equipped with a nuclear reactor, the place it was built and the main place of business of the shipbuilder);

d) location, structure and equipment of the building housing the nuclear reactor;

e) dates of the beginning and planned end of operating activities of the nuclear reactor;

f) types and quantity of the nuclear materials to be used as fuel in the nuclear reactor;

g) method of disposing of spent fuel;

h) information about the liability insurance contract.

(ii) Indemnity agreement relating to production:

a) name and address of the installations or sites equipped with a production plant;

b) location, structure, equipment and production procedures of the production plants;

c) dates of the beginning and planned end of production activities;

d) types and quantity of the nuclear materials to be produced;

e) information about the liability insurance contract.

(iii) Indemnity agreement relating to reprocessing:

a) name and address of the installations or sites equipped with a reprocessing facility;

b) location, structure, equipment and reprocessing procedures of the reprocessing facilities;

c) dates of the beginning and planned end of reprocessing activities;

d) types and quantity of the spent fuel to be reprocessed;

e) information about the liability insurance contract.

(iv) Indemnity agreement relating to the use of nuclear fuel:

a) purposes and methods of use;

b) places of use;

c) location, structure and equipment used in installations for the use, storage and disposal of waste;

d) dates of the beginning and planned end of use activities;

e) types and quantity of nuclear fuel to be used;

f) method of disposing of the spent nuclear fuel;

g) information about the liability insurance contract.

(v) Indemnity agreement relating to the storage of spent fuel:

a) name and address of the sites equipped with a storage facility for spent fuel;

b) location, structure, equipment and procedures used in the storage facilities for spent fuel;

c) dates of the beginning and planned end of the nuclear fuel storage activities;

d) types and quantity of spent fuel to be stored;

e) method of transferring spent fuel subsequent to storage;

f) information about the liability insurance contract.

(vi) Indemnity agreement relating to the underground disposal or management of waste:

a) name and address of the sites equipped with facilities for the underground disposal or management of waste;

b) location, structure, equipment and procedures for disposal of the facilities for the underground disposal or management of waste;

c) dates of the beginning and planned end of the activities for the underground disposal or management of waste;

d) types and quantity of nuclear fuel or materials contaminated by nuclear fuel (including nuclear fission products, a provision which applies also to the remainder of this section) to be disposed of by underground burial or waste management;

e) information about the liability insurance contract.

(vii) Indemnity agreement relating to transport in accordance with the provisions of Section 1, paragraph 6 of the Order for the Execution of the Act on Compensation for Nuclear Damage (Cabinet Order No. 44 of 1962):

a) itinerary and method of transport;

b) dates of the beginning and planned end of the transport activities;

c) types and quantity of nuclear fuel or materials contaminated by nuclear fuel to be transported;

d) information about the liability insurance contract.

(viii) Indemnity agreement relating to storage in accordance with the provisions of Section 1, paragraph 6 of the Order for the Execution of the Act on Compensation for Nuclear Damage:

a) places and methods of storage;

b) dates of the beginning and planned end of the storage activities;

c) types and quantity of nuclear fuel or materials contaminated by nuclear fuel to be stored;

d) information about the liability insurance contract.

(ix) Indemnity agreement relating to the disposal of waste in accordance with the provisions of Section 1, paragraph 6 of the Order for the Execution of the Act on Compensation for Nuclear Damage:

a) places and methods of waste disposal;

b) dates of the beginning and planned end of the waste disposal activities;

c) itinerary and method of transport of the waste constituted by nuclear fuel or materials contaminated by nuclear fuel, as well as the dates of the beginning and planned end of such transport activities;

d) types et quantity of waste constituted by nuclear fuel or materials contaminated by nuclear fuel to be disposed of;

e) information about the liability insurance contract

Section 5 Payment of the indemnity fee

The nuclear operator must pay the Government an indemnity fee on the date of the conclusion of an indemnity agreement and, subsequently, on each anniversary thereof (when, depending on the year, there is no anniversary date, payment must be made the day before). The indemnity fee shall be paid for a length of agreement of one year from the day concerned (when the length of the indemnity agreement is less than one year, the fee is payable for the duration in question).

Section 6 Payment under the indemnity agreement

When a nuclear operator requests indemnification, the Minister for Education, Culture, Sport, Science and Technology (MEXT) must pay the indemnity within 30 days of the formulation of the request. This provision does not, however, apply if there are unpredictable and inevitable circumstances.

Reimbursement of the sum paid under an indemnity agreement

Section 7

In accordance with the provisions of Section 13, MEXT shall have one year as from the date of payment of an indemnity within which to require reimbursement of a sum equivalent to the said indemnity.

Section 8

[Abolished]

Section 9 Cancellation of an indemnity agreement

The provisions referred to in Section 15, paragraph 1, sub-paragraph v) of the act and established by Cabinet Order concern the breaching of the requirement to take the necessary steps to prevent or mitigate nuclear damage when such damage occurs or is likely to occur.

Fines

Section 10

The provisions referred to in Section 16 of the Act and established by Cabinet Order provide the following requirements in the event of a breach:

(i) when nuclear damage occurs or is likely to occur, take all the steps necessary to prevent or mitigate it;

(ii) obtain the prior approval of MEXT when the operator intends to admit liability, in whole or in part, for the damage;

(iii) when nuclear damage occurs, submit without delay an opinion to MEXT to inform him of the date, time and place of the accident and report on the extent of the damage;

(iv) when a nuclear operator brings proceedings or is the subject of proceedings, submit without delay an opinion to MEXT informing him of the facts.

Section 11

Under Section 16 of the act, MEXT may impose a fine up to the amounts mentioned in the following paragraphs and as from the date on which the nuclear operator received indemnification.

(i) an amount equivalent to $1/10^{th}$ of the indemnification received, in cases of a breach of the provisions mentioned in paragraphs i) and ii) of the preceding Section on the indemnity agreement requirements;

(ii) an amount of 100 000 yen, in cases of a breach of the provisions mentioned in paragraphs iii) and iv) of the preceding Section on indemnity agreement requirements.

Section 12 Mandate

The operations for which the Government may grant a mandate, in accordance with the provisions of Section 18, paragraph 1 of the Act, are as follows:

(i) reception of requests for the payment of an indemnity;

(ii) investigations into the amount of loss giving rise to an indemnity;

(iii) in addition to the cases referred to in the two preceding sub-paragraphs, any operation relating to the payment of indemnities and required by Ministerial Order adopted by MEXT.

2. In addition to the cases mentioned in the preceding paragraph, the relevant provisions relating to mandates under Section 18, paragraph 1 of the act, shall be laid down by Ministerial Order taken by MEXT.

Supplementary Provisions

This Cabinet Order shall enter into force as from the date of the entry into force of the act (15 March 1962).

Supplementary provision (Order No. 201 of 7 August 2009)

This act shall enter into force on 1 January 2010.

International Regulatory Activities

European Atomic Energy Community

Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations[1] *(2009)*

On 25 June 2009, based on a revised Commission proposal,[2] and following the large support by both the European Parliament and the European Economic and Social Committee, the Council adopted unanimously Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations.[3] The directive sets up a legislative framework defining basic obligations and principles governing nuclear safety throughout the European Union. It enshrines in the Community legislation the widely recognised nuclear safety principles of the main international instruments, namely the obligations resulting from the Convention on Nuclear Safety[4] and the Safety Fundamentals[5] developed by the International Atomic Energy Agency (IAEA). The underlying principles of the directive are first, national responsibility for nuclear safety and secondly, continuous improvement of safety. The directive enhances the role and independence of national regulatory authorities, and at the same time it establishes the prime responsibility of the licence holders for nuclear safety. Member states are required to set up and continuously improve national nuclear safety frameworks, to encourage a high level of transparency of regulatory actions and to guarantee regular independent safety assessments.

International Atomic Energy Agency

53rd IAEA General Conference

The 53rd regular session of the IAEA General Conference was held in Vienna, from 14 to 18 September 2009. Delegates from 136 member states and representatives of various international organisations participated in the conference.

Resolutions of the Conference

A number of resolutions were adopted by the General Conference. As in previous years, two resolutions: GC(53)/RES/10 relating to international co-operation in nuclear, radiation, transport and waste safety and GC(53)/RES/11 relating to nuclear security include sections that are of legal

1. Text of the Directive reproduced on pp. 139 *et seq.* of this Bulletin.
2. COM(2008) 790 final.
3. For more ample information on the directive see Garribba, M., Chirteş, A. and Nauduzaite, M., "Directive establishing a Community Framework for the Nuclear Safety of Nuclear Installations: The EU Approach to Nuclear Safety", pp. 23 *et seq.* of this Bulletin.
4. INFCIRC 449 of 5 July 1994.
5. Fundamental safety principles, IAEA Safety Standard Series No. SF-1 (2006).

relevance. The General Conference continued to devote special attention to the question of nuclear liability as indicated below.

Measures to Strengthen International Co-operation in Nuclear, Radiation, Transport and Waste Safety [GC(53) /RES/10]

Nuclear Liability

The General Conference recognised the importance of effective and coherent nuclear liability mechanisms at national and global levels [preambular paragraph (bb)], and it made specific reference to the Vienna Convention on Civil Liability for Nuclear Damage, the Paris Convention on Third Party Liability in the Field of Nuclear Energy, the Brussels Convention Supplementary to the Paris Convention, the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention as well as the protocols amending these conventions. The intention of the Convention on Supplementary Compensation for Nuclear Damage to establish a worldwide nuclear liability regime based on the principles of nuclear liability law, without prejudice to other liability regimes, was also noted [preambular paragraph (cc)].

In Part 1, the Conference continued to welcome the valuable work of INLEX and encouraged relevant member states to participate in the next INLEX workshop which is scheduled for December 2009 for countries which have expressed an interest in launching a nuclear power programme.

In Part 5 of the Resolution relating to transport safety, the Conference continued to stress the importance of having effective liability mechanisms in place for harm to human health and the environment as well as actual economic loss due to an accident or incident during the maritime transport of radioactive materials.

National Infrastructures

In Part 1 of the Resolution, the Director General was requested to continue the current programme to assist member states in developing and improving their national infrastructures, including legislative and regulatory frameworks, for nuclear, radiation, transport and waste safety.

Nuclear Installation Safety

In Part 3 of the Resolution, the Conference noted with satisfaction that all states currently operating nuclear power plants are contracting parties to the Convention on Nuclear Safety (CNS) and urged all member states constructing or planning nuclear power plants, or considering a nuclear power programme, to become parties to the CNS.

The Conference continued to endorse the principles and objectives of the non-legally binding Code of Conduct on the Safety of Research Reactors and noted with satisfaction the findings and outcomes of the international meeting on the application of the code held in October 2008. Member states constructing, operating or decommissioning research reactors or with research reactors in extended shutdown were encouraged to participate in international and regional meetings on the application of the code and to apply the guidance to the code.

The Safety of Spent Fuel and Radioactive Waste Management

In Part 6 of the Resolution, the Conference welcomed the increase in the number of contracting parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive

Waste Management from 32 at the First Review Meeting in 2003 to 51 in 2009. Member states which have not yet become party to the Joint Convention were invited to do so. The Conference also welcomed the continuing efforts of the contracting parties to the Joint Convention to enhance the transparency, efficiency and effectiveness of the review process and noted the outcomes of the Third Review Meeting held in May 2009 (see *Nuclear Law Bulletin* No. 83).

Safety and Security of Radioactive Sources

In Part 10 of the Resolution, the principles and objectives of the non-legallybinding Code of Conduct on the Safety and Security of Radioactive Sources were endorsed and the high level of global support for the code was welcomed. The Conference noted that, as of 30 June 2009, 95 states had made a political commitment to the code and urged other states to make such a commitment.

The Conference underlined the important role of the Guidance on the Import and Export of Radioactive Sources for the establishment of continuous, global control of radioactive sources and noted that, as of 30 June 2009, 53 states had notified the Director General of their intention to act in accordance with the guidance on a harmonised basis. The Conference reiterated the need for states to implement the guidance in a co-operative, harmonised and consistent fashion.

The Conference noted the report of the Chairman of the Technical Meeting on Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources with Regards to Long Term Strategies for the Management of Sealed Sources held in June/July 2009. It noted particularly the conclusions of the meeting encouraging states to facilitate the return of disused sources to suppliers, to develop central storage or disposal facilities for disused or orphan sources which cannot be returned to the suppliers and the conclusions relating to information sharing between those member states implementing the code and contracting parties to the Joint Convention. It looked forward to the Open-ended Meeting of Technical and Legal Experts for Sharing of Information as to States' Implementation of the Code of Conduct and its Supplementary Guidance to be held in May 2010.

Nuclear and Radiological Incident and Emergency Preparedness and Response

In Part 11 of the Resolution, the Conference urged all member states to become parties to the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency thereby contributing to a broader and improved basis for international emergency response which would be of benefit to all member states.

It also welcomed the endorsement of the mandate and methods of work of the Meeting of Representatives of Competent Authorities identified under the two conventions.

Nuclear Security, including Measures to Protect Against Nuclear and Radiological Terrorism [GC(53)/RES/11]

The General Conference again reaffirmed the importance of the Convention on the Physical Protection of Nuclear Material (CPPNM) as the only multilateral legally binding instrument dealing with the physical protection of nuclear material, and the value of its amendment extending its scope and thereby strengthening global nuclear security.

It recalled the important role that the recommendations contained in "The Physical Protection of Nuclear Material and Nuclear Facilities" (INFCIRC/225) have played in providing guidance to member states for effective physical protection and noted that INFCIRC/225, which was last revised in 1999, was currently under revision.

In this context, the importance of the Code of Conduct on the Safety and Security of Radioactive Sources as a valuable instrument for the enhancement of the safety and security of radioactive sources was reaffirmed recognising that the code is not a legally binding instrument.

The Conference also noted the role of the IAEA in the development of the nuclear security series of documents that establish fundamentals, recommendations and guidance to assist states in implementing the legally binding and non binding international instruments related to nuclear security and reaffirmed that the application of these documents is voluntary in nature.

Finally, the Conference called upon states parties to the CPPNM to work towards its universal adherence, and where applicable, to accelerate the ratification of the Amendment to the CPPNM and to act for its early entry into force. The Conference also encouraged these states to act in accordance with the object and purpose of the amendment until such time as it enters into force and encouraged all states that have not done so to adhere to the CPPNM and the amendment as soon as possible.

Bilateral & Multilateral Agreements

Bilateral Agreements[1]

Co-operation in the peaceful uses of nuclear energy

- Argentina and Jordan: Agreement on co-operation in the peaceful uses of nuclear energy.
- Argentina and India: Agreement on the development, promotion of nuclear energy and co-operation in civil nuclear energy projects.
- Canada and Kazakhstan: Agreement on co-operation in the peaceful uses of nuclear energy.
- Canada and Libya: Memorandum of understanding for cooperation in the peaceful use of nuclear energy.
- Jordan and the United Kingdom: Co-operation agreement on the peaceful use of nuclear energy.
- Nigeria and the Russian Federation: Agreement on co-operation in the peaceful uses of nuclear energy.

Co-operation on research

- Belgium and Romania: Agreements covering several nuclear-related areas of research including reactor safety, radioactive waste management and fourth generation reactor technologies.
- Italy and the United States: Joint Declaration on Nuclear Co-operation in civilian nuclear energy research and development covering areas of advanced nuclear energy systems and associated fuel cycle technologies.
- South Africa and the United States: Agreement on co-operation in research and development of nuclear energy.

Co-operation in the field of uranium mining and production

- Egypt and Russia: Agreement on co-operation in uranium prospecting and mining in Egypt.
- Mongolia and Russia: Agreement to set up a joint venture in the field of uranium mining.

Co-operation on safety and security issues

- Iceland and the United States: Agreement on co-operation to improve efforts to counter nuclear and radiological terrorism and promote international nuclear and environmental safety and security.
- Morocco and the United States: Agreement on co-operation to improve efforts to counter nuclear and radiological terrorism and promote international nuclear and environmental safety and security.

Co-operation with respect to a nuclear facility or nuclear equipment

- Argentina and Canada: Agreement on a co-operation program including the development of the advanced CANDU reactor (ACR-1000).

1. Selective list of bilateral agreements which have been concluded during the course of the second half of 2009, brought to our attention largely on the basis of the news media: World Nuclear News and NucNet News in Brief.

Multilateral Agreements

I. Status of conventions in the field of nuclear energy as of November 2009

Non-proliferation and nuclear security

Treaty on the Non-Proliferation of Nuclear Weapons

The treaty was adopted on 12 June 1968 and entered into force on 5 March 1970. There are **191 parties** to this convention:

Afghanistan	Dominica	Liberia	Saint Vincent and the Grenadines
Albania	Dominican Republic	Libya	Samoa
Algeria	Ecuador	Liechtenstein	San Marino
Andorra	Egypt	Lithuania	Sao Tome and Principe
Angola	El Salvador	Luxembourg	Saudi Arabia
Antigua and Barbuda	Equatorial Guinea	Macedonia	Senegal
Argentina	Eritrea	Madagascar	Serbia
Armenia	Estonia	Malawi	Seychelles
Australia	Ethiopia	Malaysia	Sierra Leone
Austria	Fiji	Maldives	Singapore
Azerbaijan	Finland	Mali	Slovak Republic
Bahamas	France	Malta	Slovenia
Bahrain	Gabon	Marshall Islands	Solomon Islands
Bangladesh	Gambia	Mauritania	Somalia
Barbados	Georgia	Mauritius	South Africa
Belarus	Germany	Mexico	Spain
Belgium	Ghana	Micronesia	Sri Lanka
Belize	Greece	Moldova	Sudan
Benin	Grenada	Monaco	Suriname
Bhutan	Guatemala	Mongolia	Swaziland
Bolivia	Guinea	Montenegro	Sweden
Bosnia and Herzegovina	Guinea-Bissau	Morocco	Switzerland
Botswana	Guyana	Mozambique	Syria
Brazil	Haiti	Myanmar	Tajikistan
Brunei Darussalam	Holy See	Namibia	Tanzania
Bulgaria	Honduras	Nauru	Thailand
Burkina Faso	Hungary	Nepal	Timor-Leste
Burundi	Iceland	Netherlands	Togo
Cambodia	Indonesia	New Zealand	Tonga
Cameroon	Iran	Nicaragua	Trinidad and Tobago
Canada	Iraq	Niger	Tunisia
Cape Verde	Ireland	Nigeria	Turkey
Central African Republic	Italy	Norway	Turkmenistan
Chad	Jamaica	Oman	Tuvalu
Chile	Japan	Palau	Uganda
China	Jordan	Panama	Ukraine
Colombia	Kazakhstan	Papua New Guinea	United Arab Emirates
Comoros	Kenya	Paraguay	United Kingdom
Congo	Kiribati	Peru	United States of
Democratic Republic of the Congo	Democratic People's Republic of Korea*	Philippines	America
Costa Rica	Korea, Republic of	Poland	Uruguay
Côte d'Ivoire	Kuwait	Portugal	Uzbekistan
Croatia	Kyrgyzstan	Qatar	Vanuatu
Cuba	Lao People's Democratic Republic	Romania	Venezuela
Cyprus	Latvia	Russian Federation	Vietnam
Czech Republic	Lebanon	Rwanda	Yemen
Denmark	Lesotho	Saint Kitts and Nevis	Zambia
Djibouti		Saint Lucia	Zimbabwe

Since the last status report in *Nuclear Law Bulletin* No. 82, there has been no further ratification.

* According to www.disarmament2.un.org/TreatyStatus.nsf.

The text of the Convention is available at: www.un.org/events/npt2005/npttreaty.html.

Convention on the Physical Protection of Nuclear Material

The convention was adopted on 3 March 1980 and entered into force on 8 February 1987. There are **142 parties** to this convention:

Afghanistan	Djibouti	Lebanon	Qatar
Albania	Dominica	Libya	Romania*
Algeria	Dominican Republic	Liechtenstein	Russian Federation*
Andorra	Ecuador	Lithuania*	Rwanda
Antigua and Barbuda	El Salvador	Luxembourg	Saint Kitts and Nevis
Argentina*	Equatorial Guinea	Macedonia	Saudi Arabia
Armenia*	Estonia	Madagascar	Senegal
Australia	Fiji	Mali	Serbia
Austria	Finland*	Malta	Seychelles
Azerbaijan	France*	Marshall Islands	Slovak Republic*
Bahamas	Gabon	Mauritania	Slovenia*
Bangladesh	Georgia	Mexico*	South Africa*
Belarus	Germany*	Moldova	Spain*
Belgium*	Ghana	Monaco	Sudan
Bolivia	Greece	Mongolia	Swaziland
Bosnia and Herzegovina	Grenada	Montenegro	Sweden*
Botswana	Guatemala	Morocco	Switzerland*
Brazil*	Guinea	Mozambique	Tajikistan
Bulgaria*	Guinea-Bissau	Namibia	Tanzania
Burkina Faso	Guyana	Nauru	Togo
Cambodia	Honduras	Netherlands*	Tonga
Cameroon	Hungary*	New Zealand	Trinidad and Tobago
Canada*	Iceland	Nicaragua	Tunisia
Cape Verde	India*	Niger	Turkey
Central African Republic	Indonesia	Nigeria	Turkmenistan
Chile	Ireland	Niue	Uganda
China*	Israel	Norway	Ukraine*
Colombia	Italy	Oman	United Arab Emirates
Comoros	Jamaica	Pakistan*	United Kingdom*
Costa Rica	Japan*	Palau	United States of America*
Croatia	Jordan	Panama	Uruguay
Cuba	Kazakhstan	Paraguay	Uzbekistan
Cyprus	Kenya	Peru	Yemen
Czech Republic*	Korea, Republic of*	Philippines	EURATOM.
Democratic Republic of Congo	Kuwait	Poland	
Denmark	Latvia	Portugal	

Since the last status report in *Nuclear Law Bulletin* No. 82, five states have become parties to this convention: Dominican Republic, Guinea-Bissau, Jordan, Niue and Saudi Arabia.

The text of the Convention is reproduced in *Nuclear Law Bulletin* No. 23 and is also available at: www.iaea.org/Publications/Documents/Infcircs/Others/inf274r1.shtml.

* Country with at least one operating nuclear power plant.

Amendment to the Convention on the Physical Protection of Nuclear Material

The amendment was adopted on 8 July 2005 and has not yet entered into force. There are **32 contracting states** to this convention:

Algeria	Fiji	Lithuania*	Russian Federation*
Australia	Gabon	Mauritania	Seychelles
Austria	Hungary	Moldova	Slovenia
Bulgaria*	India*	Niger	Spain*
Chile	Jordan	Nigeria	Switzerland*
China*	Kenya	Norway	Turkmenistan
Croatia	Libya	Poland	Ukraine*
Estonia	Liechtenstein	Romania*	United Arab Emirates

Since the last status report in *Nuclear Law Bulletin* No. 82, thirteen states have become contracting parties to this amendment: Chile, China, Estonia, Hungary, Jordan, Liechtenstein, Lithuania, Moldova, Niger, Norway, Slovenia, Ukraine and the United Arab Emirates.

The text of this amendment is available at: http://ola.iaea.org/OLA/treaties/FullText.pdf.

International Convention for the Suppression of Acts of Nuclear Terrorism

The convention was adopted on 13 April 2005 and entered into force on 7 July 2007. There are **61 parties** to this convention.

Austria	Fiji	Lithuania	Saudi Arabia
Azerbaijan	Finland	Luxembourg	Serbia
Bangladesh	Gabon	Macedonia	Slovak Republic
Belarus	Germany	Malawi	Solomon Islands
Belgium	Guinea-Bissau	Mali	South Africa
Brazil	Hungary	Mauritania	Spain
Burundi	India	Mexico	Sri Lanka
Central African Republic	Japan	Moldova	Switzerland
Comoros	Kazakhstan	Mongolia	Turkmenistan
Croatia	Kenya	Nicaragua	Ukraine
Cuba	Kiribati	Niger	United Arab Emirates
Cyprus	Kyrgyzstan	Panama	United Kingdom
Czech Republic	Latvia	Paraguay	Uzbekistan
Denmark	Lebanon	Peru	
Dominican Republic	Libya	Romania	
El Salvador	Liechtenstein	Russian Federation	

Since the last status report in *Nuclear Law Bulletin* No. 82, fourteen states have become parties to this convention: Azerbaijan, Belgium, Brazil, Cuba, Finland, Libya, Liechtenstein, Malawi, Mali, Nicaragua, Paraguay, Peru, Solomon Islands and the United Kingdom.

The text of the convention is available at: http://untreaty.un.org/English/Terrorism/English_18_15.pdf.

Comprehensive Nuclear-Test-Ban Treaty

The treaty was adopted on 10 September 1996 as has not yet entered into force. There are **151 contracting states** to this convention.

Of the 44 "Annex 2" states whose ratification is necessary for the treaty to enter into force, the following have not yet ratified: *China, Egypt, Democratic People's Republic of Korea, India, Indonesia, Iran, Israel, Pakistan and United States of America.*

Afghanistan	Denmark	Libya	Russian Federation
Albania	Djibouti	Liechtenstein	Rwanda
Algeria	Dominican Republic	Lithuania	Saint Kitts and Nevis
Andorra	Ecuador	Luxembourg	Saint Lucia
Antigua and Barbuda	El Salvador	Macedonia	Saint Vincent and the Grenadines
Argentina	Eritrea	Madagascar	Samoa
Armenia	Estonia	Malawi	San Marino
Australia	Ethiopia	Malaysia	Senegal
Austria	Fiji	Maldives	Serbia
Azerbaijan	Finland	Mali	Seychelles
Bahamas	France	Malta	Sierra Leone
Bahrain	Gabon	Marshall Islands	Singapore
Bangladesh	Georgia	Mauritania	Slovak Republic
Barbados	Germany	Mexico	Slovenia
Belarus	Greece	Micronesia	South Africa
Belgium	Grenada	Moldova	Spain
Belize	Guyana	Monaco	Sudan
Benin	Haiti	Mongolia	Suriname
Bolivia	Holy See	Montenegro	Sweden
Bosnia and Herzegovina	Honduras	Morocco	Switzerland
Botswana	Hungary	Mozambique	Tajikistan
Brazil	Iceland	Namibia	Tanzania
Bulgaria	Ireland	Nauru	Togo
Burkina Faso	Italy	Netherlands	Tunisia
Burundi	Jamaica	New Zealand	Turkey
Cambodia	Japan	Nicaragua	Turkmenistan
Cameroon	Jordan	Niger	Uganda
Canada	Kazakhstan	Nigeria	Ukraine
Cape Verde	Kenya	Norway	United Arab Emirates
Chile	Kiribati	Oman	United Kingdom
Colombia	Korea, Republic of	Palau	Uruguay
Democratic Republic of the	Kuwait	Panama	Uzbekistan
Congo	Kyrgyzstan	Paraguay	Vanuatu
Cook Islands	Lao People's Democratic	Peru	Venezuela
Costa Rica	Republic	Philippines	Vietnam
Côte d'Ivoire	Latvia	Poland	Zambia
Croatia	Lebanon	Portugal	
Cyprus	Lesotho	Qatar	
Czech Republic	Liberia	Romania	

Since the last status report in *Nuclear Law Bulletin* No. 82, three countries have become parties to this convention: Liberia, the Marshall Islands and Saint Vincent and the Grenadines.

The text of the convention is reproduced in *Nuclear Law Bulletin* No. 58 and is also available at: www.ctbto.org/fileadmin/content/treaty/treatytext.tt.html.

Nuclear safety and emergency response

Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

The convention was adopted on 26 September 1986 and entered into force on 26 February 1987. There are **104 parties** to this convention:

Albania	Finland*	Mali	Senegal
Algeria	France*	Mauritius	Serbia
Argentina*	Gabon	Mexico*	Singapore
Armenia*	Germany*	Moldova	Slovak Republic*
Australia	Greece	Monaco	Slovenia*
Austria	Guatemala	Mongolia	South Africa*
Bangladesh	Hungary*	Montenegro	Spain*
Belarus	Iceland	Morocco	Sri Lanka
Belgium*	India*	Mozambique	Sweden*
Bolivia	Indonesia	Netherlands*	Switzerland*
Bosnia and Herzegovina	Iran	New Zealand	Tanzania
Brazil*	Iraq	Nicaragua	Thailand
Bulgaria*	Ireland	Nigeria	Tunisia
Cameroon	Israel	Norway	Turkey
Canada*	Italy	Oman	Ukraine*
Chile	Japan*	Pakistan*	United Arab Emirates
China*	Jordan	Panama	United Kingdom*
Colombia	Korea, Republic of*	Peru	United States of America*
Costa Rica	Kuwait	Philippines	Uruguay
Croatia	Latvia	Poland	Vietnam
Cuba	Lebanon	Portugal	EURATOM
Cyprus	Libya	Qatar	Food and Agriculture Organization
Czech Republic*	Liechtenstein	Romania*	World Health Organization
Denmark	Lithuania*	Russian Federation*	World Meteorological Organization
Egypt	Luxembourg	Saint Vincent and the Grenadines	
El Salvador	Macedonia	Saudi Arabia	
Estonia	Malaysia		

Since the last status report in *Nuclear Law Bulletin* No. 82, three countries have become parties to this convention, namely: Mozambique, Oman and Senegal.

The text of the convention is reproduced in the Supplement to the *Nuclear Law Bulletin* No. 38 and is also available at: www.iaea.org/Publications/Documents/Infcircs/Others/infcirc336.shtml.

* Country with at least one operating nuclear power plant.

Convention on Early Notification of a Nuclear Accident

The convention was adopted on 26 September 1986 and entered into force on 27 October 1986. There are **106 parties** to this convention:

Albania	Estonia	Mali	Senegal
Algeria	Finland*	Mauritius	Serbia
Angola	France*	Mexico*	Singapore
Argentina*	Gabon	Moldova	Slovak Republic*
Armenia*	Germany*	Monaco	Slovenia*
Australia	Greece	Mongolia	South Africa*
Austria	Guatemala	Montenegro	Spain*
Bangladesh	Hungary*	Morocco	Sri Lanka
Belarus	Iceland	Mozambique	Sweden*
Belgium*	India*	Myanmar	Switzerland*
Bolivia	Indonesia	Netherlands*	Tanzania
Bosnia and Herzegovina	Iran	New Zealand	Thailand
Brazil*	Iraq	Nicaragua	Tunisia
Bulgaria*	Ireland	Nigeria	Turkey
Cameroon	Israel	Norway	Ukraine*
Canada*	Italy	Oman	United Arab Emirates
Chile	Japan*	Pakistan*	United Kingdom*
China*	Jordan	Panama	United States of America*
Colombia	Korea, Republic of*	Peru	Uruguay
Costa Rica	Kuwait	Philippines	Vietnam
Croatia	Latvia	Poland	EURATOM
Cuba	Lebanon	Portugal	Food and Agriculture Organization
Cyprus	Libya	Qatar	World Health Organization
Czech Republic*	Liechtenstein	Romania*	World Meteorological Organization
Denmark	Lithuania*	Russian Federation*	
Egypt	Luxembourg	Saint Vincent and the Grenadines	
El Salvador	Macedonia	Saudi Arabia	
	Malaysia		

Since the last status report in *Nuclear Law Bulletin* No. 82, four countries have become parties to this convention, namely: Libya, Mozambique, Oman and Senegal.

The text of the convention is reproduced in the Supplement to *Nuclear Law Bulletin* No. 38 and is also available at: www.iaea.org/Publications/Documents/Infcircs/Others/infcirc335.shtml.

* Country with at least one operating nuclear power plant.

Convention on Nuclear Safety

The convention was adopted on 17 June 1994 and entered into force on 24 October 1996. There are **66 parties** to this convention:

Argentina*	Finland*	Lithuania*	
Armenia*	France*	Luxembourg	Singapore
Australia	Germany*	Macedonia	Slovak Republic*
Austria	Greece	Mali	Slovenia*
Bangladesh	Hungary*	Malta	South Africa*
Belarus	Iceland	Mexico*	Spain*
Belgium*	India*	Moldova	Sri Lanka
Brazil*	Indonesia	Netherlands*	Sweden*
Bulgaria*	Ireland	Nigeria	Switzerland*
Canada*	Italy	Norway	Turkey
Chile	Japan*	Pakistan*	Ukraine*
China*	Jordan	Peru	United Arab Emirates
Croatia	Korea, Republic of*	Poland	United Kingdom*
Cyprus	Kuwait	Portugal	United States of America*
Czech Republic*	Latvia	Romania*	Uruguay
Denmark	Lebanon	Russian Federation*	EURATOM
Estonia	Libya	Senegal	

Since the last status report in *Nuclear Law Bulletin* No. 82, four countries have become parties to this convention, namely: Jordan, Libya, Senegal and the United Arab Emirates.

The text of the convention is reproduced in *Nuclear Law Bulletin* No. 53 and is available at: www.iaea.org/Publications/Documents/Infcircs/Others/inf449.shtml.

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The convention was adopted on 5 September 1997 and entered into force on 18 June 2001. There are **51 parties** to this convention:

Argentina*	Estonia	Latvia	South Africa*
Australia	Finland*	Lithuania*	Spain*
Austria	France*	Luxembourg	Sweden*
Belarus	Georgia	Morocco	Switzerland*
Belgium*	Germany*	Netherlands*	Tajikistan
Brazil*	Greece	Nigeria	Ukraine*
Bulgaria*	Hungary*	Norway	United Arab Emirates
Canada*	Iceland	Poland	United Kingdom*
China*	Ireland	Portugal	United States of America*
Croatia	Italy	Romania*	Uruguay
Czech Republic*	Japan*	Russian Federation*	Uzbekistan
Denmark	Korea, Republic of *	Senegal	EURATOM
	Kyrgyzstan	Slovak Republic*	
		Slovenia*	

Since the last status report in *Nuclear Law Bulletin* No. 82, five countries have become parties to this convention, namely: Georgia, Portugal, Senegal, the United Arab Emirates and Uzbekistan.

The text of the convention is available at: www.iaea.org/Publications/Documents/Infcircs/1997/infcirc546.pdf.

---

* Country with at least one operating nuclear power plant.

Liability and compensation for nuclear damage

Paris Convention on Nuclear Third Party Liability

The convention was adopted on 29 July 1960 and entered into force on 1 April 1968, along with its 1964 additional protocol. The 1982 Protocol entered into force on 7 October 1988. The 2004 Protocol has not yet entered into force.

There are **15 parties** to this convention and its 1964 and 1982 additional protocols:

Belgium*	Germany*	Norway	Sweden*
Denmark	Greece	Portugal	Turkey
Finland*	Italy	Slovenia*	United Kingdom*
France*	Netherlands*	Spain*	

The text of the convention is available at: www.nea.fr/html/law/nlparis_conv.html.

Brussels Supplementary Convention on Third Party Liability in the Field of Nuclear Energy

The convention was adopted on 31 January 1963 and entered into force on 4 December 1974, along with its 1964 additional protocol. The 1982 Protocol entered into force on 1 January 1988. The 2004 Protocol has not yet entered into force. There are **12 parties** to this convention:

Belgium*	France*	Netherlands*	Spain*
Denmark	Germany*	Norway	Sweden*
Finland*	Italy	Slovenia*	United Kingdom*

The text of the convention is available at: www.nea.fr/html/law/nlbrussels.html.

Protocol to Amend the Paris Convention on Nuclear Third Party Liability

The protocol was adopted on 12 February 2004 as has not yet entered into force. There are **16 signatories** to this convention, namely: Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom. No signatory has yet ratified the Protocol.

The text of the protocol is reproduced in the Supplement to *Nuclear Law Bulletin* No. 75 and is also available at: //www.nea.fr/html/law/paris_convention.pdf.

Protocol to Amend the Brussels Convention Supplementary to the Paris Convention

The protocol was adopted on 12 February 2004 and has not yet entered into force. There are **13 signatories** to this convention: Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Slovenia, Spain, Sweden, Switzerland and United Kingdom. Only Spain has ratified the Protocol.

---

* Country with at least one operating nuclear power plant.

The text of the protocol was reproduced in the Supplement to *Nuclear Law Bulletin* No. 75 and is also available at: //www.nea.fr/html/law/brussels_supplementary_convention.pdf.

Vienna Convention on Civil Liability for Nuclear Damage

The convention was adopted on 21 May 1963 and entered into force on 12 November 1977. There are **36 parties** to this convention:

Argentina*	Cuba	Moldova	Saint Vincent and the Grenadines
Armenia*	Czech Republic*	Montenegro	Senegal
Belarus	Egypt	Niger	Serbia
Bolivia	Estonia	Nigeria	Slovak Republic*
Bosnia-Herzegovina	Hungary*	Peru	Trinidad and Tobago
Brazil*	Latvia	Philippines	Ukraine*
Bulgaria*	Lebanon	Poland	Uruguay
Cameroon	Lithuania*	Romania*	
Chile	Macedonia	Russian Federation*	
Croatia	Mexico*		

Since the last status report in *Nuclear Law Bulletin* No. 82, Senegal has become party to this convention.

The text of the convention is available at: www.iaea.org/Publications/Documents/Infcircs/1996/inf500.shtml.

Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage

The convention was adopted on 12 September 1997 and entered into force on 4 October 2003. There are **5 parties** to this convention, namely: Argentina,* Belarus, Latvia, Morocco and Romania.*

The text of the convention is available at: www.iaea.org/Publications/Documents/Infcircs/1998/infcirc566.shtml.

* Country with at least one operating nuclear power plant.

Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention

The convention was adopted on 21 September 1988 and entered into force on 27 April 1992. There are **26 parties** to this convention ("PC" or "VC" indicates that the state is party to the Paris Convention or Vienna Convention):

Bulgaria* (VC) Cameroon (VC) Chile (VC) Croatia (VC) Czech Republic* (VC) Denmark (PC) Egypt (VC)	Estonia (VC) Finland* (PC) Germany* (PC) Greece (PC) Hungary* (VC) Italy (PC) Latvia (VC)	Lithuania* (VC) Netherlands* (PC) Norway (PC) Poland (VC) Romania* (VC) Saint Vincent and the Grenadines (VC)	Slovak Republic* (VC) Slovenia* (PC) Sweden* (PC) Turkey (PC) Ukraine* (VC) Uruguay (VC)

Since the last status report in *Nuclear Law Bulletin* No. 82, Uruguay has become party to this convention.

The text of the convention is reproduced in *Nuclear Law Bulletin* No. 42 and is also available at: www.iaea.org/Publications/Documents/Infcircs/Others/inf402.shtml.

Convention on Supplementary Compensation for Nuclear Damage

The convention was adopted on 12 September 1997 as has not yet entered into force. Four countries have ratified this convention, namely: Argentina, Morocco, Romania and the United States of America.

Since the last status report in *Nuclear Law Bulletin* No. 82, there has been no further ratification.

The text of the Convention is available at: www.iaea.org/Publications/Documents/Infcircs/1998/infcirc567.pdf.

* Country with at least one operating nuclear power plant.

II. Status of conventions in the field of environmental protection/assessment which affect nuclear energy use as of November 2008

Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)

The convention was adopted on 25 June 1998 and entered into force on 30 October 2001. There are **43 parties** to this convention:

Albania	Czech Republic	Kyrgyzstan	Romania
Armenia	Denmark	Latvia	Serbia
Austria	Estonia	Lithuania	Slovak Republic
Azerbaijan	Finland	Luxembourg	Slovenia
Belarus	France	Macedonia	Spain
Belgium	Georgia	Malta	Sweden
Bosnia and Herzegovina	Germany	Moldova	Tajikistan
	Greece	Netherlands	Turkmenistan
Bulgaria	Hungary	Norway	Ukraine
Croatia	Italy	Poland	United Kingdom
Cyprus	Kazakhstan	Portugal	European Community.

Since the last status report in *Nuclear Law Bulletin* No. 82, Serbia has become party to this convention.

The text of the convention is available at: www.unece.org/env/pp/documents/cep43e.pdf.

Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)

The convention was adopted on 25 February 1991 and entered into force on 10 September 1997. There are **43 parties** to this convention:

Albania	Denmark	Latvia	Romania
Armenia	Estonia	Liechtenstein	Serbia
Austria	Finland	Lithuania	Slovak Republic
Azerbaijan	France	Luxembourg	Slovenia
Belarus	Germany	Macedonia	Spain
Belgium	Greece	Moldova	Sweden
Bulgaria	Hungary	Montenegro	Switzerland
Canada	Ireland	Netherlands	Ukraine
Croatia	Italy	Norway	United Kingdom
Cyprus	Kazakhstan	Poland	European Community
Czech Republic	Kyrgyzstan	Portugal	

Since the last status report in *Nuclear Law Bulletin* No. 82, Montenegro has become party to this convention.

The text of the convention is available at: www.unece.org/env/eia/documents/legaltexts/conventiontextenglish.pdf.

Protocol on Strategic Environmental Assessment (Kiev Protocol)

The protocol was adopted on 21 May 2003 and has not yet entered into force. **Eleven countries** and an international organisation have ratified this convention, namely: Albania, Bulgaria, Croatia, Czech Republic, Finland, Germany, Luxembourg, Norway, the Slovak Republic, Spain, Sweden and the European Community.

The text of the convention is available at: www.unece.org/env/eia/documents/legaltexts/protocolenglish.pdf.

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)

The convention was adopted on 22 September 1992 and entered into force on 25 March 1998. There are **16 parties** to this convention:

Belgium	Germany	Netherlands	Sweden
Denmark	Iceland	Norway	Switzerland
Finland	Ireland	Portugal	United Kingdom
France	Luxembourg	Spain	European Community

The text of the convention is available at: www.ospar.org.

News Briefs

European Atomic Energy Community

Fourth plenary meeting of the European Nuclear Energy Forum (2009)

The fourth plenary meeting of the European Nuclear Energy Forum (ENEF) took place in Prague on 28 and 29 May 2009 gathering more than 250 high-ranking participants representing all relevant stakeholders to discuss risks, opportunities and transparency issues of nuclear energy.

At the Prague meeting, ENEF focused more particularly on nuclear safety, nuclear waste policies, possible initiatives on training and education, and transparency. On practical matters, it was decided that the ENEF plenary sessions would be organised once instead of twice a year in order to leave more time for the working groups to achieve concrete results. The next ENEF meeting will be held in Bratislava in 2010.

Meetings of the European High Level Group on Nuclear Safety and Waste Management (2009)

Meetings of the European High Level Group on Nuclear Safety and Waste Management (ENSREG) took place on 2 July and on 28 October 2009. The first meeting was dedicated to the review of the working programme and to the preparation of the first ENSREG Activity Report.

On 17 July 2009, in line with the Group's founding Commission Decision,[1] ENSREG submitted to the European Commission its first Activity Report. According to the procedure established in this decision, the Commission transmitted the Report to the European Parliament and to the Council.

The Report presents the Group's discussions and recommendations covering nuclear safety, waste management and transparency. Among future actions, ENSREG identifies several areas where improvements can be envisaged. It recommends making full use of the international peer review systems and of the results of the existing international safety conventions. The creation and implementation of national radioactive waste and spent fuel management programmes should be promoted. It also emphasises the importance of constantly supporting the exchange of operating experiences and communication between the regulators. In order to increase transparency and openness for effective regulation, guidance for regulators is being prepared.

The full text of the Report was published on the Europa website.[2]

At the meeting in October 2009, the Chairman Mr. Stritar (from Slovenia) was re-elected for another 2-year term. The group expressed support for the implementation of the Council Directive on nuclear safety and it will develop a position on a possible Commission proposal for a Council Directive on radioactive waste and spent fuel management. A website dedicated to the work of ENSREG will be established soon with the support of the European Commission.

---

1. Commission Decision 2007/530/Euratom – Article 6.

2. The text is available at http://ec.europa.eu/energy/nuclear/ensreg/doc/2009_ensreg_report.pdf.

International Workshop on Justification of Medical Exposure in Diagnostic Imaging (2009)

The IAEA organised jointly with the European Commission an international workshop on justification of medical exposures in diagnostic imaging which was held in Brussels from 2 to 4 September 2009. The discussions were focussed on examining the status of justification of exposures, the availability of guidelines in improving referral patterns and the areas where further initiatives should be undertaken.

International Atomic Energy Agency

International Expert Group on Nuclear Liability (2009)

The International Expert Group on Nuclear Liability (INLEX), established by the Director General of the International Atomic Energy Agency (IAEA), held its 9th meeting from 24 to 26 June 2009 at the IAEA Headquarters in Vienna. Major topics discussed included, *inter alia*, the status of ratification of the international nuclear liability conventions, the European Commission Impact Assessment on the Paris Convention on Third Party Liability in the Field of Nuclear Energy and future INLEX outreach activities.

With respect to the status of ratification of the international nuclear liability conventions, the INLEX members reaffirmed their support for working towards establishing a global nuclear liability regime, and in that regard, they provided some insight on the latest efforts made at the national level.

With regard to the European Commission Impact Assessment Study, INLEX noted that the impact assessment has been reclassified by the European Commission as a "legal study" with no anticipated proposals for legislative action. INLEX recalled the concern it had expressed during last year's session about the various options considered by the European Commission, especially the concern that EURATOM may act in a way which may impair treaty relations between EU and non-EU states. INLEX encouraged the European Commission to continue to look at all the possible avenues available, including those that would contribute to strengthening the global nuclear liability regime such as the CSC or the Joint Protocol.

Finally, on the Group's outreach activities, INLEX took note of the preparations which are under way for the Fourth Workshop on Liability for Nuclear Damage for emerging nuclear power countries. It is currently scheduled to be held from 9 to 11 December 2009 in the United Arab Emirates. In addition, INLEX discussed further outreach activities and suggested that the Fifth Workshop be held for countries in Eastern Europe and Central Asia.

IAEA counts 150 member states (2009)

In 2009, Bahrain, Burundi, Cambodia, Conga, Lesotho, Oman and Rwanda[3] joined the International Atomic Energy Agency (IAEA) which increased the number of member states of the agency to 150. On 1 December 2009, Mr. Yukiya Amano took office as the new Director-General of

3. Membership of Cambodia and Rwanda has been approved by the IAEA General Conference and will take effect once the state deposits the necessary legal instruments with the IAEA.

the Agency,[4] succeeding Mohamed ElBaradei (1997-2009), Hans Blix (1981-1997), Sigvard Eklund (1961-1981) and Sterling Cole (1957-1961).

International Nuclear Law Association

Nuclear Inter Jura Biennial Congress in Toronto (2009)

The 2009 Nuclear Inter Jura Congress was held in Toronto, Canada from 5 to 9 October 2009. The biennial congress was organised by the International Nuclear Law Association (INLA) in co-operation with the Canadian Nuclear Law Organisation. It was the 19th in a series of biennial meetings of INLA, created in 1972 to promote the study of legal issues associated with the peaceful uses of nuclear energy and to encourage the exchange of information in this field.

The 2009 Congress was attended by approximately 250 participants from all over the world. The sessions focused in particular on the challenges posed by *nuclear new build* as well as more traditional topics such as nuclear regulation and safety, nuclear liability, nuclear waste, nuclear security and radiation protection. Some of the topics were quite original in nature and had never been dealt with at INLA Congresses before such as legal issues with respect to uranium mining or to aboriginal rights. A break-out session was devoted to nuclear law developments in the United States.

Amongst the more controversial contributions were the suggestion to abolish the principle of channelling nuclear third party liability to the operator and the view that the application of the ALARA principle in nuclear safety regulation could prove to be a too costly option for developing countries.

A new feature to INLA conferences was the case study on nuclear new build. A special session focussed on nuclear liability laws in North America and, an international panel on latest developments in nuclear third party liability was chaired by a representative from the OECD Nuclear Energy Agency.

This year's winner of the INLA Prize was Mr. Jakub Handrlica for his contribution entitled "Perspectives and limits of an EU-wide nuclear liability harmonisation: From the new EU member countries point of view".[5]

The Toronto Congress was very well organised and presented a rich and unique programme thanks to the efforts of INLA President Stanley Berger, Assistant General Counsel at Ontario Power Generation Inc. It once again created the opportunity for nuclear lawyers worldwide to meet and exchange views. The current President of INLA will be succeeded by Mr. Vlad Chiripus from Romania, Head of the Legal Department at National Company "Nuclearelectrica" S.A.

More information is available at www.aidn-inla.be and www.cnlo.ca.

---

4. GC(53)/RES/3.

5. A revised version of which is published on pp. 35 *et seq.* of this Bulletin.

International School of Nuclear Law

10th Anniversary of the ISNL

The next session of the International School of Nuclear Law (ISNL) will take place from 23 August to 3 September 2010 in Montpellier, France.

This session will mark the 10th anniversary of this unique academic programme. The ISNL was established in 2001 by the OECD Nuclear Energy Agency and the University of Montpellier 1 and aims to provide a high-quality, intensive educational programme in all aspects of international nuclear law. In the past nine years, the ISNL has trained 500 participants from all around the world. It has created a network of young lawyers working at regulatory bodies and in the private sector. At each session, the ISNL brings together approximately 55 to 60 participants from both developed and developing countries to study virtually all facets of international nuclear law. Highly regarded and experienced lecturers provide valuable information through presentations, discussions and case studies.

Since 2003, the University of Montpellier 1 has awarded 183 participants with the Diploma in International Nuclear Law. All participants selected to participate in the programme have the possibility to apply for the Diploma, and the majority does avail themselves of this opportunity.

Application forms for this session may be downloaded from the NEA website at www.nea.fr/html/law/isnl/index.html and must be submitted before 31 March 2010.

World Nuclear University

Summer Institute and regional sessions (2009)

The fifth Summer Institute of the World Nuclear University (WNU-SI) took place at the University of Oxford, England from 5 July to 15 August 2009. The mission of the World Nuclear University is to enhance international education and leadership in the peaceful applications of nuclear science and technology. The 6-week programme focuses on presentations from leading world experts on the full range of topics relevant for the future of nuclear energy.

As in past years, the NEA's Legal Affairs Section made a joint presentation with the IAEA Office of Legal Affairs. The NEA's presentation covered a comprehensive introduction to nuclear law and other important issues such as liability and compensation for nuclear damage and the impact of environmental law on nuclear projects and activities. The IAEA's presentation consisted of an extensive overview of both nuclear safety and nuclear security.

In 2009, the WNU also organised regional sessions in Brazil, Argentina, China, India, Republic of Korea and South Africa. Each course aims at attracting approximately 100 attendees, and locations are chosen where there is significant local interest in nuclear but little ability to travel large distances to attend training courses. These 1-week orientation courses aim to inform an audience of graduate students and nuclear professionals on the key issues in the nuclear energy sector. Once again this year, the NEA's Legal Affairs Section participated in two such sessions, in China and in Korea. On both occasions, the presentations covered all aspects of nuclear law at both national and international levels,

bearing in mind that few, if any, of the participants have a legal background. The events were viewed as being very successful and the NEA expects to continue its involvement in this valuable programme.

The WNU is supported by the World Nuclear Association, the OECD/NEA, the World Association of Nuclear Operators and the International Atomic Energy Agency.

In 2010, the WNU will also hold its First Annual School on Radioisotopes from 15 May to 4 June 2010 in the Republic of Korea. This 3-week programme aims at young professionals involved in managerial roles related to radioisotope application and production. Further information is available at www.world-nuclear-university.org.

List of Correspondents to the Nuclear Law Bulletin

ALBANIA	Mr. F. YLLI, Director, Institute of Nuclear Physics
ALGERIA	Mr. F. CHENNOUFI, Lawyer, Atomic Energy Commission
ARGENTINA	Mr. J. MARTINEZ FAVINI, Consultant, National Atomic Energy Commission
	Mr. M. PAEZ, Head of Department, National Atomic Energy Commission
ARMENIA	Mr. A. MARTIROSYAN, Armenian Nuclear Regulatory Authority
AUSTRALIA	Ms. O. LIAVAS, Corporate Counsel for Australian Radiation Protection and Nuclear Safety Agency
	Mr. S. MCINTOSH, Australian Nuclear Science and Technology Organisation
AUSTRIA	Mr. T. AUGUSTIN, Deputy Director for Nuclear Co-ordination, Federal Ministry of Agriculture, Forestry, Environment and Water Management
BELARUS	Mr. D. LOBACH, Ministry on Emergency Situations, Gasatomnadzor
BELGIUM	Ms. K. GEERTS, Head Legal Service, Federal Agency for Nuclear Control
BRAZIL	Mr. E. DAMASCENO, National Commission for Nuclear Energy
	Ms. D. FISCHER, Brazilian Association of Nuclear Law
BULGARIA	Mrs. A. BELYANOVA, Head, Legal Department, Nuclear Regulatory Agency
CANADA	Mr. J. LAVOIE, General Counsel and Manager, Legal Services Unit, Canadian Nuclear Safety Commission
	Ms. L. THIELE, Senior Counsel and Deputy Director of the Legal Services, Canadian Nuclear Safety Commission
CHINA	Ms. Z. LI, Director of the Law Office, China National Nuclear Corporation
	Ms. Q. WANG, Commission of Science, Technology and Industry for National Defence
CROATIA	Mr. I. VALCIC, Head, Department for Nuclear Safety, Ministry of Economic Affairs
DENMARK	Ms. R. PETERSEN, Head of Section, Ministry of Justice, Law Department, Property Law Division
EGYPT	Mr. A.-M. MAREI, Assistant Lecturer, Nuclear Law Department, National Centre for Nuclear Safety, Atomic Energy Authority

ESTONIA	Ms. K. MURU, Department of Radiation Protection, Estonian Radiation Protection Centre
FINLAND	Mr. Y. SAHRAKORPI, Counsellor, Energy Department, Ministry of Employment and the Economy
FRANCE	Ms. F. TOUITOU-DURAND, Legal Directorate, Atomic Energy Commission
GERMANY	Professor N. PELZER, Consultant
GREECE	Professor L. CAMARINOPOULOS, President, Greek Atomic Energy Commission
HUNGARY	Dr. L. CZOTTNER, Senior Legal Adviser, Hungary Atomic Energy Authority
	Professor V. LAMM, Institute for Legal Studies, Academy of Sciences
ICELAND	Mr. S. MAGNUSSON, Director, Icelandic Radiation Protection Institute
INDIA	Mr. S.D. DAVE, Judge, Circuit Court
INDONESIA	Mr. M. POERNOMO, Senior Officer, Nuclear Energy Control Board
	Ms. V. DEWI FAUZI, Legal Officer, National Nuclear Energy Agency
IRELAND	Ms. I. BOLGER, Information Officer, Radiological Protection Institute
ISRAEL	Mr. R. LAHAV, Legal Adviser, Atomic Energy Commission
ITALY	Mr. V. FERRAZZANO, Head of Legal Department, SOGIN SPA
	Mr. M. FRANZA, Unit of Institutional Relations, ENEA
JAPAN	Mr. Y. KAWAGUCHI, First Secretary, Japanese Delegation to the OECD
	Mr. T. YAMAMURA, Policy Research Office, Nuclear Non-Proliferation Science and Technology Centre, Japan Atomic Energy Agency
KAZAKHSTAN	Ms. L. NOVOZHILOVA, Legal Advisor, Kazakhstan Atomic Energy Committee
REPUBLIC OF KOREA	Professor K.-G. PARK, Faculty of Law, Korea University
LATVIA	Mr. A. SALMINS, Director, Radiation Safety Centre
LITHUANIA	Mr. M. ABRAITIS, Chief Legal Adviser, VATESI
LUXEMBOURG	Mr. P. MAJERUS, Radiation Protection Division, Health Directorate, Ministry of Health
MACEDONIA	Mr. D. NEDELKOVSKI, Radiation Protection Department, Republic Institute for Public Health

MEXICO	Mr. S. BERTRÁN DEL RÍO, Director General for Internacional Affaire, Ministry of Energy
	Mr. J. GONZALEZ ANDUISA, Legal Affairs Department, Federal Commission on Electricity
	Mr. M. PINTO CUNILLE, Head of the Legal and International Affairs Department, National Commission on Nuclear Safety and Safeguards
MOLDOVA	Ms. M. CORFANENCO, Head of the Legal and Foreign Affairs Division, Department of Standardisation and Metrology
MONTENEGRO	Prof. JOVANOVIC, Faculty of Natural Sciences, University of Montenegro
MOROCCO	Ms. L. ZIDI, Management Assistant, National Centre of Nuclear Energy, Science and Techniques
NETHERLANDS	Dr. N. HORBACH, Director, Centre for Transboundary Damage and Compensation
	Mr. R. VAN EMDEN, Legal Adviser, Ministry of Finance
NORWAY	Mr. S. HORNKJØL, Acting Head of Section, Norwegian Radiation Protection Authority
POLAND	Mr. M. KOC, Specialist for International Legal Affairs, National Atomic Energy Agency
PORTUGAL	Ms. M. MONTEIRO, Legal Adviser, Nuclear and Technological Institute
ROMANIA	Mr. V. CHIRIPUS, Attorney at Law, SN Nuclearelectrica S.A.
	Mr. V. ZSOMBORI, Chairman, National Commission for the Control of Nuclear Activities
RUSSIA	Mr. A. UTENKOV, Federal Environmental, Industrial and Nuclear Supervision Service of Russia (Rostechnadzor)
REPUBLIC OF SERBIA	Mrs. M. COJBASIC, Senior Adviser, Ministry of Science
SLOVAK REPUBLIC	Mr. M. POSPÍŠIL, Legal Director, Nuclear Regulatory Authority
SLOVENIA	Mr. A. ŠKRABAN, Head, Office of General Affairs, Slovenian Nuclear Safety Administration
SOUTH AFRICA	Mr. N.G. NHLAPHO, Legal Adviser, National Nuclear Regulator
SPAIN	Mr. J.R. MARTIN HERNANDEZ, Legal Adviser, Nuclear Safety Council
	Ms. E. MENENDEZ-MORAN, Sub-Directorate of Nuclear Energy, Ministry of Economy
SWEDEN	Mr. T. LOFGREN, Legal Adviser, Swedish Radiation Safety Authority
	Mr. T. ISRAELSSON, Legal Adviser, Swedish Radiation Safety Authority

SWITZERLAND	Mr. R. TAMI, Head, Legal Service, Federal Office of Energy
TUNISIA	Mr. M. CHALBI, Ministry of Education and Science, National School of Engineering
TURKEY	Mr. F. KURHAN, Legal Adviser, Turkish Atomic Energy Authority
UKRAINE	Ms. S. PILGUN, Main Specialist, Department of Planning, Co-ordination and Development, State Nuclear Committee of Ukraine
	Mr. V. SHVYTAI, Head of Presidential Office, National Nuclear Energy Generating Company ENERGOATOM
UNITED KINGDOM	Ms. L. MUSTAFA, Legal Adviser, Department of Trade and Industry
UNITED STATES	Mr. S. BURNS, General Counsel, U.S. Nuclear Regulatory Commission
	Ms. S. ANGELINI, Attorney Adviser, Office of Civilian Nuclear Programs, Department of Energy
URUGUAY	Professor D. PUIG, Professor of Nuclear Law, College of Law, University of Uruguay
UZBEKISTAN	Mr. K. YUNUSOV, Head, Inspectorate for the Supervision of Nuclear Safety and Radiation Protection, State Committee on Safety in Industry and Mining
IAEA	Mr. J. RAUTENBACH, Director, Office of Legal Affairs
EC	Ms. A.P. CHIRTEŞ, Directorate-General Energy and Transport
WHO	Ms. G. PINET, Director, Health Legislation

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(67 2009 02 1 P) ISSN 0304-341X – No. 57143 2009

Nuclear Law Bulletin No. 84

Considered to be the standard reference work for both professionals and academics in the field of nuclear law, the *Nuclear Law Bulletin* is a unique international publication providing its subscribers with up-to-date information on all major developments falling within the domain of nuclear law. Published twice a year in both English and French, it covers legislative developments in almost 60 countries around the world as well as reporting on relevant jurisprudence and administrative decisions, international agreements and regulatory activities of international organisations.

Feature articles in this issue include "Nuclear New Build – New Nuclear Law?", "Directive Establishing a Community Framework for the Nuclear Safety of Nuclear Installations" and the "Harmonisation of Nuclear Liability in the European Union".

2009 Subscription (2 issues)
(67 2009 02 1 P) € 114
ISSN 0304-341X

www.nea.fr

www.oecd.org