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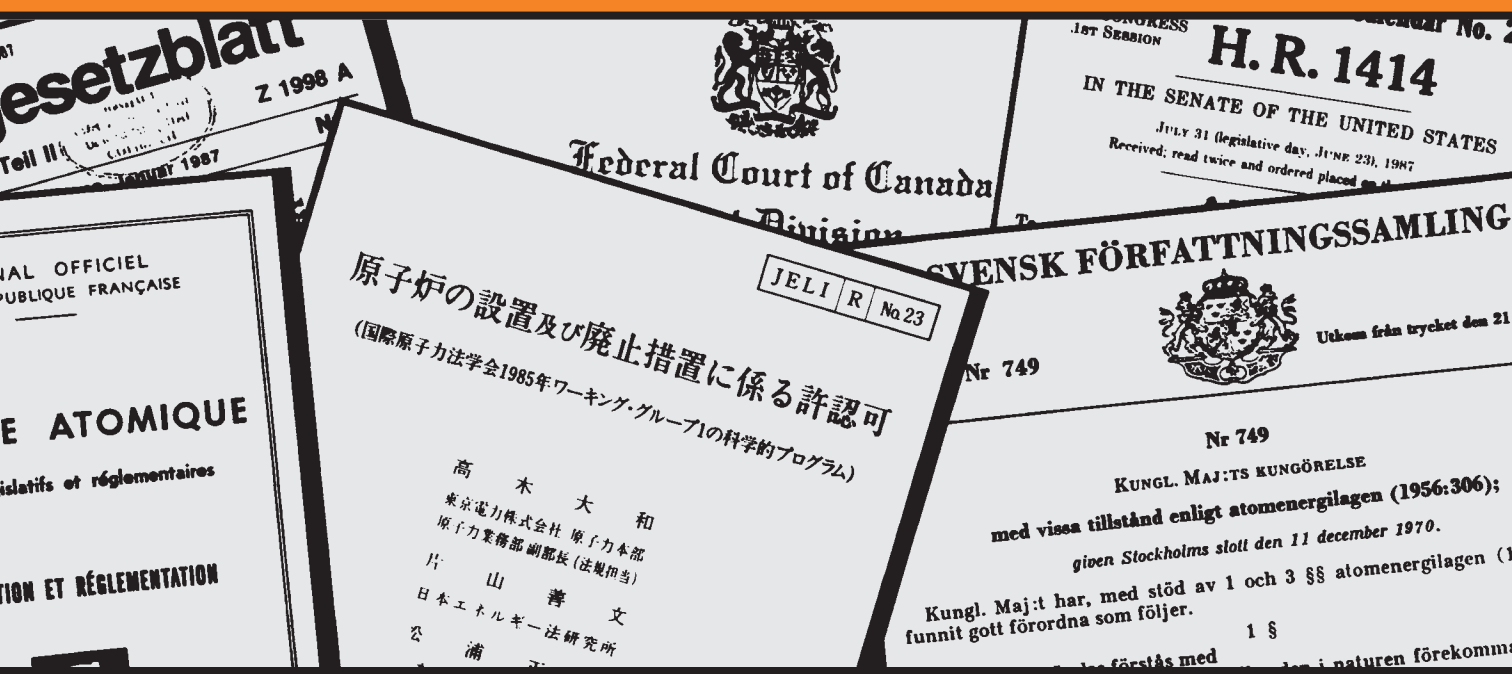

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Contents

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995), Hungary (7th May 1996), Poland (22nd November 1996), Korea (12th December 1996) and the Slovak Republic (14 December 2000). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

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 27 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.

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The IAEA Nuclear Safety Conventions: An Example of Successful "Treaty Management"?

by Günther Handl*

I. Introduction

When the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management[1] came into force in June 2002, following by almost five years the entry into force of the Convention on Nuclear Safety (CNS),[2] the major elements[3] of the International Atomic Energy Agency's long-planned international legal regime on nuclear safety[4] appeared to be finally in place. This fact might have been expected to be a cause for general satisfaction, if not

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1. The Joint Convention on the Safety Spent Fuel Management and on the Safety of Radioactive Waste Management [hereinafter: "Joint Convention"], reproduced in 36 *International Legal Materials*, p. 1431 (1997).

2. "The Nuclear Safety Convention, IAEA", Doc. INFCIRC/449 of 5 July 1994; reproduced in 33 *International Legal Materials*, p. 1514 (1994). It entered into force on 24 October 1996.

3. Apart from nuclear power installation and waste safety, this treaty-based regulatory approach does not (yet) cover transport safety, the safety of radiation sources or indeed of research reactors. However, transport safety was the subject of an International Conference on the Safety of Transport of Radioactive Material in July 2003, the purpose of which was to *inter alia* formulate recommendations regarding future international co-operation in this area, which might include development of an international legal instrument. As regards the regulation of the safety of radiation sources and of research reactors, the IAEA has endorsed the development of codes of conduct rather than the adoption of treaty instruments. See, e.g., "Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management: Revision of the Code of Conduct on the Safety and Security of Radioactive Sources", IAEA, Doc. GOV/2003/49-GC(47)9, 29 July 2003; and "Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management: Nuclear Safety Review for the Year 2002", IAEA Doc. GC(47)/INF/3, 11 August 2003, Annex, 6.

4. See, e.g., Handl, "*Après Tchernobyl: Quelques réflexions sur le programme législatif multilatéral à l'ordre du jour*," 92 *Revue générale de droit international public*, p. 5, at p. 12-15 (1988). This regime at law thus finally complements the existing de facto nuclear safety regime that had evolved over time under the aegis of the IAEA. For an overview of the latter, see "Measures to Strengthen International Co-operation in Nuclear, Radiation, Transport and Waste Management", IAEA Doc. GC(45)/INF/3, 31 August 2001.

celebration. However, reaction among legal experts has been mixed. Some commentators consider the two Nuclear Safety Conventions[5] a singular accomplishment of nuclear energy law, if not a milestone in the development of modern international environmental law in general.[6] Others, however, have been much less charitable in their comments. They criticise the Nuclear Safety Conventions for not appreciably advancing a genuine internationalisation of the nuclear safety regime,[7] for confirming its "inward-looking, insular character,"[8] or, more specifically, for lacking clearly established, sufficiently specific, or legally meaningful international safety provisions.[9]

Yet another group of commentators, while welcoming the two Conventions in principle, have reserved final judgement until there exists adequate operational experience to assess the instruments.[10] The principal reason for such caution seems to be the Conventions' idiosyncratic design which was prompted, at least in part, by the inherent complexity of devising uniform international regulations for traditionally disparate national nuclear power technologies, safety philosophies and regulatory systems, as well as the political sensitivity of subjecting national nuclear power facilities to international jurisdiction and control.[11] Thus, conceived as so-called "incentive conventions,"[12] both instruments establish fairly general nuclear safety requirements in conjunction with a non-coercive procedural mechanism[13] – in peer review format[14] – to ensure realisation of basic Conventional safety

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5. Hereinafter, the Convention on Nuclear Safety will be referred to by its acronym of "CNS" while "Nuclear Safety Conventions" will refer to both the CNS and the Joint Convention.

6. To this effect, see e.g. Pelzer, "Nuclear Energy", in 5 *Yearbook of International Environmental Law* 1994, p. 195, at p. 197 (1995), speaking of the CNS; and de Kageneck, "*La Convention commune sur la sûreté de la gestion du combustible usé et sur la sûreté de la gestion des déchets radioactifs*," 102 *Revue générale de droit international public*, p. 145, at p. 155 (1998).

7. See, e.g., Washington, "Monitoring Compliance with Nuclear Safety Standards: Peer Review through the International Atomic Energy Agency and its Convention on Nuclear Safety," in P. Szasz, ed., *Administrative and Expert Monitoring of International Treaties*, p. 193, at p. 213 (1999).

8. Kaminga, "The IAEA Convention on Nuclear Safety," in 44 *International & Comparative Law Quarterly*, p. 872, at p. 881 (1994).

9. See *infra* text at notes 33-36; Marples & Cerullo, "International Nuclear Safety: The Case of the Chernobyl Nuclear Power Station," 24 *Vermont Law Review*, p. 1209, at p. 1222 (2000); and Cameron, "Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management," in N. Horbach, ed., *Contemporary Developments in Nuclear Energy Law: Harmonizing Legislation in CEES/NIS*, p. 117, at p. 127 (1999), who referring to the Joint Convention's safety requirements, asserts that "it is hard to see how anyone could find anything offensive with the 'motherhood and apple pie' sentiments in these 'requirements.'"

10. See, in particular, Jankowitsch, "The Convention on Nuclear Safety," *Nuclear Law Bulletin* No. 54, p. 9 (1994); Reyners, "*La Convention de 1994 sur la sûreté nucléaire,*" 99 *Revue Générale de droit international public*, p. 605, at p. 621 (1995); Tonhauser & Jankowitsch, "The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management," *Nuclear Law Bulletin* No. 60, p. 9, at p. 22 (1997); and Cameron, *supra* note 9, at p. 128.

11. See, e.g., Stoiber, "International Convention on Nuclear Safety: National Reporting as the Key to Effective Implementation," in N. Horbach, ed., *supra* note 9, p. 97, at p. 100.

12. See preambular paragraphs iv and ix of the CNS and the Joint Convention, respectively. While the term is not defined in either instrument, it is generally understood to imply a convention, not designed to ensure fulfilment of obligations by parties through control and sanction, but based on the parties' enlightened self-interest in enhanced levels of safety to be developed co-operatively and promoted through regular "peer review" meetings. See Jankowitsch, *supra* note 10, at p. 12-13.

13. Carlton Stoiber puts it rather succinctly: "The 'incentive' character of the CNS puts issues of compliance and non-compliance in a much different light than for other multilateral instruments. No sanctions or

objectives. Pierre Strohl, in commenting on this "two pillar strategy" notes that "*[l]'architecture du premier de ces piliers ne manque pas d'élégance mais les matériaux utilisés sont relativement légers ; la solidité du deuxième est incertaine parce qu'elle dépendra de l'énergie qu'y insuffleront les participants aux examens.*"[15]

Today, there exist some relevant operational data[16] on the basis of which official commentaries tend to project a fairly optimistic picture as regards the effectiveness of the instrument concerned.[17] Whether such optimism might be justified is, however, far from certain.[18] Indeed, differences of opinion are likely to persist over two fundamental assumptions that underlie the Nuclear Safety Conventions' design: first, that, generally speaking, a combination of soft substance and soft enforcement procedure – the hallmark of the Nuclear Safety Conventions[19] – can, after all, constitute effective international nuclear law.[20] Second, that the particular design of the peer review process will be capable of meeting the twin challenges posed by the Conventions' inherently open-ended, hence dynamic emphasis on "nuclear safety": to control the Contracting Parties' compliance with "existing" legal obligations while also facilitating a progressive improvement of nuclear safety through periodic adjustments in the Contracting Parties' collective understanding of conventional safety obligations.

It is the validity of these assumptions and, specifically, the implicit claim that the Conventions reflect a "treaty management"[21] approach that successfully integrates law-application (enforcement,

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penalties flow from the fact that a nation has failed to comply… And, in any case, peer review meetings will not be marking findings of non-compliance regarding any individual Contracting Party." Stoiber, *supra* note 11, at p. 110.

14. See *infra* text at notes 71-76.

15. Strohl, "*La convention sur la sûreté nucléaire*," 40 *Annuaire français de droit international*, p. 804 (1994). Editor's translation: " the architecture of the first of these pillars does not lack elegance, but the building materials used are relatively light; the solidness of the second is uncertain because it will depend on the effect which the participants bring to the assessments." He then concludes: "*L'édifice n'est pas massif, ses chances d'équilibre et de résistance se trouvent dans la souplesse même des structures: pensons à la fable du chêne et du roseau*."

16. While these are largely derived from the first two review meetings of the Contracting Parties to the CNS, they are likely to be relevant also as regards the Joint Convention given the two Conventions' virtually identical structural features. Indeed, it might be noted that given their strikingly similar features, the two Conventions have been referred to as "sister conventions." See de Kageneck & Pinel, "The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management," in 47 *International & Comparative Law Quarterly*, p. 409, at p. 417 (1999).

17. See Convention on Nuclear Safety, First Review Meeting of the Contracting Parties, 12-23 April 1999, Vienna, Austria, CNS-RM-99/021, paragraph 52; and Convention on Nuclear Safety, Second Review Meeting of the Contracting Parties, 15-26 April 2002, Vienna, Austria, Summary Report, CNS-RM-2002/02, 26 April 2002.

18. See, e.g., P. Birnie & A. Boyle, *International Law and the Environment*, 463 (2nd ed. 2002) who note that the CNS's "control regime compares unfavourably with most of the more recent global agreements."

19. See further *infra* text at notes 70-75.

20. Or, to put it differently, that it is – paradoxically – the formally "weak convention that is most likely to beget the strong regime." Downs, Danish & Barsoom, "The Transformational Model of International Regime Design: Triumph of Hope or Experience?" 38 *Columbia Journal of Transnational Law*, p. 465, at p. 467 (2000).

21. "Treaty management" is used here to denote a process of interaction among parties to a given treaty through treaty-internal institutions or procedures by which the parties seek to protect the integrity of the existing treaty as well as to expand, further develop and refine the treaty regime. Treaty management thus

compliance control) and law making functions that the present paper will focus on. Although the relative dearth of operational experience[22] continues to pose something of a handicap, an examination of these issues appears appropriate at a time of growing dissension among theorists about appropriate international regime design. The Nuclear Safety Conventions are part of an ongoing wider trend in the design of multilateral (environmental or equivalent) agreements that has increasingly de-emphasised coercive application/enforcement measures for the sake of a facilitative, co-operative approach.[23] This trend is inspired by the assumption that in an inclusive institutional setting for interactive discourse among relevant actors, a "self-reinforcing dynamic"[24] will inevitably lead to a deepening of co-operation and increasingly ambitious commitments, even though, or rather precisely because, initially agreed to undertakings are modest and compliance is "managed" rather than "enforced." Recently, however, a backlash has begun to develop calling into question the utility of this "managerial"[25] (also "transformational[26] and, relatedly, "interactional"[27]) model to ensure regime

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refers to a structured process that combines both compliance control and regime building functions. It differs from "compliance management" in that the latter focuses primarily on regime maintenance. For an exposition of this narrower concept of "managing compliance," see Chayes, *et al.*, "Managing Compliance: A Comparative Perspective," in E.B. Weiss & H.K. Jacobson, eds.*, Engaging Countries: Strengthening Compliance with International Environmental Accords*, p. 39 (1998); and A. Chayes & A. Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (1995). Note also the different usage of "treaty management" as in "treaty management organisations," denoting organisations primarily involved in the implementation of substantive treaty provisions. See Sommer, "Environmental Law-Making by International Organisations," 56 *Zeitschrift f. ausl. öffentl. Recht u. Völkerrecht*, p. 628, at p. 631 (1996). For a more detailed look at compliance control see, e.g., Brunnée, "The Kyoto Protocol: A Testing Ground for Compliance Theories?" 63 *Zeitschrift f. ausl. öffentliches Recht u. Völkerrecht*, p. 255 (2003); M. Ehrmann, *Erfüllungskontrolle im Umweltvölkerrecht: Verfahren der Erfüllungskontrolle in der umweltvölkerrechtlichen Vertragspraxis*, (2000); Fitzmaurice & Redgwell, "Environmental Non-Compliance Procedures and International Law," in 31 *Netherlands Yearbook of International Law*, p. 35 (2000); Handl, "Compliance Control Mechanisms and International Environmental Obligations," 5 *Tulane Journal of International & Comparative Law*, p. 29 (1997); Marauhn, "Towards a Procedural Law of Compliance Control in International Environmental Relations," 56 *Zeitschrift f. ausl. öffentliches Recht u. Völkerrecht*, p. 696 (1996); C. Romano, *The Peaceful Settlement of International Environmental Disputes* 65-90 (2000); and Szell, "Compliance Regimes for Multilateral Environmental Agreements – A Progress Report," 27 *Environmental Policy & Law*, p. 304 (1997).

22. Thus, at the time of this writing there existed only limited, preliminary data for the Joint Convention as the first review meeting of the contracting parties will not be held until 3-24 November 2003.

23. The essence of this trend is well captured in statements by several experts at a meeting of a UNEP Working Group on compliance and enforcement of multilateral environmental agreements who suggested that proposed UNEP guidelines "should avoid the use of negative connotations and include only positive activities and incentives which encourage compliance and enforcement of environmental conventions in the spirit of full co-operation, understanding and support." See "MEA: Working Group on Compliance and Enforcement," 30 *Environmental Policy & Law*, p. 60, at p. 61 (2000). Recent examples of overwhelmingly facilitative approaches include The Basel Convention's Mechanism for Promoting Implementation and Compliance, Decision VI/12, Appendix, in Report of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Doc. UNEP/CHW.6/40, 10 February 2003, 46; and Art. 4 of the Alpine Convention's Compliance Mechanism, reproduced in 33 *Environmental Law & Policy*, p. 179, at p. 180 (2003).

24. Haas & Sundgren, "Evolving International Law: Changing Practices of National Sovereignty," in N. Choucri (Ed.), *Global Accord*, p. 401, at p. 406 (1993).

25. The "managerial model of compliance" discourages sanctioning processes and emphasises instead "an iterative process of discourse" that is as inclusive as possible. "The ensuing discourse progressively

effectiveness.[28] This controversy, therefore, directly implicates also the effectiveness of the two Nuclear Safety Conventions themselves. In short, the design of the Nuclear Safety Conventions not only raises issues that are important as well as timely from a nuclear legal perspective, but also poses topical questions of a larger, indeed general international legal import.[29]

II. The Nuclear Safety Conventions' Substantive and Procedural Norms in Context

A first impression of the CNS and the Joint Convention[30] as the international legal framework for nuclear safety world-wide is likely to prove somewhat less than reassuring: critically important substantive provisions in either Convention suffer from normative indeterminacy or are subject to very

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elaborates the meaning of relevant obligations through co-operative processes of consultation, analysis, and persuasion, rather than coercive measures." Chayes, *et al.*, *supra* note 21, at p. 41.

26. Similarly, "[t]ransformationalism prescribes that regimes be highly inclusive, minimise the stringency of obligations, de-emphasise enforcement, and utilise decision-making rules requiring near unanimity." Downs, Danish & Barsoom, *supra* note 20, at p. 467.

27. See Brunnée & Toope, "International Law and Constructivism: Elements of an Interactional Theory of Law," 39 *Columbia Journal Transnational Law*, p. 19 (2000), who by taking their cue from "constructivism" and drawing heavily on Lon Fuller's work, offer an "interactional" understanding of law. The hallmark of this theory is an emphasis on communicative or discursive processes, not just as a means, but as an end of law. "Inclusive processes" the authors maintain, serve to "reinforce the commitments of participants in the system to the substantive outcomes achieved by implicating participants in their generation." They thus conclude that a legal norm is "legitimate" when it reflects a specific rationality, i.e. reasoned argument, reference to past practice and contemporary social aspirations, and use of analogy. In these circumstances, law will attract its own adherence, without coercion. Id. at p. 51-58.

28. See, in particular, Downs, Danish & Barsoom, *supra* note 20, at p. 468, who note that "Transformational design principles have inspired on average less co-operative evolution in the agreements that embody them than have non-Transformational principles." Similarly, Raustiala & Victor, "Conclusions," in D. Victor, K. Raustiala & E.B. Skolnikoff, *The Implementation and Effectiveness of International Environmental Agreements: Theory and Practice*, p. 659, at p. 681-84 (1998) offer as well a mixed message in relation to the "management vs. enforcement" issue by concluding that "sticks" can be essential for handling non-implementation or non-compliance situations. See also Tallberg, "Paths to Compliance: Enforcement, Management, and the European Union," 56 *International Organization*, p. 609, at p. 610 (2002); and Bodansky, "The Legitimacy of International Governance: A Coming Challenge of International Environmental Law," 93 *American Journal of International Law*, p. 596, at p. 608 (1999) (questioning the basic practicality of a consensus-based compliance control procedure in as complex a regime as that of the Kyoto Protocol).

29. Still, the focus of the present inquiry will necessarily be on the specific issue of the Nuclear Safety Conventions' likely effectiveness over time, rather than on generic theoretical questions, such as whether regime effectiveness can or should be viewed as a function of a particular system of compliance control. For a highly pertinent warning against any easy conclusions, see, e.g., Kingsbury, "The Concept of Compliance as a Function of Competing Conceptions of International Law," 19 *Michigan Journal of International Law* p. 345 (1998). See also Brown Weiss, "Conclusions: Understanding Compliance with Soft Law," in D. Shelton, (Ed.) *Commitment and Compliance: The Role of non-binding Norms in the International Legal System*, p. 535 (2000).

30. The key features of both the CNS and of the Joint Convention have been described in great detail elsewhere. See *supra* note 2; Jankowitsch & Tonhauser, "The Convention on Nuclear Safety," 2 *Austrian Review of International & European Law*, p. 319 (1997); de Kageneck, *supra* note 6, at p. 145; and Cameron, *supra* note 9, at p. 117. Here it will suffice, therefore, to refer to those provisions of the two instruments that are critical to examining their normative significance.

significant reservations. To begin with, the preamble to the CNS, while reaffirming "the necessity of continuing to promote a high level of nuclear safety" simultaneously undermines the normative significance of this acknowledgement by emphasising that the "Convention entails a commitment to the application of fundamental safety principles… rather than of detailed safety standards." Key operational safety obligations such as those laid down in Article 6 of the CNS, namely to ensure the safety of existing nuclear installations, are qualified by such weasel words as "reasonably practical" and "as soon as practically possible." Similarly, while the Convention stipulates that any nuclear installation whose safety cannot be upgraded be shut down, this provision is couched in hortatory rather than mandatory language. Moreover, the normative significance of this stipulation is further compromised by the fact that it admits of balancing any safety risks against countervailing considerations, such as a contemplated shutdown's "social, environmental and economic impact" on the country. [31]

The corresponding provisions of the Joint Convention, namely Articles 5 and 12,[32] are couched in similarly conditional language. By the same token, obligations under Articles 4 and 11 of the Joint Convention which relate to "general safety requirements" applicable to spent fuel and radioactive waste management, respectively, are qualified by such words as "appropriate" or "adequate".[33] Other important safety objectives are circumscribed in terms of Contracting Parties' obligation to "strive to" or "aim to" avoid proscribed impacts from management operations.[34]

That evidence of such non-specific or heavily qualified substantive safety obligations might give rise to concern about the Conventions' effectiveness as international regulatory instruments should, therefore, not be surprising. Indeed, while expressions of concern about the Nuclear Safety Conventions differ in scope and intensity, they virtually all evince unease about the normative quality, the "softness"[35] of many of the Conventions' substantive provisions. This unease has been most forcefully articulated by Katia Boustany who refers to the two Conventions as prime examples of the "art of legal 'evasion.'"[36] By implying that the Conventions establish a normative house of cards, she

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31. "… Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact."

32. They relate to the safety of existing spent fuel management facilities and of radioactive waste management facilities and past practices, respectively.

33. For example, the first paragraph of Articles 4 and 11 provides: "Each Contracting Parties shall take the appropriate steps to ensure that … individuals, society and the environment are *adequately* protected against radiological [Joint Convention: "and other"] hazards." *Emphasis added*.

34. See Article 4, paragraphs (vi) and (vii); and Article 11, paragraphs (vi) and (vii).

35. See further *infra* text at notes 40-45. For a description of the concept, see, e.g., P. Birnie & A. Boyle, *supra* note 18, at p. 24-26.

36. Boustany, "The Development of Nuclear Law-Making or the Art of Legal 'Evasion,'" *Nuclear Law Bulletin* No. 61, p. 39 (1998). Similarly, Peter Cameron notes that the Joint Convention's safety requirements "are merely hortatory, encouraging Contracting Parties to take action but defining the obligation in the softest of soft terms…" Cameron, *supra* note 9, at p. 126. See also de La Fayette, "International Environmental Law and the Problems of Nuclear Safety," 5 *Journal of Environmental Law*, p. 31, at p. 68 (1993), who, speaking of what were then "Draft Elements for a Nuclear Safety Convention," deplores the (proposed) Convention's "regressive stance" which "defeats the very purpose of the convention."

criticises that much of states' conventional obligations are of a soft law nature,[37] with "[o]ne soft law giv[ing] rise to another, as in a perpetual motion imposed, despite itself, by the evasiveness of Governments."[38] In this sense, Boustany articulates a not uncommon view according to which recourse to "soft" norms in international law in general, and international environmental law in particular, is increasingly not intended to create or develop international law proper, but rather to prevent the law from taking shape altogether.[39]

It may well be true that the phenomenon of international conventional law as law hard in form, but soft in substance, of which the Nuclear Safety Conventions provide seemingly perfect illustrations, is generally on the rise.[40] However, it would be simplistic to characterise this development *per se* as a pathological phenomenon or to assume that soft normative provisions in a given legal instrument constitute *prima facie* evidence of "wilful intent […] to avoid restrictions on sovereign powers."[41] Rather, more often than not soft law provisions are likely to have a different, decidedly less morbid explanation.[42] For example, negotiators may conclude that the goals of the instrument concerned might not be immediately realisable, that additional time and effort are required to shape international consensus for the application of the treaty as a fully effective set of legal norms.[43] Indeed, it is perfectly "innocent" or "constructive" considerations such as these that account for much of present-day environmental lawmaking as a process that typically involves the adoption, first, of a framework convention with few or relatively soft substantive provisions, to be followed by implementing protocols of progressively greater normative bite.[44] "Normative softness", including variability of sanctions thus can be, and most frequently turns out to be, the result of "refined and

37. Thus Boustany characterises post-convention nuclear safety as "caught in the trap of 'soft law' and 'nebulous law'". Boustany, *supra* note 36.

38. Id. at.

39. See e.g., Székely, "Compliance with Environmental Treaties: The Empirical Evidence – A Commentary on the Softening of International Environmental Law," [1997] *American Society of International Law (ASIL) Proceedings*, p. 234, at p. 237.

40. For early analyses of this phenomenon, see, e.g., "A Hard Look at Soft Law," [1988] *ASIL Proceedings* p. 371; and Lang, "Diplomacy and International Environmental Law-Making: Some Observations," 3 *Yearbook of International Environmental Law* p. 108, at p. 116-117 (1992). See also Boyle, "Reflections on Treaties and Soft Law,"48 *International & Comparative Law Quarterly*, p. 901 (1999); and, generally, D. Shelton, *supra* note 29.

41. See Székely, "Non-Binding Commitments: A Commentary on the Softening of International Law as Evidenced in the Environmental Field," in *International Law on the Eve of the Twenty-First Century: Views from the International Law Commission*, p. 173, at p. 176 (1997). Indeed, some critics have raised the question of whether this type of commitment can at all to be understood as a treaty commitment. See, e.g., Hillgenberg, "A Fresh Look at Soft Law," 10 *European Journal of International Law*, p. 499 (1999), who speaks of "non-treaty agreements."

42. In fairness it should be pointed out that Prof. Boustany recognises in principle that "legal formalism is not necessarily relevant…when it comes to assessing the effectiveness of a normative tool or of a norm vis-à-vis the behaviour that it is supposed to be triggering." See Boustany, "The IAEA Code of Conduct on the Safety of Radiation Sources and the Security of Radioactive Materials: A Step Forward or Backwards?", *Nuclear Law Bulletin* No. 67, p. 9, at p. 18 (2001).

43. See, e.g., Gehring, "International Environmental Regimes: Dynamic Sectoral Legal Systems," 1 *Yearbook of International Environmental Law*, p. 35, at p. 38-46 (1990).

44. See, e.g., Handl, "Environmental Security and Global Change: The Challenge to International Law," 1 *Yearbook of International Environmental Law*, p. 3, at p. 5-7 (1990).

nuanced socio-legal engineering."[45] In consequence, any attempt at passing judgement on the effectiveness of the Nuclear Safety Conventions calls for corresponding caution. For the *prima facie* shortcomings of the safety conventions' substantive stipulations cannot be separated from but must be seen in the larger normative context, both substantive and procedural, in which they are embedded.

Looked at from this wider perspective, the Nuclear Safety Conventions' alleged normative quality problems immediately appear less disconcerting. First, both Conventions provide for cross-references to existing as well as evolving international standards and criteria as providing at the very least guidance on how Contracting Parties can achieve what is a fundamental objective of the respective Conventions, i.e. a high level of nuclear safety and protection against radiological hazards. For example, in the CNS the Contracting Parties reaffirm "the necessity of continuing to promote a high level of nuclear safety world-wide,"[46] and recognise not only the importance of international co-operation "through existing bilateral and multilateral mechanisms…and… [the] Convention," but also expressly acknowledge that there are internationally formulated safety guidelines which are updated from time to time and so can provide guidance on contemporary means of achieving a high level of safety…[47]

The Joint Convention refers in even stronger terms to pertinent extra-conventional international safety standards and criteria. After endorsing in its preamble, once again, "a high level of safety world-wide,"[48] it specifically recalls the "Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources," the "Principles of Radioactive Waste Management" of the IAEA Safety Fundamentals and "existing international standards" relating to transport safety.[49] Articles 4 and 11, which focus on general safety requirements for spent fuel and radioactive waste management, respectively, establish in identical language each contracting party's obligation to provide for effective protection of individuals, society and the environment, by applying at the national level suitable protective methods as approved by the regulatory body, in the framework of its national legislation *which has due regard to internationally endorsed criteria and standards*….[50] Finally, Article 24 of the Joint Convention addressing "operational radiation protection" incorporates again the same reference to "internationally endorsed standards on radiation protection."[51]

The true legal import of Contracting Parties' individual obligations under the Nuclear Safety Conventions, therefore, cannot be established except by reference to these extra-conventional safety standards, criteria and principles.[52] Indeed, these references do provide interstitial normative materials

45. Reisman, "Remarks", (A Hard Look at Soft Law), (1988) *ASIL Proceedings*, p. 373, at p. 375.

46. Preambular paragraph (ii). Moreover, Article 1, paragraph (i), again, lists among the objectives of the Convention "to achieve and maintain a high level of nuclear safety world-wide through the enhancement of national measures and international co-operation including, where appropriate, safety-related technical co-operation…."

47. Preambular paragraph (viii).

48. Article 1, paragraph (i) of the Joint Convention. See also preambular paragraphs (v) and (ix).

49. See preambular paragraph (xiv).

50. Paragraph (iv). Emphasis added.

51. See paragraphs 1 (ii) and 2 (ii).

52. For an overview of safety standards and principles developed under the aegis of the IAEA, see, e.g., "Measures to Strengthen International Co-operation in Nuclear, Radiation and Waste Safety including Nuclear Safety Review for the Year 1999," IAEA Doc. GC(44)/INF/4, 17 August 2000, Annex 2. For a update of their status, see "Status of the IAEA Safety Standards Programme, August 2003," at www.iaea.org/ns/committees/css/status.pdf., visited 2 September 2003.

that fill outright gaps in the principal instruments themselves, or compensate for the latter's relative lack of normative specificity. The fact that many of the standards or criteria referred to are themselves formally non-binding is *per se* of no consequence, as their ultimate legal significance is a function of the normative status of the referring or adopting provision, rather than of the referred to standards and criteria. Thus, the Joint Convention clearly establishes a link to a secondary level of normative concepts as binding upon states parties, thereby adopting a technique of "indirect legislation" that is well established internationally.[53]

The CNS, by contrast, recognises such external concepts as merely highly persuasive in pointing the way towards achieving the Convention's fundamental safety objectives. Moreover, it does not refer by name to specifically relevant international safety standards. However, this ostensibly more limited endorsement of CNS-external safety parameters does not necessarily suggest a lesser degree of their normative effectiveness under CNS auspices. First, apart from special circumstances in which IAEA safety standards might be formally binding,[54] many of the standards and principles involved[55] are already routinely and widely being complied with by States and as such may generally be deemed to have acquired *de facto* binding status.[56] In this vein, the proposed European Community's basic statement on fundamental nuclear safety obligations and concepts applicable throughout the EC, simply acknowledges the authoritative guiding function of IAEA standards and principles.[57] By the same token, their endorsement, by the IAEA's own Commission on Safety Standards,[58] as a mere

53. For a discussion of this technique and its implications in the context of, e.g., the Law of the Sea, see Oxman, "The Duty to Respect Generally Accepted International Standards", 24 *New York University Journal of International Law & Politics*, p. 109 (1991). See also Contini & Sand, "Methods to Expedite Environmental Protection: International Eco-standards," 66 *AJIL*, p. 37 (1972); Kirgis, "Specialized Law-Making Processes," in O. Schachter & C. Joyner (eds.), *The United Nations Legal Order* (Vol. 1), p. 109 (1995); and Sommer, *supra* note 21, at p. 654-659.

54. These include the application of IAEA safety standards to Agency projects in Member States, as well as, at the request of parties, to operations pursuant to any bilateral or multilateral agreement, or at the request of a state to any of that state's nuclear activities. See Art.III.A.6 of the Statute of the IAEA.

55. Of course, not all IAEA safety standards or principles carry equal normative weight, and therefore are not of equal legal significance from the standpoint of the Nuclear Safety Conventions. Thus, the Agency itself distinguishes between "safety fundamentals" (covering basic objectives, concepts and principles of safety and protection), "safety requirements" (requirements that must be fulfilled to ensure safety for particular activities or applications) and "safety guides" (listing merely recommended actions, conditions or procedures for complying with these safety requirements).

56. On this point see, e.g., Handl, *supra* note 4, at p. 18; Szasz, "The IAEA and Nuclear Safety," 1 *Review of European Community & International Environmental Law* p. 165, at p. 169 (1992); de La Fayette, *supra* note 36, at p. 58-59; and P. Birnie & A. Boyle, *supra* note 18, at p. 456-58. However, it must be acknowledged that while acceptance and application by states of IAEA safety standards are both routine and widespread, they are not universal. See "Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management: Nuclear Safety Review for the Year 2002", *supra* note 3, at Annex, 1.

57. See, e.g., European Economic and Social Committee, Opinion on the Draft Proposal for a Council Directive (Euratom) setting out basic obligations and general principles on the safety of nuclear installations and a Draft Proposal for a Council Directive (Euratom) on the management of spent nuclear fuel and radioactive waste, EC. Doc. TEN/128 Nuclear Safety, 26 March 2003, at paragraph 4.1.

58. The IAEA's Commission on Safety Standards (CSS) is a standing body of senior government officials holding national responsibilities for establishing standards and other regulatory documents relevant to nuclear, radiation, waste and transport safety. The CSS has a special overview role with regard to the Agency's safety standards and provides advice to the Director General on the overall program on regulatory aspects of safety.

"recommendation" instead of an unambiguous affirmation of their steering function, appears overly cautious, if not unwarranted.[59] Second, although the CNS's admittedly soft cross-reference cannot change the safety standards' and principles' formal legal status from non-binding to binding, neither does it, of course, undermine their extra-conventional status as generally quasi-binding. Third, and most significantly, the CNS's procedural setting, in particular its peer review mechanism, appears specifically designed to render these standards and principles verifiably applicable across the board to all Contracting Parties as a matter of political, if not legal inevitability. In other words, over time and notwithstanding their incorporation by reference as providing mere "guidance," IAEA safety standards and principles themselves are likely to metamorphose into *de facto* legally binding provisions, provided the peer review mechanism functions as intended.

There can be little doubt, therefore, that the peer review mechanism is critically important to the Nuclear Safety Conventions' ultimate effectiveness. Its principal cornerstones are two: first, the national reporting requirements laid down in Article 5 of the CNS and Article 32 of the Joint Convention; and second, regular as well "extraordinary" meetings to review Contracting Parties' performance.[60] The reports' contents as well as structure follow standards specified in guidelines established pursuant to Article 22, paragraph 1(i)[61] and Article 29, paragraph 2(iii),[62] of the respective Conventions and provide the basic information input into the review meetings. The latter, in turn, focus on individual Contracting Parties' compliance with conventional obligations – in terms both of overall or generic national safety trends and of the safety of individual nuclear facilities.[63] Beyond the expressly acknowledged objective – assessment and improvement of national measures of implementation of, as well as compliance with a given set of normative prescriptions – the peer review process serves also, at least implicitly, to refine, strengthen and, indeed, progressively raise the normative threshold against which implementation and compliance are being assessed.

It is true that the Contracting Parties' international legal obligations can first and foremost be characterised as those obligations of conduct[64] specifically enumerated in the respective instruments.

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59. Thus the Commission simply recommends that Contracting Parties use IAEA standards as a basis for assessing compliance with their obligations under the Nuclear Safety Conventions. See Commission on Safety Standards, Vision and Strategy for the IAEA Safety Standards, Draft Note to the Director-General, 27 January 2003, at paragraph 11.

60. See Articles 20 and 23 of the CNS, and Articles 30-31 of the Joint Convention.

61. Guidelines regarding National Reports under the Convention on Nuclear Safety, IAEA Doc. INFIRC/572/Rev.2, 2 September 2002 [hereafter: "GNR"].

62. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Guidelines regarding the Form and Structure of National Reports, IAEA Doc. INFIRC/604, 1 July 2002 [hereafter: "Joint Convention GNR"].

63. See *infra* text at notes p. 98-103; and GNR, *supra* note 61, at § III, 4-6 & 7; and Joint Convention GNR *supra* note 62, at § II 3 (e) and § III, G, paragraph 15, and H, paragraph 17. See further Stoiber, *supra* note 11, at p. 106.

64. For the Contracting Parties' "obligation" to achieve a high level of safety world-wide represents an inherently indeterminate obligation. It is given operational meaning only through specifically enumerated "obligations of conduct." As to the distinction involved, see Articles 20 and 21 of the International Law Commission's previous draft articles on State Responsibility, [1980] *Yearbook of the International Law Commission* (vol. II-2), p. 32. Note, however, that in its Draft articles on the Responsibility of States for Internationally Wrongful Acts, adopted in 2001, the Commission dropped this classification or typology of international obligations as not particularly useful and potentially confusing. See Crawford, Second Report on State Responsibility, UN Doc. A/CN.4/498, 17 March 1999, paragraphs 88-90; and Dupuy, "Reviewing the Difficulties of Codification: Ago's Classification of Obligations of Means and

However, as noted before, the Conventions' fundamental objective to "achieve and maintain a high level of nuclear safety world-wide" implies also an obligation of result,[65] which introduces an inherently dynamic dimension as regards these very obligations of conduct. In this sense, therefore, the reference in the CNS preamble to periodically updated international safety guidelines, as providing "guidance on contemporary means" of achieving the fundamental conventional objective, virtually assures that the review meetings will acquire overtones of a lawmaking exercise. The Joint Convention's analogous provisions and their even stronger "due regard to internationally endorsed criteria and standards" language are likely to have a similar effect: the peer review meetings are invited to engage in ascertaining individualised obligations of conduct commensurate with changing international safety standards and principles. In other words, the meetings should work not only to buttress Contracting Parties' general obligations flowing from the Conventions' basic safety philosophy and objectives, but also to identify and validate *ad hoc* specific normative implications of internationally evolving "good safety practices." It should be evident that in so doing the meetings will also help revise or develop over time generally applicable standards of safety or nuclear due diligence.[66]

In short, the Nuclear Safety Conventions merge in a single, regime-internal procedural mechanism a duality of functions – law application/compliance control, as well as lawmaking. This fact alone may not set the Conventions categorically apart from other comparable multilateral instruments,[67] although, more typically, such regulatory instruments seek to separate regime-internal compliance control from lawmaking functions, at least in principle.[68] However, as incentive conventions, the nuclear instruments also eschew truly coercive strategies in support of effectiveness.[69]

Obligations of Result in Relation to State Responsibility," 10 *European Journal of International Law*, p. 371, at p. 374-82 (1999).

65. See Article 21 of the International Law Commission's 1980 draft articles, *supra* note 64.

66. Thus Tonhauser & Jankowitsch correctly observe that "implementation of the Convention on Nuclear Safety and of the Joint Convention will presumably create new State practice by the mere functioning of the peer review mechanism." Tonhauser & Jankowitsch, *supra* note 10, at p. 22. Such practice, of course, is legally relevant in that it expresses or shapes community expectations regarding required conduct.

67. Indeed, compliance control mechanisms, such as the "non-compliance procedures" of various multilateral environmental agreements unavoidably straddle traditional lawmaking and law application or enforcement functions. See, e.g., Chayes & Chayes, "Compliance without Enforcement: State Behavior under Regulatory Regimes," *Negotiation Journal*, p. 311 at p. 313 (1991); and Handl, "Controlling Implementation of and Compliance with International Environmental Law: The Rocky Road from Rio," 5 *Colorado Journal of International Environmental Law and Policy*, p. 305, at p. 329 (1994). Thus, Jutta Brunnée correctly speaks of a "compliance continuum" comprising the design of the regime itself, law making and law application. See Brunnée, "COPing with Consent: Law-Making Under Multilateral Environmental Agreements," 15 *Leiden Journal of International Law*, p. 1, at p. 35-37 (2002).

68. Namely, in the sense that the assessment of factors bearing on compliance, the factual determination of non-compliance and the recommendation of co-operative or facilitative measures to be taken in response, tend to be allocated to special compliance review committees. On the other hand, the formal declaration of non-compliance, issuance of cautions, or suspension of rights and privileges under the treaty – actual sanctions – will normally be the responsibility of the collectivity, i.e. the conference or meetings of the parties, not of the select compliance review committee. For an overview of various pertinent treaty regimes, see Churchill & Ulfstein, "Autonomous Institutional Arrangements in Multilateral Environmental Agreements: A Little-Noticed Phenomenon in International Law," 94 *American Journal of International Law*, p. 623, at p. 628-45 (2000).

69. Except for the Joint Convention's express contemplation of traditional, regime-external dispute settlement mechanisms provided for under international law. For details, see *infra* note 118.

This fact accentuates the ambitious "treaty management," i.e. regime building and maintenance role assigned to the peer review process and underscores the uniqueness of the Conventions' design. Inevitably, it also raises the question of the latter's adequacy given the Conventions' express and implicit nuclear safety undertakings.

III. The Peer Review Mechanism: Can it fulfil its Pivotal Role?

As an international mechanism of accountability in the nuclear industry,[70] peer review[71] predates very considerably the entry into force of the Nuclear Safety Conventions. Indeed, for many years now peer review has been a signature characteristic of nuclear safety services provided through the IAEA[72] as well as the World Association of Nuclear Operators (WANO).[73] In these latter fora, submission to peer review is voluntary, their findings intrinsically advisory. By contrast, peer review pursuant to the Nuclear Safety Conventions is mandatory and intended to "compel"[74] – albeit through peer scrutiny and pressure – states parties towards maintaining as well as developing the nuclear safety regimes. Thus by appealing to parties' rational self-interest as well as perception of fairness it seeks to demonstrate, educate, persuade and, yes, if necessary, cajole. However, for this "managerial" formula[75] to work peer reviews must, first, be embedded in a robust procedural framework; second, be able to draw on adequate and accurate information; third, truly facilitate parties' discursive interaction as the key to the process's educational, norm-clarifying and validating effect; and, fourth, satisfy the test of legitimacy, if and when reviews involve regime building or lawmaking.

(a) Basic Structural Issues

One problem that is characteristic of international peer review and thus needs to be particularly guarded against results from participants' status as sovereign states, on the one hand, and the natural inclination among members of any social group to be influenced by reciprocally operating social

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70. "Peer review operates as a mechanism of accountability within an institutionalized social system." Washington, *supra* note 7, at p. 204. See also Jankowitsch, *supra* note 10, at p. 13.

71. The concept is said to have originated in 1665 when the Royal Society authorised the licensing of one of its publication "under the charter of the Council of the Society, being first reviewed by some members of the same." Daryl E. Chubin & Edward J. Hackett, *Peerless Science*, p. 19 (1990). In this sense, peer review is "an organized method for evaluating scientific work which is used by scientists to certify the correctness of procedures, establish the plausibility of results, and allocate scarce resources." Id. at p. 2.

72. See, e.g., Handl, *supra* note 4, at p. 19-21. For a listing of present IAEA safety services, including peer-review-based ones, see www.iaea.org/ns/nusafe/services.htm, visited 3 September 2003.

73. WANO's peer review program was launched on a provisional, pilot basis in 1991, and formally adopted in 1993.

74. See Jankowitsch, *supra* note 10, at p. 13.

75. This is not the place, nor is there a need, for an in-depth analysis of the peer review process and its underlying legal theory. Suffice it to say instead that the Nuclear Safety Conventions' design is evidently inspired by "constructivism," "an account of law not as a body of rules but as a system of legal relations, at once universalising from individual particularities, patterns of interactive behaviour, and particularising society's universal purposes." Kingsbury, *supra* note 29, at p. 358. For a fuller discussion of "constructivism" and its impact on international legal theory, see Brunée & Toope, *supra* note 25. For an analysis of the critical role of discursive interaction in relation to law, see generally, J. Habermas, *Faktizität und Geltung: Beiträge zur Diskurstheorie des Rechts und des demokratischen Rechststaats*, p. 15-60 (1992).

restraints, on the other. As Winfried Lang put it: "Peer review means that governments only submit to governments; this implies that governments only accept their fellow governments as judges; from this it follows that real judgements or condemnations in case of compliance-failure remain rare events…."[76] Peer review, in other words, undeniably poses an inherent danger of under-enforcement.[77] Indeed, this danger is more pronounced in the nuclear safety context given traditional governmental sensitivity about national or international security-related implications of domestic nuclear power program or activities. It is, therefore, reasonable to assume that states might also be less inclined to submit themselves or, conversely, to subject others to intense peer scrutiny in relation to the Nuclear Safety Conventions than would be the case in other multilateral treaty contexts. It is thus of paramount importance that the Conventions' peer review procedure be capable of guaranteeing a process that is both transparent and rigorous.

Both Conventions' basic provisions and, in particular, the procedural arrangements adopted thus far in furtherance of the peer review process, reflect a fairly sophisticated approach to counter bias and under-enforcement. Thus, as a key step that aims both to strengthen the effectiveness and to protect the integrity of the review process, the Contracting Parties of the Nuclear Safety Conventions have agreed to establish country subgroups to review the national reports. This means that the composition of each country group, the selection of group co-ordinators, its rapporteurs and chairpersons, become important factors that not only determine whether and how the process works, but that also affect public perception of its effectiveness, as well as its overall legitimacy.

Recognising the critical importance of properly structuring the review process, the Conventions' guidelines pay careful attention to the participation of states in the meetings' various country groups.[78] First, individual groups are made up of both countries with operational nuclear installations or experience with spent fuel/nuclear waste management and countries without such installations or experience. This serves to maximise the individual group's collective expertise as well as to ensure an appropriately robust review climate. Second, the review process guidelines of both Conventions recommend, but do not mandate, that countries periodically be reassigned to different country groups. The Conventions' guidelines refer to enhancing expertise among Contracting Parties, and thereby an "increasingly constructive review process" as the rationale for rotating country group membership.[79] They coyly omit, however, to acknowledge what is, after all, another critical objective of this recommendation, namely avoidance of a build-up over time of intra-group solidarity that might undermine the peer review. Third, the assignment of a country to a particular country group does not

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76. Lang, "'Peer Review' of Environmental Performances in International Organisations," in G. Hafner, *et al*., eds., *Liber Amicorum Professor Seidl-Hohenveldern – In Honour of his 80th Birthday*, p. 381, at p. 382 (1998).

77. "By definition, peer review involves critical analysis of colleagues, which can be beset by bias and animus. Bias is most likely to manifest itself in the under-enforcement of safety norms. Collegial experts may be tempted to overlook certain problems in the safety reports of peer countries." Washington, *supra* note 7, at p. 215.

78. See Guidelines Regarding the Review Process under the Convention on Nuclear Safety [hereafter: "GRP"], IAEA Doc. INFIRC/571/Rev.2, 2 September 2002; and Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Guidelines Regarding the Review Process [hereafter: "Joint Convention GRP"], IAEA Doc. INFIRC/603, 1 July 2002, Attachment.

79. See GRP, *supra* note 78, at p. 4, Section VI; and Joint Convention GRP, *supra* note 78, at p. 3, Section VI.

prevent that country from being represented also at the meetings of other country groups, although its right to participate in the deliberations of other groups will be limited.[80]

If these structural safeguards against the risks of misplaced collegiality look sound, there are other aspects of the review process that might be viewed as somewhat less reassuring. One such aspect concerns the limits on Contracting Parties' ability to discuss and if necessary challenge each other's implementation of and compliance with the obligations under the Conventions. Both Conventions expressly provide that "each Contracting Party shall have a reasonable opportunity to discuss the reports submitted by other Contracting Parties and seek clarification of such reports."[81] However, participation in this process is restricted to members of the country group concerned and to other Contracting Parties that have submitted written questions or comments at least two months in advance of the meeting.[82] Whereas the former will be "full participants," the latter will have the right to be present only during the group's review of the national report in relation to which they submitted questions or comments. Additionally, full participants are expected to lead the discussions on each group of questions before the group, whereas other participants' intervention will be restricted to discussing and seeking further clarification of answers to their own advance questions and comments.[83] The final plenary session offers another opportunity for all Contracting Parties to comment on national reports as well as on group rapporteurs' oral reports.[84] However, the net effect of limiting access to group deliberations is likely to be to prevent or at least seriously hamper spontaneous in-depth discussions of safety information that might come to the fore only in the course of intra-group analysis and discussion of national reports.

A second matter of potential concern relates again to restrictions on attendance. Both the CNS and the Joint Convention limit attendance of meetings, or specific session thereof, to Contracting Parties and to intergovernmental organisations specifically invited as observers.[85] Moreover, such invitation by Contracting Parties must be by consensus and is limited to organisations "competent in respect of the matters governed by this convention." Thus far, only the Nuclear Energy Agency of the OECD has been granted observer status at CNS review meetings.[86] While such a restrictive approach may be consistent with the nuclear industry's traditional reluctance to open up to outside review generally, it seems at odds with a condition for the proper functioning of any treaty management or compliance management procedure, namely that its institutional setting be truly inclusive. Today, "inclusiveness" in relation to an international review of nuclear safety issues probably ought to be understood to imply a process that is open not only to the Contracting Parties of the Nuclear Safety Conventions and international governmental entities, but also to relevant non-governmental organisations. The Conventions' unequivocal rejection of public participation in this wider sense,

80. See GRP, *supra* note 78, at p. 5, Section VII; and Joint Convention GRP, *supra* note 78, at p. 3, paragraph 2 (a-b).

81. CNS, Article 20, paragraph 3; and Joint Convention, Article 30, paragraph 3.

82. See GRP, *supra* note 78, at p. 3-4; and Joint Convention GRP, *supra* note 78, at p. 3, paragraphs 1-2.

83. See GRP, *supra* note 78, at p. 4; and Joint Convention GRP, *supra* note 78, at p. 3, paragraph 5.

84. See GPR, *supra* note 78, at p. 6; and Joint Convention GPR, *supra* note 78, at p. 5, paragraph 4(c).

85. See Article 24, paragraph 2 of the CNS, and Article 33, paragraph 2 of the Joint Convention, respectively.

86. See Summary Report, Second Review Meeting, *supra* note 17, at p. 1. No invitations were extended for the Joint Convention's Organisational Meeting of Contracting Parties in April 2003 as no requests for participation had been submitted.

therefore, might not only diminish the overall effectiveness of the review process but also shape negatively public perceptions of its legitimacy.[87]

(b) The Information Input

The Nuclear Safety Conventions guarantee confidentiality in relation to safety-related information potentially relevant to the deliberations of the peer review groups. Clearly, this is a matter of concern from the standpoint of the structural robustness of the review process. But it is equally problematical, if not more so, from the viewpoint of ensuring the accuracy and adequacy of the information input into the review proceedings. First, the CNS as well as the Joint Convention exempt information from disclosure if that information is protected information under the laws of the contracting party concerned.[88] This exemption extends to information that *inter alia* bears on national security or physical protection of nuclear materials or installations, intellectual property rights, and personal data. Although the Contracting Parties are encouraged to publish their national reports or summaries thereof (as well as questions and comments received from other Contracting Parties and responses thereto),[89] they ultimately are free to decide themselves whether or not information supplied is to be deemed confidential. Second, the contents of the debates during the review of individual national reports are to remain confidential,[90] the only record to be released to the public being a summary of the deliberations. Third, under the rules of procedure applicable to review meetings under either Convention, any decision on substantive matters must be adopted by consensus.[91] Thus by giving individual Contracting Parties a veto over disclosure of information the meetings' decision-making rules might end up further undercutting the dissemination of relevant information to the public at large. In sum, the transparency of review proceedings on which, after all, the effectiveness as well as legitimacy[92] of the whole process depend, is less than desirable. Indeed it may be perceived as compromised given this emphasis on protecting Contracting Parties' sensibilities over safety-related information.

A related matter of concern about the quality of the information input stems from the fact that national reports on implementation/compliance are initial self-assessments with each contracting party retaining a potentially significant measure of discretion regarding the form, length and structure of its report.[93] This poses an obvious problem as any effective review presupposes that national data

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87. See generally, Ebbesson, "The Notion of Public Participation in International Environmental Law," 8 *Yearbook of International Environmental Law*, p. 51 (1997). For further discussion of the issue of legitimacy as justification of authority, see *infra* text at notes 112-118.

88. See CNS, Article 27, paragraph 1; and Joint Convention, Article 36, paragraph 1.

89. See GNR, *supra* note 61, at Annex, 11.

90. Article 27, paragraph 3 and Article 36, paragraph 4, respectively. See further Rule 20 of the CNS Rules of Procedure and Financial Rules, IAEA Doc. INFIRC/573/Rev.2, 2 September 2002, p. 9.

91. See Rule 35, paragraph 1 of both the CNS Rules of Procedure and Financial Rules, IAEA Doc.INFIRC/573/Rev.2, 2 September 2002; and Joint Convention, Rules of Procedure and Financial Rules, IAEA Doc.INFIRC/602, 1 July 2002, Attachment.

92. For a discussion of the issue of legitimacy, see *infra* text at notes 109-118.

93. See GNR, *supra* note 61, at p. 1: "[E]ach contracting party has the right to submit a National Report with the form, length and structure it believes necessary to describe how it has implemented its obligations under the Convention…;" and Rule 40, paragraph 2 of the CNS Rules of Procedure and Financial Rules, *supra* note 90, at p. 13. The Joint Convention adopts virtually identical language in describing Contracting Parties' discretion.

submitted be, if not comprehensive, at least relevant in the sense of being *grosso modo* indicative of the national safety situation, reliable and comparable. Comparability of data suggests, of course, standardised formats, if not uniformity of national reports.

In view of the differences that exist among national nuclear technologies, regulatory philosophies etc., on the one hand, and the constraints of time and resources under which the peer review meetings operate,[94] on the other, national reports thus pose a serious challenge from a data management viewpoint. This problem requires, first, that the Contracting Parties identify and use data that permit both accurate assessments of national trends and cross-industry comparisons. Second, given the virtual impossibility of a truly comprehensive assessment of "nuclear safety" in individual Contracting Parties, peer review meetings must balance judiciously quality and quantity objectives for national reports. In this vein, Carlton Stoiber has suggested that review meetings use select "markers" that can highlight significant changes in a country's nuclear safety situation. [95] In other words, peer review meetings are called upon to forge an understanding on a manageable number of criteria by which safety-significant developments and trends can be relevantly measured.

Considering this information management issue, it is not surprising that the guidelines on national reports of both conventions seek to curtail Contracting Parties' discretion. They do so through recommendations that specify the reports' basic features as well as what type of information ought to be provided in describing implementation of national obligations under the respective Convention, article-by-article.[96] Success at streamlining of national reporting, and specifically assuring the quality of the reports, will thus depend on the peer review meetings' ability to reshape or reverse normative expectations within the nuclear safety regimes, given the Conventions' express recognition of Contracting Parties' discretion relative to national reports.

(c) Specificity and Iteration in the Peer Review Meetings

For peer review to work as envisaged, it is, as noted before, essential that the process optimise conditions for the collective shaping of normative expectations, i.e. the identification, general affirmation as well as validation ad hoc – vis-à-vis individual Contracting Parties – of applicable nuclear safety norms. Clearly, the process' structural robustness as discussed before will be an important factor. At least two additional aspects might be singled out here as being critical in this respect. First, reviews of national reports and related exchanges among the participants need to go beyond generic policy issues and reach a level of specificity sufficient to provide clear guidance to individual Contracting Parties with regard to the implementation of and compliance with their obligations under the Conventions. Second, and equally importantly, the notion of iterative discourse as the linchpin of the review process implies by its very terms that the peer review meetings facilitate the revisiting of questions regarding implementation and compliance to ensure the process' general educational and norm-clarification and validation objectives.

Doubts about the Nuclear Safety Conventions' peer review as an effective "normative process of communication" frequently surface under the guise of criticism of the review meetings' safety

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94. Note, for example, Article 5, paragraph 2 of the Annex to the Final Act of the Diplomatic Conference adopting the CNS, which recommends limiting the frequency as well as duration of review meetings in order to reduce costs and thereby to encourage the widest possible adherence to the Convention.

95. Among relevant reporting parameters he recommends *inter alia* the number of unplanned reactor shutdowns, availability factors, and occurrences reported under the INES. See Stoiber, *supra* note 11.

96. See GNR, *supra* note 61; and Joint Convention GNR, *supra* note 62.

control function, in particular in relation to risks emanating from individual nuclear installations. Those who tend to judge the merits of the Nuclear Safety Conventions against this yardstick will no doubt claim that limited money and time alone prohibit the peer review meetings from providing the kind of thorough or indepth assessment of national safety trends that might be necessary to anticipate and correct in time significant national nuclear safety lapses. By the same token, it has been suggested that because review meetings are designed to focus on nuclear safety issues at a generic trend or policy level, the meetings would be largely irrelevant as instruments of control of specific hazards emanating from individual installations.

It is certainly true that constraints of time and money[97] pose obvious obstacles to the meetings assuming a safety review function at individual facility level. Moreover, the general thrust of the peer review process clearly is to redress from a perspective of general safety policy and philosophy possible national shortcomings in implementing conventional obligations, not to assess the safety of individual nuclear installations.[98] However, the Conventions do not *per se* preclude the review meetings from focusing on individual nuclear facilities. Indeed, the CNS's Guidelines on National Reports (GNR) leave the door open to the possibility of an individual facility-focused review by acknowledging that generic safety trends could be "illustrated by the specific discussion of particular safety-related issues encountered at individual facilities."[99] A very similar acknowledgement can be found in the Joint Convention's Guidelines regarding the Form and Structure of National Reports.[100] The likelihood that the review meetings might after all end up focusing on individual plant safety is underlined also by the GNR comment to Article 6 of the CNS which invites Parties to report on individual existing nuclear power installations.[101] Indeed, the first two review meetings of the CNS seem to confirm that some discussion of specific safety aspects of individual national nuclear installations might well be inevitable.[102] Finally, it might be argued that internationally significant nuclear safety events at individual national facilities – whatever their exact cause – would seem to be precisely the type of situation which Contracting Parties could be expected to wish to be briefed on and to review within the ambit of the Nuclear Safety Conventions.

It is far from a foregone conclusion, therefore, that CNS review meetings might be intrinsically unable or routinely unwilling to relevantly discuss safety issues that arise at individual national nuclear installations. Given the nature of the subject matter, the Joint Convention and related Guidelines on National Reports offer an even clearer prospect that review meetings might cover not just generic safety trends, but also safety issues at individual installations.[103]

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97. Thus Article 5, paragraph 2 of the Annex to the Final Act of the Diplomatic Conference adopting the CNS recommends limiting the frequency as well as duration of review meetings in order to reduce costs and thereby to encourage the widest possible adherence to the Convention. Similarly, the Joint Convention Guidelines regarding the Review Process limit group discussions of each national report to a maximum of one full day. See Joint Convention GRP, *supra* note 78, at p. 3, paragraph 4.

98. Thus the summary reports of the first two meetings reiterate emphatically this point. See *supra* note 18, at paragraphs 6, and 9, respectively.

99. GNR, *supra* note 61, at p. 2.

100. See Joint Convention GNR, *supra* note 62, at p. 2, paragraphs 2 (f) and 3(e).

101. GNR, *supra* note 61, at p. 4-5.

102. See Summary Report of the First Review Meeting, *supra* note 17, at paragraphs 29 and 33.; and Summary Report of the Second Review Meeting, *supra* note 17, at, in particular, paragraphs 33 and 37.

103. See also Tonhauser & Jankowitsch, *supra* note 10, at p. 18.

Irrespective of whether the peer review mechanism's ability to canvass individual installation events with international safety implications can or should be taken as an accurate measure of the Conventions' overall effectiveness, it is thus likely that peer reviews will at least occasionally expand their focus to safety issues at individual installation level, notwithstanding mantra-like assertions to the contrary.[104] Indeed, such a step might be a logical consequence of the Nuclear Safety Conventions' cross-reference to extra-conventional safety standards and principles, which bring into play more specific normative parameters. "Managing" Contracting Parties' compliance with these parameters might, therefore, also necessitate a peer review pegged at a more specific level, including operational safety aspects of individual installations. Admittedly, such expanded reviews are unlikely to be carried out in any systematic or comprehensive manner. However, they might well occur sufficiently frequently to make a difference in terms of both public perception of the Conventions' utility and of enhancing overall nuclear safety.

There can be little doubt that the Nuclear Safety Conventions meet the second requirement that peer review meetings provide a forum for effective iterative discourse. Apart from clear indications to this effect in the Conventions themselves, the summary reports of the review meeting of the CNS reflect emphatic acknowledgement of the fact that the "Convention entails a commitment to a continuous learning and improving process."[105] Thus CNS Contracting Parties have specifically affirmed that the review process' ability to revisit safety issues is an indispensable element and a signature characteristic of the nuclear safety regime as an incentive convention.[106] The endorsement of the educational function of peer review "follow-through" on matters previously reported or discussed, finds normative expression also in the GNR catchall safety-related paragraph which specifically envisages follow-up reporting by Contracting Parties in relation to the safety of existing individual nuclear installations.[107] Similarly, the Joint Convention's GNR stipulate that Contracting Parties provide *inter alia* updated information on matters covered in the previous report, address issues identified by the parties previously and, most significantly, respond to any recommendations adopted at the plenary sessions of the previous meeting.[108]

In sum, the evidence regarding structural robustness, information management and ability to promote iterative discourse thus reveals a few obvious weaknesses in the Nuclear Safety Conventions' the peer review mechanism. Some of these, e.g., with regard to transparency, might require concerted efforts to overcome; others, such as the lack of uniformity in national reporting practices, might be correctable through an informal reinterpretation of the relevant Conventional provisions. At the same time, however, there is little to suggest that the mechanism is fundamentally deficient or a priori lacks any of the basic requisite features for effective regime maintenance, i.e. norm-clarification and validation through discursive interaction among the Contracting Parties.

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104. For example, the Second Review Meeting of the CNS again emphasised that it was not the review process' task "to review the safety of individual nuclear installations." See Summary Report of the Second Review Meeting, *supra* note 17, at paragraph 9.

105. Summary Report of First Review Meeting, *supra* note 17, at paragraph 7; and see Summary Report of the Second Review Meeting, *supra* note 17, at p. 3, paragraph 11: "As part of this learning process it was considered to be good practice to provide additional information in future reports on those topics and issues on which particular interest was expressed during the review process…."

106. See, e.g., Summary Report of First Review Meeting, *supra* note 17, at paragraph 8.

107. GNR, *supra* note 61, at p. 9, read together with comment on Article 6 of the CNS.

108. Joint Convention GNR, *supra* note 62, at p. 2, paragraph 2(e).

(d) The Issue of Legitimacy

The effectiveness of peer review, finally, is also a function of its perceived legitimacy or fairness.[109] For example, Tom Franck refers to the "compliance pull"[110] of legitimacy by which he means procedural legitimacy.[111] In the context of the Nuclear Safety Conventions, to the extent an issue of legitimacy might be perceived to arise at all, it will likely concern legitimacy in the sense of justification of authority.[112]

As noted before, the Nuclear Safety Conventions' peer review process, which serves principally to control or manage implementation/compliance, inevitably strays also into the realm of law making.[113] It is in relation to this latter aspect of "treaty management" that an issue of legitimacy might be seen as presenting itself. This – albeit limited – lawmaking dynamic inherent in the Nuclear Safety Convention's peer review mechanism, together with indirectly legislated substantive norms,[114] might give the impression of an attenuated consensual basis of obligations said to arise under the Nuclear Safety Convention. Specifically, the individualised validation and application of extra-conventional safety standards and principles as legally relevant parameters, though covered by the Contracting Parties' general consent [115] to the Conventions' enabling provisions, might appear unsupported by the Contracting Parties' specific consent. If true, this would, of course, raise a question of legitimacy, namely in terms of the peer review mechanism's authority to prescribe. However, a more careful analysis shows otherwise.

Unlike other international, especially environmental, regimes, which often feature a transfer of binding decision-making powers to institutional bodies while concomitantly abandoning or at least modifying the traditional consent principle, the Nuclear Safety Conventions' peer review process retains all the characteristics of a state-centred, strictly consensus-based treaty-management device. In other words, while the Conventions and their peer review mechanisms might give the appearance – as Bodansky puts it – of binding consenting states to a governance structure[116] with independent, binding decision-making powers, in reality they continue to embody treaties that commit the Contracting Parties to a system of rules of which they remain fully in control: All matters of substance are to be decided by consensus.[117] The institutional mechanism, the peer review process, moreover, has no

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109. This is not, of course, the place for to an in-depth review of the interrelationship of legitimacy and efficiency in international agreements or a review of the copious literature on the subject. However, a few comments will be necessary.

110. Thomas M. Franck, *The Power of Legitimacy among Nations*, p. 43-44 (1990).

111. See also Kingsbury, *supra* note 29, at p. 355: "Compliance is … influenced by perceptions of fairness apart from rational calculations of costs and benefits…."

112. For further discussion of this notion of legitimacy, see Bodansky, *supra* note 36, at p. 601.

113. See *supra* text at notes 63-66.

114. i.e. the Conventions' cross-referenced international safety standards and principles.

115. As to the legitimating role of state consent and the necessary distinction of specific and general consent, see Bodansky, *supra* note 36, at p. 604.

116. Id. at p. 608.

117. See Rule 35, paragraph 1 of the CNS Rules of Procedure and Financial Rules, *supra* note 90; and Rule 35, paragraph 1 of the Joint Convention Rules of Procedure and Financial Rules, *supra* note 90.

coercive powers. The only discordant note in this respect arises from the dispute settlement provisions of the Joint Convention, a fact that has not escaped critical attention. [118]

In sum, it should be evident that the Nuclear Safety Conventions as designed and likely to operate in the foreseeable future probably will not give rise to any significant "legitimacy of governance" issues. In general, such a finding might be taken to confirm the regime's effectiveness. Somewhat paradoxically, however, it is the very absence of a legitimacy problem that reminds us instead of the problematic nature of the Conventions' treaty management approach. For within the context of the Nuclear Safety Conventions, peer review-centred regime-building (as well as compliance control) activities remain hostage to individual Contracting Parties' goodwill, co-operation, and consent. When the two incentive Conventions are reduced to their basic component elements, the notion that the Conventions might signal a radical departure from tradition thus turns out to be something of a myth; the Nuclear Safety Conventions represent typically orthodox regimes. For at the end of the day, in relation to each and every contracting party, law making within the peer review setting remains a self-validating process giving rise to problems typical of collective standard-setting, such as the single-state veto, the slowest boat and the lowest common denominator phenomena.[119]

IV. Conclusions

The preceding analysis shows that the Nuclear Safety Conventions' substantive obligations may indeed be often non-specific, or subject to significant reservations, hence *prima facie* weak. Core obligations arising for individual Contracting Parties are, however, pegged to more detailed extra-conventional safety standards and principles, rendering the Conventions' alleged normative infirmities more apparent than real. This normative structure is backed by states' reporting obligations within a system of peer review to ensure states' realisation of the Conventions' fundamental objective of securing a high level of nuclear safety world-wide.

The Nuclear Safety Conventions undoubtedly represent an advance in bringing national nuclear power activities within the ambit of international legal safety norms. They introduce a novel measure of international legal accountability for the safety of commercial nuclear power operations. But whether this system represents a successful example of "treaty management" defies an easy answer. Certainly, it is beyond doubt that the peer review process combines aspects of law application (enforcement/control of implementation and compliance) with lawmaking. However, the overall effectiveness of this approach in terms of promoting the Conventions' basic objective cannot readily

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118. See Kageneck, *supra* note 6, at p. 156, who rightly calls attention to the incongruity of traditional, regime-external dispute settlement options under Article 38 of the Joint Convention, in particular arbitration, within the setting of an incentive convention.

    The Nuclear Safety Convention does not contain provisions on dispute settlement, other than a reference to consultations among the parties concerned "within the framework of a meeting of the Contracting Parties," be that a regular review or an extraordinary meeting. Thus the CNS meetings' treaty management functions extend as well to dispute settlement proper. Indeed, they provide the exclusive mechanism, as disputes are to be settled amicably within, and not to be submitted to processes or fora outside, the regime. By contrast, Article 38 of the Joint Convention calls for consultations within the framework of the meetings of the Contracting Parties as a first step, and specifically provides for traditional dispute settlement techniques, including recourse to arbitration in the event that consultations within the regime should fail.

119. The latter two phenomena are aptly described in P. Sand, *Lessons Learned in Global Environmental Governance*, p. 5-18 (1990).

be reduced to a few variables. Compliance, it has been said, is not the same as effectiveness,[120] nor can legitimacy necessarily be equated with effectiveness. What might be noted, however, is that by entrusting critical aspects of regime maintenance and regime building to the peer review meetings without strengthening also the latter's effective, if not legal, powers – for example, by providing for coercive compliance control measures or, even more significantly, by generally modifying the consensual basis of substantive decisions of the meetings – the Nuclear Safety Conventions are caught in the tension between innovation and tradition. The Conventions are innovative in radically embracing the idea of law as a process of iterative discourse. They are traditional in the sense of clinging to the ideal of an exclusively state-centred, consent-based model of international law. In this sense, the Nuclear Safety Conventions bear the characteristics of a political compromise, perhaps a necessary one, but one that affects also effectiveness. For the time being, at any rate, it remains unclear whether this compromise will prove acceptable in the long-run or how the tension between the two contending perspectives is likely to resolve itself.

120. Raustiala & Victor, *supra* note 28, at p. 661.

Protection of Civilian Nuclear Installations in Time of Armed Conflict

by Vanda Lamm*

The history of wars fought by mankind has witnessed a host of cases in which installations containing dangerous forces, e.g., dams and dykes became the object of military operations, and such installations were damaged particularly during the wars of the 20th century. In 1938, for instance, the Chinese authorities exploded dams of the Yellow River to prevent the advance of Japanese troops. With the same end in view, the Dutch flooded extensive agricultural areas with seawater. During the Second World War the dams in the Eder and the Möhne in Germany became targets of the enemy in 1943. Needless to emphasise that such attacks caused enormous damage at the time. Later similar attacks were undertaken during the wars in Korea and Vietnam.[1] The cited examples go to show that installations containing dangerous forces were often damaged in armed conflicts, not only by the enemy, but were destroyed for defensive purposes as well.

All those events led the International Committee of the Red Cross (ICRC) to introduce in the "Draft Rules for the Limitation of the Dangers Incurred by the Civilian Population in Time of War",[2] which it had prepared by 1956, an article (then Article 17) on the special protection of installations containing dangerous forces. According to the Draft, States were to seek in peacetime special agreements on granting general immunity, for the duration of armed conflicts, to installations like dams and dykes of hydroelectric stations serving exclusively peaceful purposes. In addition, States were to conclude separate agreements in time of war to provide special protection for installations which were and would remain wholly unrelated to military operations.[3] The list of installations containing dangerous forces was later extended to include nuclear electrical generating stations.

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1. *Cf.* Commentary to the Additional Protocols to the Geneva Conventions, Ed. Yves Sandoz, Christophe Swinarski, Bruno Zimernann (1987), *International Committee of the Red Cross*, Martinus Nujhoff Publishers, Geneva, p. 667.

2. For the Draft, see Herczegh, Géza (1981), "*A humanitarius nemzetközi jog fejlődése és mai problémái*" (Development and Current Problems of International Humanitarian Law), *Közgazdasági és Jogi Könyvkiadó*, Budapest, p. 143-145. In 1949 the Four Geneva "Red Cross" Conventions replaced a number of conventions that dealt with rules concerning the wounded and sick in armies in the field and prisoners of war, and extended the protection of civilians in time of war. In 1977, two Additional Protocols to the 1949 Conventions were adopted.

3. *Cf.* Bothe M., K.J. Partsch and W.A. Solf (1982), *New Rules for the Victims of Armed Conflicts*, Martinus Nujhoff Publishers, The Hague (Boston) London, p. 350-351.

The Draft of the Red Cross was not received favourably at the 1971 and 1972 Conferences of Governmental Experts, primarily because several representatives found it inapplicable in practice as it envisioned agreements to be concluded in time of armed conflict.[4] Thus, in 1968 the ICRC prepared a new Draft proposing that, in case of armed conflict, dams, dykes and nuclear power stations should be protected in all circumstances and that the belligerents should refrain from locating any kind of military objective in the vicinity of such installations.[5]

After a long discussion the Working Group dealing with this question accepted by consensus Article 56 of the Protocol Additional to the Geneva Conventions of 12 August 1949 (Protocol I). The Treaty was adopted by the Diplomatic Conference from 1974 to 1977, on the reaffirmation and development of international humanitarian law applicable in armed conflicts. Article 56 of Protocol I reads as follows:

"1. Works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population.

2. The special protection against attack provided by paragraph 1 shall cease:

(a) for a dam or a dyke only if it is used for other than its normal function and in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(b) for a nuclear electrical generating station only if it provides electric power in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(c) for other military objectives located at or in the vicinity of these works or installations only if they are used in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support.

3. In all cases, the civilian population and individual civilians shall remain entitled to all the protection accorded them by international law, including the protection of the precautionary measures provided for in Article 57. If the protection ceases and any of the works, installations or military objectives mentioned in paragraph 1 is attacked, all practical precautions shall be taken to avoid the release of the dangerous forces.

4. It is prohibited to make any of the works, installations or military objectives mentioned in paragraph 1 the object of reprisals.

5. The Parties to the conflict shall endeavour to avoid locating any military objectives in the vicinity of the works or installations mentioned in paragraph 1. Nevertheless, installations

4. Ibid. p. 351.

5. Commentary...., op. cit., p. 667-668.

erected for the sole purpose of defending the protected works or installations from attack are permissible and shall not themselves be made the object of attack, provided that they are not used in hostilities except for defensive actions necessary to respond to attacks against the protected works or installations and that their armament is limited to weapons capable only repelling hostile action against the protected works or installations.

6. The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces.

7. In order to facilitate the identification of the objects protected by this Article, the Parties to the conflict may mark them with a special sign consisting of a group of three bright orange circles placed on the same axis, as specified in Article 16 of Annex I to this Protocol. The absence of such marking in no way relieves any Party to the conflict of its obligations under this Article."[6]

The inclusion of Article 56 in Protocol I clearly represents a significant achievement in the development of international humanitarian law. Nonetheless, this article has been, perhaps to the point of exaggeration, criticised as complicated and confusing which explains why, among other reasons, the United States has not ratified Protocol I.[7]

I. The protected installations and the concept of protection

1. The basic idea of Article 56 is that installations should not be the object of attack when an act of violence, whether offensive or defensive in nature, could release forces resulting in grave losses to the civilian population.

Paragraph 1 of Article 56 enumerates three categories of protected installations, notably dams, dykes and nuclear electrical generating stations. In connection with Article 56 the first question raised by writers concerns the failure of that article to mention other installations similarly containing dangerous forces, such as certain chemical works or oil installations.[8] It is to be noted that the need to widen the range of protected installations had already emerged in the course of the negotiations on the Protocol, with importance attached especially to the protection of oil refineries and storage facilities.[9] Although the relevant proposals were later withdrawn, one of the reasons may have been that Article 56 of Protocol I contains a separate provision on environmental damage and that attacks against petroleum storage facilities and refineries or chemical works breach the prohibition of damage to the environment.[10]

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6. For the interpretation of Article 56 see Commentary…, op. cit., p. 666-675; and Bothe, Partsch and Solf, op. cit., p. 350-357.

7. *Cf.* Carnahan, Burrus M. (1992), "Protecting Nuclear Facilities from Military Attack: Prospects after the Gulf War", *American Journal of International Law*, p. 533.

8. Rogers, A.P.V. (1996), *Law on the Battlefield*, Manchester University Press, Manchester and New York, p. 117.

9. *Cf.* Commentary …, op. cit., p. 668.

10. For the elaboration of the provisions of Protocol I on the protection of the environment, see Herczegh, Géza, (1984), "*La protection de l'environnement naturel et le droit humanitaire*", *Études et essais sur le droit international humanitaire et sur les principes de la Croix-Rouge en l'honneur de Jean*

The Protocol refers to nuclear electrical generating stations as the third group of protected installations. This means that Protocol I *only aims to protect the nuclear facilities used for peaceful purposes* and that even its related provisions apply to a single sub-group of civilian nuclear installations.

2. Thus Protocol I in no way covers nuclear weapons, albeit, as will be discussed later, the use of such weapons may have environmental consequences. The Draft of the ICRC specifically stated that it did not intend to deal with the problem of nuclear weapons. As is pointed out by Rogers, that statement was necessary because the nuclear powers were not willing to enter into negotiations unless those weapons remained unaffected by the instrument to be elaborated.[11] The International Court of Justice has, also in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons* stated that nuclear weapons specifically had not been discussed at the Conferences of Geneva in 1949 and 1974-1977. However, the Court emphasised that "In view of the vast majority of States as well as writers there can be no doubt as to the applicability of humanitarian law to nuclear weapons."[12]

3. As mentioned earlier, Protocol I deals only with the protection of nuclear electrical generating stations. This means that *protection does not extend to research reactors, which* constitute another large group of nuclear installations used for peaceful purposes. This is one of the great deficiencies of the Protocol, and there are several reasons *why it is necessary to list the research reactors among the installations containing dangerous forces.*

- Extension of protection to research reactors is supported primarily by the fact that in 56 States of the world there exists today a total of 283 research reactors with a combined capacity exceeding 3 000 MW.[13]

- Another reason lies in the fact that research reactors operate at widely different capacities. There are research reactors in the United States which operate with a capacity of 3 or 4 MW, but also ones with a capacity of 250, 100 and 60 MW.[14]

- A considerable number of research reactors operate within the framework of universities and research institutes, which are generally much nearer to inhabited areas than nuclear power plants.

The quantity and capacity of nuclear research reactors as well as their proximity to populated centres *make it likely that attacks against them will cause severe losses among the civilian population.*

Pictet, Ed. Christophe Swinarski, *Comité international de la Croix-Rouge*, Martinus Nijhoff Publishers. p. 725-731.

11. This explains why several States, at the time of signing and ratifying the Protocol, made declaratory statements stressing that the rules laid down in Protocol I did not affect nuclear weapons and did not regulate or prohibit their use. *Cf.* Rogers, op. cit., p. 118.

12. ICJ Reports, 1996. p. 259.

13. *Cf.* www.world-nuclear.org/info. *Cf.* Ritchie, Ian G., "Growing Dimensions, Spent Fuel Management at Research Reactors", www.iaea.org/worldatom/Periodical/Bulletin/ Bull401/article7.html.

14. In the United States the capacity of the Idaho National Engineering Lab. is 250 MW, that of the Oak Ridge National Laboratory is 100 MW, and that of the Brookhaven National Laboratory is 60 MW. *Cf.* Matos J.E., "LEU Conversion Status of US Research Reactors" (Paper presented at the 1996 International Meeting on Reduced Enrichment for Research and Test Reactors, October 7-10, 1966. Seoul, Korea), p. 8.

However, in connection with the inclusion of research reactors among the installations containing dangerous forces, the question arises what to do with research reactors producing fissionable materials for nuclear weapons.[15]

The question of immunity of these reactors is of topical interest because several research reactors have become the objects of attack due to the suspicion that nuclear materials were used for military purposes.

The first such action took place on 7 June 1981, when Israel bombed the French-made OSIRAK research reactor of 40 MW capacity located at the research centre Tuwaitha near Baghdad.[16] In the course of the first Gulf War of 1981 the United States Air Force attacked this same nuclear installation. In both cases the military action was said to have been warranted by Iraq's breach of its obligations under the Non-Proliferation Treaty and intention to use the reactor's materials for the production of nuclear weapons, and further justified as a measure to prevent the spread of nuclear weapons.[17] It should be added that, according to published information, the American attacks on Iraqi nuclear installations during the first Gulf War did not create a risk of radioactive contamination.[18]

Without dwelling on this issue I should point to an essential difference between the Israeli and American attacks. At the time, Israel's action was condemned by several States of the international community on the basis of Article 2, paragraph 4, of the United Nations Charter, whereas the American attacks took place on an authorisation by the Security Council. The extent to which the attack on the basis of Security Council Resolution 678 on Iraq was justified is a separate question. In that Resolution the Security Council invited the Member States of the World Organisation to use all possible means to have Iraq withdraw from Kuwait and "to restore peace and security in the region". Obviously, the first sentence of the Security Council Resolution can in no way justify the attacks on the nuclear installation Tuwaitha, because the expulsion of Iraq's forces from Kuwaiti territory can hardly be brought into a direct relationship with the attacks on the facilities under IAEA safeguards.[19] Rather, it is that part of the Resolution dealing with the restoration of peace and security in the region which can be invoked as a justification for the American action.[20] This appears to be borne out by the fact that neither the coalition nor the closed session of the Security Council were inquisitive about the American action, which leads Henri Meyrowitz to conclude "*... que le consensus qui existe indéniablement quant à la licéité et à la justesse du désarmement nucléaire de l'Irak couvrait aussi les bombardements ayant visé les installations nucléaires.*"[21]

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15. Carnahan, op. cit., p. 533.

16. At the time of the attack OSIRAK was not yet in operation, but the enriched uranium in the reactor was already under IAEA safeguards, and the Agency's inspectors did not find any irregularity a few months before the Israeli attack. That was not the first attack against OSIRAK, as the Israeli air force had bombed the facility on 30 September 1980. During the Iran – Iraq war, Iraq launched six attacks against Iranian nuclear installations between 1984 and 1988. *Cf.* Carnahan, op. cit., p. 535.

17. *Cf.* Carnahan, op. cit., p. 524-525.

18. Rogers, op. cit., p. 125.

19. Ibid., p. 526.

20. Ibid.

21. Meyrowitz, Henri (1993), "*La guerre du Golfe et le droit des conflits armés*", *Revue générale de droit international public*, p. 581. Editor's translation: "…that the consensus which undeniably exists with regard to the legality and justness of the nuclear disarmament of Iraq also covered the bombardments aiming at nuclear installations".

For that matter, investigation in light of Protocol I of the events during the first Gulf War is misleading, chiefly because neither Iraq nor the three leading powers of the coalition (the United States, the United Kingdom, and France) were contracting Parties to the Protocol I at that time.[22] Moreover, as mentioned before, the protection accorded by the Protocol does not extend to research reactors.

4. The definition of "attack" on protected installations is given by the provisions of Article 49 of the Protocol, and covers not only offensive acts of violence against the adversary, but also defensive counter-attacks. In addition, under paragraph 2 of this Article, the provisions on the attacking Party apply to any attack anywhere, including attacks by a Party on its own territory under the control of the adverse Party.[23]

In the case of installations protected by paragraph 1 of Article 56 this means that dams, dykes and nuclear electrical generating stations enjoy protection even if they are located on a Party's own territory, but have come under the control of the enemy. At the same time, however, as is stressed by writers, this paragraph does not prohibit destroying dams or dykes under a State's own control as part of an effort to halt or impede an advancing enemy.[24]

There are two factors to be stressed in this context. On the one hand, such action undertaken on a Party's own territory to halt the enemy or to prevent the advancing may only be carried out under Article 53 of the Fourth Convention of 1949 on Humanitarian Law if such destruction is rendered absolutely necessary by military operations. On the other hand, the power ordering the action must ensure, even in such circumstances, that the civilian population is protected, that is, there is no damage to it.[25]

I should like to point out that damaging a nuclear power plant on a Party's own territory for the purpose of preventing the advance of the enemy is highly unlikely and would involve enormous destruction inevitably causing severe losses among the civilian population. For purposes of defence, however, a nuclear power plant in the territory of the Party concerned may happen to be damaged in order to be rendered useless if it comes under the control of the enemy.

The protection is extended in the second sentence of Article 56, paragraph 1, – in addition to dams, dykes and nuclear electrical generating stations – to "military objectives located at or in the vicinity of such works or installations", which, if attacked, could lead to the release of dangerous forces and could consequently cause severe losses among the civilian population. In other words, other civil engineering works, e.g., a bridge, railway line etc., enjoy immunity from military objectives if they are in the immediate vicinity of a dam, dyke or nuclear electrical generating station, and if attack against them could release dangerous forces.[26]

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22. However, several other members of the coalition were party to the Protocol. For more detail, see Meyrowitz, op. cit., p. 565. The United Kingdom ratified Protocol I on 28 January 1998, France did it on 11 April 2001.

23. Commentary…, op. cit., p. 602-605.

24. Bothe, Partsch and Solf, op. cit., p. 353.

25. Commentary…, op. cit., p. 669.

26. Commentary…, op. cit., p. 670.

Article 52, paragraph 1, of Protocol I provides in general terms that civilian objects must not be the object of attack or reprisals. Such objects include, among other things, installations containing dangerous forces.

II. The problem of terminating the special protection

Paragraph 2 of Article 56 provides that the special protection of installations containing dangerous forces is to cease in certain cases. It should be emphasised that termination of protection is conditional in that the attack on installations containing dangerous forces is *the only way to stop support by such installations for military operations*.

As regards the cessation of special protection, the Protocol deals separately with dams and dykes on the one hand and with nuclear electrical generating stations on the other. In the former case special protection ceases when three cumulative conditions are present, namely:

- a dam or a dyke is used for other than its normal function;
- a dam or a dyke is used in *regular* (not occasional), *significant and direct support* of military operations;
- attack is the only feasible way to terminate such support.[27]

In the case of nuclear electrical generating stations, protection ceases if attack is *the only feasible way to terminate significant and direct support of military operations*.

The provisions concerning termination of the protection of nuclear facilities are undesirable for several reasons. As mentioned earlier, termination of the protection of nuclear electrical generating stations is aimed at preventing their continued support of military operations. Such support, however, can also be terminated by other means, as is pointed out in the Commentary on Protocol I, namely by attacking the electricity lines, thereby preventing the use for military operations of electricity generated by a nuclear electrical generating stations.[28] Otherwise the practical application of the provision on termination of the protection of nuclear facilities can be rather problematical, since it is rather difficult to identify the source of electricity in an integrated electric network.[29]

Considering that support by nuclear electrical generating stations for military operations can also be secured by means other than attack, it would be much more comforting to provide for the *absolute protection of civilian nuclear installations in all circumstances.*

Absolute protection of civilian nuclear installations is also supported by the fact that attack on such installations is likely to cause severe losses among the civilian population. The sad experience of the Chernobyl disaster shows that pernicious consequences can occur not only in the installation State, but also in a region hundreds of kilometres apart. *In other words, severe losses can be suffered not only by the belligerents, but also by the civilian population of a third State, or neutral State.*

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27. Bothe, Partsch and Solf, op. cit., p. 354.

28. Commentary…, op. cit., p. 672.

29. This point was made by the Swiss delegation at the Diplomatic Conference. *Cf.* Bothe, Partsch and Solf, op. cit., p. 355.

It is known that dams and dykes can fulfil various functions. In addition to energy production, they are used for water supply to the population. When they are used for supplying water to the population, for instance, attack against them offends Article 54 of the Protocol, which provides for the protection of objects indispensable to the survival of the civilian population.

If protection ceases, attack is permissible on the basis of military necessity. As Goldblat points out,[30] that leaves the military commander much room for discretion. Goldblat writes that military commanders have to balance such unquantifiable factors as human suffering and military necessity, and to decide during military actions whether attack on an installation is lawful or not.[31]

If the protection of installations containing dangerous forces ceases, the civilian population remains entitled, under paragraph 3 of Article 56, to "all the protection accorded them by international law". This article refers in fact to Articles 51 and 57 of the Protocol, which provide for the protection of the civilian population and the precautionary measures to be taken during attack.

Subject to the provisions of Articles 51 and 57, even if protection ceases, all these reasons combine:

- to *prohibit indiscriminate attack*, namely one during which methods of warfare are used with such consequences as cannot be limited as required by Protocol I and as therefore indiscriminately affect in each case military objectives and civilian population or civilian objects alike;

- to require observance of the rule of *proportionality*, namely it is forbidden to launch an attack which claims so many civilian victims and injuries as well as so much damage to civilian objects such that, by themselves or together, it would exceed the concrete and direct military advantage to be expected from the attack.

The last sentence in paragraph 3 of Article 56 stresses in particular that even if the protection of dams, dykes and nuclear electrical generating stations ceases, all practical precautions must be taken to avoid the release of dangerous forces.

If we attempt to apply these criteria to the situation in which a nuclear power plant is attacked, it is difficult to meet the requirements. Attacks on nuclear installations are similar to a nuclear accident in the sense that the system "fails to function" and is therefore very likely to result in uncontrolled emission of radioactive material.[32] In other words, attacks on nuclear electrical generating stations make it rather difficult to prevent the release of dangerous forces. So it is strongly questionable whether at the Diplomatic Conference framing the two Protocols of 1977 the Rapporteur was right in saying about paragraph 3 of Article 56 that, "...given the panoply of weapons available to modern

30. Goldblat, "Legal Protection", p. 3. Reference to it is made by Rogers, A.P.V. (1996), *Law on the Battlefield*, Manchester University Press, Manchester and New York, p. 117.

31. Ibid.

32. In time of armed conflict it would of course be necessary to shut down the nuclear installation immediately, but it is questionable whether in case of surprise attack – which may be launched, within the meaning of the Protocol, precisely because a nuclear power plant produces electricity in regular, significant and direct support of military operations – the operators have time enough to do so.

armies, this provision should ensure real protection against the catastrophic release of dangerous forces."[33]

Rogers takes a less strict view of attack on nuclear installations. The author writes that attacks on power stations are justified if the power stations are military objectives and if it can be attacked in such a way that there is no risk of radioactive contamination.[34] However, the author holds that even if radioactive materials are released, the question of proportionality may arise as to the severity of pollution and the effect on the civilian population and the environment.[35]

However, *the extent of radioactive contamination that may be caused by the attack cannot in fact be known in advance* of a decision to attack a nuclear facility. If the attack is directed at an external unit of such an installation, it may happen, provided that the installation was shut off, that no radioactive contamination will result. An attack upon an operating nuclear installation, however, may entail unpredictable consequences.

III. Protection of installations containing dangerous forces and protection of the natural environment

It is worthwhile to examine the question of an attack on nuclear electrical generating stations in the light of other provisions of Protocol I as well. In this context it is necessary to consider above all the articles of the Protocol dealing with the protection of the natural environment.

Protocol I lays down express provisions on the protection of the natural environment. The related articles were not contained in the draft that the ICRC submitted to the Diplomatic Conference, and the relevant two articles [Article 35(3) and Article 55] were presented at the Conference itself, which shows clearly the special consideration given to environmental protection in the early 1970s.[36]

Nevertheless, there are important differences between the two provisions on the protection of the environment.[37] Paragraph 3 of Article 35 deals with the protection of the environment as such, whereas Article 55, while essentially repeating paragraph 3 of Article 35, provides for environmental protection in connection with the protection of the civilian population.[38]

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33. Commentary…, op. cit., p. 673.

34. Rogers, op. cit., p. 125.

35. Ibid.

36. Bouvier, Antoine, "Protection of the Natural Environment in Time of Armed Conflict", *International Review of the Red Cross*, November-December 1991. p. 574.

37. For paragraph 3 of Article 35 and Article 55, see Kiss, Alexandre, "*Les Protocoles additionnels aux Conventions de Genève de 1977 et la protection de biens de l'environnement*", *Études et essais sur le droit international humanitaire et sur les principes de la Croix-Rouge en l'honneur de Jean Pictet*, op. cit., p. 184-186.

38. Paragraph 3. of Article 35 reads as follows:

> "It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread long-term and severe damage to the natural environment."

Article 55 contains the following provisions:

> "1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods

Concerning these two provisions on environmental protection, Alexandre Kiss writes that paragraph 3 of Article 35 provides for general protection of the environment in all cases covered by the Protocol. The scope of application of Article 55 is somewhat more limited owing to the fact that this article is included, not among the basic rules, but in Part IV among the provisions on the protection of the civilian population.

Bouvier emphasises that one should come to terms with the fact that environmental damage is inevitable in time of war despite any sort of precautionary measures. According to the author, the rules of international humanitarian law relating to the protection of the environment are therefore designed, not to prevent environmental damage in general, but to keep such damage at a tolerable level.[39]

There arise two questions in connection with attack on nuclear electrical generating stations when their protection has ceased. On the one hand, can the resulting environmental damage be kept at a "tolerable" level and what may really be a tolerable level in such a case? On the other hand, will attack not offend Article 55 on the protection of the natural environment? While it is not so simple to answer the first question, one can safely say that an attack on a nuclear electrical generating station when protection has ceased is very likely contrary to Article 55.

IV. Conclusions

The foregoing clearly indicates the need for Article 56 of Protocol I of 1977 to be supplemented particularly in respect of protection accorded to nuclear installations in case of armed conflict.

Article 56, paragraph 6, of the Protocol upholds the idea, contained in the 1956 Draft of the ICRC, that "The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces". As can be seen, this article invites the contracting Parties to elaborate further rules on the special protection of installations containing dangerous forces. In the light of what has been said above, it appears that *provision for the full-scale protection, in all circumstances, of all civilian nuclear installations, including research reactors, could be the thrust for a new regulation.*

It should be noted that this proposal is not new at all. The full protection of nuclear installations was also suggested during the disarmament talks surrounding the treaty on radiological weapons at the end of the 1970s. In the course of those talks Sweden presented a draft prohibiting attack on nuclear facilities containing sufficient radioactive material to cause "mass destruction" if released.[40] At the time such facilities were defined as reprocessing plants, large deposits of spent fuel or radioactive waste having a thermal effect of more than 10 MW capacity. The United States did not agree with the Swedish proposal as it raised practical military problems, because it gave protection to installations expressly defined as military objectives and permitted no attack in any case on nuclear installations capable of releasing a certain quantity of radiation.[41]

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or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

2. Attacks against the natural environment by way of reprisals are prohibited."

39. *Cf.* Bouvier, op. cit., p. 569.

40. *Cf.* Carhaham, op. cit., p. 534.

41. Ibid.

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

Slovak Republic

Judgement concerning the right of the Nuclear Regulatory Authority to deny information classified as a commercial secret from requests for public information (2003)

Based on Act 211/2000 Coll. on free access to information, Greenpeace requested, in June 2002, that the Slovak Republic Nuclear Regulatory Authority (NRA) provide information included in its Safety Reports concerning, *intra alia*, an analysis from the project on the reconstruction of the V-1 Bohunice Nuclear Power Plant. Specifically, Greenpeace asked for the final thermal and hydraulic analysis of the main circulation pipe rupture (2Xdn 500), calculated on the realistic-approach basis, including the methods of calculations.

Pursuant to Article 10 of Act 211/2000 Coll., any information classified as a commercial secret shall not be made available to the public. On the basis of this provision, the Nuclear Regulatory Authority withheld the requested information. Greenpeace filed a complaint against this refusal to comply with its information request. In response to the complaint, the Head of the Nuclear Regulatory Authority conducted a second-instance proceeding and confirmed the first-instance decision not to make the requested information available, due to it being classified as a commercial secret of the owner – the Slovak Electricity Company (SE), a.s.

Greenpeace subsequently filed a suit with the Supreme Court of the Slovak Republic in October 2002, seeking judicial review of the above-mentioned decision. The suit was based particularly on the grounds that the Nuclear Regulatory Authority failed to examine all objective and subjective criteria of commercial secrets as required by the Commercial Code and that the information concerned could not, in any case, be classified as a commercial secret.

In its response to the suit, the NRA answered that according to Act 211/2000, Article 10, information classified as a commercial secret should not be made available by the person in charge of furnishing information. Further, it argued that it was not within the NRA's competence to judge whether all conditions required by civil and commercial law regarding commercial secrets had been complied with in its determination that the requested information was, in fact, a commercial secret.

On 25 March 2003 the Supreme Court held a hearing in this case and ruled in favour of the NRA, upholding the decision to not provide Greenpeace with the requested information. The written decision was served on 20 May 2003. Within the time prescribed by law, Greenpeace appealed the court's decision and the NRA responded to the appeal on 4 July 2003. On 23 October 2003, the

Supreme Court heard Greenpeace's appeal, but confirmed the judgement in its first instance, denying Greenpeace access to the requested information.

Sweden

Judgement of the Göta Court of Appeal on negligent violation of the Swedish Act on Nuclear Activities (2003)

On 28 August 2001, the Chief District Prosecutor in Kalmar charged two employees at the Oskarshamn Nuclear Power Plant (OKG) with negligent violation of the Swedish Act on Nuclear Activities (see *Nuclear Law Bulletin* Nos. 31 and 33; the text of this Act is reproduced in the Supplement to *Nuclear Law Bulletin* No. 33). These charges followed an incident in the fall of 1996, related to the restart of one of the reactors after an overhaul-shutdown.

According to the technical specifications for reactor operation after shutdown at OKG, Security-system 323 – a sprinkler system for emergency cooling of the reactor core – should be in operation before the reactor is restarted. During overhaul, Security-system 323 had been disconnected because an unexpected start of the sprinkler system would have disrupted the maintenance work and caused danger to workers. One of the indicted, a control room technician, was undertaking restoration measures related to the restart of the reactor. At the time that he started his shift on 30 October 1996, certain reconstruction measures were still incomplete and work was taking place inside the containment. For this reason the control room technician decided not to close certain ventilators (system 741) in order to prevent the oxygen content inside the containment from becoming too low for the people working there. He also decided not to close the disconnectors to the sprinkler system (system 323), to prevent them from activating during the ongoing work. The technician made a note of the measure concerning system 741 in a logbook that was to be handed over to the next shift. However, he did not make any note concerning the disconnectors in system 323. Instead, he wrote his signature in the work-instruction, indicating that the disconnectors actually had been closed. The control room technician took these measures after consulting his closest superior, the deputy Operative-Engineer, who was also charged. Neither of the latter subsequently checked that the disconnectors to the sprinkler system actually had been closed. As a consequence of this, the Security-system 323 was not activated at the restart of the reactor on 5 November 1996. The discrepancy from the operating rules was discovered at a routine control on 13 November 1996.

At trial the control room technician and the deputy Operative-Engineer stated that they had believed and relied on the existence of another security instruction ("control before start"). They claimed to have been certain that this instruction would cover checking system 323 before the reactor re-start. This assumption later proved, however, to be incorrect.

According to Swedish legislation it is considered a crime to deliberately or negligently cause infringements of regulations or operation-conditions based on the Swedish Act on Nuclear Activities (1984:3). Penalties are not issued, however, for insignificant infringements.

The Prosecutor argued that the control room technician and the deputy Operative-Engineer were guilty of negligence as they failed to make sure that the disconnectors to the sprinkler system were closed before restart of the reactor. In the Prosecutor's view they should have at least informed the next work-shift that the disconnectors were open. The District Court of Oskarshamn, however, came to the opposite conclusion. In its ruling of 30 April 2002, the Court emphasised that the conditions were extraordinary due to the fact that there was work going on in the containment at the same time as

restoration measures were being undertaken. These circumstances had not been foreseen in the operation instructions and led, according to the Court, to uncertainty of how to handle the situation. Taking into account the time schedule that the indicted were working under, the Court reached a non-guilty verdict in both cases.

An appeal was submitted on behalf of the Prosecutor to the Göta Court of Appeal, which confirmed in its ruling of 26 March 2003 (case B 621-02), that the control room technician was not to be held responsible for the infringements. According to the Court it followed from common criminal law principles that a person in the control room technician's position could not bear criminal responsibility for measures that the law imposes on a company. Such responsibility requires the existence of a clear and explicit delegation of power. The Court held, however, that the deputy Operative-Engineer had such a clear and explicit delegation of power that he qualified for criminal responsibility on behalf of his company. The Court also held that he had deliberately neglected a measure prescribed in the instructions and despite this allowed the control room technician to leave his signature. Further, the deputy Operative-Engineer neglected to ensure that the next work-team was informed about the situation. The Göta Court of Appeal concluded that his negligence had caused the reactor to be taken into operation in deviance with the regulations. The Court sentenced the deputy Operative-Engineer to pay a low-level fine, taking account of the tight schedule and that the particular situation had not been foreseen in work instructions.

Permanent Court of Arbitration

*Ireland vs. United Kingdom (the OSPAR Arbitration)(2003)**

Introduction

1. In October 2001 the Secretary of State for the Environment, Food and Rural Affairs and the Secretary of State for Health ('the Secretaries of State') decided that the manufacturing of mixed oxide fuel ('MOX') in the United Kingdom was "justified" in accordance with Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation, thereby allowing British Nuclear Fuels ('BNFL') to commence the plutonium commissioning of its Sellafield MOX plant ('SMP').[1] This decision led to a legal challenge by environmental pressure groups in the English courts by way of a judicial review in an attempt to have the decision of the Secretaries of State set aside. This challenge failed, at first instance and on appeal[2] (see *Nuclear Law Bulletin* No. 71).

2. However, even before the judicial review challenge had been launched in the English courts, Ireland had initiated two sets of international arbitration proceedings against the United

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* This note on case law has been prepared by Dr. W.J. Leigh, Senior Legal Adviser with British Nuclear Fuels plc. (BNFL). The author alone is responsible for the facts mentioned and opinions expressed in this article.

1. Consent was also required – and obtained – from the UK's nuclear regulator – the Nuclear Installations Inspectorate.

2. See *Regina (on the application of Friends of the Earth) vs. Secretary of State for the Environment, Food and Rural Affairs*, [2002] Env LR 612, CA.

Kingdom in relation to SMP. The first of these claims was made under the Convention for the Protection of the Marine Environment of the North-East Atlantic ('the OSPAR Convention')[3] and has now been decided. The second was made under the United Nations Convention on the Law of the Sea (UNCLOS) and was accompanied by a request for provisional measures which was subsequently adjudicated upon by the International Tribunal of the Law of the Sea ('ITLOS').[4] However, the UNCLOS proceedings on jurisdiction and the merits of the case are currently suspended, a decision which led Ireland to make a fresh application for provisional measures.[5] This note reports on the outcome of the OSPAR arbitration; it is hoped to provide an account of the UNCLOS proceedings in a future case note.

Events Leading to the Initiation of the OSPAR Arbitration

3. As part of the 'justification' decision-making exercise conducted in relation to MOX manufacture, two reports on the economic and commercial case for SMP were produced by independent consultants: a report by PA Consulting Ltd ('the PA report') and (subsequently) a report by A.D. Little ('the ADL report'). These reports were (together which a great deal of information concerning the environmental impact of SMP) put into the public domain as part of the public consultation process, but with commercially confidential information omitted (redacted). Although Ireland made detailed representations to the United Kingdom during the consultation process, Ireland contended that the United Kingdom was obliged to make the information redacted from the PA Report available under Article 9 of the OSPAR Convention. The United Kingdom rejected this contention on the basis that it wished to preserve the commercial confidentiality of the information. On 15 June 2001 Ireland requested that an arbitral tribunal be constituted under Article 32 of OSPAR to determine its dispute with the United Kingdom concerning the United Kingdom's refusal to make available information redacted from the public domain versions of the PA report. A statement of claim was also filed. This was subsequently amended to the effect that the United Kingdom was also obliged to make available the information omitted from the published version of the ADL report (which the United Kingdom also declined to provide to Ireland).

4. An arbitral Tribunal was established, consisting of three distinguished arbitrators.[6] Rules of procedure were adopted and timetable was set for submissions and the Hearing. Written pleadings were filed by the Parties between March and August 2002, and the Hearing took place

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3. The OSPAR Convention was opened for signature on 22 September 1992 and entered into force on 25 March 1998. Both the United Kingdom and Ireland are Contracting Parties.

4. The provisional measures application was heard by ITLOS in Hamburg on 19/20 November 2001. ITLOS declined to give Ireland the provisional measures it was requesting. However, ITLOS did issue an Order requiring the Parties to co-operate in exchanging information concerning risks or effects of the operation of the MOX plant (see *Nuclear Law Bulletin* No. 69).

5. On 24 June 2003, the UNCLOS arbitral Tribunal (established under Annex VII of UNCLOS), after two weeks of hearings at the Peace Palace in the Hague, issued Order No. 3 – Suspension of Proceedings on Jurisdiction and Merits and Request for Further Provisional Measures. The suspension was ordered because of the Tribunal considered that there were substantial doubts (raised by the United Kingdom) as to whether the jurisdiction of the UNCLOS Tribunal could be firmly established in respect of all or any of the claims in the dispute. The Tribunal did not grant any of the provisional measures requested by Ireland but (in brief) recommended that the Parties seek to establish better secure inter-governmental arrangements and review such arrangements.

6. Professor W. Michael Reisman (Chairman), Dr. Gavan Griffith QC and Lord Mustill PC.

at the Peace Palace in The Hague from 21 to 25 October 2002. The Tribunal's decision (final award) was issued on 2 July 2003.[7]

Claims and Submissions of the Parties

5. Ireland, in its Memorial, requested full disclosure of the two consultants' reports in order to be in a better position to consider the impact which the commissioning of the MOX plant (SMP) would or might have on the marine environment and to be able to assess the extent of the compliance by the United Kingdom with its obligations under the OSPAR Convention, UNCLOS and various provisions of European Community law. Ireland requested the Tribunal to declare that the United Kingdom was in breach of Article 9 of the OSPAR Convention by refusing to make available information deleted from the PA and ADL reports. An order was sought requiring the United Kingdom to provide Ireland with a complete copy of both the PA report and the ADL report, or alternatively a copy of those reports which included all such information as the Tribunal considered would not affect commercial confidentiality within the meaning of Article 9(3)(d) of the OSPAR Convention.

6. The relevant provisions of Article 9 of OSPAR provide:

> "Access to Information
>
> 1. The Contracting Parties shall ensure that their competent authorities are required to make available the information described in paragraph 2 of this Article to any natural or legal person, in response to any reasonable request, without that person's having to prove an interest, without unreasonable charges, as soon as possible and at the latest within two months.
>
> 2. The information referred to in paragraph 1 of this Article is any available information in written, visual, aural or data base form on the state of the maritime area, on activities or measures adversely affecting or likely to affect it and on activities or measures introduced in accordance with the Convention.
>
> 3. The provision of this Article shall not affect the right of Contracting Parties, in accordance with their national legal systems and applicable international regulations, to provide for a request for such information to be refused where it affects:[ ]
>
> (d) commercial and industrial confidentiality;"

7. The United Kingdom refused to disclose the full reports, contending in its Counter-Memorial that:

- Article 9 of the OSPAR Convention does not establish a direct right to receive information but merely requires Contracting Parties to establish a domestic framework for the disclosure of information, and that such a framework has been established.[8]

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7. The OSPAR Tribunal's Final Award, written pleadings, transcripts of hearings and procedural decisions are available at the following URL: www.pca-cpa.org

8. Pursuant to the Environmental Information Regulations 1992, implementing Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment.

- Even if the United Kingdom was wrong regarding the above submission, Ireland would need to show that the information it was requesting was information within the scope of Article 9(2) of the OSPAR Convention. The United Kingdom contended that Ireland had failed to this – the information in question was not information within the scope of Article 9(2): it was insufficiently proximate to the state of the maritime area or to measures or activities affecting or likely to affect it.

- Even if the United Kingdom was wrong regarding the above submission, Article 9(3)(d) of the OSPAR Convention affirms the right of the Contracting Parties to provide for a request for information to be refused on grounds of commercial confidentiality. The United Kingdom has legislated to this effect and its refusal to disclose the particular information requested by Ireland was consistent with both national law and applicable international regulations.

8. The United Kingdom requested the Tribunal to adjudge and declare that it lacked jurisdiction over the claims brought by Ireland and/or that the claims were inadmissible.

The Three Sequential Questions for the Tribunal to Determine

9. On the basis of the claims as pleaded, the Tribunal considered that there were three sequential questions raised for determination by the Tribunal, namely:

- Does Article 9(1) of the OSPAR Convention put a 'direct' obligation on a Contracting Party to disclose "information" [within the meaning of Article 9(2)] on request, or is the obligation merely to set up a domestic framework for the disclosure of such information?

- If Article 9(1) creates a direct obligation, does the material the disclosure of which Ireland has requested, constitute "information" for the purposes of Article 9(2) of the OSPAR Convention?

- If so, has the United Kingdom redacted and withheld any information requested by Ireland contrary to Article 9(3)(d)?

Findings with respect to Article 9(1)

10. The unanimous view of the Tribunal was that the question posed by Ireland with respect to Article 9(1) was not one of jurisdiction or admissibility but one of substance. The issue for determination was whether the requirement in Article 9(1) "to ensure" the obligated result, required a result – the provision of information – (as Ireland contended) rather than merely a municipal law system directed to obtain the result (as the United Kingdom contended).

11. By a majority, the Tribunal found that the obligation in Article 9(1) is to be construed at the "mandatory end of the scale".[9] To accept the expression of the requirement "to ensure" a result as expressed at the lesser level of setting up a regime or system directed to obtain the stipulated result under domestic law, would be to apply an "impermissible gloss" that does not appear as

9. See Final Award, paragraph 134.

part of the unconditional primary obligation under Article 9(1).[10] The majority of the Tribunal found that Article 9(1) is "pitched at a level" that imposed an obligation of result, rather than merely to provide access to a domestic regime which is directed at obtaining the required result.[11] Accordingly, the Tribunal determined that Article 9(1) requires an outcome of result, namely that information falling within the meaning of Article 9(2) [and not excluded by Article 9(3)] is in fact disclosed in conformity with the Article 9 obligation imposed upon each Contracting Party.

Findings in respect of Article 9(2)

12. As with Article 9(1), the unanimous view of the Tribunal was that the question posed by Ireland with respect to Article 9(2) was not one of jurisdiction or admissibility but one of substance. The Tribunal was required to determine the proper construction of Article 9(2) in relation to the facts of this case. In this connection note that in its Memorial, Ireland put the redacted information in the PA and ADL reports into 14 categories. These 14 categories of information related to:

- estimated annual production capacity of the MOX facility;
- time taken to reach this capacity;
- sales volumes;
- probability of achieving higher sales volumes;
- probability of being able to win contracts for recycling fuel in 'significant quantities';
- estimated sales demand;
- percentage plutonium already on site;
- maximum throughput figures;
- life span of the MOX facility;
- number of employees;
- price of MOX fuel;
- whether, and to what extent, there are firm contracts to purchase MOX from Sellafield;

10. Ibid at paragraph 135. Note the Declaration in the Final Award of the Chairman, Prof. Reisman, in which he gives his reasons for not agreeing with the majority's interpretation of Article 9(1). He states, amongst other things, that Ireland's proposed meaning would require deletion of a critical phrase in Article 9(1) – namely "the seven critical words" underlined in the following extract from Article 9(1): "The Contracting Parties shall ensure that their competent authorities are required to make available the information….".

11. Ibid at paragraph 137.

- arrangements for transport of plutonium to, and MOX from, Sellafield;

- likely number of such shipments.

13. Accordingly, the determination under Article 9(2) required an examination of whether the categories of redacted information fell within the definition of "information" in Article 9(2). The Tribunal's holding on this issue was supported by a majority decision.[12] The Tribunal[13] noted that "information" was not a defined term, but they considered it to be clear that it "is a broad and inclusive reference to the state of the maritime area". Information falling within the scope of Article 9(2) should be regarded as "information" about the state of the maritime area.[14] On this basis, the view of the Tribunal was that it is "manifest…that none of the …14 categories [of information] in Ireland's list can plausibly be characterised as "information…on the state of the maritime area" [and] the Tribunal could, thus, rest its decision on the fact that none of the material in the 14 categories falls within the definition of "information" in Article 9(2)." [15]

14. However, the Tribunal analysed the position further and noted that Article 9(2) itself contains three categories of information, namely:

    - "any available information" on "the state of the maritime area,"

    - "any available information" on "activities or measures adversely affecting or likely to affect…the maritime area,"

    - "any available information" on "activities or measures introduced in accordance with the Convention."

15. Both Parties focused attention on the second category as being the relevant category to consider. Ireland argued what the Tribunal termed an "interpretative theory of inclusive causality".[16] On this argument anything, no matter how remote, which facilitated the performance of an activity could be deemed to be part of that activity. However, the Tribunal found that while the drafters of the OSPAR Convention sought inclusiveness with respect to some aspects of the information covered by Article 9(2), they had no intention of adopting a theory of inclusive causality. In particular, the Tribunal noted the second category of information in Article 9(2) contains an additional threshold of exclusion/inclusion that is constructed around the phrase "adversely affecting or likely to affect" the maritime area. The restrictive effect of the language (i.e. the requirement to show existing or prospective adverse affects on the maritime area) the Tribunal said, was clear and the standard which the Tribunal must apply.

16. The Tribunal found that:

> "…Ireland has failed to demonstrate that any of the 14 categories of redacted items in the PA and ADL Reports, insofar as they might be taken to be activities or

12. The substantive findings on the interpretation of Article 9(2) and applicable law were based on a majority decision by Prof. Reisman and Lord Mustill.

13. References in this part of the case note to "the Tribunal" are references to the majority.

14. Ibid at paragraph 168.

15. Ibid at paragraph 163.

16. Ibid at paragraph 164.

measures with respect to the commissioning and operation of a MOX plant at Sellafield, are "information… on the state of the maritime area" or, even if they were, are likely adversely to affect the maritime area."[17]

17. The Tribunal observed that Ireland, "rather than engage the requirement of establishing an adverse effect" sought to rely on the provisions of treaties that are unratified and not in force between the Parties, or on regional initiatives that have not been finalised". The Tribunal said that it was not empowered to apply "legally unperfected instruments."[18]

No Need for a Determination under Article 9(3)(d)

18. If any of the 14 categories of information in question had been regarded as information falling within the ambit of Article 9(2) it would then have been necessary for the Tribunal to have considered in detail the actual *content* of the redacted information in each of the relevant categories in order for a determination to be made as whether the withholding of the information was lawful on grounds of commercial confidentiality as provided for by Article 9(3)(d).[19] However, given the Tribunal's finding as regards Article 9(2), the Tribunal found (again by a majority decision) that as a consequence, Ireland's claim – that the United Kingdom had breached its obligation under Article 9 of OPSPAR by refusing, on the basis of its understanding of the requirements of Article 9(3)(d), to make information available – did not arise.[20]

Conclusions

19. Ireland, therefore, failed in its attempt to use the OSPAR Convention as means of compelling the United Kingdom to disclose information that it (the United Kingdom) considered to be commercially confidential information. The fact that the information requested was essentially of an economic and commercial nature, rather than what one might describe as information relating to the marine environment, clearly influenced the majority of the Tribunal in terms of deciding that the information fell outside of the ambit of the OSPAR Convention.

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17. Ibid at paragraph 179.

18. Ibid at paragraph 180. A starkly different view was expressed in the dissenting opinion of Dr. Gavan Griffith QC. Dr. Griffith disagreed with what he regarded as a restrictive interpretation of the applicable law by the majority. He considered that emerging legal instruments concerning the environment ought to be taken into account. For example, he was of the view that although the Aaarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters had not been ratified by the Parties, it did not follow that this Convention could not inform issues of construction of Article 9 of the kind that arose in the dispute.

19. Much of the hearing was taken up with expert and factual evidence being presented to the Tribunal on the question of or not the redacted material could be properly regarded as commercially confidential.

20. See Final Award, paragraph 185(v).

ADMINSTRATIVE DECISIONS

Romania

Government Decision for the return of nuclear fuel to the Russian Federation (2003)

Government Decision No. 1077 was adopted 11 September 2003, and published in the Official Gazette (*Monitural Oficial,* Part I, No. 666) on 19 September 2003. The Decision provides that Romania is to return to the Russian Federation the non-irradiated and unspent nuclear fuel containing substantially enriched uranium – which originates from the Russian Federation and which is currently in storage at the "*Regie Autonome*" for Nuclear Activities. The material is to be considered as waste with no commercial value attached. It is to be delivered by the "*Regie Autonome*" for Nuclear Activities to the National Commission for the Control of Nuclear Activities *(Comisia Nationala pentra Controlul Activitatilos Nucleare – CNCAN*), the public institution authorised under law to carry out such exports in the name of the Romanian State. The Decision specifies that the official authorised to negotiate and to conclude agreements for the export of nuclear fuel of Russian origin is the Chairman of the CNCAN.

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

China (People's Republic of)

Radiation Protection

Law on Protection from Radiation Contamination (2003)

The Law on Protection from Radiation Contamination was adopted on 28 June 2003, and came into force on 1 October 2003. This Law is composed of eight chapters and 63 articles. Generally, it covers: supervision and administration organisations; prevention and control of radiation contamination at nuclear installations, uranium ore extraction sites and any place where radiation applications are used; management of nuclear waste and legal liability. A translation of this Law in English will be made available shortly, upon which time a more detailed description of the Law will appear in the *Nuclear Law Bulletin*.

France

Organisation and structure

Decree on the Creation of the Interministerial Committee on Nuclear and Radiological Crisis (2003)

This Decree No. 2003-865, adopted on 8 September 2003, modifies the general rules governing the organisation and implementation of nuclear security. The Interministerial Committee on Nuclear and Radiological Crisis (ICNRC) replaces the Interministerial Committee on Nuclear Security (ICNS) created by Decree No. 75-713 of 4 August 1975 (see *Nuclear Law Bulletin* No. 16) which is repealed by the present Decree.

In accordance with Article 1 of the Decree, the mission of the ICNRC is to suggest measures to the Prime Minister "in case of an accident in a major nuclear installation, a nuclear installation classified as secret, during the transport of nuclear or radiological material which concerns the civil or defence sector and above all a military nuclear system, as well as in case of attack or threat of attack having or capable of having nuclear or radiological consequences." The ICNRC may assemble on the initiative of the Prime Minister, on the basis of the need to manage a nuclear or radiological crisis affecting the civil or defence sectors or even as a defensive measure in the case of a threatened attack. The ICNRC assembles the Prime Minister and the Ministers of Foreign Affairs, Defence, Environment, Industry, Health and Transportation. The Secretary General of National Defence

governs an operating Secretariat. In addition, other agencies and interested organisations as well as the nuclear operators concerned may be invited to meetings of the ICNRC. However, the Prime Minister may move to limit participation in ICNRC meetings.

Working together with the ministries and agencies concerned, the Secretary General of National Defence has as its mission (Article 2) to co-ordinate, organise and follow-up on the coherence of every plan of action which aims to prevent the situations provided for in Article 1 of the Decree, and of the means of action implemented in case of a nuclear or radiological crisis. The Secretary General of National Defence is, in addition, informed without delay in the event of an accident, attack or threat of a nuclear or radiological nature. It is his responsibility to prepare a follow-up report of the incident for the President of the Republic and the Prime Minister.

Finally, the Decree specifies that the respective ministries, organisations, consultative bodies and interested nuclear operators furnish assistance, as far as needed, to the Secretary General of National Defence in the carrying out of its above mentioned responsibilities.

Nuclear Material Regime (including Physical Protection)

Order Regarding the Protection of National Defence Secrecy in the Field of Nuclear Material Control and Protection (2003)

This Order, adopted on 24 July 2003 by the Ministry of Economy, Finance and Industry, provides that all information pertaining to surveillance measures, physical protection and monitoring of nuclear materials is classified as a national security secret. Likewise, all information pertaining to the transportation of nuclear materials and the preparation of crisis exercises related to the protection of nuclear materials within official places or installations is classified as a national security secret. Accordingly, such information must be protected by measures that assure restricted distribution.

Hungary

Organisation and Structure

Decree on the Scope of Duties, Authority and Competence to Impose Penalties of the Hungarian Atomic Energy Authority, and on the Activities of the Atomic Energy Co-ordination Council (2003)

This Government Decree No. 114/2003 was adopted on 29 July 2003 and entered into force on 1 August 2003. It implements the provisions of the 1996 Atomic Energy Act (see *Nuclear Law Bulletin* No. 60; the text of this Law is reproduced in the Supplement to *NLB* No. 60), defining the statutes of the Hungarian Atomic Energy Authority (HAEA), and the Atomic Energy Co-ordination Council, and provides HAEA with regulatory independence.

The main function of the HAEA is to co-ordinate and fulfil regulatory duties with respect to the safety of the peaceful use of atomic energy. The HAEA is entitled to conduct inspections at the installation of any user of atomic energy and is responsible for the management of the Central Nuclear Financial Fund. The HAEA is also empowered to fine any licensee for violation of legal regulations or safety rules, or for any failure to comply with the provisions laid down in the licence. The Director

General of the HAEA shall prepare an annual report on the safe use of atomic energy to the Government and to Parliament in co-operation with the relevant ministries, and also other competent central state organisations.

An Emergency Response Organisation shall also be set up and operated by the HAEA. This Organisation shall be designed to carry out the duties relating to emergency preparedness and response to nuclear accidents. The HAEA is assisted by the Scientific Council, composed of 12 experts with nation-wide reputation in the field of atomic energy. The Scientific Council shall convey its opinion in connection with nuclear safety, radiation protection, emergency response and preparedness related to nuclear accidents.

Finally, the Atomic Energy Co-ordination Council, established by the Government, intends to co-ordinate the activities of ministries and central administration organisations vested with regulatory powers under the 1996 Atomic Energy Act in the field of safe use of atomic energy, nuclear safety and radiation protection. This Council is chaired by the Director General of the HAEA.

Radioactive Waste Management

Order on some Aspects of the Interim Storage and Final Disposal of Radioactive Waste and on the Radiological Aspects of Radioactive Materials Arising from Industrial Activities and Naturally Occurring Radioactive Materials (2003)

This Order No. 47/2003 was adopted on 8 August 2003 by the Ministry of Health, Social and Family Affairs. It sets out the procedure and conditions to obtain a license to establish an interim storage facility or final depository of radioactive waste. It also regulates the conditions of processing radioactive materials arising from industrial activities and naturally occurring radioactive materials.

Italy

Organisation and structure

Legislative Decree on the Organisational Statute of the ENEA (2003)

Legislative Decree No. 257/03, adopted the 3 September 2003, and published in the Official Journal No. 213 on 13 September 2003, repeals and replaces the previous organisational statute (Decree No. 36/99) of the National Committee for Research and Development of Nuclear and Alternative Energies (ENEA). Unlike the previous organisational statute, Decree 257/03 specifically addresses nuclear energy.

Article 2 of the Decree stipulates that the ENEA is a public body, which acts to support policies of competitiveness and sustainable development in the areas of energy, the environment and new technologies.

In order to pursue the above mentioned objectives, Article 3 states that ENEA is to promote and carry out basic and applied research activities, including the production of prototypes, the industrialisation of items in the area of nuclear technologies and the applications of technologies

pertaining to ionising radiation. ENEA is in particular responsible for the scientific and technological know-how in the matter of nuclear energy. More generally, ENEA is also in charge of the various activities necessary for the accomplishment of the tasks conferred to it.

Latvia

Radiation Protection

Regulations on the Requirements for Emergency Preparedness and Response (2003)

The Cabinet of Ministers approved Regulations on the Requirements for Emergency Preparedness and Response and the National Emergency Preparedness Plan on 8 April 2003. These documents describe both the on-site and off-site emergency plans and response actions, including the large-scale actions to be taken in the event of an accident in the neighbouring countries. The governmental bodies co-ordinating response actions in the case of a radiological emergency are the State Fire and Rescue Service and the Radiation Safety Centre. The Radiation Safety Centre is responsible for the supervision of operative actions at the accident site, while the State Fire and Rescue Service is responsible for larger scale accident activities.

Regime of Radioactive Materials (including Physical Protection)

Regulations on Physical Protection of Ionising Radiation Sources (2002)

These Regulations, issued on 4 November 2002, establish several groups according to their importance for physical protection and introduce the basic approach for simultaneously applicable protection methods: detection, assessment, delay and response. These Regulations are based upon the IAEA Recommendations for physical protection of nuclear facilities and nuclear materials.

Portugal

Organisation and Structure

Decree-Law approving the Organic Law of Ministry for Towns, Territorial Planning and Environment (2003)

This Decree-Law No. 97/03, adopted on 7 May 2003, defines, *inter alia*, the competence of the Environment Institute, a public entity created under the Ministry for Towns, Territorial Planning and Environment responsible for continuing environment and sustainable development policies. The Environment Institute also co-ordinates the activities related to environment and public security. In this respect, it is responsible for early notification in the event of a nuclear accident and is responsible for the assessment of the risks of radiation emissions. The Environment Institute is chaired by a president and two vice-presidents. Decree-Law 113/2003 details the internal structure of the Environment Institute.

Romania

General Legislation

The Romanian Constitution vests the government with the authority to enact ordinances, on select matters, which produce the same effect as statutes and are enforced as such until the Parliament votes for or against them. If the Parliament passes the ordinance it becomes a statute. Pursuant to this procedure, the Romanian Parliament has recently passed laws that approve government ordinances regarding the use of nuclear energy for peaceful purposes and the safe management of nuclear waste and spent fuel.

Law for the approval of the Government Ordinance on the Use of Nuclear Energy Exclusively for Peaceful Purposes (2003)

The Law No. 321/2003 was published in the Official Gazette (*Monitural Oficial*, Part I, No. 509) on 15 July 2003, for the purpose of approving and simultaneously amending Government Ordinance No. 7 on the use of nuclear energy exclusively for peaceful purposes (see *Nuclear Law Bulletin* No. 71).

Law No. 321/2003 amends the scope of Ordinance No. 7 by stating that the promotion and organisation of activities in the nuclear field is to be achieved through promoting research, development and use of nuclear applications for peaceful purposes and to secure nuclear energy resources.

The Law also modifies Article 5 of the Ordinance by requiring that the siting, construction, transfer of property and decommissioning of power and research reactors, as well as final storage facilities shall be approved by Government Decision issued by the Romanian government.

The most important amendment of Government Ordinance No. 7 is the creation of a Romanian Nuclear Agency – called the Nuclear Agency – by the reorganisation of the National Agency for Atomic Energy within the Ministry of Education, Research and Youth for the purpose of harmonising the strategies in the nuclear field and the monitoring of the National Nuclear Plan's implementation.

The Nuclear Agency is a specialised body of the central administration; a legal person in its own right, subordinated to the Prime Minister. Its main purpose is to provide technical counsel to the government in making nuclear policy, as well as the promotion and monitoring of nuclear activities in Romania. The Nuclear Agency shall be administered by a Board of Directors whose members should be representatives of the ministries having responsibilities in the nuclear field. The Nuclear Agency's Chairman shall be appointed and dismissed by decision of the Prime Minister.

The Nuclear Agency co-ordinates the promotion of nuclear activities in Romania, based on the Nuclear Development Strategy, Operational Plan and National Nuclear Plan. The Nuclear Agency also promotes international partnership by co-operating with the International Atomic Energy Agency (IAEA) and other international or regional organisations operating in this field, as well as by concluding research and development, technical assistance, evaluation, training agreements and contracts, after consulting the ministries managing specific activities or having responsibilities in the nuclear field.

Amendment to the Law on the Safe Conduct of Nuclear Activities (2003)

Law No. 111/1996 was initially published on 29 October 1996 (the text of this Law is reproduced in the Supplement to the *Nuclear Law Bulletin* No. 59). Several amendments have been made to the Law, the latest being Law No. 193 of 13 May 2003, published in the Official Gazette (*Monitural Oficial*, Part I, No. 343) on 20 May 2003. The object of the Law, in general, is the safe conduct of nuclear activities for exclusively peaceful purposes so that they meet safety conditions set for the protection of professionally exposed personnel, the general population, the environment and property. Further, the Law aims to minimise the risks associated with nuclear activities through a regime of regulatory requirements and international conventions. The Law on Safe Conduct of Nuclear Activities will soon be republished in the Official Gazette of Romania with a new numerical assignation to the text.

The National Commission for the Control of Nuclear Activities (CNCAN) is the national authority competent to exercise the regulatory powers provided for under Law No. 111/1996. The new amendments serve to enhance the CNCAN's administrative capacity by providing for:

- the recognition of CNCAN personnel who develop activities in radiological areas as exposed workers [in accordance with the provisions of Council Directive 96/29 Euratom of 13 May 1996 laying down the basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation (see *Nuclear Law Bulletin* No.58)];

- the establishment of technical support organisations for CNCAN including a forthcoming National Institute for Nuclear Safety;

- the authority of CNCAN inspectors to order that activities posing unauthorised risk to nuclear installations cease, and the power to close nuclear installations not complying with legal requirements;

- the complete financing of the CNCAN budget by tariffs and fees received for the authorisation and control of nuclear activities.

Other noteworthy amendments found in Law No. 193/2003 include:

- allowance for the transit of radioactive waste in Romania, transposing the provisions of Directive 92/3/Euratom of 3 February 1992 on control of Radioactive Waste Shipments (see *Nuclear Law Bulletin* No. 69) into national legislation by Order No. 183/2003;

- a definition of nuclear related terrorist acts and specific sentences for each act;

- and criminal sanctions for unauthorised decommission of nuclear installations and radioactive sources, and the unauthorised cessation of nuclear activities.

Radioactive Waste Management

Law for the approval of the Government Ordinance on the Management of Spent Nuclear Fuel and Radioactive Waste, Final Storage Included (2003)

Law No. 320/2003 was published in the Official Gazette (*Monitural Oficial*, Part I, No. 527) on 22 July 2003, and has the effect of simultaneously approving and modifying Government Ordinance No. 11 of 30 January 2003 (see *Nuclear Law Bulletin* No. 71). The Law came into force 22 August 2003, and is to be re-published in the Official Gazette of Romania with a new number assignation to the texts.

The modified object of Ordinance No. 11/2003 is to regulate activities relating to the management of spent nuclear fuel and radioactive material so as to secure safe conditions for professional personnel at risk, the general population, the environment and property, at present and in the future, without jeopardising the needs and expectations of future generations.

Nuclear operators are required to manage the spent nuclear fuel and radioactive waste that they generate in compliance with national regulations and the international agreements to which Romania is a Party. To this end, licensees must annually report the quantities and types of spent nuclear fuel and radioactive waste generated over the current year and an estimate for the following year. Operators are required to provide funds for the purpose of final storage of spent nuclear fuel and radioactive waste that results from the operation, maintenance and repair of nuclear and radiological installations.

Finally, the Law prohibits the import of spent nuclear fuel and radioactive waste for the purpose of final storage, and specifies sanctions for violation of this provision.

Third Party Liability

Norms for the Enforcement of the Law on Civil Liability for Nuclear Damage (2003)

The Methodological Norms for the enforcement of Law No. 703/2001 on Civil Liability for Nuclear Damage (the text of this Law is reproduced in the Supplement to *Nuclear Law Bulletin* No. 69) were published in the Official Gazette (*Monitural Oficial*, Part I, No. 580) on 14 August 2003 and came into force on 14 September 2003. The Norms provide that nuclear operators must present the insurance policy or the financial security set out in Law No. 703/2001 to the CNCAN by 14 March 2003. Also the Insurance Supervision Commission is to issue specific prudential Norms with respect to the underwriting of risks for nuclear accidents which are to be published in the Official Gazette by 14 November 2003.

The Methodological Norms require that insurance policies or financial securities acquired under the provisions of Law No. 703/2001 must provide cover against civil liability for nuclear damage. In case of nuclear installations and radioactive materials that do not present a risk of criticality, an insurance policy or financial security is not mandatory. Risk of criticality is defined as the risk of an uncontrolled chain-process of nuclear fission. A nuclear installation is deemed to present a risk of criticality when the quantity of fissionable material held, deposited, handled, used or transported can sustain a chain-process of nuclear fission. According to the provisions of Law No. 111/1996 on the Safe Deployment of Nuclear Activities, the licensee should make the request for such an exemption during the licensing procedure and it shall be explicitly set-out in the license issued by the CNCAN.

The sum insured under the insurance policy or guaranteed through the financial security shall also be explicitly set-out in the license issued by the CNCAN.

The insurance policy or the financial security provided for in Law No. 703/2001 must be acquired from an insurer/financial institution registered with the national authority competent in the nuclear field. The insurer may conclude insurance policies with a nuclear operator only subsequent to its authorisation and in accordance with the relevant prudential norms regarding underwriting risks relating to civil liability for nuclear damage. The financial security may also be created as a deposit placed with the State Treasury. The CNCAN shall be notified as to the creation of such security set out in the previous paragraph within 48 hours of its creation. The said security may be modified or liquidated only with CNCAN approval. In such cases the operator may withdraw the amounts deposited in excess of the minimum amount required.

The nuclear operator shall immediately notify the CNCAN and the insurer as to any nuclear occurrence susceptible to cause nuclear damage. Within ten days of such an occurrence, the nuclear operator shall transmit to the CNCAN and to the insurer a preliminary report assessing any potential damage. The nuclear operator shall keep good record of any claim for damages made against it and register the identity of the claimant, the nature, type and size of the damages claimed. The nuclear operator shall notify the CNCAN as to the method of compensation and the amount of damages awarded by the insurer.

Subsequent to a nuclear occurrence the CNCAN is to set-up a special commission whose tasks are to: determine the causes and consequences of the nuclear occurrence; examine and assess nuclear damage; issue recommendations as to the compensation, assistance and reconstruction measures; and issue recommendations as to the improvements to the nuclear installation with respect to nuclear and radiation emission safety. The conclusions and recommendations presented in the report are to be disclosed to the media.

The competent court may take into consideration the above mentioned examination reports and recommendations made by the Commission with respect to compensation to make a correct allotment, consistent with the type of damage and number of victims. The Court may order ten percent of the total coverage against nuclear damage to be set-aside for potential nuclear damage until the statutory limit tolls.

Slovak Republic

Regime of Nuclear Installations

Decree on Nuclear Safety Requirements for Nuclear Installations (2003)

This Decree No. 167/2003 was adopted on 5 March 2003 by the Nuclear Regulatory Authority of the Slovak Republic and entered into force on 1 June 2003. It lays down the requirements for nuclear safety of nuclear installations during siting, design, commissioning, operation and decommissioning. The Decree details, *inter alia*, the properties of the land for the siting of a nuclear installation; depth protection, nuclear safety functions and characteristics; radiation protection; research in the field of nuclear safety, equipment faults, fire prevention; safety systems and control systems; containment system, nuclear material management; basic requirements for the start-up and principles of operation of a nuclear installation.

Decree on Nuclear Safety Assessment (2003)

This Decree No. 121/2003 was adopted by the Nuclear Regulatory Authority of the Slovak Republic on 5 March 2003 and entered into force on 1 June 2003. It regulates the intervals and performance scope of complex and systematic assessments of nuclear safety during the operation of a nuclear installation.

Slovenia

Organisation and Structure

Regulation on the Organisation and Assignment of Ministerial Responsibilities (2003)

This Regulation was adopted by the Government on 12 June 2003 and entered into force on 27 June 2003. It contains, *inter alia*, a description of the responsibilities of the Radiation Safety Administration, established on 27 February 2003 as a regulatory body within the Ministry of Health, and of the Slovene Nuclear Safety Administration. The Radiation Safety Administration performs specialised technical and development administrative tasks and inspection supervision related to practices involving radiation or the use of radiation sources in medical and veterinary applications; the protection against ionising radiation; systematic monitoring of living and working conditions in relation to exposure from natural radiation sources; monitoring of radioactive contamination of foodstuffs and drinking water; restriction, diminution and prevention of damage to health resulting from non-ionising radiation; and control of the qualifications and competence of radiation protection experts.

Switzerland

General Legislation

Law on Nuclear Energy (LENu) (2003)

This Law was adopted on 21 March 2003 (see *Nuclear Law Bulletin* No. 71. The Law is foreseen to take effect on 1 January 2005, at the same time as its implementing Ordinance (OENu), which is to be approved by the Federal Swiss Council near the end of the year 2004. The text of the Law is reproduced in the Supplement to this edition of the *Bulletin*.

Ukraine

Third Party Liability

Decree on Compulsory Insurance of Civil Liability for Nuclear Damage (2003)

This Decree No. 953 was adopted by the Cabinet of Ministers on 23 June 2003, following the entry into force of the 2001 Law on Civil Liability for Nuclear Damage and its Financial Security (see *Nuclear Law Bulletin* No. 69; the text of this Law is reproduced in the Supplement to *NLB* No. 69). It approves the procedures and rules for the compulsory insurance of civil liability for nuclear damage, specific licensing terms for activities requiring civil liability insurance for nuclear damage, a statute on a national nuclear insurance pool, a standard form of agreement for mandatory civil liability insurance for nuclear damage and a procedure for calculating premiums for such insurance.

Uruguay

Radiation Protection

Regulations on Radiation Protection (2002)

The following regulations were approved by Resolution of the Ministry of Industry, Energy and Mining (*Ministerio de Industria, Energia y Mineria*) on 28 June 2002.

Regulation UY 101 establishes minimum-security requirements for the operation of industrial gammagraphy equipment.

Regulation UY 102 establishes minimum radiological security requirements applicable to the authorisation of non-dispersible solid radioactive sources with therapeutics, interstitial brachytherapy applications and superficial intracavitaries. This Regulation applies to all activities related to the use of non-dispersible solid radioactive sources in brachytherapy.

Regulation UY 103 establishes minimum radiological security requirements in the operation of electron linear accelerators for medical use. This Regulation applies to all installations that have electron linear accelerators for medical purposes, with an energy rank between 4 and 40 MeV.

Regulation UY 104 establishes the radiological security requirements applicable to the operation of telecobalt therapy equipment used for the treatment of human beings.

Regulation UY 105 establishes minimum radiological safety requirements for the use of non-sealed radioactive sources in nuclear medicine. This Regulation is applicable to the operation of any installation or the realisation of nuclear medicine training that uses non-sealed radioactive sources for therapeutic purposes.

Regulation UY 108 guarantees effective inspections over the use of medical or odontological radio-diagnostics in order to avoid any unnecessary exposures of workers and the public. In addition it aims to limit the possibility of accidents and exposure to patients where a minimum is necessary to

achieve the objective of the diagnostic required, taking into account the International Basic Standards for Protection against Ionising Radiation and for Safety of Radiation Sources (Safety Series No. 115). Annex to Regulation UY 108 guarantees an effective control of X-ray equipment used in the baggage and cargo inspection to avoid unnecessary exposure of workers and public, as well as to limit the possibility of accidents.

Radioactive Waste Management

Regulation on Radioactive Waste Management (2002)

Regulation UY 106, approved by Resolution of the Ministry of Industry, Energy and Mining on 20 June 2002, establishes general requirements pertaining to radioactive waste management for the purpose of maintaining an adequate level of radiological protection of people and the environment for present and future generations. This regulation is applicable to waste management installations and training under the control of the Regulatory Authority.

Transport of Radioactive Materials

Regulation on the Transport of Radioactive Materials (2002)

Regulation UY 107, approved by Resolution of the Ministry of Industry, Energy and Mining on 28 June 2002, establishes minimum safety requirements for the protection of people, goods and the environment from harmful effects of ionising radiation during the transport of radioactive materials.

INTERNATIONAL REGULATORY ACTIVITIES

International Atomic Energy Agency

Resolutions adopted by the IAEA General Conference (2003)[1]

The 47th Session of the IAEA General Conference was held in Vienna from 15 to 19 September 2003 with the participation of the delegations from 137 Member States and representatives of various international organisations. Resolutions were adopted by the Conference, *inter alia*, in the following areas.

Nuclear Safety, Radiation, Transport and Waste Safety

Under Resolution No. 7 on Measures to Strengthen International Co-operation in Nuclear, Radiation, Transport and Waste Safety, the General Conference welcomes with satisfaction the decision of the Board to establish, as Agency safety standards, the Safety Requirements on "Site Evaluation for Nuclear Installations" (in document GOV/2003/51) and the Safety Requirements on "Remediation of Areas Contaminated by Past Activities and Accidents" (in document GOV/2003/52), and encourages Member States to incorporate these safety requirements into national regulatory programmes, to the fullest extent possible. Further, the General Conference appeals to all Member States which have not yet taken the necessary steps to become Party to the Convention on Nuclear Safety to do so. The General Conference recognises the progress made in preparing a Code of Conduct on the Safety of Research Reactors, and notes that the final version of the draft Code is expected to be resubmitted for consideration by the Board of Governors in March 2004.

With regard to radiation safety, the General Conference welcomed progress in implementing the International Action Plan for the Radiological Protection of Patients, as well as the approval by the Board of Governors of the International Action Plan for Occupational Radiation Protection. It further welcomed the steps taken by the Secretariat to assist in developing an international framework for the protection of the environment from ionising radiation.

The General Conference appealed to all Member States who have not yet become Party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management to take all necessary steps to do so. The General Conference reminded all Member States that the first Review Meeting of Contracting Parties to this Convention would be held in Vienna in November 2003.

1. The texts of these Resolutions are available on the Web site of the IAEA at the following URL: www.iaea.org/worldatom/About/Policy/GC/GC47/ Resolutions

The General Conference urged all Member States to become Parties to the Convention on Early Notification of a Nuclear Accident and to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. It also encouraged the Member States to implement, where necessary, instruments for improving their own preparedness and response capabilities for nuclear and radiological incidents and accidents including their arrangements for responding to acts involving the malicious use of nuclear or radioactive materials and threats to use such acts.

Concerning the Code of Conduct on the Safety and Security of Radioactive Sources, the General Conference noted that radioactive sources are used throughout the world for a wide variety of beneficial purposes. However, the ineffective, interrupted or sporadic regulatory or management control of radioactive sources has led to serious accidents or malicious acts, or to the existence of orphan sources. The General Conference recognised the need for effective and continuous regulatory control, and welcomed the approval by the Board of Governors of the revised IAEA Code of Conduct on the Safety and Security of Radioactive Sources. It endorsed the objectives and principles set out in the Code, while recognising that the Code is not a legally binding instrument.

With regard to transport safety, the General Conference noted concerns about a potential accident or incident during the transport of radioactive materials by sea, and the importance of the protection of people, human health and the environment as well as protection from actual economic loss, as defined in relevant international instruments, due to an accident or incident. It further noted that the International Conference on the Safety of Transport of Radioactive Material, held in Vienna from 7-11 July 2003, found that the current regulations provide a high level of safety and provide a good basis for an effective regulatory process and ensure strict implementation of guidelines. The General Conference stressed the importance of having effective liability mechanisms in place to insure against 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. It acknowledged the Conference President's conclusion that the preparation of an explanatory text for the various nuclear liability instruments would assist in developing a common understanding of the complex issues and thereby promote adherence to these instruments. Further, it welcomed the decision of the Director General to appoint a group of experts to explore and advise on issues related to nuclear liability. The General Conference emphasised the importance of maintaining dialogue and consultation aimed at improving mutual understanding, confidence building and enhanced communications in relation to safe maritime transport of radioactive materials. Finally, it urged Member States that do not have national regulatory documents governing the transport of radioactive materials to adopt such documents expeditiously.

Nuclear Security – Progress on Measures to Protect Against Nuclear Terrorism

The General Conference also adopted Resolution No. 8, which recalls the potential implications of terrorist acts for the security of nuclear materials, nuclear facilities, radioactive sources and other radioactive materials. It further calls upon Member States to promote an effective security culture in their physical protection. Resolution No. 8 appeals to States which have not yet done so to accede to the Convention on the Physical Protection of Nuclear Material, and encourages States to apply the physical protection objectives and fundamental principles endorsed by the Board of Governors and set out in document GOV/2001/41. Finally, Resolution No. 8 welcomes the finalisation of the work of the legal and technical experts convened by the Director General to prepare a draft of an amendment aimed at strengthening the Convention.

Strengthening the IAEA's Safeguards System

In Resolution No. 11, the General Conference stressed the need for effective safeguards in order to prevent the use of nuclear material for prohibited purposes, and urged all States which have yet to bring into force comprehensive safeguards agreements (and their additional protocols) to do so as soon as possible in conformity with their national legislation. It further requested the Secretariat to examine innovative technical solutions to strengthen the effectiveness and to improve the efficiency of safeguards.

Safeguards in the Democratic People's Republic of Korea (DPRK)

The General Conference, under Resolution No. 12, commended the impartial efforts of the Director General and the Secretariat to apply comprehensive safeguards in the DPRK. Further, the General Conference deplored the steps taken by the DPRK which led the Board to find it in non-compliance with its NPT safeguards agreement, and the DPRK's continued unwillingness to enter into the substantive dialogue offered by the IAEA regarding the application of comprehensive safeguards. To this end, Resolution No. 12 urged the DPRK to reconsider those actions which run contrary to voluntarily undertaken, international non-proliferation obligations, to promptly dismantle any nuclear weapons programme in a transparent, verifiable and irreversible manner and to maintain the essential verification role of the IAEA. Resolution No. 12 stressed the desire for a peaceful resolution through dialogue to the DPRK nuclear issue, leading to a nuclear free Korean Peninsula with a view to maintaining peace and security in the region, and particularly welcomed the six-party talks which took place in Beijing from 27 to 29 August 2003.

Application of IAEA Safeguards Standards in the Middle East

Resolution No. 13 affirmed the urgent need for all States in the Middle East to accept the application of full-scope IAEA safeguards to all their nuclear activities as a step in enhancing peace and security in the context of the establishment of a nuclear-weapon free zone (NWFZ). Further it called upon States in the Middle East to take measures, including confidence-building and verification measures, aimed at creating a NWFZ. To this end, the General Conference requested the Director General to consult with the States of the Middle East to facilitate the application of safeguards to nuclear activities as relevant to the preparation of model agreements.

Implementation of United Nations Security Council Resolutions relating to Iraq

On 19 September 2003, the General Conference adopted Decision No. 12, endorsing a statement by the President to the effect that the General Conference commended the IAEA for its verification activities in Iraq under the mandate provided by UN Security Council Resolutions from November 2002 to March 2003. It also noted with satisfaction that there is no proliferation risk from the type and quantity of uranium compounds at the Baghdad Yellowcake Facility and expressed appreciation for the continuation by the IAEA of its NPT safeguards activities in Iraq.

European Union

In the past months, the Commission has adopted several regulations and legislative proposals based on the provisions of the Euratom Treaty to supplement or update the legislation in force in the field of nuclear energy. In addition, recent initiatives based on the provisions of the Treaty establishing the European Community and currently examined by the Council of the European Union may stand to affect nuclear activities in the European Union.

Proposals for Directives on nuclear safety and radioactive waste management (2003)

On 30 January 2003, the Commission adopted a proposal for a Council Directive setting out basic obligations and general principles on the safety of nuclear installations and a proposal for a Council Directive on the management of spent nuclear fuel and radioactive waste (COM/2003/0032/ final).

Both proposals are based on the provisions on Health and Safety in Chapter 3 of Title II, especially Article 32 of the Treaty which allows the basic safety standards to be revised or supplemented. These proposals are specifically designed to supplement the existing health standards in order to meet the objectives set in the Treaty; notably the obligation imposed by Article 2(b) to "establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied". In accordance with Article 32, they were adopted after consultation of the Group of Experts from the Member States provided for in Article 31 of the Euratom Treaty.

The first: "proposal for a directive setting out the basic obligations and general principles on the safety of nuclear installations" was drafted with the main objective to ensure that health protection against ionising radiation will be assured during the whole life of nuclear installations, from design to decommissioning. The proposal sets out basic obligations and general principles contained in the international conventions and gives them force of Community law. To ensure the credibility of the system the proposal institutes, in a Community framework, a cross-checking of the national safety authorities. Another objective of this initiative is to confirm the necessity to have available adequate financial resources to cover the cost of decommissioning of nuclear installations.

The objective of the second: "proposal for a directive on the management of spent nuclear fuel and radioactive waste" is to place an obligation on the Member States to establish a clearly defined programme for the disposal of radioactive waste, including deep disposal of high-level waste. The proposal sets out a concrete timetable to that end: in the case of short-lived low and intermediate-level waste, authorisation for the development of appropriate disposal site(s) shall be granted no later than 2008 and authorisation for the operation of the facility no later than 2013. The deadline for the authorisation for the operation of the disposal facility is fixed at 2018 for high-level and long-lived radioactive waste, which shall be disposed in a geological repository. The programmes may include, as an alternative solution to disposal, the shipment of radioactive waste or spent fuel to another Member State or third country under strict conditions of compliance. This alternative solution will require the agreement of the recipient of the waste. The proposal also intends to encourage co-operation between the Member States in common areas of research and technological development.

New Regulation on the application of Euratom safeguards (2002)

In 2002, the Commission proposed a new Commission Regulation (COM 2002/099 final) on the application of Euratom safeguards, which will replace the Regulation No. 3227/76.

The new Regulation will introduce additional requirements on reporting to the IAEA for which the Commission carries legal responsibility under the Protocols Additional to the Safeguards Agreements between Member States, the Community and the IAEA. Furthermore clear definitions of waste categories, new Inventory Change Codes and special annexes for reporting transfers of waste are to be introduced to reflect current practices in the industry and the experience gained in effective accountancy and control of waste under the Euratom Treaty. This part of the proposal is also in line with the wider reporting requirements for waste introduced by the Additional Protocols. Finally the new reporting format will introduce changes in the format and the content of accountancy reports.

Control of high activity sealed radioactive sources (2003)

On 24 January 2003, the Commission adopted a proposal for a Council Directive on the control of high activity sealed radioactive sources (COM/2003/0018 final). Based on Articles 31 and 32 of the Euratom Treaty, this proposal aims at supplementing the Basic Safety Standards Directive with a view to strengthening control by the competent national authorities on those sealed radioactive sources posing the greatest risk and to emphasise the responsibilities of holders of such sources.

This proposal is meant to contribute to higher safety and security for European citizens against the risks associated with the handling and storage of highly radioactive sources. It further sets-out to prevent exposure to ionising radiation arising from inadequate control of high activity sealed radioactive sources and to harmonise controls in place in the Member States by putting in place specific requirements to ensure that each source is kept under control.

Recommendation on the protection and information of the public with regard to the continued contamination of certain wild food products following the Chernobyl accident (2003)

On 14 April 2003, the Commission adopted Recommendation 203/247/Euratom on the protection and information of the public with regard to exposure resulting from the continued radioactive caesium contamination of certain wild food products as a consequence of the accident at the Chernobyl nuclear power station.

According to this recommendation, the Member States should take appropriate measures to ensure that the maximum permitted levels in terms of caesium-134 and caesium-137 are respected in the Community for the placing on the market of certain wild products and should inform the population in affected regions of the health risks involved. The Community Rapid Alert System laid down in Regulations (EC) No. 178/2002 of 28 January 2002 should be used for exchanging information between the Member States on recorded cases of exceeding the maximum permitted levels.

Proposals for decisions authorising the Member States to sign and ratify the Protocol to amend the Paris Convention (2003)

On 9 July 2003, the Commission adopted two proposals for Council decisions authorising the Member States which are Contracting Parties to the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy to sign and ratify the Protocol amending that Convention, or to accede to it, in the interest of the European Community.

The Protocol to amend the Paris Convention was negotiated by the Commission for matters falling within the jurisdiction of the European Community, in accordance with the Council's directives of 13 September 2002. However, since the Paris Convention and the Protocol to amend it are not open to participation by regional organisations, it has been deemed justified, on an exceptional basis, that the Community exercise its powers through its Member States which are Parties to that Convention. All Member States of the European Union, except Austria, Ireland and Luxembourg, are Contracting Parties to the Paris Convention.

Community authorisation was required previous to the signature of the Protocol to amend since it affects Community rules on jurisdiction and the recognition and enforcement of judgements in civil and commercial matters laid down in Council Regulation (EC) No. 44/2001 of 22 December 2002. Indeed, the Community has exclusive jurisdiction with regards to amending Article 13 of the Paris Convention, which determines the court that has jurisdiction in claims for compensation for damage caused by nuclear accidents, as it affects the corresponding rules of Council Regulation (EC) No. 44/2001.

Proposal for a Directive on environmental liability with regard to the prevention and remedying of environmental damage (2002)

On 23 January 2002, the Commission adopted a proposal for a Directive of the European Parliament and of the Council on environmental liability with regard to the prevention and remedying of environmental damage [COM (2002) 17 final].

The proposal aims to establish a framework whereby environmental damage, which is defined in the proposal as "biodiversity damage", "water damage" and "land damage", would be prevented or remedied through a system of environmental liability. Whenever possible, the operator that has caused the environmental damage or an imminent threat of such damage occurring must, in accordance with the « polluter-pays » principle, bear the cost associated with the implementation of the necessary liable or restorative measures. In cases in which no operator can be held liable or an operator is liable but unable to pay, Member States are required to find an alternative source of financing the measures in question.

The scope of the proposal does not cover such nuclear risks or environmental damage or imminent threat of such damage as may be caused by the activities covered by the Euratom Treaty or caused by an incident or activity in respect of which liability or compensation falls within the scope of any of the following international conventions:

- the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy and the Brussels Supplementary Convention of 31 January 1963;

- the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage;

- the Convention of 12 September 1997 on Supplementary Compensation for Nuclear Damage;

- the Joint Protocol of 21 September 1988 relating to the Application of the Vienna Convention and the Paris Convention;

- the Brussels Convention of 17 December 1971 relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material.

The proposal was discussed in a first reading by the European Parliament which adopted its Opinion on 14 May 2003. On 18 September 2003, the Council adopted its Common Position. The Common Position keeps nuclear activities out of the scope of the proposed directive and specifies that the exclusion of nuclear risks covered by international instruments extends to any future amendments to these instruments. However, it is now proposed that the report be submitted to the Commission before ten years after the entry into force of the Directive, which shall then conduct a review of the matters excluded from the scope of the directive including nuclear damage.

The Common Position has now been sent to the European Parliament for a second reading, in accordance with the co-decision procedure.

Proposal for a Regulation on the law applicable to non-contractual obligations (2003)

On 22 July 2003, the Commission adopted a proposal for a Regulation on the law applicable to non-contractual obligations, the so-called "Rome II" Regulation. The purpose of this proposal is to standardise the Member States' rules of conflict of laws regarding non-contractual obligations. This Regulation extends the harmonisation of private international law in relation to civil and commercial obligations which is already well advanced in the Community with the Council Regulation (EC) No. 44/2001 and the Rome Convention of 1980.

The proposed Regulation would apply to all situations involving a conflict of laws, i.e. situations in which there are one or more elements that are alien to the domestic social life of a country that entail applying several systems of law. It would cover all non-contractual obligations in civil and commercial matters, except those in matters listed in Article 1, paragraph 2.

The non-contractual obligations arising out of nuclear damage are among the matters excluded from the scope of the proposed Regulation. The importance of the economic and state interests at stake and the Member States' contribution to measures to compensate for nuclear damage in the international scheme of nuclear liability explain this exclusion.

AGREEMENTS

BILATERAL AGREEMENTS

Bulgaria – Russian Federation – Ukraine

Trilateral Agreement on Nuclear Transport (2002)

On 14 August 2002, the Russian Federation, Ukraine and Bulgaria signed this Agreement, which is valid for ten years, thereby allowing the transport of nuclear material between Russia and Bulgaria, via Ukraine. A shipment from the Kozloduy nuclear power plant in Bulgaria was expected to arrive in Russia by the end of 2002.

Estonia – Latvia

Agreement on Co-operation in Radiation Safety (2003)

On 28 May 2003, the Radiation Safety Centre of the Republic of Latvia and the Radiation Protection Centre of the Republic of Estonia signed this Agreement, which entered into force upon signature for a period of five years. The Agreement will be automatically extended for another term of five years. Ten years after the entry into force of the Agreement a meeting shall be convened to decide whether the Agreement shall continue indefinitely or shall be extended for an additional fixed period.

This Agreement focuses on the following activities:

- development of a national legal framework on radiation and nuclear safety, state supervision and control of radiation sources;
- establishment and development of national registers of radiation sources and occupational exposure of radiation workers;
- development of procedures relating to notification, registration and licensing, validation of practices and assessment of safety for practices and sources;
- emergency preparedness and response; and
- safeguards issues.

The Parties agreed to regularly exchange information on: the supervision and control of radiation sources and practices involving radiation sources; unknown or previously unidentified sources and practices, as well as the properties of those sources; and details on given practices that raise concern from a radiation safety viewpoint or that may have an impact on the safety of the population and the environment; any accident or incident which occurs in the territory of one of the Parties concerned and may have consequences in the other country; training activities, conferences, workshops and co-operation projects.

Euratom – Non-Member States of the European Union

Radiological emergency: Agreement between Euratom and Non-Member States of the European Union (2003)

On 29 January 2003, Euratom signed an Agreement negotiated between the European Atomic Energy Community and non-member States of the European Union on the participation of the latter in the Community arrangements for the early exchange of information in the event of a radiological emergency (Ecurie).

The Agreement is now open for signature and ratification by the Republic of Bulgaria, the Republic of Cyprus, the Czech Republic, the Republic of Estonia, the Republic of Hungary, the Republic of Latvia, the Republic of Lithuania, the Republic of Malta, the Republic of Poland, Romania, the Slovak Republic, the Republic of Slovenia, the Swiss Confederation and the Republic of Turkey. This Agreement also aims at replacing the existing bilateral agreement concluded in June 1995 between the Euratom Community and the Swiss Confederation. Euratom may invite other countries to become a party to this Agreement.

Closely based on the provisions of Council Decision 87/600/Euratom of 14 December 1987 which set up the Ecurie system, this agreement aims at extending the existing system to the future Member States, already before their formal accession to the EU. In the meantime, it provides for a framework for a future collaboration between the European Union and its neighbouring countries in the sensitive issues of early notification in case of a nuclear accident.

Euratom – Uzbekistan

Agreement for Co-operation in the Peaceful Uses of Nuclear Energy (2003)

This Agreement was signed on 6 October 2003 between the European Atomic Energy Community (Euratom) and the Government of the Republic of Uzbekistan. It will enter into force, on the date agreed upon by the Parties, by exchange of diplomatic notes and will remain in force for an initial period of five years. At the expiration of this period the Agreement will be tacitly renewed every five years.

The objective of this Agreement is to provide a framework for co-operation between the Parties in the areas of nuclear safety, research and development in the nuclear sector, trade in nuclear materials and provision of nuclear fuel cycle services, and other relevant areas of mutual interest.

In the area of nuclear safety, the co-operation shall pay particular regard to radiation protection (development of safety standards, training and education), nuclear waste management, research and development on safeguards of nuclear material (development of the systems of accounting for and control of nuclear materials) and the prevention of illicit trafficking of nuclear and radioactive material.

With regard to research and development in the nuclear sector, the Agreement covers, *inter alia*, applications of nuclear energy in the fields of medicine and industry, and the interaction between nuclear energy and the environment.

Finally, the Agreement provides that trade in nuclear materials and the provision of relevant services between the Parties shall be carried out at market-related prices. Transfers of nuclear materials shall be carried out for peaceful purposes.

France – United States of America

Agreement for Exchange of Technical Information and Co-operation in the Regulation of Nuclear Safety (2003)

On 17 April 2003, the United States Nuclear Regulatory Commission (NRC) and the French Directorate General for Nuclear Safety and Radiation Protection (DGSNR) signed this Agreement, which entered into force upon signature for a period of five years. The Agreement may be extended for a further period of time by written agreement of the Parties.

The Parties agreed to regularly exchange information, to the extent permitted under their laws, on the following types of technical information and policy directives related to designated nuclear facilities:

- Topical reports concerning technical safety, radiation protection, waste management, and environmental effects written by or for one of the Parties as a basis for, or in support of, regulatory decisions and policies.

- Documents relating to significant licensing actions and safety and environmental decisions affecting nuclear facilities.

- Detailed documents describing the NRC process for licensing and regulating certain United States facilities designated by the DGSNR as similar to certain facilities being built or planned in France and equivalent documents on such French facilities.

- Reports on operating experiences such as reports on nuclear incidents, accidents and shutdowns, and compilations of historical reliability data on components and systems.

- Regulatory procedures for the safety, radiation protection, waste management and environmental impact evaluation of nuclear facilities.

- Early advice of important events, such as serious operating incidents and government-directed reactor shutdowns, that are of immediate interest to the Parties.

- Copies of regulatory standards required to be used by the regulatory organisations of the Parties.

- Temporary assignments of personnel by one Party within the other Party's general organisation. Such activities will be considered on a case-by-case basis and will, in general, require a separate letter of agreement.

Republic of Korea – Romania

Memorandum of Understanding on Co-operation in Nuclear Energy Projects (2003)

The Memorandum of Understanding on Co-operation in the Nuclear Energy Projects concluded between the Ministry of Economy and Commerce of Romania and the Ministry of Commerce, Industry and Energy of the Republic of Korea, was signed in Seoul on 21 July 2003, and the Government Decision No. 112 of 25 September 2003 regarding this Memorandum was published in the Official Gazette *(Monitural Oficial*, Part I, No. 689) on 1 October 2003.

Under Article 1 of the Memorandum of Understanding (Scope of Co-operation), the signing Parties agree to co-operate on the construction plans of Units 3, 4, and 5 of the Cernavoda Nuclear Power Plant on a progressive basis. The Parties further agree to develop the projects as a joint effort and to find the most competitive financial mechanisms to back them up. The Korean Party shall act as consultant to the Romanian nuclear industry providing technical support and training with respect to the operation of Unit 1 and the construction of Unit 2.

Both Romanian and Korean institutions having concerns in nuclear matters may take part in the process initiated by the Memorandum of Understanding, and visits – by both parties – may be organised for predetermined periods. Prior to any such visits, the Parties shall agree on the size of the delegation, the duration and purpose of the visit. Each Party shall bear its own expenses such as they occur in the execution of the Memorandum of Understanding.

The Agreement includes a confidentiality clause that the proprietary rights in relation to all information and expertise acquired while enforcing the Memorandum of Understanding shall remain vested in the Party supplying them. To this effect, neither the Ministry of Economy and Commerce of Romania nor the Ministry of Commerce, Industry and Energy of the Republic of Korea shall disclose information that is confidential or property of the other Party and that has been acquired in the execution of the Memorandum of Understanding without the prior written consent of the other Party.

The initial duration of the Memorandum of Understanding is three years and shall be automatically extended by additional three-year periods, provided that neither one of the Parties gives notice of termination at least six months prior to the expiry of the current time period.

Norway – Russian Federation – United Kingdom – United States

Arctic Military Environmental Co-operation (2003)

In June 2003, the United Kingdom formally joined the Arctic Military Environmental Co-operation (AMEC), which currently comprises the Russian Federation, Norway and the

United States (see *Nuclear Law Bulletin* No. 58). AMEC provides a forum to address military-related environmental concerns in the Arctic. Established in 1996, the co-operation has developed technologies that minimise radioactive environmental contamination. A key focus for AMEC is to develop storage and treatment technologies to improve the decommissioning of Russian nuclear submarines and related facilities, a process that generates large volumes of solid radioactive waste. Without proper storage, the waste could release significant amounts of radiation into the environment.

Russian Federation – United Kingdom

Agreement on Nuclear Proliferation Prevention (2003)

On 26 June 2003, the United Kingdom and the Russian Federation signed the Agreement on Nuclear Proliferation Prevention that enables the United Kingdom to start spending tens of millions of pounds in aide to dismantle decommissioned Russian nuclear submarines and to store Russian spent fuel. The Agreement took effect immediately.

MULTILATERAL AGREEMENTS

Status of Conventions in the Field of Nuclear Energy

1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage

On 4 July 2003, the Republic of Belarus deposited an instrument of ratification of the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (see *Nuclear Law Bulletin* No. 60) whereby the requirements for its entry into force have been met. Pursuant to its Article 21.1, the Protocol "shall enter into force three months after the date of deposit of the fifth instrument of ratification, acceptance or approval".

The Protocol therefore entered into force on 4 October 2003. As of 11 November 2003, there are five Parties to this Protocol, as set out in the table below.

Status of signatures, ratifications, acceptances, approvals or accessions

State	Date of Signature	Date of Deposit of Instrument
Argentina	19 December 1997	14 November 2000 (ratification)
Belarus	14 September 1998	4 July 2003 (ratification)
Czech Republic	18 June 1998	
Hungary	29 September 1997	
Indonesia	6 October 1997	
Italy	26 January 1998	
Latvia	7 March 2001	5 December 2001 (ratification)
Lebanon	30 September 1997	
Lithuania	30 September 1997	
Morocco	29 September 1997	6 July 1999 (ratification)
Peru	4 June 1998	
Philippines	10 March 1998	
Poland	3 October 1997	
Romania	30 September 1997	29 December 1998 (ratification)
Ukraine	29 September 1997	

1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

Since the last update in *Nuclear Law Bulletin* No. 65, seven countries have become Contracting Parties to this Convention, namely Albania, Canada, Islamic Republic of Iran, Kuwait, Lithuania, Luxembourg and Saint Vincent and the Grenadines. Therefore, as of 11 November 2003, there are 86 Parties to this Convention, as set out in the table below.

Status of signatures, ratifications, acceptances, approvals or accessions

State	Date of Signature	Date of Deposit of Instrument
Afghanistan	26 September 1986	
Albania		30 April 2003 (accession)
Algeria	24 September 1987	
Argentina		17 January 1990 (accession)
Armenia		24 August 1993 (accession)
Australia	26 September 1986	22 September 1987 (ratification)
Austria	26 September 1986	21 November 1989 (ratification)
Bangladesh		7 January 1988 (accession)
Belarus	26 September 1986	26 January 1987 (ratification)
Belgium	26 September 1986	4 January 1999 (ratification)
Bosnia and Herzegovina		30 June 1998 (succession)
Brazil	26 September 1986	4 December 1990 (ratification)
Bulgaria	26 September 1986	24 February 1988 (ratification)
Cameroon	25 September 1987	
Canada	26 September 1986	12 August 2002 (ratification)
Chile	26 September 1986	
China	26 September 1986	10 September 1987 (ratification)
Costa Rica	26 September 1986	16 September 1991 (ratification)
Côte d'Ivoire	26 September 1986	
Croatia		29 September 1992 (succession)
Cuba	26 September 1986	8 January 1991 (ratification)
Cyprus		4 January 1989 (accession)
Czech Republic		24 March 1993 (succession)
Democratic People's Republic of Korea	29 September 1986	
Democratic Rep. of the Congo	30 September 1986	
Denmark	26 September 1986	
Egypt	26 September 1986	17 October 1988 (ratification)
Estonia		9 May 1994 (accession)
Food and Agricultural Organization		19 October 1990 (accession)

State	Date of Signature	Date of Deposit of Instrument
Finland	26 September 1986	27 November 1990 (approval)
France	26 September 1986	6 March 1989 (approval)
Germany	26 September 1986	14 September 1989 (ratification)
Greece	26 September 1986	6 June 1991 (ratification)
Guatemala	26 September 1986	8 August 1988 (ratification)
Holy See	26 September 1986	
Hungary	26 September 1986	10 March 1987 (ratification)
Iceland	26 September 1986	
India	29 September 1986	28 January 1988 (ratification)
Indonesia	26 September 1986	12 November 1993 (ratification)
Iran, Islamic Republic of	26 September 1986	9 October 2000 (ratification)
Iraq	12 August 1987	21 July 1988 (ratification)
Ireland	26 September 1986	13 September 1991 (ratification)
Israel	26 September 1986	25 May 1989 (ratification)
Italy	26 September 1986	25 October 1990 (ratification)
Japan	6 March 1987	9 June 1987 (acceptance)
Jordan	2 October 1986	11 December 1987 (ratification)
Korea, Republic of		8 June 1990 (accession)
Kuwait		13 May 2003 (accession)
Latvia		28 December 1992 (accession)
Lebanon	26 September 1986	17 April 1997 (ratification)
Libyan Arab Jamahiriya		27 June 1990 (accession)
Liechtenstein	26 September 1986	19 April 1994 (ratification)
Lithuania		21 September 2000 (accession)
Luxembourg		26 September 2000 (accession)
Malaysia	1 September 1987	1 September 1987 (signature)
Mali	2 October 1986	
Mauritius		17 August 1992 (accession)
Mexico	26 September 1986	10 May 1988 (ratification)
Monaco	26 September 1986	19 July 1989 (approval)
Mongolia	8 January 1987	11 June 1987 (ratification)
Morocco	26 September 1986	7 October 1993 (ratification)
Netherlands	26 September 1986	23 September 1991 (acceptance)
New Zealand		11 March 1987 (accession)
Nicaragua		11 November 1993 (accession)
Niger	26 September 1986	
Nigeria	21 January 1987	10 August 1990 (ratification)
Norway	26 September 1986	26 September 1986 (signature)
Pakistan		11 September 1989 (accession)
Panama	26 September 1986	1 April 1999 (ratification)
Paraguay	2 October 1986	
Peru		17 July 1995 (accession)

State	Date of Signature	Date of Deposit of Instrument
Philippines		5 May 1997 (accession)
Poland	26 September 1986	24 March 1988 (ratification)
Portugal	26 September 1986	
Republic of Moldova		7 May 1998 (accession)
Romania		12 June 1990 (accession)
Russian Federation	26 September 1986	23 December 1986 (ratification)
Saint Vincent and the Grenadines		18 September 2001 (accession)
Saudi Arabia		3 November 1989 (accession)
Senegal	15 June 1987	
Sierra Leone	25 March 1987	
Singapore		15 December 1997 (accession)
Slovak Republic		10 February 1993 (succession)
Slovenia		7 July 1992 (succession)
South Africa	10 August 1987	10 August 1987 (ratification)
Spain	26 September 1986	13 September 1989 (ratification)
Sri Lanka		11 January 1991 (accession)
Sudan	26 September 1986	
Sweden	26 September 1986	24 June 1992 (ratification)
Switzerland	26 September 1986	31 May 1988 (ratification)
Syrian Arab Republic	2 July 1987	
Thailand	25 September 1987	21 March 1989 (ratification)
Former Yugoslav Republic of Macedonia		20 September 1996 (succession)
Tunisia	24 February 1987	24 February 1989 (ratification)
Turkey	26 September 1986	3 January 1991 (ratification)
Ukraine	26 September 1986	26 January 1987 (ratification)
United Arab Emirates		2 October 1987 (accession)
United Kingdom of Great Britain and Northern Ireland	26 September 1986	9 February 1990 (ratification)
United States of America	26 September 1986	19 September 1988 (ratification)
Uruguay		21 December 1989 (accession)
Viet Nam		29 September 1987 (accession)
World Health Organisation		10 August 1988 (accession)
World Meteorological Organisation		17 April 1990 (accession)
Yugoslavia		9 April 1991 (accession)
Zimbabwe	26 September 1986	

1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

Since the last update in *Nuclear Law Bulletin* No. 70, Timor-Leste has become a Contracting Party to this Treaty. Therefore, as of 11 November 2003, there are 189 Contracting Parties to this Treaty.

1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters and its 1996 Protocol

Since the last update in *Nuclear Law Bulletin* No. 66, two States, namely Peru and Saint Vincent and the Grenadines have become Contracting Parties to this Convention. Therefore, as of 11 November 2003, there are 80 Contracting Parties to this Convention. Since the last update in *Nuclear Law Bulletin* No. 67, five States, namely Angola, Iceland, Ireland, New Zealand and Tonga have become Contracting Parties to the 1996 Protocol. Therefore, as of 11 November 2003, there are 18 Contracting Parties to the 1996 Protocol.

1979 Convention on the Physical Protection of Nuclear Materials

Since the last update in *Nuclear Law Bulletin* No. 71, seven States, namely Afghanistan, Algeria, Costa Rica, Malta, Oman, Seychelles and United Arab Emirates have become Contracting Parties to this Convention (accession). Therefore, as of 11 November 2003, there are 93 Contracting Parties to this Convention.

1986 Convention on Early Notification of a Nuclear Accident

Since the last update in *Nuclear Law Bulletin* No. 71, three States, namely Albania, Bolivia and Kuwait have become Contracting Parties to this Convention (accession). Therefore, as of 11 November 2003, there are 91 Contracting Parties to this Convention.

1994 Convention on Nuclear Safety

Since the last update in *Nuclear Law Bulletin* No. 70, Uruguay has become a Contracting Party to this Convention. Therefore, as of 11 November 2003, there are 55 Contracting Parties to this Convention.

1996 Comprehensive Nuclear Test Ban Treaty

Since the last up

date in *Nuclear Law Bulletin* No. 71, seven States, namely Afghanistan, Algeria, Cyprus, Eritrea, Honduras, Kyrgyzstan and Oman have become Contracting Parties to this Treaty. Therefore, as of 11 November 2003, there are 108 Contracting Parties to this Treaty.

1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

Since the last update in *Nuclear Law Bulletin* No. 71, two States, namely Australia (ratification) and Japan (accession) have become Contracting Parties to this Convention. Therefore, as of 11 November 2003, there are 33 Contracting Parties to this Convention.

BIBLIOGRAPHY & NEWS BRIEFS

BIBLIOGRAPHY

International Atomic Energy Agency

Handbook on Nuclear Law, Vienna, 2003

A new Handbook on Nuclear Law was published by the IAEA in August 2003. This publication is designed to provide IAEA Member States with a new resource for assessing the adequacy of their national legal frameworks governing the peaceful uses of nuclear energy. It further provides practical guidance for governments in efforts to enhance their laws and regulations, in harmonising them with internationally-recognised standards, and in meeting their obligations under relevant international instruments.

The Handbook is organised into five general parts:

- Part I provides a general overview of key concepts in the field: nuclear law and the legislative process; the regulatory authority; and the fundamental regulatory activities of licensing, inspection and enforcement.
- Part II deals with radiation protection.
- Part III covers various subjects arising from nuclear and radiation safety: radiation sources, nuclear installations, emergency preparedness and response, mining and milling, transportation, and waste and spent fuel.
- Part IV addresses the topic of nuclear liability and coverage.
- Part V moves to non-proliferation and security-related subjects: safeguards, export and import controls and physical protection.

The Handbook also reflects and refers to the extensive range of IAEA Safety Standards covering all fields relevant to peaceful nuclear technology.

The authors of the Handbook are Carlton Stoiber, a lawyer with over thirty years' experience in the US government in nuclear non-proliferation, safety and security; Alec Baer, professor of science and engineering at the University of Ottawa and former Chairman of the Board of Governors and the International Nuclear Safety Advisory Group (INSAG); Norbert Pelzer, professor of nuclear law at the

University of Goettingen and a recognised expert in nuclear liability; and Wolfram Tonhauser, co-ordinator of the IAEA's Nuclear Legislative Assistance activities.

OECD Nuclear Energy Agency

Nuclear Energy Today, Paris, 2003, 112 pages

This book published by the OECD Nuclear Energy Agency, in English and French, addresses today's important questions about nuclear energy by providing an authoritative and factual introduction to the relevant issues. It is primarily intended for policy makers, but should also be useful to interested members of the public, industrial managers, academics and journalists.

Chapter 1 gives a brief overview. The rest of the book describes the fundamental issues important to a discussion of nuclear energy today. Chapters 2 and 3 provide an introduction to the basic sciences and technologies involved. Chapter 4 to 8 set out the facts and issues connected with radioactive waste management, nuclear safety, radiological protection, economics, and international law and non-proliferation. The ninth chapter assesses nuclear energy in the context of sustainable development. The last chapter looks to the future, and to the potential of new nuclear-based technologies.

The information throughout is necessarily brief, but at the end of each chapter, there is an annotated list that guides to a fuller set of references at the end of the book that are appropriate for further study.

World Nuclear Transport Institute

Radioactive Materials Transport: The International Safety Regime, published by WNTI, London, 2001, 78 pages

The second edition of this publication, published in the WNTI Review Series No. I in 2001, describes the regime that applies to international transport of radioactive materials, by road, rail, sea, air and inland waterway. It focuses on safety standards and regulations, to ensure that people and the environment are protected from the different hazards presented by the transport of radioactive materials.

The paper explains how the development of standards and regulations for dangerous goods transports on a broad international basis was initiated by the United Nations, and focuses on the core of the system for radioactive material transports; the IAEA Regulations for the Safe Transport of Radioactive Material. It also explains how this basic system is completed by additional modal regulations for the safe transport of dangerous goods.

Along with the main provisions of the various standards and regulations, the report describes the international or regional organisations – the scope of activity and structure – which elaborate these texts, and also explains the process used to conduct this work.

NEWS BRIEFS

OECD Nuclear Energy Agency

2003 Session of the International School of Nuclear Law

The third session of the International School of Nuclear Law (ISNL), a teaching programme jointly organised by the OECD Nuclear Energy Agency (NEA) and the University of Montpellier 1, took place from 25 August to 5 September 2003 in Montpellier. The International Nuclear Law Association, the European Commission and the International Atomic Energy Agency also extended their patronage or support to the organisation of this session.

The International School of Nuclear Law aims to provide a high-quality programme on all aspects of the law governing the peaceful uses of nuclear energy. Classes are designed for both law students at the master's or doctoral level who are interested in specialising in this field and for professionals who are already active in the nuclear sector and wish to develop their knowledge.

The 2003 Session brought together 53 participants from 30 countries all over the world. Subjects covered included, *inter alia,* the origins of nuclear law, radiation protection, nuclear safety and accident prevention, emergency preparedness, spent fuel and radwaste management, physical protection and nuclear security, liability and compensation for nuclear damage. A major development in 2003 has been the establishment, under the authority of the University of Montpellier, of a Diploma of International Nuclear Law.

The 2004 Session of the School is due to take place in Montpellier from 23 August to 3 September 2004. Further information on the ISNL and its programme and application forms for its 2004 Session are available from the NEA Secretariat, Legal Affairs, 12 Boulevard des Îles, 92130 Issy-les-Moulineaux, France, and on the NEA Web site: www.nea.fr/html/law/isnl/index.html.

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995), Hungary (7th May 1996), Poland (22nd November 1996), Korea (12th December 1996) and the Slovak Republic (14 December 2000). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

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 27 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.

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The IAEA Nuclear Safety Conventions: An Example of Successful "Treaty Management"?

by Günther Handl*

I. Introduction

When the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management[1] came into force in June 2002, following by almost five years the entry into force of the Convention on Nuclear Safety (CNS),[2] the major elements[3] of the International Atomic Energy Agency's long-planned international legal regime on nuclear safety[4] appeared to be finally in place. This fact might have been expected to be a cause for general satisfaction, if not

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1. The Joint Convention on the Safety Spent Fuel Management and on the Safety of Radioactive Waste Management [hereinafter: "Joint Convention"], reproduced in 36 *International Legal Materials*, p. 1431 (1997).

2. "The Nuclear Safety Convention, IAEA", Doc. INFCIRC/449 of 5 July 1994; reproduced in 33 *International Legal Materials*, p. 1514 (1994). It entered into force on 24 October 1996.

3. Apart from nuclear power installation and waste safety, this treaty-based regulatory approach does not (yet) cover transport safety, the safety of radiation sources or indeed of research reactors. However, transport safety was the subject of an International Conference on the Safety of Transport of Radioactive Material in July 2003, the purpose of which was to *inter alia* formulate recommendations regarding future international co-operation in this area, which might include development of an international legal instrument. As regards the regulation of the safety of radiation sources and of research reactors, the IAEA has endorsed the development of codes of conduct rather than the adoption of treaty instruments. See, e.g., "Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management: Revision of the Code of Conduct on the Safety and Security of Radioactive Sources", IAEA, Doc. GOV/2003/49-GC(47)9, 29 July 2003; and "Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management: Nuclear Safety Review for the Year 2002", IAEA Doc. GC(47)/INF/3, 11 August 2003, Annex, 6.

4. See, e.g., Handl, "*Après Tchernobyl: Quelques réflexions sur le programme législatif multilatéral à l'ordre du jour*," 92 *Revue générale de droit international public*, p. 5, at p. 12-15 (1988). This regime at law thus finally complements the existing de facto nuclear safety regime that had evolved over time under the aegis of the IAEA. For an overview of the latter, see "Measures to Strengthen International Co-operation in Nuclear, Radiation, Transport and Waste Management", IAEA Doc. GC(45)/INF/3, 31 August 2001.

celebration. However, reaction among legal experts has been mixed. Some commentators consider the two Nuclear Safety Conventions[5] a singular accomplishment of nuclear energy law, if not a milestone in the development of modern international environmental law in general.[6] Others, however, have been much less charitable in their comments. They criticise the Nuclear Safety Conventions for not appreciably advancing a genuine internationalisation of the nuclear safety regime,[7] for confirming its "inward-looking, insular character,"[8] or, more specifically, for lacking clearly established, sufficiently specific, or legally meaningful international safety provisions.[9]

Yet another group of commentators, while welcoming the two Conventions in principle, have reserved final judgement until there exists adequate operational experience to assess the instruments.[10] The principal reason for such caution seems to be the Conventions' idiosyncratic design which was prompted, at least in part, by the inherent complexity of devising uniform international regulations for traditionally disparate national nuclear power technologies, safety philosophies and regulatory systems, as well as the political sensitivity of subjecting national nuclear power facilities to international jurisdiction and control.[11] Thus, conceived as so-called "incentive conventions,"[12] both instruments establish fairly general nuclear safety requirements in conjunction with a non-coercive procedural mechanism[13] – in peer review format[14] – to ensure realisation of basic Conventional safety

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5. Hereinafter, the Convention on Nuclear Safety will be referred to by its acronym of "CNS" while "Nuclear Safety Conventions" will refer to both the CNS and the Joint Convention.

6. To this effect, see e.g. Pelzer, "Nuclear Energy", in 5 *Yearbook of International Environmental Law* 1994, p. 195, at p. 197 (1995), speaking of the CNS; and de Kageneck, "*La Convention commune sur la sûreté de la gestion du combustible usé et sur la sûreté de la gestion des déchets radioactifs*," 102 *Revue générale de droit international public*, p. 145, at p. 155 (1998).

7. See, e.g., Washington, "Monitoring Compliance with Nuclear Safety Standards: Peer Review through the International Atomic Energy Agency and its Convention on Nuclear Safety," in P. Szasz, ed., *Administrative and Expert Monitoring of International Treaties*, p. 193, at p. 213 (1999).

8. Kaminga, "The IAEA Convention on Nuclear Safety," in 44 *International & Comparative Law Quarterly*, p. 872, at p. 881 (1994).

9. See *infra* text at notes 33-36; Marples & Cerullo, "International Nuclear Safety: The Case of the Chernobyl Nuclear Power Station," 24 *Vermont Law Review*, p. 1209, at p. 1222 (2000); and Cameron, "Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management," in N. Horbach, ed., *Contemporary Developments in Nuclear Energy Law: Harmonizing Legislation in CEES/NIS*, p. 117, at p. 127 (1999), who referring to the Joint Convention's safety requirements, asserts that "it is hard to see how anyone could find anything offensive with the 'motherhood and apple pie' sentiments in these 'requirements.'"

10. See, in particular, Jankowitsch, "The Convention on Nuclear Safety," *Nuclear Law Bulletin* No. 54, p. 9 (1994); Reyners, "*La Convention de 1994 sur la sûreté nucléaire,*" 99 *Revue Générale de droit international public*, p. 605, at p. 621 (1995); Tonhauser & Jankowitsch, "The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management," *Nuclear Law Bulletin* No. 60, p. 9, at p. 22 (1997); and Cameron, *supra* note 9, at p. 128.

11. See, e.g., Stoiber, "International Convention on Nuclear Safety: National Reporting as the Key to Effective Implementation," in N. Horbach, ed., *supra* note 9, p. 97, at p. 100.

12. See preambular paragraphs iv and ix of the CNS and the Joint Convention, respectively. While the term is not defined in either instrument, it is generally understood to imply a convention, not designed to ensure fulfilment of obligations by parties through control and sanction, but based on the parties' enlightened self-interest in enhanced levels of safety to be developed co-operatively and promoted through regular "peer review" meetings. See Jankowitsch, *supra* note 10, at p. 12-13.

13. Carlton Stoiber puts it rather succinctly: "The 'incentive' character of the CNS puts issues of compliance and non-compliance in a much different light than for other multilateral instruments. No sanctions or

objectives. Pierre Strohl, in commenting on this "two pillar strategy" notes that "*[l]'architecture du premier de ces piliers ne manque pas d'élégance mais les matériaux utilisés sont relativement légers ; la solidité du deuxième est incertaine parce qu'elle dépendra de l'énergie qu'y insuffleront les participants aux examens.*"[15]

Today, there exist some relevant operational data[16] on the basis of which official commentaries tend to project a fairly optimistic picture as regards the effectiveness of the instrument concerned.[17] Whether such optimism might be justified is, however, far from certain.[18] Indeed, differences of opinion are likely to persist over two fundamental assumptions that underlie the Nuclear Safety Conventions' design: first, that, generally speaking, a combination of soft substance and soft enforcement procedure – the hallmark of the Nuclear Safety Conventions[19] – can, after all, constitute effective international nuclear law.[20] Second, that the particular design of the peer review process will be capable of meeting the twin challenges posed by the Conventions' inherently open-ended, hence dynamic emphasis on "nuclear safety": to control the Contracting Parties' compliance with "existing" legal obligations while also facilitating a progressive improvement of nuclear safety through periodic adjustments in the Contracting Parties' collective understanding of conventional safety obligations.

It is the validity of these assumptions and, specifically, the implicit claim that the Conventions reflect a "treaty management"[21] approach that successfully integrates law-application (enforcement,

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penalties flow from the fact that a nation has failed to comply… And, in any case, peer review meetings will not be marking findings of non-compliance regarding any individual Contracting Party." Stoiber, *supra* note 11, at p. 110.

14. See *infra* text at notes 71-76.

15. Strohl, "*La convention sur la sûreté nucléaire*," 40 *Annuaire français de droit international*, p. 804 (1994). Editor's translation: " the architecture of the first of these pillars does not lack elegance, but the building materials used are relatively light; the solidness of the second is uncertain because it will depend on the effect which the participants bring to the assessments." He then concludes: "*L'édifice n'est pas massif, ses chances d'équilibre et de résistance se trouvent dans la souplesse même des structures: pensons à la fable du chêne et du roseau*."

16. While these are largely derived from the first two review meetings of the Contracting Parties to the CNS, they are likely to be relevant also as regards the Joint Convention given the two Conventions' virtually identical structural features. Indeed, it might be noted that given their strikingly similar features, the two Conventions have been referred to as "sister conventions." See de Kageneck & Pinel, "The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management," in 47 *International & Comparative Law Quarterly*, p. 409, at p. 417 (1999).

17. See Convention on Nuclear Safety, First Review Meeting of the Contracting Parties, 12-23 April 1999, Vienna, Austria, CNS-RM-99/021, paragraph 52; and Convention on Nuclear Safety, Second Review Meeting of the Contracting Parties, 15-26 April 2002, Vienna, Austria, Summary Report, CNS-RM-2002/02, 26 April 2002.

18. See, e.g., P. Birnie & A. Boyle, *International Law and the Environment*, 463 (2nd ed. 2002) who note that the CNS's "control regime compares unfavourably with most of the more recent global agreements."

19. See further *infra* text at notes 70-75.

20. Or, to put it differently, that it is – paradoxically – the formally "weak convention that is most likely to beget the strong regime." Downs, Danish & Barsoom, "The Transformational Model of International Regime Design: Triumph of Hope or Experience?" 38 *Columbia Journal of Transnational Law*, p. 465, at p. 467 (2000).

21. "Treaty management" is used here to denote a process of interaction among parties to a given treaty through treaty-internal institutions or procedures by which the parties seek to protect the integrity of the existing treaty as well as to expand, further develop and refine the treaty regime. Treaty management thus

compliance control) and law making functions that the present paper will focus on. Although the relative dearth of operational experience[22] continues to pose something of a handicap, an examination of these issues appears appropriate at a time of growing dissension among theorists about appropriate international regime design. The Nuclear Safety Conventions are part of an ongoing wider trend in the design of multilateral (environmental or equivalent) agreements that has increasingly de-emphasised coercive application/enforcement measures for the sake of a facilitative, co-operative approach.[23] This trend is inspired by the assumption that in an inclusive institutional setting for interactive discourse among relevant actors, a "self-reinforcing dynamic"[24] will inevitably lead to a deepening of co-operation and increasingly ambitious commitments, even though, or rather precisely because, initially agreed to undertakings are modest and compliance is "managed" rather than "enforced." Recently, however, a backlash has begun to develop calling into question the utility of this "managerial"[25] (also "transformational[26] and, relatedly, "interactional"[27]) model to ensure regime

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refers to a structured process that combines both compliance control and regime building functions. It differs from "compliance management" in that the latter focuses primarily on regime maintenance. For an exposition of this narrower concept of "managing compliance," see Chayes, *et al.*, "Managing Compliance: A Comparative Perspective," in E.B. Weiss & H.K. Jacobson, eds.*, Engaging Countries: Strengthening Compliance with International Environmental Accords*, p. 39 (1998); and A. Chayes & A. Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (1995). Note also the different usage of "treaty management" as in "treaty management organisations," denoting organisations primarily involved in the implementation of substantive treaty provisions. See Sommer, "Environmental Law-Making by International Organisations," 56 *Zeitschrift f. ausl. öffentl. Recht u. Völkerrecht*, p. 628, at p. 631 (1996). For a more detailed look at compliance control see, e.g., Brunnée, "The Kyoto Protocol: A Testing Ground for Compliance Theories?" 63 *Zeitschrift f. ausl. öffentliches Recht u. Völkerrecht*, p. 255 (2003); M. Ehrmann, *Erfüllungskontrolle im Umweltvölkerrecht: Verfahren der Erfüllungskontrolle in der umweltvölkerrechtlichen Vertragspraxis*, (2000); Fitzmaurice & Redgwell, "Environmental Non-Compliance Procedures and International Law," in 31 *Netherlands Yearbook of International Law*, p. 35 (2000); Handl, "Compliance Control Mechanisms and International Environmental Obligations," 5 *Tulane Journal of International & Comparative Law*, p. 29 (1997); Marauhn, "Towards a Procedural Law of Compliance Control in International Environmental Relations," 56 *Zeitschrift f. ausl. öffentliches Recht u. Völkerrecht*, p. 696 (1996); C. Romano, *The Peaceful Settlement of International Environmental Disputes* 65-90 (2000); and Szell, "Compliance Regimes for Multilateral Environmental Agreements – A Progress Report," 27 *Environmental Policy & Law*, p. 304 (1997).

22. Thus, at the time of this writing there existed only limited, preliminary data for the Joint Convention as the first review meeting of the contracting parties will not be held until 3-24 November 2003.

23. The essence of this trend is well captured in statements by several experts at a meeting of a UNEP Working Group on compliance and enforcement of multilateral environmental agreements who suggested that proposed UNEP guidelines "should avoid the use of negative connotations and include only positive activities and incentives which encourage compliance and enforcement of environmental conventions in the spirit of full co-operation, understanding and support." See "MEA: Working Group on Compliance and Enforcement," 30 *Environmental Policy & Law*, p. 60, at p. 61 (2000). Recent examples of overwhelmingly facilitative approaches include The Basel Convention's Mechanism for Promoting Implementation and Compliance, Decision VI/12, Appendix, in Report of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Doc. UNEP/CHW.6/40, 10 February 2003, 46; and Art. 4 of the Alpine Convention's Compliance Mechanism, reproduced in 33 *Environmental Law & Policy*, p. 179, at p. 180 (2003).

24. Haas & Sundgren, "Evolving International Law: Changing Practices of National Sovereignty," in N. Choucri (Ed.), *Global Accord*, p. 401, at p. 406 (1993).

25. The "managerial model of compliance" discourages sanctioning processes and emphasises instead "an iterative process of discourse" that is as inclusive as possible. "The ensuing discourse progressively

effectiveness.[28] This controversy, therefore, directly implicates also the effectiveness of the two Nuclear Safety Conventions themselves. In short, the design of the Nuclear Safety Conventions not only raises issues that are important as well as timely from a nuclear legal perspective, but also poses topical questions of a larger, indeed general international legal import.[29]

II. The Nuclear Safety Conventions' Substantive and Procedural Norms in Context

A first impression of the CNS and the Joint Convention[30] as the international legal framework for nuclear safety world-wide is likely to prove somewhat less than reassuring: critically important substantive provisions in either Convention suffer from normative indeterminacy or are subject to very

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elaborates the meaning of relevant obligations through co-operative processes of consultation, analysis, and persuasion, rather than coercive measures." Chayes, *et al.*, *supra* note 21, at p. 41.

26. Similarly, "[t]ransformationalism prescribes that regimes be highly inclusive, minimise the stringency of obligations, de-emphasise enforcement, and utilise decision-making rules requiring near unanimity." Downs, Danish & Barsoom, *supra* note 20, at p. 467.

27. See Brunnée & Toope, "International Law and Constructivism: Elements of an Interactional Theory of Law," 39 *Columbia Journal Transnational Law*, p. 19 (2000), who by taking their cue from "constructivism" and drawing heavily on Lon Fuller's work, offer an "interactional" understanding of law. The hallmark of this theory is an emphasis on communicative or discursive processes, not just as a means, but as an end of law. "Inclusive processes" the authors maintain, serve to "reinforce the commitments of participants in the system to the substantive outcomes achieved by implicating participants in their generation." They thus conclude that a legal norm is "legitimate" when it reflects a specific rationality, i.e. reasoned argument, reference to past practice and contemporary social aspirations, and use of analogy. In these circumstances, law will attract its own adherence, without coercion. Id. at p. 51-58.

28. See, in particular, Downs, Danish & Barsoom, *supra* note 20, at p. 468, who note that "Transformational design principles have inspired on average less co-operative evolution in the agreements that embody them than have non-Transformational principles." Similarly, Raustiala & Victor, "Conclusions," in D. Victor, K. Raustiala & E.B. Skolnikoff, *The Implementation and Effectiveness of International Environmental Agreements: Theory and Practice*, p. 659, at p. 681-84 (1998) offer as well a mixed message in relation to the "management vs. enforcement" issue by concluding that "sticks" can be essential for handling non-implementation or non-compliance situations. See also Tallberg, "Paths to Compliance: Enforcement, Management, and the European Union," 56 *International Organization*, p. 609, at p. 610 (2002); and Bodansky, "The Legitimacy of International Governance: A Coming Challenge of International Environmental Law," 93 *American Journal of International Law*, p. 596, at p. 608 (1999) (questioning the basic practicality of a consensus-based compliance control procedure in as complex a regime as that of the Kyoto Protocol).

29. Still, the focus of the present inquiry will necessarily be on the specific issue of the Nuclear Safety Conventions' likely effectiveness over time, rather than on generic theoretical questions, such as whether regime effectiveness can or should be viewed as a function of a particular system of compliance control. For a highly pertinent warning against any easy conclusions, see, e.g., Kingsbury, "The Concept of Compliance as a Function of Competing Conceptions of International Law," 19 *Michigan Journal of International Law* p. 345 (1998). See also Brown Weiss, "Conclusions: Understanding Compliance with Soft Law," in D. Shelton, (Ed.) *Commitment and Compliance: The Role of non-binding Norms in the International Legal System*, p. 535 (2000).

30. The key features of both the CNS and of the Joint Convention have been described in great detail elsewhere. See *supra* note 2; Jankowitsch & Tonhauser, "The Convention on Nuclear Safety," 2 *Austrian Review of International & European Law*, p. 319 (1997); de Kageneck, *supra* note 6, at p. 145; and Cameron, *supra* note 9, at p. 117. Here it will suffice, therefore, to refer to those provisions of the two instruments that are critical to examining their normative significance.

significant reservations. To begin with, the preamble to the CNS, while reaffirming "the necessity of continuing to promote a high level of nuclear safety" simultaneously undermines the normative significance of this acknowledgement by emphasising that the "Convention entails a commitment to the application of fundamental safety principles… rather than of detailed safety standards." Key operational safety obligations such as those laid down in Article 6 of the CNS, namely to ensure the safety of existing nuclear installations, are qualified by such weasel words as "reasonably practical" and "as soon as practically possible." Similarly, while the Convention stipulates that any nuclear installation whose safety cannot be upgraded be shut down, this provision is couched in hortatory rather than mandatory language. Moreover, the normative significance of this stipulation is further compromised by the fact that it admits of balancing any safety risks against countervailing considerations, such as a contemplated shutdown's "social, environmental and economic impact" on the country. [31]

The corresponding provisions of the Joint Convention, namely Articles 5 and 12,[32] are couched in similarly conditional language. By the same token, obligations under Articles 4 and 11 of the Joint Convention which relate to "general safety requirements" applicable to spent fuel and radioactive waste management, respectively, are qualified by such words as "appropriate" or "adequate".[33] Other important safety objectives are circumscribed in terms of Contracting Parties' obligation to "strive to" or "aim to" avoid proscribed impacts from management operations.[34]

That evidence of such non-specific or heavily qualified substantive safety obligations might give rise to concern about the Conventions' effectiveness as international regulatory instruments should, therefore, not be surprising. Indeed, while expressions of concern about the Nuclear Safety Conventions differ in scope and intensity, they virtually all evince unease about the normative quality, the "softness"[35] of many of the Conventions' substantive provisions. This unease has been most forcefully articulated by Katia Boustany who refers to the two Conventions as prime examples of the "art of legal 'evasion.'"[36] By implying that the Conventions establish a normative house of cards, she

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31. "… Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact."

32. They relate to the safety of existing spent fuel management facilities and of radioactive waste management facilities and past practices, respectively.

33. For example, the first paragraph of Articles 4 and 11 provides: "Each Contracting Parties shall take the appropriate steps to ensure that … individuals, society and the environment are *adequately* protected against radiological [Joint Convention: "and other"] hazards." *Emphasis added*.

34. See Article 4, paragraphs (vi) and (vii); and Article 11, paragraphs (vi) and (vii).

35. See further *infra* text at notes 40-45. For a description of the concept, see, e.g., P. Birnie & A. Boyle, *supra* note 18, at p. 24-26.

36. Boustany, "The Development of Nuclear Law-Making or the Art of Legal 'Evasion,'" *Nuclear Law Bulletin* No. 61, p. 39 (1998). Similarly, Peter Cameron notes that the Joint Convention's safety requirements "are merely hortatory, encouraging Contracting Parties to take action but defining the obligation in the softest of soft terms…" Cameron, *supra* note 9, at p. 126. See also de La Fayette, "International Environmental Law and the Problems of Nuclear Safety," 5 *Journal of Environmental Law*, p. 31, at p. 68 (1993), who, speaking of what were then "Draft Elements for a Nuclear Safety Convention," deplores the (proposed) Convention's "regressive stance" which "defeats the very purpose of the convention."

criticises that much of states' conventional obligations are of a soft law nature,[37] with "[o]ne soft law giv[ing] rise to another, as in a perpetual motion imposed, despite itself, by the evasiveness of Governments."[38] In this sense, Boustany articulates a not uncommon view according to which recourse to "soft" norms in international law in general, and international environmental law in particular, is increasingly not intended to create or develop international law proper, but rather to prevent the law from taking shape altogether.[39]

It may well be true that the phenomenon of international conventional law as law hard in form, but soft in substance, of which the Nuclear Safety Conventions provide seemingly perfect illustrations, is generally on the rise.[40] However, it would be simplistic to characterise this development *per se* as a pathological phenomenon or to assume that soft normative provisions in a given legal instrument constitute *prima facie* evidence of "wilful intent […] to avoid restrictions on sovereign powers."[41] Rather, more often than not soft law provisions are likely to have a different, decidedly less morbid explanation.[42] For example, negotiators may conclude that the goals of the instrument concerned might not be immediately realisable, that additional time and effort are required to shape international consensus for the application of the treaty as a fully effective set of legal norms.[43] Indeed, it is perfectly "innocent" or "constructive" considerations such as these that account for much of present-day environmental lawmaking as a process that typically involves the adoption, first, of a framework convention with few or relatively soft substantive provisions, to be followed by implementing protocols of progressively greater normative bite.[44] "Normative softness", including variability of sanctions thus can be, and most frequently turns out to be, the result of "refined and

37. Thus Boustany characterises post-convention nuclear safety as "caught in the trap of 'soft law' and 'nebulous law'". Boustany, *supra* note 36.

38. Id. at.

39. See e.g., Székely, "Compliance with Environmental Treaties: The Empirical Evidence – A Commentary on the Softening of International Environmental Law," [1997] *American Society of International Law (ASIL) Proceedings*, p. 234, at p. 237.

40. For early analyses of this phenomenon, see, e.g., "A Hard Look at Soft Law," [1988] *ASIL Proceedings* p. 371; and Lang, "Diplomacy and International Environmental Law-Making: Some Observations," 3 *Yearbook of International Environmental Law* p. 108, at p. 116-117 (1992). See also Boyle, "Reflections on Treaties and Soft Law,"48 *International & Comparative Law Quarterly*, p. 901 (1999); and, generally, D. Shelton, *supra* note 29.

41. See Székely, "Non-Binding Commitments: A Commentary on the Softening of International Law as Evidenced in the Environmental Field," in *International Law on the Eve of the Twenty-First Century: Views from the International Law Commission*, p. 173, at p. 176 (1997). Indeed, some critics have raised the question of whether this type of commitment can at all to be understood as a treaty commitment. See, e.g., Hillgenberg, "A Fresh Look at Soft Law," 10 *European Journal of International Law*, p. 499 (1999), who speaks of "non-treaty agreements."

42. In fairness it should be pointed out that Prof. Boustany recognises in principle that "legal formalism is not necessarily relevant…when it comes to assessing the effectiveness of a normative tool or of a norm vis-à-vis the behaviour that it is supposed to be triggering." See Boustany, "The IAEA Code of Conduct on the Safety of Radiation Sources and the Security of Radioactive Materials: A Step Forward or Backwards?", *Nuclear Law Bulletin* No. 67, p. 9, at p. 18 (2001).

43. See, e.g., Gehring, "International Environmental Regimes: Dynamic Sectoral Legal Systems," 1 *Yearbook of International Environmental Law*, p. 35, at p. 38-46 (1990).

44. See, e.g., Handl, "Environmental Security and Global Change: The Challenge to International Law," 1 *Yearbook of International Environmental Law*, p. 3, at p. 5-7 (1990).

nuanced socio-legal engineering."[45] In consequence, any attempt at passing judgement on the effectiveness of the Nuclear Safety Conventions calls for corresponding caution. For the *prima facie* shortcomings of the safety conventions' substantive stipulations cannot be separated from but must be seen in the larger normative context, both substantive and procedural, in which they are embedded.

Looked at from this wider perspective, the Nuclear Safety Conventions' alleged normative quality problems immediately appear less disconcerting. First, both Conventions provide for cross-references to existing as well as evolving international standards and criteria as providing at the very least guidance on how Contracting Parties can achieve what is a fundamental objective of the respective Conventions, i.e. a high level of nuclear safety and protection against radiological hazards. For example, in the CNS the Contracting Parties reaffirm "the necessity of continuing to promote a high level of nuclear safety world-wide,"[46] and recognise not only the importance of international co-operation "through existing bilateral and multilateral mechanisms…and… [the] Convention," but also expressly acknowledge that there are internationally formulated safety guidelines which are updated from time to time and so can provide guidance on contemporary means of achieving a high level of safety…[47]

The Joint Convention refers in even stronger terms to pertinent extra-conventional international safety standards and criteria. After endorsing in its preamble, once again, "a high level of safety world-wide,"[48] it specifically recalls the "Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources," the "Principles of Radioactive Waste Management" of the IAEA Safety Fundamentals and "existing international standards" relating to transport safety.[49] Articles 4 and 11, which focus on general safety requirements for spent fuel and radioactive waste management, respectively, establish in identical language each contracting party's obligation to provide for effective protection of individuals, society and the environment, by applying at the national level suitable protective methods as approved by the regulatory body, in the framework of its national legislation *which has due regard to internationally endorsed criteria and standards*….[50] Finally, Article 24 of the Joint Convention addressing "operational radiation protection" incorporates again the same reference to "internationally endorsed standards on radiation protection."[51]

The true legal import of Contracting Parties' individual obligations under the Nuclear Safety Conventions, therefore, cannot be established except by reference to these extra-conventional safety standards, criteria and principles.[52] Indeed, these references do provide interstitial normative materials

45. Reisman, "Remarks", (A Hard Look at Soft Law), (1988) *ASIL Proceedings*, p. 373, at p. 375.

46. Preambular paragraph (ii). Moreover, Article 1, paragraph (i), again, lists among the objectives of the Convention "to achieve and maintain a high level of nuclear safety world-wide through the enhancement of national measures and international co-operation including, where appropriate, safety-related technical co-operation…."

47. Preambular paragraph (viii).

48. Article 1, paragraph (i) of the Joint Convention. See also preambular paragraphs (v) and (ix).

49. See preambular paragraph (xiv).

50. Paragraph (iv). Emphasis added.

51. See paragraphs 1 (ii) and 2 (ii).

52. For an overview of safety standards and principles developed under the aegis of the IAEA, see, e.g., "Measures to Strengthen International Co-operation in Nuclear, Radiation and Waste Safety including Nuclear Safety Review for the Year 1999," IAEA Doc. GC(44)/INF/4, 17 August 2000, Annex 2. For a update of their status, see "Status of the IAEA Safety Standards Programme, August 2003," at www.iaea.org/ns/committees/css/status.pdf., visited 2 September 2003.

that fill outright gaps in the principal instruments themselves, or compensate for the latter's relative lack of normative specificity. The fact that many of the standards or criteria referred to are themselves formally non-binding is *per se* of no consequence, as their ultimate legal significance is a function of the normative status of the referring or adopting provision, rather than of the referred to standards and criteria. Thus, the Joint Convention clearly establishes a link to a secondary level of normative concepts as binding upon states parties, thereby adopting a technique of "indirect legislation" that is well established internationally.[53]

The CNS, by contrast, recognises such external concepts as merely highly persuasive in pointing the way towards achieving the Convention's fundamental safety objectives. Moreover, it does not refer by name to specifically relevant international safety standards. However, this ostensibly more limited endorsement of CNS-external safety parameters does not necessarily suggest a lesser degree of their normative effectiveness under CNS auspices. First, apart from special circumstances in which IAEA safety standards might be formally binding,[54] many of the standards and principles involved[55] are already routinely and widely being complied with by States and as such may generally be deemed to have acquired *de facto* binding status.[56] In this vein, the proposed European Community's basic statement on fundamental nuclear safety obligations and concepts applicable throughout the EC, simply acknowledges the authoritative guiding function of IAEA standards and principles.[57] By the same token, their endorsement, by the IAEA's own Commission on Safety Standards,[58] as a mere

53. For a discussion of this technique and its implications in the context of, e.g., the Law of the Sea, see Oxman, "The Duty to Respect Generally Accepted International Standards", 24 *New York University Journal of International Law & Politics*, p. 109 (1991). See also Contini & Sand, "Methods to Expedite Environmental Protection: International Eco-standards," 66 *AJIL*, p. 37 (1972); Kirgis, "Specialized Law-Making Processes," in O. Schachter & C. Joyner (eds.), *The United Nations Legal Order* (Vol. 1), p. 109 (1995); and Sommer, *supra* note 21, at p. 654-659.

54. These include the application of IAEA safety standards to Agency projects in Member States, as well as, at the request of parties, to operations pursuant to any bilateral or multilateral agreement, or at the request of a state to any of that state's nuclear activities. See Art.III.A.6 of the Statute of the IAEA.

55. Of course, not all IAEA safety standards or principles carry equal normative weight, and therefore are not of equal legal significance from the standpoint of the Nuclear Safety Conventions. Thus, the Agency itself distinguishes between "safety fundamentals" (covering basic objectives, concepts and principles of safety and protection), "safety requirements" (requirements that must be fulfilled to ensure safety for particular activities or applications) and "safety guides" (listing merely recommended actions, conditions or procedures for complying with these safety requirements).

56. On this point see, e.g., Handl, *supra* note 4, at p. 18; Szasz, "The IAEA and Nuclear Safety," 1 *Review of European Community & International Environmental Law* p. 165, at p. 169 (1992); de La Fayette, *supra* note 36, at p. 58-59; and P. Birnie & A. Boyle, *supra* note 18, at p. 456-58. However, it must be acknowledged that while acceptance and application by states of IAEA safety standards are both routine and widespread, they are not universal. See "Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management: Nuclear Safety Review for the Year 2002", *supra* note 3, at Annex, 1.

57. See, e.g., European Economic and Social Committee, Opinion on the Draft Proposal for a Council Directive (Euratom) setting out basic obligations and general principles on the safety of nuclear installations and a Draft Proposal for a Council Directive (Euratom) on the management of spent nuclear fuel and radioactive waste, EC. Doc. TEN/128 Nuclear Safety, 26 March 2003, at paragraph 4.1.

58. The IAEA's Commission on Safety Standards (CSS) is a standing body of senior government officials holding national responsibilities for establishing standards and other regulatory documents relevant to nuclear, radiation, waste and transport safety. The CSS has a special overview role with regard to the Agency's safety standards and provides advice to the Director General on the overall program on regulatory aspects of safety.

"recommendation" instead of an unambiguous affirmation of their steering function, appears overly cautious, if not unwarranted.[59] Second, although the CNS's admittedly soft cross-reference cannot change the safety standards' and principles' formal legal status from non-binding to binding, neither does it, of course, undermine their extra-conventional status as generally quasi-binding. Third, and most significantly, the CNS's procedural setting, in particular its peer review mechanism, appears specifically designed to render these standards and principles verifiably applicable across the board to all Contracting Parties as a matter of political, if not legal inevitability. In other words, over time and notwithstanding their incorporation by reference as providing mere "guidance," IAEA safety standards and principles themselves are likely to metamorphose into *de facto* legally binding provisions, provided the peer review mechanism functions as intended.

There can be little doubt, therefore, that the peer review mechanism is critically important to the Nuclear Safety Conventions' ultimate effectiveness. Its principal cornerstones are two: first, the national reporting requirements laid down in Article 5 of the CNS and Article 32 of the Joint Convention; and second, regular as well "extraordinary" meetings to review Contracting Parties' performance.[60] The reports' contents as well as structure follow standards specified in guidelines established pursuant to Article 22, paragraph 1(i)[61] and Article 29, paragraph 2(iii),[62] of the respective Conventions and provide the basic information input into the review meetings. The latter, in turn, focus on individual Contracting Parties' compliance with conventional obligations – in terms both of overall or generic national safety trends and of the safety of individual nuclear facilities.[63] Beyond the expressly acknowledged objective – assessment and improvement of national measures of implementation of, as well as compliance with a given set of normative prescriptions – the peer review process serves also, at least implicitly, to refine, strengthen and, indeed, progressively raise the normative threshold against which implementation and compliance are being assessed.

It is true that the Contracting Parties' international legal obligations can first and foremost be characterised as those obligations of conduct[64] specifically enumerated in the respective instruments.

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59. Thus the Commission simply recommends that Contracting Parties use IAEA standards as a basis for assessing compliance with their obligations under the Nuclear Safety Conventions. See Commission on Safety Standards, Vision and Strategy for the IAEA Safety Standards, Draft Note to the Director-General, 27 January 2003, at paragraph 11.

60. See Articles 20 and 23 of the CNS, and Articles 30-31 of the Joint Convention.

61. Guidelines regarding National Reports under the Convention on Nuclear Safety, IAEA Doc. INFIRC/572/Rev.2, 2 September 2002 [hereafter: "GNR"].

62. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Guidelines regarding the Form and Structure of National Reports, IAEA Doc. INFIRC/604, 1 July 2002 [hereafter: "Joint Convention GNR"].

63. See *infra* text at notes p. 98-103; and GNR, *supra* note 61, at § III, 4-6 & 7; and Joint Convention GNR *supra* note 62, at § II 3 (e) and § III, G, paragraph 15, and H, paragraph 17. See further Stoiber, *supra* note 11, at p. 106.

64. For the Contracting Parties' "obligation" to achieve a high level of safety world-wide represents an inherently indeterminate obligation. It is given operational meaning only through specifically enumerated "obligations of conduct." As to the distinction involved, see Articles 20 and 21 of the International Law Commission's previous draft articles on State Responsibility, [1980] *Yearbook of the International Law Commission* (vol. II-2), p. 32. Note, however, that in its Draft articles on the Responsibility of States for Internationally Wrongful Acts, adopted in 2001, the Commission dropped this classification or typology of international obligations as not particularly useful and potentially confusing. See Crawford, Second Report on State Responsibility, UN Doc. A/CN.4/498, 17 March 1999, paragraphs 88-90; and Dupuy, "Reviewing the Difficulties of Codification: Ago's Classification of Obligations of Means and

However, as noted before, the Conventions' fundamental objective to "achieve and maintain a high level of nuclear safety world-wide" implies also an obligation of result,[65] which introduces an inherently dynamic dimension as regards these very obligations of conduct. In this sense, therefore, the reference in the CNS preamble to periodically updated international safety guidelines, as providing "guidance on contemporary means" of achieving the fundamental conventional objective, virtually assures that the review meetings will acquire overtones of a lawmaking exercise. The Joint Convention's analogous provisions and their even stronger "due regard to internationally endorsed criteria and standards" language are likely to have a similar effect: the peer review meetings are invited to engage in ascertaining individualised obligations of conduct commensurate with changing international safety standards and principles. In other words, the meetings should work not only to buttress Contracting Parties' general obligations flowing from the Conventions' basic safety philosophy and objectives, but also to identify and validate *ad hoc* specific normative implications of internationally evolving "good safety practices." It should be evident that in so doing the meetings will also help revise or develop over time generally applicable standards of safety or nuclear due diligence.[66]

In short, the Nuclear Safety Conventions merge in a single, regime-internal procedural mechanism a duality of functions – law application/compliance control, as well as lawmaking. This fact alone may not set the Conventions categorically apart from other comparable multilateral instruments,[67] although, more typically, such regulatory instruments seek to separate regime-internal compliance control from lawmaking functions, at least in principle.[68] However, as incentive conventions, the nuclear instruments also eschew truly coercive strategies in support of effectiveness.[69]

Obligations of Result in Relation to State Responsibility," 10 *European Journal of International Law*, p. 371, at p. 374-82 (1999).

65. See Article 21 of the International Law Commission's 1980 draft articles, *supra* note 64.

66. Thus Tonhauser & Jankowitsch correctly observe that "implementation of the Convention on Nuclear Safety and of the Joint Convention will presumably create new State practice by the mere functioning of the peer review mechanism." Tonhauser & Jankowitsch, *supra* note 10, at p. 22. Such practice, of course, is legally relevant in that it expresses or shapes community expectations regarding required conduct.

67. Indeed, compliance control mechanisms, such as the "non-compliance procedures" of various multilateral environmental agreements unavoidably straddle traditional lawmaking and law application or enforcement functions. See, e.g., Chayes & Chayes, "Compliance without Enforcement: State Behavior under Regulatory Regimes," *Negotiation Journal*, p. 311 at p. 313 (1991); and Handl, "Controlling Implementation of and Compliance with International Environmental Law: The Rocky Road from Rio," 5 *Colorado Journal of International Environmental Law and Policy*, p. 305, at p. 329 (1994). Thus, Jutta Brunnée correctly speaks of a "compliance continuum" comprising the design of the regime itself, law making and law application. See Brunnée, "COPing with Consent: Law-Making Under Multilateral Environmental Agreements," 15 *Leiden Journal of International Law*, p. 1, at p. 35-37 (2002).

68. Namely, in the sense that the assessment of factors bearing on compliance, the factual determination of non-compliance and the recommendation of co-operative or facilitative measures to be taken in response, tend to be allocated to special compliance review committees. On the other hand, the formal declaration of non-compliance, issuance of cautions, or suspension of rights and privileges under the treaty – actual sanctions – will normally be the responsibility of the collectivity, i.e. the conference or meetings of the parties, not of the select compliance review committee. For an overview of various pertinent treaty regimes, see Churchill & Ulfstein, "Autonomous Institutional Arrangements in Multilateral Environmental Agreements: A Little-Noticed Phenomenon in International Law," 94 *American Journal of International Law*, p. 623, at p. 628-45 (2000).

69. Except for the Joint Convention's express contemplation of traditional, regime-external dispute settlement mechanisms provided for under international law. For details, see *infra* note 118.

This fact accentuates the ambitious "treaty management," i.e. regime building and maintenance role assigned to the peer review process and underscores the uniqueness of the Conventions' design. Inevitably, it also raises the question of the latter's adequacy given the Conventions' express and implicit nuclear safety undertakings.

III. The Peer Review Mechanism: Can it fulfil its Pivotal Role?

As an international mechanism of accountability in the nuclear industry,[70] peer review[71] predates very considerably the entry into force of the Nuclear Safety Conventions. Indeed, for many years now peer review has been a signature characteristic of nuclear safety services provided through the IAEA[72] as well as the World Association of Nuclear Operators (WANO).[73] In these latter fora, submission to peer review is voluntary, their findings intrinsically advisory. By contrast, peer review pursuant to the Nuclear Safety Conventions is mandatory and intended to "compel"[74] – albeit through peer scrutiny and pressure – states parties towards maintaining as well as developing the nuclear safety regimes. Thus by appealing to parties' rational self-interest as well as perception of fairness it seeks to demonstrate, educate, persuade and, yes, if necessary, cajole. However, for this "managerial" formula[75] to work peer reviews must, first, be embedded in a robust procedural framework; second, be able to draw on adequate and accurate information; third, truly facilitate parties' discursive interaction as the key to the process's educational, norm-clarifying and validating effect; and, fourth, satisfy the test of legitimacy, if and when reviews involve regime building or lawmaking.

(a) Basic Structural Issues

One problem that is characteristic of international peer review and thus needs to be particularly guarded against results from participants' status as sovereign states, on the one hand, and the natural inclination among members of any social group to be influenced by reciprocally operating social

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70. "Peer review operates as a mechanism of accountability within an institutionalized social system." Washington, *supra* note 7, at p. 204. See also Jankowitsch, *supra* note 10, at p. 13.

71. The concept is said to have originated in 1665 when the Royal Society authorised the licensing of one of its publication "under the charter of the Council of the Society, being first reviewed by some members of the same." Daryl E. Chubin & Edward J. Hackett, *Peerless Science*, p. 19 (1990). In this sense, peer review is "an organized method for evaluating scientific work which is used by scientists to certify the correctness of procedures, establish the plausibility of results, and allocate scarce resources." Id. at p. 2.

72. See, e.g., Handl, *supra* note 4, at p. 19-21. For a listing of present IAEA safety services, including peer-review-based ones, see www.iaea.org/ns/nusafe/services.htm, visited 3 September 2003.

73. WANO's peer review program was launched on a provisional, pilot basis in 1991, and formally adopted in 1993.

74. See Jankowitsch, *supra* note 10, at p. 13.

75. This is not the place, nor is there a need, for an in-depth analysis of the peer review process and its underlying legal theory. Suffice it to say instead that the Nuclear Safety Conventions' design is evidently inspired by "constructivism," "an account of law not as a body of rules but as a system of legal relations, at once universalising from individual particularities, patterns of interactive behaviour, and particularising society's universal purposes." Kingsbury, *supra* note 29, at p. 358. For a fuller discussion of "constructivism" and its impact on international legal theory, see Brunée & Toope, *supra* note 25. For an analysis of the critical role of discursive interaction in relation to law, see generally, J. Habermas, *Faktizität und Geltung: Beiträge zur Diskurstheorie des Rechts und des demokratischen Rechststaats*, p. 15-60 (1992).

restraints, on the other. As Winfried Lang put it: "Peer review means that governments only submit to governments; this implies that governments only accept their fellow governments as judges; from this it follows that real judgements or condemnations in case of compliance-failure remain rare events…."[76] Peer review, in other words, undeniably poses an inherent danger of under-enforcement.[77] Indeed, this danger is more pronounced in the nuclear safety context given traditional governmental sensitivity about national or international security-related implications of domestic nuclear power program or activities. It is, therefore, reasonable to assume that states might also be less inclined to submit themselves or, conversely, to subject others to intense peer scrutiny in relation to the Nuclear Safety Conventions than would be the case in other multilateral treaty contexts. It is thus of paramount importance that the Conventions' peer review procedure be capable of guaranteeing a process that is both transparent and rigorous.

Both Conventions' basic provisions and, in particular, the procedural arrangements adopted thus far in furtherance of the peer review process, reflect a fairly sophisticated approach to counter bias and under-enforcement. Thus, as a key step that aims both to strengthen the effectiveness and to protect the integrity of the review process, the Contracting Parties of the Nuclear Safety Conventions have agreed to establish country subgroups to review the national reports. This means that the composition of each country group, the selection of group co-ordinators, its rapporteurs and chairpersons, become important factors that not only determine whether and how the process works, but that also affect public perception of its effectiveness, as well as its overall legitimacy.

Recognising the critical importance of properly structuring the review process, the Conventions' guidelines pay careful attention to the participation of states in the meetings' various country groups.[78] First, individual groups are made up of both countries with operational nuclear installations or experience with spent fuel/nuclear waste management and countries without such installations or experience. This serves to maximise the individual group's collective expertise as well as to ensure an appropriately robust review climate. Second, the review process guidelines of both Conventions recommend, but do not mandate, that countries periodically be reassigned to different country groups. The Conventions' guidelines refer to enhancing expertise among Contracting Parties, and thereby an "increasingly constructive review process" as the rationale for rotating country group membership.[79] They coyly omit, however, to acknowledge what is, after all, another critical objective of this recommendation, namely avoidance of a build-up over time of intra-group solidarity that might undermine the peer review. Third, the assignment of a country to a particular country group does not

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76. Lang, "'Peer Review' of Environmental Performances in International Organisations," in G. Hafner, *et al*., eds., *Liber Amicorum Professor Seidl-Hohenveldern – In Honour of his 80th Birthday*, p. 381, at p. 382 (1998).

77. "By definition, peer review involves critical analysis of colleagues, which can be beset by bias and animus. Bias is most likely to manifest itself in the under-enforcement of safety norms. Collegial experts may be tempted to overlook certain problems in the safety reports of peer countries." Washington, *supra* note 7, at p. 215.

78. See Guidelines Regarding the Review Process under the Convention on Nuclear Safety [hereafter: "GRP"], IAEA Doc. INFIRC/571/Rev.2, 2 September 2002; and Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Guidelines Regarding the Review Process [hereafter: "Joint Convention GRP"], IAEA Doc. INFIRC/603, 1 July 2002, Attachment.

79. See GRP, *supra* note 78, at p. 4, Section VI; and Joint Convention GRP, *supra* note 78, at p. 3, Section VI.

prevent that country from being represented also at the meetings of other country groups, although its right to participate in the deliberations of other groups will be limited.[80]

If these structural safeguards against the risks of misplaced collegiality look sound, there are other aspects of the review process that might be viewed as somewhat less reassuring. One such aspect concerns the limits on Contracting Parties' ability to discuss and if necessary challenge each other's implementation of and compliance with the obligations under the Conventions. Both Conventions expressly provide that "each Contracting Party shall have a reasonable opportunity to discuss the reports submitted by other Contracting Parties and seek clarification of such reports."[81] However, participation in this process is restricted to members of the country group concerned and to other Contracting Parties that have submitted written questions or comments at least two months in advance of the meeting.[82] Whereas the former will be "full participants," the latter will have the right to be present only during the group's review of the national report in relation to which they submitted questions or comments. Additionally, full participants are expected to lead the discussions on each group of questions before the group, whereas other participants' intervention will be restricted to discussing and seeking further clarification of answers to their own advance questions and comments.[83] The final plenary session offers another opportunity for all Contracting Parties to comment on national reports as well as on group rapporteurs' oral reports.[84] However, the net effect of limiting access to group deliberations is likely to be to prevent or at least seriously hamper spontaneous in-depth discussions of safety information that might come to the fore only in the course of intra-group analysis and discussion of national reports.

A second matter of potential concern relates again to restrictions on attendance. Both the CNS and the Joint Convention limit attendance of meetings, or specific session thereof, to Contracting Parties and to intergovernmental organisations specifically invited as observers.[85] Moreover, such invitation by Contracting Parties must be by consensus and is limited to organisations "competent in respect of the matters governed by this convention." Thus far, only the Nuclear Energy Agency of the OECD has been granted observer status at CNS review meetings.[86] While such a restrictive approach may be consistent with the nuclear industry's traditional reluctance to open up to outside review generally, it seems at odds with a condition for the proper functioning of any treaty management or compliance management procedure, namely that its institutional setting be truly inclusive. Today, "inclusiveness" in relation to an international review of nuclear safety issues probably ought to be understood to imply a process that is open not only to the Contracting Parties of the Nuclear Safety Conventions and international governmental entities, but also to relevant non-governmental organisations. The Conventions' unequivocal rejection of public participation in this wider sense,

80. See GRP, *supra* note 78, at p. 5, Section VII; and Joint Convention GRP, *supra* note 78, at p. 3, paragraph 2 (a-b).

81. CNS, Article 20, paragraph 3; and Joint Convention, Article 30, paragraph 3.

82. See GRP, *supra* note 78, at p. 3-4; and Joint Convention GRP, *supra* note 78, at p. 3, paragraphs 1-2.

83. See GRP, *supra* note 78, at p. 4; and Joint Convention GRP, *supra* note 78, at p. 3, paragraph 5.

84. See GPR, *supra* note 78, at p. 6; and Joint Convention GPR, *supra* note 78, at p. 5, paragraph 4(c).

85. See Article 24, paragraph 2 of the CNS, and Article 33, paragraph 2 of the Joint Convention, respectively.

86. See Summary Report, Second Review Meeting, *supra* note 17, at p. 1. No invitations were extended for the Joint Convention's Organisational Meeting of Contracting Parties in April 2003 as no requests for participation had been submitted.

therefore, might not only diminish the overall effectiveness of the review process but also shape negatively public perceptions of its legitimacy.[87]

(b) The Information Input

The Nuclear Safety Conventions guarantee confidentiality in relation to safety-related information potentially relevant to the deliberations of the peer review groups. Clearly, this is a matter of concern from the standpoint of the structural robustness of the review process. But it is equally problematical, if not more so, from the viewpoint of ensuring the accuracy and adequacy of the information input into the review proceedings. First, the CNS as well as the Joint Convention exempt information from disclosure if that information is protected information under the laws of the contracting party concerned.[88] This exemption extends to information that *inter alia* bears on national security or physical protection of nuclear materials or installations, intellectual property rights, and personal data. Although the Contracting Parties are encouraged to publish their national reports or summaries thereof (as well as questions and comments received from other Contracting Parties and responses thereto),[89] they ultimately are free to decide themselves whether or not information supplied is to be deemed confidential. Second, the contents of the debates during the review of individual national reports are to remain confidential,[90] the only record to be released to the public being a summary of the deliberations. Third, under the rules of procedure applicable to review meetings under either Convention, any decision on substantive matters must be adopted by consensus.[91] Thus by giving individual Contracting Parties a veto over disclosure of information the meetings' decision-making rules might end up further undercutting the dissemination of relevant information to the public at large. In sum, the transparency of review proceedings on which, after all, the effectiveness as well as legitimacy[92] of the whole process depend, is less than desirable. Indeed it may be perceived as compromised given this emphasis on protecting Contracting Parties' sensibilities over safety-related information.

A related matter of concern about the quality of the information input stems from the fact that national reports on implementation/compliance are initial self-assessments with each contracting party retaining a potentially significant measure of discretion regarding the form, length and structure of its report.[93] This poses an obvious problem as any effective review presupposes that national data

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87. See generally, Ebbesson, "The Notion of Public Participation in International Environmental Law," 8 *Yearbook of International Environmental Law*, p. 51 (1997). For further discussion of the issue of legitimacy as justification of authority, see *infra* text at notes 112-118.

88. See CNS, Article 27, paragraph 1; and Joint Convention, Article 36, paragraph 1.

89. See GNR, *supra* note 61, at Annex, 11.

90. Article 27, paragraph 3 and Article 36, paragraph 4, respectively. See further Rule 20 of the CNS Rules of Procedure and Financial Rules, IAEA Doc. INFIRC/573/Rev.2, 2 September 2002, p. 9.

91. See Rule 35, paragraph 1 of both the CNS Rules of Procedure and Financial Rules, IAEA Doc.INFIRC/573/Rev.2, 2 September 2002; and Joint Convention, Rules of Procedure and Financial Rules, IAEA Doc.INFIRC/602, 1 July 2002, Attachment.

92. For a discussion of the issue of legitimacy, see *infra* text at notes 109-118.

93. See GNR, *supra* note 61, at p. 1: "[E]ach contracting party has the right to submit a National Report with the form, length and structure it believes necessary to describe how it has implemented its obligations under the Convention…;" and Rule 40, paragraph 2 of the CNS Rules of Procedure and Financial Rules, *supra* note 90, at p. 13. The Joint Convention adopts virtually identical language in describing Contracting Parties' discretion.

submitted be, if not comprehensive, at least relevant in the sense of being *grosso modo* indicative of the national safety situation, reliable and comparable. Comparability of data suggests, of course, standardised formats, if not uniformity of national reports.

In view of the differences that exist among national nuclear technologies, regulatory philosophies etc., on the one hand, and the constraints of time and resources under which the peer review meetings operate,[94] on the other, national reports thus pose a serious challenge from a data management viewpoint. This problem requires, first, that the Contracting Parties identify and use data that permit both accurate assessments of national trends and cross-industry comparisons. Second, given the virtual impossibility of a truly comprehensive assessment of "nuclear safety" in individual Contracting Parties, peer review meetings must balance judiciously quality and quantity objectives for national reports. In this vein, Carlton Stoiber has suggested that review meetings use select "markers" that can highlight significant changes in a country's nuclear safety situation. [95] In other words, peer review meetings are called upon to forge an understanding on a manageable number of criteria by which safety-significant developments and trends can be relevantly measured.

Considering this information management issue, it is not surprising that the guidelines on national reports of both conventions seek to curtail Contracting Parties' discretion. They do so through recommendations that specify the reports' basic features as well as what type of information ought to be provided in describing implementation of national obligations under the respective Convention, article-by-article.[96] Success at streamlining of national reporting, and specifically assuring the quality of the reports, will thus depend on the peer review meetings' ability to reshape or reverse normative expectations within the nuclear safety regimes, given the Conventions' express recognition of Contracting Parties' discretion relative to national reports.

(c) Specificity and Iteration in the Peer Review Meetings

For peer review to work as envisaged, it is, as noted before, essential that the process optimise conditions for the collective shaping of normative expectations, i.e. the identification, general affirmation as well as validation ad hoc – vis-à-vis individual Contracting Parties – of applicable nuclear safety norms. Clearly, the process' structural robustness as discussed before will be an important factor. At least two additional aspects might be singled out here as being critical in this respect. First, reviews of national reports and related exchanges among the participants need to go beyond generic policy issues and reach a level of specificity sufficient to provide clear guidance to individual Contracting Parties with regard to the implementation of and compliance with their obligations under the Conventions. Second, and equally importantly, the notion of iterative discourse as the linchpin of the review process implies by its very terms that the peer review meetings facilitate the revisiting of questions regarding implementation and compliance to ensure the process' general educational and norm-clarification and validation objectives.

Doubts about the Nuclear Safety Conventions' peer review as an effective "normative process of communication" frequently surface under the guise of criticism of the review meetings' safety

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94. Note, for example, Article 5, paragraph 2 of the Annex to the Final Act of the Diplomatic Conference adopting the CNS, which recommends limiting the frequency as well as duration of review meetings in order to reduce costs and thereby to encourage the widest possible adherence to the Convention.

95. Among relevant reporting parameters he recommends *inter alia* the number of unplanned reactor shutdowns, availability factors, and occurrences reported under the INES. See Stoiber, *supra* note 11.

96. See GNR, *supra* note 61; and Joint Convention GNR, *supra* note 62.

control function, in particular in relation to risks emanating from individual nuclear installations. Those who tend to judge the merits of the Nuclear Safety Conventions against this yardstick will no doubt claim that limited money and time alone prohibit the peer review meetings from providing the kind of thorough or indepth assessment of national safety trends that might be necessary to anticipate and correct in time significant national nuclear safety lapses. By the same token, it has been suggested that because review meetings are designed to focus on nuclear safety issues at a generic trend or policy level, the meetings would be largely irrelevant as instruments of control of specific hazards emanating from individual installations.

It is certainly true that constraints of time and money[97] pose obvious obstacles to the meetings assuming a safety review function at individual facility level. Moreover, the general thrust of the peer review process clearly is to redress from a perspective of general safety policy and philosophy possible national shortcomings in implementing conventional obligations, not to assess the safety of individual nuclear installations.[98] However, the Conventions do not *per se* preclude the review meetings from focusing on individual nuclear facilities. Indeed, the CNS's Guidelines on National Reports (GNR) leave the door open to the possibility of an individual facility-focused review by acknowledging that generic safety trends could be "illustrated by the specific discussion of particular safety-related issues encountered at individual facilities."[99] A very similar acknowledgement can be found in the Joint Convention's Guidelines regarding the Form and Structure of National Reports.[100] The likelihood that the review meetings might after all end up focusing on individual plant safety is underlined also by the GNR comment to Article 6 of the CNS which invites Parties to report on individual existing nuclear power installations.[101] Indeed, the first two review meetings of the CNS seem to confirm that some discussion of specific safety aspects of individual national nuclear installations might well be inevitable.[102] Finally, it might be argued that internationally significant nuclear safety events at individual national facilities – whatever their exact cause – would seem to be precisely the type of situation which Contracting Parties could be expected to wish to be briefed on and to review within the ambit of the Nuclear Safety Conventions.

It is far from a foregone conclusion, therefore, that CNS review meetings might be intrinsically unable or routinely unwilling to relevantly discuss safety issues that arise at individual national nuclear installations. Given the nature of the subject matter, the Joint Convention and related Guidelines on National Reports offer an even clearer prospect that review meetings might cover not just generic safety trends, but also safety issues at individual installations.[103]

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97. Thus Article 5, paragraph 2 of the Annex to the Final Act of the Diplomatic Conference adopting the CNS recommends limiting the frequency as well as duration of review meetings in order to reduce costs and thereby to encourage the widest possible adherence to the Convention. Similarly, the Joint Convention Guidelines regarding the Review Process limit group discussions of each national report to a maximum of one full day. See Joint Convention GRP, *supra* note 78, at p. 3, paragraph 4.

98. Thus the summary reports of the first two meetings reiterate emphatically this point. See *supra* note 18, at paragraphs 6, and 9, respectively.

99. GNR, *supra* note 61, at p. 2.

100. See Joint Convention GNR, *supra* note 62, at p. 2, paragraphs 2 (f) and 3(e).

101. GNR, *supra* note 61, at p. 4-5.

102. See Summary Report of the First Review Meeting, *supra* note 17, at paragraphs 29 and 33.; and Summary Report of the Second Review Meeting, *supra* note 17, at, in particular, paragraphs 33 and 37.

103. See also Tonhauser & Jankowitsch, *supra* note 10, at p. 18.

Irrespective of whether the peer review mechanism's ability to canvass individual installation events with international safety implications can or should be taken as an accurate measure of the Conventions' overall effectiveness, it is thus likely that peer reviews will at least occasionally expand their focus to safety issues at individual installation level, notwithstanding mantra-like assertions to the contrary.[104] Indeed, such a step might be a logical consequence of the Nuclear Safety Conventions' cross-reference to extra-conventional safety standards and principles, which bring into play more specific normative parameters. "Managing" Contracting Parties' compliance with these parameters might, therefore, also necessitate a peer review pegged at a more specific level, including operational safety aspects of individual installations. Admittedly, such expanded reviews are unlikely to be carried out in any systematic or comprehensive manner. However, they might well occur sufficiently frequently to make a difference in terms of both public perception of the Conventions' utility and of enhancing overall nuclear safety.

There can be little doubt that the Nuclear Safety Conventions meet the second requirement that peer review meetings provide a forum for effective iterative discourse. Apart from clear indications to this effect in the Conventions themselves, the summary reports of the review meeting of the CNS reflect emphatic acknowledgement of the fact that the "Convention entails a commitment to a continuous learning and improving process."[105] Thus CNS Contracting Parties have specifically affirmed that the review process' ability to revisit safety issues is an indispensable element and a signature characteristic of the nuclear safety regime as an incentive convention.[106] The endorsement of the educational function of peer review "follow-through" on matters previously reported or discussed, finds normative expression also in the GNR catchall safety-related paragraph which specifically envisages follow-up reporting by Contracting Parties in relation to the safety of existing individual nuclear installations.[107] Similarly, the Joint Convention's GNR stipulate that Contracting Parties provide *inter alia* updated information on matters covered in the previous report, address issues identified by the parties previously and, most significantly, respond to any recommendations adopted at the plenary sessions of the previous meeting.[108]

In sum, the evidence regarding structural robustness, information management and ability to promote iterative discourse thus reveals a few obvious weaknesses in the Nuclear Safety Conventions' the peer review mechanism. Some of these, e.g., with regard to transparency, might require concerted efforts to overcome; others, such as the lack of uniformity in national reporting practices, might be correctable through an informal reinterpretation of the relevant Conventional provisions. At the same time, however, there is little to suggest that the mechanism is fundamentally deficient or a priori lacks any of the basic requisite features for effective regime maintenance, i.e. norm-clarification and validation through discursive interaction among the Contracting Parties.

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104. For example, the Second Review Meeting of the CNS again emphasised that it was not the review process' task "to review the safety of individual nuclear installations." See Summary Report of the Second Review Meeting, *supra* note 17, at paragraph 9.

105. Summary Report of First Review Meeting, *supra* note 17, at paragraph 7; and see Summary Report of the Second Review Meeting, *supra* note 17, at p. 3, paragraph 11: "As part of this learning process it was considered to be good practice to provide additional information in future reports on those topics and issues on which particular interest was expressed during the review process…."

106. See, e.g., Summary Report of First Review Meeting, *supra* note 17, at paragraph 8.

107. GNR, *supra* note 61, at p. 9, read together with comment on Article 6 of the CNS.

108. Joint Convention GNR, *supra* note 62, at p. 2, paragraph 2(e).

(d) The Issue of Legitimacy

The effectiveness of peer review, finally, is also a function of its perceived legitimacy or fairness.[109] For example, Tom Franck refers to the "compliance pull"[110] of legitimacy by which he means procedural legitimacy.[111] In the context of the Nuclear Safety Conventions, to the extent an issue of legitimacy might be perceived to arise at all, it will likely concern legitimacy in the sense of justification of authority.[112]

As noted before, the Nuclear Safety Conventions' peer review process, which serves principally to control or manage implementation/compliance, inevitably strays also into the realm of law making.[113] It is in relation to this latter aspect of "treaty management" that an issue of legitimacy might be seen as presenting itself. This – albeit limited – lawmaking dynamic inherent in the Nuclear Safety Convention's peer review mechanism, together with indirectly legislated substantive norms,[114] might give the impression of an attenuated consensual basis of obligations said to arise under the Nuclear Safety Convention. Specifically, the individualised validation and application of extra-conventional safety standards and principles as legally relevant parameters, though covered by the Contracting Parties' general consent [115] to the Conventions' enabling provisions, might appear unsupported by the Contracting Parties' specific consent. If true, this would, of course, raise a question of legitimacy, namely in terms of the peer review mechanism's authority to prescribe. However, a more careful analysis shows otherwise.

Unlike other international, especially environmental, regimes, which often feature a transfer of binding decision-making powers to institutional bodies while concomitantly abandoning or at least modifying the traditional consent principle, the Nuclear Safety Conventions' peer review process retains all the characteristics of a state-centred, strictly consensus-based treaty-management device. In other words, while the Conventions and their peer review mechanisms might give the appearance – as Bodansky puts it – of binding consenting states to a governance structure[116] with independent, binding decision-making powers, in reality they continue to embody treaties that commit the Contracting Parties to a system of rules of which they remain fully in control: All matters of substance are to be decided by consensus.[117] The institutional mechanism, the peer review process, moreover, has no

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109. This is not, of course, the place for to an in-depth review of the interrelationship of legitimacy and efficiency in international agreements or a review of the copious literature on the subject. However, a few comments will be necessary.

110. Thomas M. Franck, *The Power of Legitimacy among Nations*, p. 43-44 (1990).

111. See also Kingsbury, *supra* note 29, at p. 355: "Compliance is … influenced by perceptions of fairness apart from rational calculations of costs and benefits…."

112. For further discussion of this notion of legitimacy, see Bodansky, *supra* note 36, at p. 601.

113. See *supra* text at notes 63-66.

114. i.e. the Conventions' cross-referenced international safety standards and principles.

115. As to the legitimating role of state consent and the necessary distinction of specific and general consent, see Bodansky, *supra* note 36, at p. 604.

116. Id. at p. 608.

117. See Rule 35, paragraph 1 of the CNS Rules of Procedure and Financial Rules, *supra* note 90; and Rule 35, paragraph 1 of the Joint Convention Rules of Procedure and Financial Rules, *supra* note 90.

coercive powers. The only discordant note in this respect arises from the dispute settlement provisions of the Joint Convention, a fact that has not escaped critical attention. [118]

In sum, it should be evident that the Nuclear Safety Conventions as designed and likely to operate in the foreseeable future probably will not give rise to any significant "legitimacy of governance" issues. In general, such a finding might be taken to confirm the regime's effectiveness. Somewhat paradoxically, however, it is the very absence of a legitimacy problem that reminds us instead of the problematic nature of the Conventions' treaty management approach. For within the context of the Nuclear Safety Conventions, peer review-centred regime-building (as well as compliance control) activities remain hostage to individual Contracting Parties' goodwill, co-operation, and consent. When the two incentive Conventions are reduced to their basic component elements, the notion that the Conventions might signal a radical departure from tradition thus turns out to be something of a myth; the Nuclear Safety Conventions represent typically orthodox regimes. For at the end of the day, in relation to each and every contracting party, law making within the peer review setting remains a self-validating process giving rise to problems typical of collective standard-setting, such as the single-state veto, the slowest boat and the lowest common denominator phenomena.[119]

IV. Conclusions

The preceding analysis shows that the Nuclear Safety Conventions' substantive obligations may indeed be often non-specific, or subject to significant reservations, hence *prima facie* weak. Core obligations arising for individual Contracting Parties are, however, pegged to more detailed extra-conventional safety standards and principles, rendering the Conventions' alleged normative infirmities more apparent than real. This normative structure is backed by states' reporting obligations within a system of peer review to ensure states' realisation of the Conventions' fundamental objective of securing a high level of nuclear safety world-wide.

The Nuclear Safety Conventions undoubtedly represent an advance in bringing national nuclear power activities within the ambit of international legal safety norms. They introduce a novel measure of international legal accountability for the safety of commercial nuclear power operations. But whether this system represents a successful example of "treaty management" defies an easy answer. Certainly, it is beyond doubt that the peer review process combines aspects of law application (enforcement/control of implementation and compliance) with lawmaking. However, the overall effectiveness of this approach in terms of promoting the Conventions' basic objective cannot readily

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118. See Kageneck, *supra* note 6, at p. 156, who rightly calls attention to the incongruity of traditional, regime-external dispute settlement options under Article 38 of the Joint Convention, in particular arbitration, within the setting of an incentive convention.

    The Nuclear Safety Convention does not contain provisions on dispute settlement, other than a reference to consultations among the parties concerned "within the framework of a meeting of the Contracting Parties," be that a regular review or an extraordinary meeting. Thus the CNS meetings' treaty management functions extend as well to dispute settlement proper. Indeed, they provide the exclusive mechanism, as disputes are to be settled amicably within, and not to be submitted to processes or fora outside, the regime. By contrast, Article 38 of the Joint Convention calls for consultations within the framework of the meetings of the Contracting Parties as a first step, and specifically provides for traditional dispute settlement techniques, including recourse to arbitration in the event that consultations within the regime should fail.

119. The latter two phenomena are aptly described in P. Sand, *Lessons Learned in Global Environmental Governance*, p. 5-18 (1990).

be reduced to a few variables. Compliance, it has been said, is not the same as effectiveness,[120] nor can legitimacy necessarily be equated with effectiveness. What might be noted, however, is that by entrusting critical aspects of regime maintenance and regime building to the peer review meetings without strengthening also the latter's effective, if not legal, powers – for example, by providing for coercive compliance control measures or, even more significantly, by generally modifying the consensual basis of substantive decisions of the meetings – the Nuclear Safety Conventions are caught in the tension between innovation and tradition. The Conventions are innovative in radically embracing the idea of law as a process of iterative discourse. They are traditional in the sense of clinging to the ideal of an exclusively state-centred, consent-based model of international law. In this sense, the Nuclear Safety Conventions bear the characteristics of a political compromise, perhaps a necessary one, but one that affects also effectiveness. For the time being, at any rate, it remains unclear whether this compromise will prove acceptable in the long-run or how the tension between the two contending perspectives is likely to resolve itself.

120. Raustiala & Victor, *supra* note 28, at p. 661.

Protection of Civilian Nuclear Installations in Time of Armed Conflict

by Vanda Lamm*

The history of wars fought by mankind has witnessed a host of cases in which installations containing dangerous forces, e.g., dams and dykes became the object of military operations, and such installations were damaged particularly during the wars of the 20th century. In 1938, for instance, the Chinese authorities exploded dams of the Yellow River to prevent the advance of Japanese troops. With the same end in view, the Dutch flooded extensive agricultural areas with seawater. During the Second World War the dams in the Eder and the Möhne in Germany became targets of the enemy in 1943. Needless to emphasise that such attacks caused enormous damage at the time. Later similar attacks were undertaken during the wars in Korea and Vietnam.[1] The cited examples go to show that installations containing dangerous forces were often damaged in armed conflicts, not only by the enemy, but were destroyed for defensive purposes as well.

All those events led the International Committee of the Red Cross (ICRC) to introduce in the "Draft Rules for the Limitation of the Dangers Incurred by the Civilian Population in Time of War",[2] which it had prepared by 1956, an article (then Article 17) on the special protection of installations containing dangerous forces. According to the Draft, States were to seek in peacetime special agreements on granting general immunity, for the duration of armed conflicts, to installations like dams and dykes of hydroelectric stations serving exclusively peaceful purposes. In addition, States were to conclude separate agreements in time of war to provide special protection for installations which were and would remain wholly unrelated to military operations.[3] The list of installations containing dangerous forces was later extended to include nuclear electrical generating stations.

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1. *Cf.* Commentary to the Additional Protocols to the Geneva Conventions, Ed. Yves Sandoz, Christophe Swinarski, Bruno Zimernann (1987), *International Committee of the Red Cross*, Martinus Nujhoff Publishers, Geneva, p. 667.

2. For the Draft, see Herczegh, Géza (1981), "*A humanitarius nemzetközi jog fejlődése és mai problémái*" (Development and Current Problems of International Humanitarian Law), *Közgazdasági és Jogi Könyvkiadó*, Budapest, p. 143-145. In 1949 the Four Geneva "Red Cross" Conventions replaced a number of conventions that dealt with rules concerning the wounded and sick in armies in the field and prisoners of war, and extended the protection of civilians in time of war. In 1977, two Additional Protocols to the 1949 Conventions were adopted.

3. *Cf.* Bothe M., K.J. Partsch and W.A. Solf (1982), *New Rules for the Victims of Armed Conflicts*, Martinus Nujhoff Publishers, The Hague (Boston) London, p. 350-351.

The Draft of the Red Cross was not received favourably at the 1971 and 1972 Conferences of Governmental Experts, primarily because several representatives found it inapplicable in practice as it envisioned agreements to be concluded in time of armed conflict.[4] Thus, in 1968 the ICRC prepared a new Draft proposing that, in case of armed conflict, dams, dykes and nuclear power stations should be protected in all circumstances and that the belligerents should refrain from locating any kind of military objective in the vicinity of such installations.[5]

After a long discussion the Working Group dealing with this question accepted by consensus Article 56 of the Protocol Additional to the Geneva Conventions of 12 August 1949 (Protocol I). The Treaty was adopted by the Diplomatic Conference from 1974 to 1977, on the reaffirmation and development of international humanitarian law applicable in armed conflicts. Article 56 of Protocol I reads as follows:

"1. Works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population.

2. The special protection against attack provided by paragraph 1 shall cease:

(a) for a dam or a dyke only if it is used for other than its normal function and in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(b) for a nuclear electrical generating station only if it provides electric power in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(c) for other military objectives located at or in the vicinity of these works or installations only if they are used in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support.

3. In all cases, the civilian population and individual civilians shall remain entitled to all the protection accorded them by international law, including the protection of the precautionary measures provided for in Article 57. If the protection ceases and any of the works, installations or military objectives mentioned in paragraph 1 is attacked, all practical precautions shall be taken to avoid the release of the dangerous forces.

4. It is prohibited to make any of the works, installations or military objectives mentioned in paragraph 1 the object of reprisals.

5. The Parties to the conflict shall endeavour to avoid locating any military objectives in the vicinity of the works or installations mentioned in paragraph 1. Nevertheless, installations

4. Ibid. p. 351.

5. Commentary...., op. cit., p. 667-668.

erected for the sole purpose of defending the protected works or installations from attack are permissible and shall not themselves be made the object of attack, provided that they are not used in hostilities except for defensive actions necessary to respond to attacks against the protected works or installations and that their armament is limited to weapons capable only repelling hostile action against the protected works or installations.

6. The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces.

7. In order to facilitate the identification of the objects protected by this Article, the Parties to the conflict may mark them with a special sign consisting of a group of three bright orange circles placed on the same axis, as specified in Article 16 of Annex I to this Protocol. The absence of such marking in no way relieves any Party to the conflict of its obligations under this Article."[6]

The inclusion of Article 56 in Protocol I clearly represents a significant achievement in the development of international humanitarian law. Nonetheless, this article has been, perhaps to the point of exaggeration, criticised as complicated and confusing which explains why, among other reasons, the United States has not ratified Protocol I.[7]

I. The protected installations and the concept of protection

1. The basic idea of Article 56 is that installations should not be the object of attack when an act of violence, whether offensive or defensive in nature, could release forces resulting in grave losses to the civilian population.

Paragraph 1 of Article 56 enumerates three categories of protected installations, notably dams, dykes and nuclear electrical generating stations. In connection with Article 56 the first question raised by writers concerns the failure of that article to mention other installations similarly containing dangerous forces, such as certain chemical works or oil installations.[8] It is to be noted that the need to widen the range of protected installations had already emerged in the course of the negotiations on the Protocol, with importance attached especially to the protection of oil refineries and storage facilities.[9] Although the relevant proposals were later withdrawn, one of the reasons may have been that Article 56 of Protocol I contains a separate provision on environmental damage and that attacks against petroleum storage facilities and refineries or chemical works breach the prohibition of damage to the environment.[10]

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6. For the interpretation of Article 56 see Commentary…, op. cit., p. 666-675; and Bothe, Partsch and Solf, op. cit., p. 350-357.

7. *Cf.* Carnahan, Burrus M. (1992), "Protecting Nuclear Facilities from Military Attack: Prospects after the Gulf War", *American Journal of International Law*, p. 533.

8. Rogers, A.P.V. (1996), *Law on the Battlefield*, Manchester University Press, Manchester and New York, p. 117.

9. *Cf.* Commentary …, op. cit., p. 668.

10. For the elaboration of the provisions of Protocol I on the protection of the environment, see Herczegh, Géza, (1984), "*La protection de l'environnement naturel et le droit humanitaire*", *Études et essais sur le droit international humanitaire et sur les principes de la Croix-Rouge en l'honneur de Jean*

The Protocol refers to nuclear electrical generating stations as the third group of protected installations. This means that Protocol I *only aims to protect the nuclear facilities used for peaceful purposes* and that even its related provisions apply to a single sub-group of civilian nuclear installations.

2. Thus Protocol I in no way covers nuclear weapons, albeit, as will be discussed later, the use of such weapons may have environmental consequences. The Draft of the ICRC specifically stated that it did not intend to deal with the problem of nuclear weapons. As is pointed out by Rogers, that statement was necessary because the nuclear powers were not willing to enter into negotiations unless those weapons remained unaffected by the instrument to be elaborated.[11] The International Court of Justice has, also in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons* stated that nuclear weapons specifically had not been discussed at the Conferences of Geneva in 1949 and 1974-1977. However, the Court emphasised that "In view of the vast majority of States as well as writers there can be no doubt as to the applicability of humanitarian law to nuclear weapons."[12]

3. As mentioned earlier, Protocol I deals only with the protection of nuclear electrical generating stations. This means that *protection does not extend to research reactors, which* constitute another large group of nuclear installations used for peaceful purposes. This is one of the great deficiencies of the Protocol, and there are several reasons *why it is necessary to list the research reactors among the installations containing dangerous forces.*

- Extension of protection to research reactors is supported primarily by the fact that in 56 States of the world there exists today a total of 283 research reactors with a combined capacity exceeding 3 000 MW.[13]

- Another reason lies in the fact that research reactors operate at widely different capacities. There are research reactors in the United States which operate with a capacity of 3 or 4 MW, but also ones with a capacity of 250, 100 and 60 MW.[14]

- A considerable number of research reactors operate within the framework of universities and research institutes, which are generally much nearer to inhabited areas than nuclear power plants.

The quantity and capacity of nuclear research reactors as well as their proximity to populated centres *make it likely that attacks against them will cause severe losses among the civilian population.*

Pictet, Ed. Christophe Swinarski, *Comité international de la Croix-Rouge*, Martinus Nijhoff Publishers. p. 725-731.

11. This explains why several States, at the time of signing and ratifying the Protocol, made declaratory statements stressing that the rules laid down in Protocol I did not affect nuclear weapons and did not regulate or prohibit their use. *Cf.* Rogers, op. cit., p. 118.

12. ICJ Reports, 1996. p. 259.

13. *Cf.* www.world-nuclear.org/info. *Cf.* Ritchie, Ian G., "Growing Dimensions, Spent Fuel Management at Research Reactors", www.iaea.org/worldatom/Periodical/Bulletin/ Bull401/article7.html.

14. In the United States the capacity of the Idaho National Engineering Lab. is 250 MW, that of the Oak Ridge National Laboratory is 100 MW, and that of the Brookhaven National Laboratory is 60 MW. *Cf.* Matos J.E., "LEU Conversion Status of US Research Reactors" (Paper presented at the 1996 International Meeting on Reduced Enrichment for Research and Test Reactors, October 7-10, 1966. Seoul, Korea), p. 8.

However, in connection with the inclusion of research reactors among the installations containing dangerous forces, the question arises what to do with research reactors producing fissionable materials for nuclear weapons.[15]

The question of immunity of these reactors is of topical interest because several research reactors have become the objects of attack due to the suspicion that nuclear materials were used for military purposes.

The first such action took place on 7 June 1981, when Israel bombed the French-made OSIRAK research reactor of 40 MW capacity located at the research centre Tuwaitha near Baghdad.[16] In the course of the first Gulf War of 1981 the United States Air Force attacked this same nuclear installation. In both cases the military action was said to have been warranted by Iraq's breach of its obligations under the Non-Proliferation Treaty and intention to use the reactor's materials for the production of nuclear weapons, and further justified as a measure to prevent the spread of nuclear weapons.[17] It should be added that, according to published information, the American attacks on Iraqi nuclear installations during the first Gulf War did not create a risk of radioactive contamination.[18]

Without dwelling on this issue I should point to an essential difference between the Israeli and American attacks. At the time, Israel's action was condemned by several States of the international community on the basis of Article 2, paragraph 4, of the United Nations Charter, whereas the American attacks took place on an authorisation by the Security Council. The extent to which the attack on the basis of Security Council Resolution 678 on Iraq was justified is a separate question. In that Resolution the Security Council invited the Member States of the World Organisation to use all possible means to have Iraq withdraw from Kuwait and "to restore peace and security in the region". Obviously, the first sentence of the Security Council Resolution can in no way justify the attacks on the nuclear installation Tuwaitha, because the expulsion of Iraq's forces from Kuwaiti territory can hardly be brought into a direct relationship with the attacks on the facilities under IAEA safeguards.[19] Rather, it is that part of the Resolution dealing with the restoration of peace and security in the region which can be invoked as a justification for the American action.[20] This appears to be borne out by the fact that neither the coalition nor the closed session of the Security Council were inquisitive about the American action, which leads Henri Meyrowitz to conclude "*... que le consensus qui existe indéniablement quant à la licéité et à la justesse du désarmement nucléaire de l'Irak couvrait aussi les bombardements ayant visé les installations nucléaires.*"[21]

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15. Carnahan, op. cit., p. 533.

16. At the time of the attack OSIRAK was not yet in operation, but the enriched uranium in the reactor was already under IAEA safeguards, and the Agency's inspectors did not find any irregularity a few months before the Israeli attack. That was not the first attack against OSIRAK, as the Israeli air force had bombed the facility on 30 September 1980. During the Iran – Iraq war, Iraq launched six attacks against Iranian nuclear installations between 1984 and 1988. *Cf.* Carnahan, op. cit., p. 535.

17. *Cf.* Carnahan, op. cit., p. 524-525.

18. Rogers, op. cit., p. 125.

19. Ibid., p. 526.

20. Ibid.

21. Meyrowitz, Henri (1993), "*La guerre du Golfe et le droit des conflits armés*", *Revue générale de droit international public*, p. 581. Editor's translation: "…that the consensus which undeniably exists with regard to the legality and justness of the nuclear disarmament of Iraq also covered the bombardments aiming at nuclear installations".

For that matter, investigation in light of Protocol I of the events during the first Gulf War is misleading, chiefly because neither Iraq nor the three leading powers of the coalition (the United States, the United Kingdom, and France) were contracting Parties to the Protocol I at that time.[22] Moreover, as mentioned before, the protection accorded by the Protocol does not extend to research reactors.

4. The definition of "attack" on protected installations is given by the provisions of Article 49 of the Protocol, and covers not only offensive acts of violence against the adversary, but also defensive counter-attacks. In addition, under paragraph 2 of this Article, the provisions on the attacking Party apply to any attack anywhere, including attacks by a Party on its own territory under the control of the adverse Party.[23]

In the case of installations protected by paragraph 1 of Article 56 this means that dams, dykes and nuclear electrical generating stations enjoy protection even if they are located on a Party's own territory, but have come under the control of the enemy. At the same time, however, as is stressed by writers, this paragraph does not prohibit destroying dams or dykes under a State's own control as part of an effort to halt or impede an advancing enemy.[24]

There are two factors to be stressed in this context. On the one hand, such action undertaken on a Party's own territory to halt the enemy or to prevent the advancing may only be carried out under Article 53 of the Fourth Convention of 1949 on Humanitarian Law if such destruction is rendered absolutely necessary by military operations. On the other hand, the power ordering the action must ensure, even in such circumstances, that the civilian population is protected, that is, there is no damage to it.[25]

I should like to point out that damaging a nuclear power plant on a Party's own territory for the purpose of preventing the advance of the enemy is highly unlikely and would involve enormous destruction inevitably causing severe losses among the civilian population. For purposes of defence, however, a nuclear power plant in the territory of the Party concerned may happen to be damaged in order to be rendered useless if it comes under the control of the enemy.

The protection is extended in the second sentence of Article 56, paragraph 1, – in addition to dams, dykes and nuclear electrical generating stations – to "military objectives located at or in the vicinity of such works or installations", which, if attacked, could lead to the release of dangerous forces and could consequently cause severe losses among the civilian population. In other words, other civil engineering works, e.g., a bridge, railway line etc., enjoy immunity from military objectives if they are in the immediate vicinity of a dam, dyke or nuclear electrical generating station, and if attack against them could release dangerous forces.[26]

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22. However, several other members of the coalition were party to the Protocol. For more detail, see Meyrowitz, op. cit., p. 565. The United Kingdom ratified Protocol I on 28 January 1998, France did it on 11 April 2001.

23. Commentary…, op. cit., p. 602-605.

24. Bothe, Partsch and Solf, op. cit., p. 353.

25. Commentary…, op. cit., p. 669.

26. Commentary…, op. cit., p. 670.

Article 52, paragraph 1, of Protocol I provides in general terms that civilian objects must not be the object of attack or reprisals. Such objects include, among other things, installations containing dangerous forces.

II. The problem of terminating the special protection

Paragraph 2 of Article 56 provides that the special protection of installations containing dangerous forces is to cease in certain cases. It should be emphasised that termination of protection is conditional in that the attack on installations containing dangerous forces is *the only way to stop support by such installations for military operations*.

As regards the cessation of special protection, the Protocol deals separately with dams and dykes on the one hand and with nuclear electrical generating stations on the other. In the former case special protection ceases when three cumulative conditions are present, namely:

- a dam or a dyke is used for other than its normal function;
- a dam or a dyke is used in *regular* (not occasional), *significant and direct support* of military operations;
- attack is the only feasible way to terminate such support.[27]

In the case of nuclear electrical generating stations, protection ceases if attack is *the only feasible way to terminate significant and direct support of military operations*.

The provisions concerning termination of the protection of nuclear facilities are undesirable for several reasons. As mentioned earlier, termination of the protection of nuclear electrical generating stations is aimed at preventing their continued support of military operations. Such support, however, can also be terminated by other means, as is pointed out in the Commentary on Protocol I, namely by attacking the electricity lines, thereby preventing the use for military operations of electricity generated by a nuclear electrical generating stations.[28] Otherwise the practical application of the provision on termination of the protection of nuclear facilities can be rather problematical, since it is rather difficult to identify the source of electricity in an integrated electric network.[29]

Considering that support by nuclear electrical generating stations for military operations can also be secured by means other than attack, it would be much more comforting to provide for the *absolute protection of civilian nuclear installations in all circumstances.*

Absolute protection of civilian nuclear installations is also supported by the fact that attack on such installations is likely to cause severe losses among the civilian population. The sad experience of the Chernobyl disaster shows that pernicious consequences can occur not only in the installation State, but also in a region hundreds of kilometres apart. *In other words, severe losses can be suffered not only by the belligerents, but also by the civilian population of a third State, or neutral State.*

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27. Bothe, Partsch and Solf, op. cit., p. 354.

28. Commentary…, op. cit., p. 672.

29. This point was made by the Swiss delegation at the Diplomatic Conference. *Cf.* Bothe, Partsch and Solf, op. cit., p. 355.

It is known that dams and dykes can fulfil various functions. In addition to energy production, they are used for water supply to the population. When they are used for supplying water to the population, for instance, attack against them offends Article 54 of the Protocol, which provides for the protection of objects indispensable to the survival of the civilian population.

If protection ceases, attack is permissible on the basis of military necessity. As Goldblat points out,[30] that leaves the military commander much room for discretion. Goldblat writes that military commanders have to balance such unquantifiable factors as human suffering and military necessity, and to decide during military actions whether attack on an installation is lawful or not.[31]

If the protection of installations containing dangerous forces ceases, the civilian population remains entitled, under paragraph 3 of Article 56, to "all the protection accorded them by international law". This article refers in fact to Articles 51 and 57 of the Protocol, which provide for the protection of the civilian population and the precautionary measures to be taken during attack.

Subject to the provisions of Articles 51 and 57, even if protection ceases, all these reasons combine:

- to *prohibit indiscriminate attack*, namely one during which methods of warfare are used with such consequences as cannot be limited as required by Protocol I and as therefore indiscriminately affect in each case military objectives and civilian population or civilian objects alike;

- to require observance of the rule of *proportionality*, namely it is forbidden to launch an attack which claims so many civilian victims and injuries as well as so much damage to civilian objects such that, by themselves or together, it would exceed the concrete and direct military advantage to be expected from the attack.

The last sentence in paragraph 3 of Article 56 stresses in particular that even if the protection of dams, dykes and nuclear electrical generating stations ceases, all practical precautions must be taken to avoid the release of dangerous forces.

If we attempt to apply these criteria to the situation in which a nuclear power plant is attacked, it is difficult to meet the requirements. Attacks on nuclear installations are similar to a nuclear accident in the sense that the system "fails to function" and is therefore very likely to result in uncontrolled emission of radioactive material.[32] In other words, attacks on nuclear electrical generating stations make it rather difficult to prevent the release of dangerous forces. So it is strongly questionable whether at the Diplomatic Conference framing the two Protocols of 1977 the Rapporteur was right in saying about paragraph 3 of Article 56 that, "...given the panoply of weapons available to modern

30. Goldblat, "Legal Protection", p. 3. Reference to it is made by Rogers, A.P.V. (1996), *Law on the Battlefield*, Manchester University Press, Manchester and New York, p. 117.

31. Ibid.

32. In time of armed conflict it would of course be necessary to shut down the nuclear installation immediately, but it is questionable whether in case of surprise attack – which may be launched, within the meaning of the Protocol, precisely because a nuclear power plant produces electricity in regular, significant and direct support of military operations – the operators have time enough to do so.

armies, this provision should ensure real protection against the catastrophic release of dangerous forces."[33]

Rogers takes a less strict view of attack on nuclear installations. The author writes that attacks on power stations are justified if the power stations are military objectives and if it can be attacked in such a way that there is no risk of radioactive contamination.[34] However, the author holds that even if radioactive materials are released, the question of proportionality may arise as to the severity of pollution and the effect on the civilian population and the environment.[35]

However, *the extent of radioactive contamination that may be caused by the attack cannot in fact be known in advance* of a decision to attack a nuclear facility. If the attack is directed at an external unit of such an installation, it may happen, provided that the installation was shut off, that no radioactive contamination will result. An attack upon an operating nuclear installation, however, may entail unpredictable consequences.

III. Protection of installations containing dangerous forces and protection of the natural environment

It is worthwhile to examine the question of an attack on nuclear electrical generating stations in the light of other provisions of Protocol I as well. In this context it is necessary to consider above all the articles of the Protocol dealing with the protection of the natural environment.

Protocol I lays down express provisions on the protection of the natural environment. The related articles were not contained in the draft that the ICRC submitted to the Diplomatic Conference, and the relevant two articles [Article 35(3) and Article 55] were presented at the Conference itself, which shows clearly the special consideration given to environmental protection in the early 1970s.[36]

Nevertheless, there are important differences between the two provisions on the protection of the environment.[37] Paragraph 3 of Article 35 deals with the protection of the environment as such, whereas Article 55, while essentially repeating paragraph 3 of Article 35, provides for environmental protection in connection with the protection of the civilian population.[38]

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33. Commentary…, op. cit., p. 673.

34. Rogers, op. cit., p. 125.

35. Ibid.

36. Bouvier, Antoine, "Protection of the Natural Environment in Time of Armed Conflict", *International Review of the Red Cross*, November-December 1991. p. 574.

37. For paragraph 3 of Article 35 and Article 55, see Kiss, Alexandre, "*Les Protocoles additionnels aux Conventions de Genève de 1977 et la protection de biens de l'environnement*", *Études et essais sur le droit international humanitaire et sur les principes de la Croix-Rouge en l'honneur de Jean Pictet*, op. cit., p. 184-186.

38. Paragraph 3. of Article 35 reads as follows:

> "It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread long-term and severe damage to the natural environment."

Article 55 contains the following provisions:

> "1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods

Concerning these two provisions on environmental protection, Alexandre Kiss writes that paragraph 3 of Article 35 provides for general protection of the environment in all cases covered by the Protocol. The scope of application of Article 55 is somewhat more limited owing to the fact that this article is included, not among the basic rules, but in Part IV among the provisions on the protection of the civilian population.

Bouvier emphasises that one should come to terms with the fact that environmental damage is inevitable in time of war despite any sort of precautionary measures. According to the author, the rules of international humanitarian law relating to the protection of the environment are therefore designed, not to prevent environmental damage in general, but to keep such damage at a tolerable level.[39]

There arise two questions in connection with attack on nuclear electrical generating stations when their protection has ceased. On the one hand, can the resulting environmental damage be kept at a "tolerable" level and what may really be a tolerable level in such a case? On the other hand, will attack not offend Article 55 on the protection of the natural environment? While it is not so simple to answer the first question, one can safely say that an attack on a nuclear electrical generating station when protection has ceased is very likely contrary to Article 55.

IV. Conclusions

The foregoing clearly indicates the need for Article 56 of Protocol I of 1977 to be supplemented particularly in respect of protection accorded to nuclear installations in case of armed conflict.

Article 56, paragraph 6, of the Protocol upholds the idea, contained in the 1956 Draft of the ICRC, that "The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces". As can be seen, this article invites the contracting Parties to elaborate further rules on the special protection of installations containing dangerous forces. In the light of what has been said above, it appears that *provision for the full-scale protection, in all circumstances, of all civilian nuclear installations, including research reactors, could be the thrust for a new regulation.*

It should be noted that this proposal is not new at all. The full protection of nuclear installations was also suggested during the disarmament talks surrounding the treaty on radiological weapons at the end of the 1970s. In the course of those talks Sweden presented a draft prohibiting attack on nuclear facilities containing sufficient radioactive material to cause "mass destruction" if released.[40] At the time such facilities were defined as reprocessing plants, large deposits of spent fuel or radioactive waste having a thermal effect of more than 10 MW capacity. The United States did not agree with the Swedish proposal as it raised practical military problems, because it gave protection to installations expressly defined as military objectives and permitted no attack in any case on nuclear installations capable of releasing a certain quantity of radiation.[41]

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or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

2. Attacks against the natural environment by way of reprisals are prohibited."

39. *Cf.* Bouvier, op. cit., p. 569.

40. *Cf.* Carhaham, op. cit., p. 534.

41. Ibid.

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

Slovak Republic

Judgement concerning the right of the Nuclear Regulatory Authority to deny information classified as a commercial secret from requests for public information (2003)

Based on Act 211/2000 Coll. on free access to information, Greenpeace requested, in June 2002, that the Slovak Republic Nuclear Regulatory Authority (NRA) provide information included in its Safety Reports concerning, *intra alia*, an analysis from the project on the reconstruction of the V-1 Bohunice Nuclear Power Plant. Specifically, Greenpeace asked for the final thermal and hydraulic analysis of the main circulation pipe rupture (2Xdn 500), calculated on the realistic-approach basis, including the methods of calculations.

Pursuant to Article 10 of Act 211/2000 Coll., any information classified as a commercial secret shall not be made available to the public. On the basis of this provision, the Nuclear Regulatory Authority withheld the requested information. Greenpeace filed a complaint against this refusal to comply with its information request. In response to the complaint, the Head of the Nuclear Regulatory Authority conducted a second-instance proceeding and confirmed the first-instance decision not to make the requested information available, due to it being classified as a commercial secret of the owner – the Slovak Electricity Company (SE), a.s.

Greenpeace subsequently filed a suit with the Supreme Court of the Slovak Republic in October 2002, seeking judicial review of the above-mentioned decision. The suit was based particularly on the grounds that the Nuclear Regulatory Authority failed to examine all objective and subjective criteria of commercial secrets as required by the Commercial Code and that the information concerned could not, in any case, be classified as a commercial secret.

In its response to the suit, the NRA answered that according to Act 211/2000, Article 10, information classified as a commercial secret should not be made available by the person in charge of furnishing information. Further, it argued that it was not within the NRA's competence to judge whether all conditions required by civil and commercial law regarding commercial secrets had been complied with in its determination that the requested information was, in fact, a commercial secret.

On 25 March 2003 the Supreme Court held a hearing in this case and ruled in favour of the NRA, upholding the decision to not provide Greenpeace with the requested information. The written decision was served on 20 May 2003. Within the time prescribed by law, Greenpeace appealed the court's decision and the NRA responded to the appeal on 4 July 2003. On 23 October 2003, the

Supreme Court heard Greenpeace's appeal, but confirmed the judgement in its first instance, denying Greenpeace access to the requested information.

Sweden

Judgement of the Göta Court of Appeal on negligent violation of the Swedish Act on Nuclear Activities (2003)

On 28 August 2001, the Chief District Prosecutor in Kalmar charged two employees at the Oskarshamn Nuclear Power Plant (OKG) with negligent violation of the Swedish Act on Nuclear Activities (see *Nuclear Law Bulletin* Nos. 31 and 33; the text of this Act is reproduced in the Supplement to *Nuclear Law Bulletin* No. 33). These charges followed an incident in the fall of 1996, related to the restart of one of the reactors after an overhaul-shutdown.

According to the technical specifications for reactor operation after shutdown at OKG, Security-system 323 – a sprinkler system for emergency cooling of the reactor core – should be in operation before the reactor is restarted. During overhaul, Security-system 323 had been disconnected because an unexpected start of the sprinkler system would have disrupted the maintenance work and caused danger to workers. One of the indicted, a control room technician, was undertaking restoration measures related to the restart of the reactor. At the time that he started his shift on 30 October 1996, certain reconstruction measures were still incomplete and work was taking place inside the containment. For this reason the control room technician decided not to close certain ventilators (system 741) in order to prevent the oxygen content inside the containment from becoming too low for the people working there. He also decided not to close the disconnectors to the sprinkler system (system 323), to prevent them from activating during the ongoing work. The technician made a note of the measure concerning system 741 in a logbook that was to be handed over to the next shift. However, he did not make any note concerning the disconnectors in system 323. Instead, he wrote his signature in the work-instruction, indicating that the disconnectors actually had been closed. The control room technician took these measures after consulting his closest superior, the deputy Operative-Engineer, who was also charged. Neither of the latter subsequently checked that the disconnectors to the sprinkler system actually had been closed. As a consequence of this, the Security-system 323 was not activated at the restart of the reactor on 5 November 1996. The discrepancy from the operating rules was discovered at a routine control on 13 November 1996.

At trial the control room technician and the deputy Operative-Engineer stated that they had believed and relied on the existence of another security instruction ("control before start"). They claimed to have been certain that this instruction would cover checking system 323 before the reactor re-start. This assumption later proved, however, to be incorrect.

According to Swedish legislation it is considered a crime to deliberately or negligently cause infringements of regulations or operation-conditions based on the Swedish Act on Nuclear Activities (1984:3). Penalties are not issued, however, for insignificant infringements.

The Prosecutor argued that the control room technician and the deputy Operative-Engineer were guilty of negligence as they failed to make sure that the disconnectors to the sprinkler system were closed before restart of the reactor. In the Prosecutor's view they should have at least informed the next work-shift that the disconnectors were open. The District Court of Oskarshamn, however, came to the opposite conclusion. In its ruling of 30 April 2002, the Court emphasised that the conditions were extraordinary due to the fact that there was work going on in the containment at the same time as

restoration measures were being undertaken. These circumstances had not been foreseen in the operation instructions and led, according to the Court, to uncertainty of how to handle the situation. Taking into account the time schedule that the indicted were working under, the Court reached a non-guilty verdict in both cases.

An appeal was submitted on behalf of the Prosecutor to the Göta Court of Appeal, which confirmed in its ruling of 26 March 2003 (case B 621-02), that the control room technician was not to be held responsible for the infringements. According to the Court it followed from common criminal law principles that a person in the control room technician's position could not bear criminal responsibility for measures that the law imposes on a company. Such responsibility requires the existence of a clear and explicit delegation of power. The Court held, however, that the deputy Operative-Engineer had such a clear and explicit delegation of power that he qualified for criminal responsibility on behalf of his company. The Court also held that he had deliberately neglected a measure prescribed in the instructions and despite this allowed the control room technician to leave his signature. Further, the deputy Operative-Engineer neglected to ensure that the next work-team was informed about the situation. The Göta Court of Appeal concluded that his negligence had caused the reactor to be taken into operation in deviance with the regulations. The Court sentenced the deputy Operative-Engineer to pay a low-level fine, taking account of the tight schedule and that the particular situation had not been foreseen in work instructions.

Permanent Court of Arbitration

*Ireland vs. United Kingdom (the OSPAR Arbitration)(2003)**

Introduction

1. In October 2001 the Secretary of State for the Environment, Food and Rural Affairs and the Secretary of State for Health ('the Secretaries of State') decided that the manufacturing of mixed oxide fuel ('MOX') in the United Kingdom was "justified" in accordance with Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation, thereby allowing British Nuclear Fuels ('BNFL') to commence the plutonium commissioning of its Sellafield MOX plant ('SMP').[1] This decision led to a legal challenge by environmental pressure groups in the English courts by way of a judicial review in an attempt to have the decision of the Secretaries of State set aside. This challenge failed, at first instance and on appeal[2] (see *Nuclear Law Bulletin* No. 71).

2. However, even before the judicial review challenge had been launched in the English courts, Ireland had initiated two sets of international arbitration proceedings against the United

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* This note on case law has been prepared by Dr. W.J. Leigh, Senior Legal Adviser with British Nuclear Fuels plc. (BNFL). The author alone is responsible for the facts mentioned and opinions expressed in this article.

1. Consent was also required – and obtained – from the UK's nuclear regulator – the Nuclear Installations Inspectorate.

2. See *Regina (on the application of Friends of the Earth) vs. Secretary of State for the Environment, Food and Rural Affairs*, [2002] Env LR 612, CA.

Kingdom in relation to SMP. The first of these claims was made under the Convention for the Protection of the Marine Environment of the North-East Atlantic ('the OSPAR Convention')[3] and has now been decided. The second was made under the United Nations Convention on the Law of the Sea (UNCLOS) and was accompanied by a request for provisional measures which was subsequently adjudicated upon by the International Tribunal of the Law of the Sea ('ITLOS').[4] However, the UNCLOS proceedings on jurisdiction and the merits of the case are currently suspended, a decision which led Ireland to make a fresh application for provisional measures.[5] This note reports on the outcome of the OSPAR arbitration; it is hoped to provide an account of the UNCLOS proceedings in a future case note.

Events Leading to the Initiation of the OSPAR Arbitration

3. As part of the 'justification' decision-making exercise conducted in relation to MOX manufacture, two reports on the economic and commercial case for SMP were produced by independent consultants: a report by PA Consulting Ltd ('the PA report') and (subsequently) a report by A.D. Little ('the ADL report'). These reports were (together which a great deal of information concerning the environmental impact of SMP) put into the public domain as part of the public consultation process, but with commercially confidential information omitted (redacted). Although Ireland made detailed representations to the United Kingdom during the consultation process, Ireland contended that the United Kingdom was obliged to make the information redacted from the PA Report available under Article 9 of the OSPAR Convention. The United Kingdom rejected this contention on the basis that it wished to preserve the commercial confidentiality of the information. On 15 June 2001 Ireland requested that an arbitral tribunal be constituted under Article 32 of OSPAR to determine its dispute with the United Kingdom concerning the United Kingdom's refusal to make available information redacted from the public domain versions of the PA report. A statement of claim was also filed. This was subsequently amended to the effect that the United Kingdom was also obliged to make available the information omitted from the published version of the ADL report (which the United Kingdom also declined to provide to Ireland).

4. An arbitral Tribunal was established, consisting of three distinguished arbitrators.[6] Rules of procedure were adopted and timetable was set for submissions and the Hearing. Written pleadings were filed by the Parties between March and August 2002, and the Hearing took place

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3. The OSPAR Convention was opened for signature on 22 September 1992 and entered into force on 25 March 1998. Both the United Kingdom and Ireland are Contracting Parties.

4. The provisional measures application was heard by ITLOS in Hamburg on 19/20 November 2001. ITLOS declined to give Ireland the provisional measures it was requesting. However, ITLOS did issue an Order requiring the Parties to co-operate in exchanging information concerning risks or effects of the operation of the MOX plant (see *Nuclear Law Bulletin* No. 69).

5. On 24 June 2003, the UNCLOS arbitral Tribunal (established under Annex VII of UNCLOS), after two weeks of hearings at the Peace Palace in the Hague, issued Order No. 3 – Suspension of Proceedings on Jurisdiction and Merits and Request for Further Provisional Measures. The suspension was ordered because of the Tribunal considered that there were substantial doubts (raised by the United Kingdom) as to whether the jurisdiction of the UNCLOS Tribunal could be firmly established in respect of all or any of the claims in the dispute. The Tribunal did not grant any of the provisional measures requested by Ireland but (in brief) recommended that the Parties seek to establish better secure inter-governmental arrangements and review such arrangements.

6. Professor W. Michael Reisman (Chairman), Dr. Gavan Griffith QC and Lord Mustill PC.

at the Peace Palace in The Hague from 21 to 25 October 2002. The Tribunal's decision (final award) was issued on 2 July 2003.[7]

Claims and Submissions of the Parties

5. Ireland, in its Memorial, requested full disclosure of the two consultants' reports in order to be in a better position to consider the impact which the commissioning of the MOX plant (SMP) would or might have on the marine environment and to be able to assess the extent of the compliance by the United Kingdom with its obligations under the OSPAR Convention, UNCLOS and various provisions of European Community law. Ireland requested the Tribunal to declare that the United Kingdom was in breach of Article 9 of the OSPAR Convention by refusing to make available information deleted from the PA and ADL reports. An order was sought requiring the United Kingdom to provide Ireland with a complete copy of both the PA report and the ADL report, or alternatively a copy of those reports which included all such information as the Tribunal considered would not affect commercial confidentiality within the meaning of Article 9(3)(d) of the OSPAR Convention.

6. The relevant provisions of Article 9 of OSPAR provide:

> "Access to Information
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> 1. The Contracting Parties shall ensure that their competent authorities are required to make available the information described in paragraph 2 of this Article to any natural or legal person, in response to any reasonable request, without that person's having to prove an interest, without unreasonable charges, as soon as possible and at the latest within two months.
>
> 2. The information referred to in paragraph 1 of this Article is any available information in written, visual, aural or data base form on the state of the maritime area, on activities or measures adversely affecting or likely to affect it and on activities or measures introduced in accordance with the Convention.
>
> 3. The provision of this Article shall not affect the right of Contracting Parties, in accordance with their national legal systems and applicable international regulations, to provide for a request for such information to be refused where it affects:[ ]
>
> (d) commercial and industrial confidentiality;"

7. The United Kingdom refused to disclose the full reports, contending in its Counter-Memorial that:

- Article 9 of the OSPAR Convention does not establish a direct right to receive information but merely requires Contracting Parties to establish a domestic framework for the disclosure of information, and that such a framework has been established.[8]

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7. The OSPAR Tribunal's Final Award, written pleadings, transcripts of hearings and procedural decisions are available at the following URL: www.pca-cpa.org

8. Pursuant to the Environmental Information Regulations 1992, implementing Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment.

- Even if the United Kingdom was wrong regarding the above submission, Ireland would need to show that the information it was requesting was information within the scope of Article 9(2) of the OSPAR Convention. The United Kingdom contended that Ireland had failed to this – the information in question was not information within the scope of Article 9(2): it was insufficiently proximate to the state of the maritime area or to measures or activities affecting or likely to affect it.

- Even if the United Kingdom was wrong regarding the above submission, Article 9(3)(d) of the OSPAR Convention affirms the right of the Contracting Parties to provide for a request for information to be refused on grounds of commercial confidentiality. The United Kingdom has legislated to this effect and its refusal to disclose the particular information requested by Ireland was consistent with both national law and applicable international regulations.

8. The United Kingdom requested the Tribunal to adjudge and declare that it lacked jurisdiction over the claims brought by Ireland and/or that the claims were inadmissible.

The Three Sequential Questions for the Tribunal to Determine

9. On the basis of the claims as pleaded, the Tribunal considered that there were three sequential questions raised for determination by the Tribunal, namely:

- Does Article 9(1) of the OSPAR Convention put a 'direct' obligation on a Contracting Party to disclose "information" [within the meaning of Article 9(2)] on request, or is the obligation merely to set up a domestic framework for the disclosure of such information?

- If Article 9(1) creates a direct obligation, does the material the disclosure of which Ireland has requested, constitute "information" for the purposes of Article 9(2) of the OSPAR Convention?

- If so, has the United Kingdom redacted and withheld any information requested by Ireland contrary to Article 9(3)(d)?

Findings with respect to Article 9(1)

10. The unanimous view of the Tribunal was that the question posed by Ireland with respect to Article 9(1) was not one of jurisdiction or admissibility but one of substance. The issue for determination was whether the requirement in Article 9(1) "to ensure" the obligated result, required a result – the provision of information – (as Ireland contended) rather than merely a municipal law system directed to obtain the result (as the United Kingdom contended).

11. By a majority, the Tribunal found that the obligation in Article 9(1) is to be construed at the "mandatory end of the scale".[9] To accept the expression of the requirement "to ensure" a result as expressed at the lesser level of setting up a regime or system directed to obtain the stipulated result under domestic law, would be to apply an "impermissible gloss" that does not appear as

9. See Final Award, paragraph 134.

part of the unconditional primary obligation under Article 9(1).[10] The majority of the Tribunal found that Article 9(1) is "pitched at a level" that imposed an obligation of result, rather than merely to provide access to a domestic regime which is directed at obtaining the required result.[11] Accordingly, the Tribunal determined that Article 9(1) requires an outcome of result, namely that information falling within the meaning of Article 9(2) [and not excluded by Article 9(3)] is in fact disclosed in conformity with the Article 9 obligation imposed upon each Contracting Party.

Findings in respect of Article 9(2)

12. As with Article 9(1), the unanimous view of the Tribunal was that the question posed by Ireland with respect to Article 9(2) was not one of jurisdiction or admissibility but one of substance. The Tribunal was required to determine the proper construction of Article 9(2) in relation to the facts of this case. In this connection note that in its Memorial, Ireland put the redacted information in the PA and ADL reports into 14 categories. These 14 categories of information related to:

- estimated annual production capacity of the MOX facility;
- time taken to reach this capacity;
- sales volumes;
- probability of achieving higher sales volumes;
- probability of being able to win contracts for recycling fuel in 'significant quantities';
- estimated sales demand;
- percentage plutonium already on site;
- maximum throughput figures;
- life span of the MOX facility;
- number of employees;
- price of MOX fuel;
- whether, and to what extent, there are firm contracts to purchase MOX from Sellafield;

10. Ibid at paragraph 135. Note the Declaration in the Final Award of the Chairman, Prof. Reisman, in which he gives his reasons for not agreeing with the majority's interpretation of Article 9(1). He states, amongst other things, that Ireland's proposed meaning would require deletion of a critical phrase in Article 9(1) – namely "the seven critical words" underlined in the following extract from Article 9(1): "The Contracting Parties shall ensure that their competent authorities are required to make available the information….".

11. Ibid at paragraph 137.

- arrangements for transport of plutonium to, and MOX from, Sellafield;

- likely number of such shipments.

13. Accordingly, the determination under Article 9(2) required an examination of whether the categories of redacted information fell within the definition of "information" in Article 9(2). The Tribunal's holding on this issue was supported by a majority decision.[12] The Tribunal[13] noted that "information" was not a defined term, but they considered it to be clear that it "is a broad and inclusive reference to the state of the maritime area". Information falling within the scope of Article 9(2) should be regarded as "information" about the state of the maritime area.[14] On this basis, the view of the Tribunal was that it is "manifest…that none of the …14 categories [of information] in Ireland's list can plausibly be characterised as "information…on the state of the maritime area" [and] the Tribunal could, thus, rest its decision on the fact that none of the material in the 14 categories falls within the definition of "information" in Article 9(2)." [15]

14. However, the Tribunal analysed the position further and noted that Article 9(2) itself contains three categories of information, namely:

    - "any available information" on "the state of the maritime area,"

    - "any available information" on "activities or measures adversely affecting or likely to affect…the maritime area,"

    - "any available information" on "activities or measures introduced in accordance with the Convention."

15. Both Parties focused attention on the second category as being the relevant category to consider. Ireland argued what the Tribunal termed an "interpretative theory of inclusive causality".[16] On this argument anything, no matter how remote, which facilitated the performance of an activity could be deemed to be part of that activity. However, the Tribunal found that while the drafters of the OSPAR Convention sought inclusiveness with respect to some aspects of the information covered by Article 9(2), they had no intention of adopting a theory of inclusive causality. In particular, the Tribunal noted the second category of information in Article 9(2) contains an additional threshold of exclusion/inclusion that is constructed around the phrase "adversely affecting or likely to affect" the maritime area. The restrictive effect of the language (i.e. the requirement to show existing or prospective adverse affects on the maritime area) the Tribunal said, was clear and the standard which the Tribunal must apply.

16. The Tribunal found that:

> "…Ireland has failed to demonstrate that any of the 14 categories of redacted items in the PA and ADL Reports, insofar as they might be taken to be activities or

12. The substantive findings on the interpretation of Article 9(2) and applicable law were based on a majority decision by Prof. Reisman and Lord Mustill.

13. References in this part of the case note to "the Tribunal" are references to the majority.

14. Ibid at paragraph 168.

15. Ibid at paragraph 163.

16. Ibid at paragraph 164.

measures with respect to the commissioning and operation of a MOX plant at Sellafield, are "information… on the state of the maritime area" or, even if they were, are likely adversely to affect the maritime area."[17]

17. The Tribunal observed that Ireland, "rather than engage the requirement of establishing an adverse effect" sought to rely on the provisions of treaties that are unratified and not in force between the Parties, or on regional initiatives that have not been finalised". The Tribunal said that it was not empowered to apply "legally unperfected instruments."[18]

No Need for a Determination under Article 9(3)(d)

18. If any of the 14 categories of information in question had been regarded as information falling within the ambit of Article 9(2) it would then have been necessary for the Tribunal to have considered in detail the actual *content* of the redacted information in each of the relevant categories in order for a determination to be made as whether the withholding of the information was lawful on grounds of commercial confidentiality as provided for by Article 9(3)(d).[19] However, given the Tribunal's finding as regards Article 9(2), the Tribunal found (again by a majority decision) that as a consequence, Ireland's claim – that the United Kingdom had breached its obligation under Article 9 of OPSPAR by refusing, on the basis of its understanding of the requirements of Article 9(3)(d), to make information available – did not arise.[20]

Conclusions

19. Ireland, therefore, failed in its attempt to use the OSPAR Convention as means of compelling the United Kingdom to disclose information that it (the United Kingdom) considered to be commercially confidential information. The fact that the information requested was essentially of an economic and commercial nature, rather than what one might describe as information relating to the marine environment, clearly influenced the majority of the Tribunal in terms of deciding that the information fell outside of the ambit of the OSPAR Convention.

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17. Ibid at paragraph 179.

18. Ibid at paragraph 180. A starkly different view was expressed in the dissenting opinion of Dr. Gavan Griffith QC. Dr. Griffith disagreed with what he regarded as a restrictive interpretation of the applicable law by the majority. He considered that emerging legal instruments concerning the environment ought to be taken into account. For example, he was of the view that although the Aaarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters had not been ratified by the Parties, it did not follow that this Convention could not inform issues of construction of Article 9 of the kind that arose in the dispute.

19. Much of the hearing was taken up with expert and factual evidence being presented to the Tribunal on the question of or not the redacted material could be properly regarded as commercially confidential.

20. See Final Award, paragraph 185(v).

ADMINSTRATIVE DECISIONS

Romania

Government Decision for the return of nuclear fuel to the Russian Federation (2003)

Government Decision No. 1077 was adopted 11 September 2003, and published in the Official Gazette (*Monitural Oficial,* Part I, No. 666) on 19 September 2003. The Decision provides that Romania is to return to the Russian Federation the non-irradiated and unspent nuclear fuel containing substantially enriched uranium – which originates from the Russian Federation and which is currently in storage at the "*Regie Autonome*" for Nuclear Activities. The material is to be considered as waste with no commercial value attached. It is to be delivered by the "*Regie Autonome*" for Nuclear Activities to the National Commission for the Control of Nuclear Activities *(Comisia Nationala pentra Controlul Activitatilos Nucleare – CNCAN*), the public institution authorised under law to carry out such exports in the name of the Romanian State. The Decision specifies that the official authorised to negotiate and to conclude agreements for the export of nuclear fuel of Russian origin is the Chairman of the CNCAN.

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

China (People's Republic of)

Radiation Protection

Law on Protection from Radiation Contamination (2003)

The Law on Protection from Radiation Contamination was adopted on 28 June 2003, and came into force on 1 October 2003. This Law is composed of eight chapters and 63 articles. Generally, it covers: supervision and administration organisations; prevention and control of radiation contamination at nuclear installations, uranium ore extraction sites and any place where radiation applications are used; management of nuclear waste and legal liability. A translation of this Law in English will be made available shortly, upon which time a more detailed description of the Law will appear in the *Nuclear Law Bulletin*.

France

Organisation and structure

Decree on the Creation of the Interministerial Committee on Nuclear and Radiological Crisis (2003)

This Decree No. 2003-865, adopted on 8 September 2003, modifies the general rules governing the organisation and implementation of nuclear security. The Interministerial Committee on Nuclear and Radiological Crisis (ICNRC) replaces the Interministerial Committee on Nuclear Security (ICNS) created by Decree No. 75-713 of 4 August 1975 (see *Nuclear Law Bulletin* No. 16) which is repealed by the present Decree.

In accordance with Article 1 of the Decree, the mission of the ICNRC is to suggest measures to the Prime Minister "in case of an accident in a major nuclear installation, a nuclear installation classified as secret, during the transport of nuclear or radiological material which concerns the civil or defence sector and above all a military nuclear system, as well as in case of attack or threat of attack having or capable of having nuclear or radiological consequences." The ICNRC may assemble on the initiative of the Prime Minister, on the basis of the need to manage a nuclear or radiological crisis affecting the civil or defence sectors or even as a defensive measure in the case of a threatened attack. The ICNRC assembles the Prime Minister and the Ministers of Foreign Affairs, Defence, Environment, Industry, Health and Transportation. The Secretary General of National Defence

governs an operating Secretariat. In addition, other agencies and interested organisations as well as the nuclear operators concerned may be invited to meetings of the ICNRC. However, the Prime Minister may move to limit participation in ICNRC meetings.

Working together with the ministries and agencies concerned, the Secretary General of National Defence has as its mission (Article 2) to co-ordinate, organise and follow-up on the coherence of every plan of action which aims to prevent the situations provided for in Article 1 of the Decree, and of the means of action implemented in case of a nuclear or radiological crisis. The Secretary General of National Defence is, in addition, informed without delay in the event of an accident, attack or threat of a nuclear or radiological nature. It is his responsibility to prepare a follow-up report of the incident for the President of the Republic and the Prime Minister.

Finally, the Decree specifies that the respective ministries, organisations, consultative bodies and interested nuclear operators furnish assistance, as far as needed, to the Secretary General of National Defence in the carrying out of its above mentioned responsibilities.

Nuclear Material Regime (including Physical Protection)

Order Regarding the Protection of National Defence Secrecy in the Field of Nuclear Material Control and Protection (2003)

This Order, adopted on 24 July 2003 by the Ministry of Economy, Finance and Industry, provides that all information pertaining to surveillance measures, physical protection and monitoring of nuclear materials is classified as a national security secret. Likewise, all information pertaining to the transportation of nuclear materials and the preparation of crisis exercises related to the protection of nuclear materials within official places or installations is classified as a national security secret. Accordingly, such information must be protected by measures that assure restricted distribution.

Hungary

Organisation and Structure

Decree on the Scope of Duties, Authority and Competence to Impose Penalties of the Hungarian Atomic Energy Authority, and on the Activities of the Atomic Energy Co-ordination Council (2003)

This Government Decree No. 114/2003 was adopted on 29 July 2003 and entered into force on 1 August 2003. It implements the provisions of the 1996 Atomic Energy Act (see *Nuclear Law Bulletin* No. 60; the text of this Law is reproduced in the Supplement to *NLB* No. 60), defining the statutes of the Hungarian Atomic Energy Authority (HAEA), and the Atomic Energy Co-ordination Council, and provides HAEA with regulatory independence.

The main function of the HAEA is to co-ordinate and fulfil regulatory duties with respect to the safety of the peaceful use of atomic energy. The HAEA is entitled to conduct inspections at the installation of any user of atomic energy and is responsible for the management of the Central Nuclear Financial Fund. The HAEA is also empowered to fine any licensee for violation of legal regulations or safety rules, or for any failure to comply with the provisions laid down in the licence. The Director

General of the HAEA shall prepare an annual report on the safe use of atomic energy to the Government and to Parliament in co-operation with the relevant ministries, and also other competent central state organisations.

An Emergency Response Organisation shall also be set up and operated by the HAEA. This Organisation shall be designed to carry out the duties relating to emergency preparedness and response to nuclear accidents. The HAEA is assisted by the Scientific Council, composed of 12 experts with nation-wide reputation in the field of atomic energy. The Scientific Council shall convey its opinion in connection with nuclear safety, radiation protection, emergency response and preparedness related to nuclear accidents.

Finally, the Atomic Energy Co-ordination Council, established by the Government, intends to co-ordinate the activities of ministries and central administration organisations vested with regulatory powers under the 1996 Atomic Energy Act in the field of safe use of atomic energy, nuclear safety and radiation protection. This Council is chaired by the Director General of the HAEA.

Radioactive Waste Management

Order on some Aspects of the Interim Storage and Final Disposal of Radioactive Waste and on the Radiological Aspects of Radioactive Materials Arising from Industrial Activities and Naturally Occurring Radioactive Materials (2003)

This Order No. 47/2003 was adopted on 8 August 2003 by the Ministry of Health, Social and Family Affairs. It sets out the procedure and conditions to obtain a license to establish an interim storage facility or final depository of radioactive waste. It also regulates the conditions of processing radioactive materials arising from industrial activities and naturally occurring radioactive materials.

Italy

Organisation and structure

Legislative Decree on the Organisational Statute of the ENEA (2003)

Legislative Decree No. 257/03, adopted the 3 September 2003, and published in the Official Journal No. 213 on 13 September 2003, repeals and replaces the previous organisational statute (Decree No. 36/99) of the National Committee for Research and Development of Nuclear and Alternative Energies (ENEA). Unlike the previous organisational statute, Decree 257/03 specifically addresses nuclear energy.

Article 2 of the Decree stipulates that the ENEA is a public body, which acts to support policies of competitiveness and sustainable development in the areas of energy, the environment and new technologies.

In order to pursue the above mentioned objectives, Article 3 states that ENEA is to promote and carry out basic and applied research activities, including the production of prototypes, the industrialisation of items in the area of nuclear technologies and the applications of technologies

pertaining to ionising radiation. ENEA is in particular responsible for the scientific and technological know-how in the matter of nuclear energy. More generally, ENEA is also in charge of the various activities necessary for the accomplishment of the tasks conferred to it.

Latvia

Radiation Protection

Regulations on the Requirements for Emergency Preparedness and Response (2003)

The Cabinet of Ministers approved Regulations on the Requirements for Emergency Preparedness and Response and the National Emergency Preparedness Plan on 8 April 2003. These documents describe both the on-site and off-site emergency plans and response actions, including the large-scale actions to be taken in the event of an accident in the neighbouring countries. The governmental bodies co-ordinating response actions in the case of a radiological emergency are the State Fire and Rescue Service and the Radiation Safety Centre. The Radiation Safety Centre is responsible for the supervision of operative actions at the accident site, while the State Fire and Rescue Service is responsible for larger scale accident activities.

Regime of Radioactive Materials (including Physical Protection)

Regulations on Physical Protection of Ionising Radiation Sources (2002)

These Regulations, issued on 4 November 2002, establish several groups according to their importance for physical protection and introduce the basic approach for simultaneously applicable protection methods: detection, assessment, delay and response. These Regulations are based upon the IAEA Recommendations for physical protection of nuclear facilities and nuclear materials.

Portugal

Organisation and Structure

Decree-Law approving the Organic Law of Ministry for Towns, Territorial Planning and Environment (2003)

This Decree-Law No. 97/03, adopted on 7 May 2003, defines, *inter alia*, the competence of the Environment Institute, a public entity created under the Ministry for Towns, Territorial Planning and Environment responsible for continuing environment and sustainable development policies. The Environment Institute also co-ordinates the activities related to environment and public security. In this respect, it is responsible for early notification in the event of a nuclear accident and is responsible for the assessment of the risks of radiation emissions. The Environment Institute is chaired by a president and two vice-presidents. Decree-Law 113/2003 details the internal structure of the Environment Institute.

Romania

General Legislation

The Romanian Constitution vests the government with the authority to enact ordinances, on select matters, which produce the same effect as statutes and are enforced as such until the Parliament votes for or against them. If the Parliament passes the ordinance it becomes a statute. Pursuant to this procedure, the Romanian Parliament has recently passed laws that approve government ordinances regarding the use of nuclear energy for peaceful purposes and the safe management of nuclear waste and spent fuel.

Law for the approval of the Government Ordinance on the Use of Nuclear Energy Exclusively for Peaceful Purposes (2003)

The Law No. 321/2003 was published in the Official Gazette (*Monitural Oficial*, Part I, No. 509) on 15 July 2003, for the purpose of approving and simultaneously amending Government Ordinance No. 7 on the use of nuclear energy exclusively for peaceful purposes (see *Nuclear Law Bulletin* No. 71).

Law No. 321/2003 amends the scope of Ordinance No. 7 by stating that the promotion and organisation of activities in the nuclear field is to be achieved through promoting research, development and use of nuclear applications for peaceful purposes and to secure nuclear energy resources.

The Law also modifies Article 5 of the Ordinance by requiring that the siting, construction, transfer of property and decommissioning of power and research reactors, as well as final storage facilities shall be approved by Government Decision issued by the Romanian government.

The most important amendment of Government Ordinance No. 7 is the creation of a Romanian Nuclear Agency – called the Nuclear Agency – by the reorganisation of the National Agency for Atomic Energy within the Ministry of Education, Research and Youth for the purpose of harmonising the strategies in the nuclear field and the monitoring of the National Nuclear Plan's implementation.

The Nuclear Agency is a specialised body of the central administration; a legal person in its own right, subordinated to the Prime Minister. Its main purpose is to provide technical counsel to the government in making nuclear policy, as well as the promotion and monitoring of nuclear activities in Romania. The Nuclear Agency shall be administered by a Board of Directors whose members should be representatives of the ministries having responsibilities in the nuclear field. The Nuclear Agency's Chairman shall be appointed and dismissed by decision of the Prime Minister.

The Nuclear Agency co-ordinates the promotion of nuclear activities in Romania, based on the Nuclear Development Strategy, Operational Plan and National Nuclear Plan. The Nuclear Agency also promotes international partnership by co-operating with the International Atomic Energy Agency (IAEA) and other international or regional organisations operating in this field, as well as by concluding research and development, technical assistance, evaluation, training agreements and contracts, after consulting the ministries managing specific activities or having responsibilities in the nuclear field.

Amendment to the Law on the Safe Conduct of Nuclear Activities (2003)

Law No. 111/1996 was initially published on 29 October 1996 (the text of this Law is reproduced in the Supplement to the *Nuclear Law Bulletin* No. 59). Several amendments have been made to the Law, the latest being Law No. 193 of 13 May 2003, published in the Official Gazette (*Monitural Oficial*, Part I, No. 343) on 20 May 2003. The object of the Law, in general, is the safe conduct of nuclear activities for exclusively peaceful purposes so that they meet safety conditions set for the protection of professionally exposed personnel, the general population, the environment and property. Further, the Law aims to minimise the risks associated with nuclear activities through a regime of regulatory requirements and international conventions. The Law on Safe Conduct of Nuclear Activities will soon be republished in the Official Gazette of Romania with a new numerical assignation to the text.

The National Commission for the Control of Nuclear Activities (CNCAN) is the national authority competent to exercise the regulatory powers provided for under Law No. 111/1996. The new amendments serve to enhance the CNCAN's administrative capacity by providing for:

- the recognition of CNCAN personnel who develop activities in radiological areas as exposed workers [in accordance with the provisions of Council Directive 96/29 Euratom of 13 May 1996 laying down the basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation (see *Nuclear Law Bulletin* No.58)];

- the establishment of technical support organisations for CNCAN including a forthcoming National Institute for Nuclear Safety;

- the authority of CNCAN inspectors to order that activities posing unauthorised risk to nuclear installations cease, and the power to close nuclear installations not complying with legal requirements;

- the complete financing of the CNCAN budget by tariffs and fees received for the authorisation and control of nuclear activities.

Other noteworthy amendments found in Law No. 193/2003 include:

- allowance for the transit of radioactive waste in Romania, transposing the provisions of Directive 92/3/Euratom of 3 February 1992 on control of Radioactive Waste Shipments (see *Nuclear Law Bulletin* No. 69) into national legislation by Order No. 183/2003;

- a definition of nuclear related terrorist acts and specific sentences for each act;

- and criminal sanctions for unauthorised decommission of nuclear installations and radioactive sources, and the unauthorised cessation of nuclear activities.

Radioactive Waste Management

Law for the approval of the Government Ordinance on the Management of Spent Nuclear Fuel and Radioactive Waste, Final Storage Included (2003)

Law No. 320/2003 was published in the Official Gazette (*Monitural Oficial*, Part I, No. 527) on 22 July 2003, and has the effect of simultaneously approving and modifying Government Ordinance No. 11 of 30 January 2003 (see *Nuclear Law Bulletin* No. 71). The Law came into force 22 August 2003, and is to be re-published in the Official Gazette of Romania with a new number assignation to the texts.

The modified object of Ordinance No. 11/2003 is to regulate activities relating to the management of spent nuclear fuel and radioactive material so as to secure safe conditions for professional personnel at risk, the general population, the environment and property, at present and in the future, without jeopardising the needs and expectations of future generations.

Nuclear operators are required to manage the spent nuclear fuel and radioactive waste that they generate in compliance with national regulations and the international agreements to which Romania is a Party. To this end, licensees must annually report the quantities and types of spent nuclear fuel and radioactive waste generated over the current year and an estimate for the following year. Operators are required to provide funds for the purpose of final storage of spent nuclear fuel and radioactive waste that results from the operation, maintenance and repair of nuclear and radiological installations.

Finally, the Law prohibits the import of spent nuclear fuel and radioactive waste for the purpose of final storage, and specifies sanctions for violation of this provision.

Third Party Liability

Norms for the Enforcement of the Law on Civil Liability for Nuclear Damage (2003)

The Methodological Norms for the enforcement of Law No. 703/2001 on Civil Liability for Nuclear Damage (the text of this Law is reproduced in the Supplement to *Nuclear Law Bulletin* No. 69) were published in the Official Gazette (*Monitural Oficial*, Part I, No. 580) on 14 August 2003 and came into force on 14 September 2003. The Norms provide that nuclear operators must present the insurance policy or the financial security set out in Law No. 703/2001 to the CNCAN by 14 March 2003. Also the Insurance Supervision Commission is to issue specific prudential Norms with respect to the underwriting of risks for nuclear accidents which are to be published in the Official Gazette by 14 November 2003.

The Methodological Norms require that insurance policies or financial securities acquired under the provisions of Law No. 703/2001 must provide cover against civil liability for nuclear damage. In case of nuclear installations and radioactive materials that do not present a risk of criticality, an insurance policy or financial security is not mandatory. Risk of criticality is defined as the risk of an uncontrolled chain-process of nuclear fission. A nuclear installation is deemed to present a risk of criticality when the quantity of fissionable material held, deposited, handled, used or transported can sustain a chain-process of nuclear fission. According to the provisions of Law No. 111/1996 on the Safe Deployment of Nuclear Activities, the licensee should make the request for such an exemption during the licensing procedure and it shall be explicitly set-out in the license issued by the CNCAN.

The sum insured under the insurance policy or guaranteed through the financial security shall also be explicitly set-out in the license issued by the CNCAN.

The insurance policy or the financial security provided for in Law No. 703/2001 must be acquired from an insurer/financial institution registered with the national authority competent in the nuclear field. The insurer may conclude insurance policies with a nuclear operator only subsequent to its authorisation and in accordance with the relevant prudential norms regarding underwriting risks relating to civil liability for nuclear damage. The financial security may also be created as a deposit placed with the State Treasury. The CNCAN shall be notified as to the creation of such security set out in the previous paragraph within 48 hours of its creation. The said security may be modified or liquidated only with CNCAN approval. In such cases the operator may withdraw the amounts deposited in excess of the minimum amount required.

The nuclear operator shall immediately notify the CNCAN and the insurer as to any nuclear occurrence susceptible to cause nuclear damage. Within ten days of such an occurrence, the nuclear operator shall transmit to the CNCAN and to the insurer a preliminary report assessing any potential damage. The nuclear operator shall keep good record of any claim for damages made against it and register the identity of the claimant, the nature, type and size of the damages claimed. The nuclear operator shall notify the CNCAN as to the method of compensation and the amount of damages awarded by the insurer.

Subsequent to a nuclear occurrence the CNCAN is to set-up a special commission whose tasks are to: determine the causes and consequences of the nuclear occurrence; examine and assess nuclear damage; issue recommendations as to the compensation, assistance and reconstruction measures; and issue recommendations as to the improvements to the nuclear installation with respect to nuclear and radiation emission safety. The conclusions and recommendations presented in the report are to be disclosed to the media.

The competent court may take into consideration the above mentioned examination reports and recommendations made by the Commission with respect to compensation to make a correct allotment, consistent with the type of damage and number of victims. The Court may order ten percent of the total coverage against nuclear damage to be set-aside for potential nuclear damage until the statutory limit tolls.

Slovak Republic

Regime of Nuclear Installations

Decree on Nuclear Safety Requirements for Nuclear Installations (2003)

This Decree No. 167/2003 was adopted on 5 March 2003 by the Nuclear Regulatory Authority of the Slovak Republic and entered into force on 1 June 2003. It lays down the requirements for nuclear safety of nuclear installations during siting, design, commissioning, operation and decommissioning. The Decree details, *inter alia*, the properties of the land for the siting of a nuclear installation; depth protection, nuclear safety functions and characteristics; radiation protection; research in the field of nuclear safety, equipment faults, fire prevention; safety systems and control systems; containment system, nuclear material management; basic requirements for the start-up and principles of operation of a nuclear installation.

Decree on Nuclear Safety Assessment (2003)

This Decree No. 121/2003 was adopted by the Nuclear Regulatory Authority of the Slovak Republic on 5 March 2003 and entered into force on 1 June 2003. It regulates the intervals and performance scope of complex and systematic assessments of nuclear safety during the operation of a nuclear installation.

Slovenia

Organisation and Structure

Regulation on the Organisation and Assignment of Ministerial Responsibilities (2003)

This Regulation was adopted by the Government on 12 June 2003 and entered into force on 27 June 2003. It contains, *inter alia*, a description of the responsibilities of the Radiation Safety Administration, established on 27 February 2003 as a regulatory body within the Ministry of Health, and of the Slovene Nuclear Safety Administration. The Radiation Safety Administration performs specialised technical and development administrative tasks and inspection supervision related to practices involving radiation or the use of radiation sources in medical and veterinary applications; the protection against ionising radiation; systematic monitoring of living and working conditions in relation to exposure from natural radiation sources; monitoring of radioactive contamination of foodstuffs and drinking water; restriction, diminution and prevention of damage to health resulting from non-ionising radiation; and control of the qualifications and competence of radiation protection experts.

Switzerland

General Legislation

Law on Nuclear Energy (LENu) (2003)

This Law was adopted on 21 March 2003 (see *Nuclear Law Bulletin* No. 71. The Law is foreseen to take effect on 1 January 2005, at the same time as its implementing Ordinance (OENu), which is to be approved by the Federal Swiss Council near the end of the year 2004. The text of the Law is reproduced in the Supplement to this edition of the *Bulletin*.

Ukraine

Third Party Liability

Decree on Compulsory Insurance of Civil Liability for Nuclear Damage (2003)

This Decree No. 953 was adopted by the Cabinet of Ministers on 23 June 2003, following the entry into force of the 2001 Law on Civil Liability for Nuclear Damage and its Financial Security (see *Nuclear Law Bulletin* No. 69; the text of this Law is reproduced in the Supplement to *NLB* No. 69). It approves the procedures and rules for the compulsory insurance of civil liability for nuclear damage, specific licensing terms for activities requiring civil liability insurance for nuclear damage, a statute on a national nuclear insurance pool, a standard form of agreement for mandatory civil liability insurance for nuclear damage and a procedure for calculating premiums for such insurance.

Uruguay

Radiation Protection

Regulations on Radiation Protection (2002)

The following regulations were approved by Resolution of the Ministry of Industry, Energy and Mining (*Ministerio de Industria, Energia y Mineria*) on 28 June 2002.

Regulation UY 101 establishes minimum-security requirements for the operation of industrial gammagraphy equipment.

Regulation UY 102 establishes minimum radiological security requirements applicable to the authorisation of non-dispersible solid radioactive sources with therapeutics, interstitial brachytherapy applications and superficial intracavitaries. This Regulation applies to all activities related to the use of non-dispersible solid radioactive sources in brachytherapy.

Regulation UY 103 establishes minimum radiological security requirements in the operation of electron linear accelerators for medical use. This Regulation applies to all installations that have electron linear accelerators for medical purposes, with an energy rank between 4 and 40 MeV.

Regulation UY 104 establishes the radiological security requirements applicable to the operation of telecobalt therapy equipment used for the treatment of human beings.

Regulation UY 105 establishes minimum radiological safety requirements for the use of non-sealed radioactive sources in nuclear medicine. This Regulation is applicable to the operation of any installation or the realisation of nuclear medicine training that uses non-sealed radioactive sources for therapeutic purposes.

Regulation UY 108 guarantees effective inspections over the use of medical or odontological radio-diagnostics in order to avoid any unnecessary exposures of workers and the public. In addition it aims to limit the possibility of accidents and exposure to patients where a minimum is necessary to

achieve the objective of the diagnostic required, taking into account the International Basic Standards for Protection against Ionising Radiation and for Safety of Radiation Sources (Safety Series No. 115). Annex to Regulation UY 108 guarantees an effective control of X-ray equipment used in the baggage and cargo inspection to avoid unnecessary exposure of workers and public, as well as to limit the possibility of accidents.

Radioactive Waste Management

Regulation on Radioactive Waste Management (2002)

Regulation UY 106, approved by Resolution of the Ministry of Industry, Energy and Mining on 20 June 2002, establishes general requirements pertaining to radioactive waste management for the purpose of maintaining an adequate level of radiological protection of people and the environment for present and future generations. This regulation is applicable to waste management installations and training under the control of the Regulatory Authority.

Transport of Radioactive Materials

Regulation on the Transport of Radioactive Materials (2002)

Regulation UY 107, approved by Resolution of the Ministry of Industry, Energy and Mining on 28 June 2002, establishes minimum safety requirements for the protection of people, goods and the environment from harmful effects of ionising radiation during the transport of radioactive materials.

INTERNATIONAL REGULATORY ACTIVITIES

International Atomic Energy Agency

Resolutions adopted by the IAEA General Conference (2003)[1]

The 47th Session of the IAEA General Conference was held in Vienna from 15 to 19 September 2003 with the participation of the delegations from 137 Member States and representatives of various international organisations. Resolutions were adopted by the Conference, *inter alia*, in the following areas.

Nuclear Safety, Radiation, Transport and Waste Safety

Under Resolution No. 7 on Measures to Strengthen International Co-operation in Nuclear, Radiation, Transport and Waste Safety, the General Conference welcomes with satisfaction the decision of the Board to establish, as Agency safety standards, the Safety Requirements on "Site Evaluation for Nuclear Installations" (in document GOV/2003/51) and the Safety Requirements on "Remediation of Areas Contaminated by Past Activities and Accidents" (in document GOV/2003/52), and encourages Member States to incorporate these safety requirements into national regulatory programmes, to the fullest extent possible. Further, the General Conference appeals to all Member States which have not yet taken the necessary steps to become Party to the Convention on Nuclear Safety to do so. The General Conference recognises the progress made in preparing a Code of Conduct on the Safety of Research Reactors, and notes that the final version of the draft Code is expected to be resubmitted for consideration by the Board of Governors in March 2004.

With regard to radiation safety, the General Conference welcomed progress in implementing the International Action Plan for the Radiological Protection of Patients, as well as the approval by the Board of Governors of the International Action Plan for Occupational Radiation Protection. It further welcomed the steps taken by the Secretariat to assist in developing an international framework for the protection of the environment from ionising radiation.

The General Conference appealed to all Member States who have not yet become Party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management to take all necessary steps to do so. The General Conference reminded all Member States that the first Review Meeting of Contracting Parties to this Convention would be held in Vienna in November 2003.

1. The texts of these Resolutions are available on the Web site of the IAEA at the following URL: www.iaea.org/worldatom/About/Policy/GC/GC47/ Resolutions

The General Conference urged all Member States to become Parties to the Convention on Early Notification of a Nuclear Accident and to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. It also encouraged the Member States to implement, where necessary, instruments for improving their own preparedness and response capabilities for nuclear and radiological incidents and accidents including their arrangements for responding to acts involving the malicious use of nuclear or radioactive materials and threats to use such acts.

Concerning the Code of Conduct on the Safety and Security of Radioactive Sources, the General Conference noted that radioactive sources are used throughout the world for a wide variety of beneficial purposes. However, the ineffective, interrupted or sporadic regulatory or management control of radioactive sources has led to serious accidents or malicious acts, or to the existence of orphan sources. The General Conference recognised the need for effective and continuous regulatory control, and welcomed the approval by the Board of Governors of the revised IAEA Code of Conduct on the Safety and Security of Radioactive Sources. It endorsed the objectives and principles set out in the Code, while recognising that the Code is not a legally binding instrument.

With regard to transport safety, the General Conference noted concerns about a potential accident or incident during the transport of radioactive materials by sea, and the importance of the protection of people, human health and the environment as well as protection from actual economic loss, as defined in relevant international instruments, due to an accident or incident. It further noted that the International Conference on the Safety of Transport of Radioactive Material, held in Vienna from 7-11 July 2003, found that the current regulations provide a high level of safety and provide a good basis for an effective regulatory process and ensure strict implementation of guidelines. The General Conference stressed the importance of having effective liability mechanisms in place to insure against 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. It acknowledged the Conference President's conclusion that the preparation of an explanatory text for the various nuclear liability instruments would assist in developing a common understanding of the complex issues and thereby promote adherence to these instruments. Further, it welcomed the decision of the Director General to appoint a group of experts to explore and advise on issues related to nuclear liability. The General Conference emphasised the importance of maintaining dialogue and consultation aimed at improving mutual understanding, confidence building and enhanced communications in relation to safe maritime transport of radioactive materials. Finally, it urged Member States that do not have national regulatory documents governing the transport of radioactive materials to adopt such documents expeditiously.

Nuclear Security – Progress on Measures to Protect Against Nuclear Terrorism

The General Conference also adopted Resolution No. 8, which recalls the potential implications of terrorist acts for the security of nuclear materials, nuclear facilities, radioactive sources and other radioactive materials. It further calls upon Member States to promote an effective security culture in their physical protection. Resolution No. 8 appeals to States which have not yet done so to accede to the Convention on the Physical Protection of Nuclear Material, and encourages States to apply the physical protection objectives and fundamental principles endorsed by the Board of Governors and set out in document GOV/2001/41. Finally, Resolution No. 8 welcomes the finalisation of the work of the legal and technical experts convened by the Director General to prepare a draft of an amendment aimed at strengthening the Convention.

Strengthening the IAEA's Safeguards System

In Resolution No. 11, the General Conference stressed the need for effective safeguards in order to prevent the use of nuclear material for prohibited purposes, and urged all States which have yet to bring into force comprehensive safeguards agreements (and their additional protocols) to do so as soon as possible in conformity with their national legislation. It further requested the Secretariat to examine innovative technical solutions to strengthen the effectiveness and to improve the efficiency of safeguards.

Safeguards in the Democratic People's Republic of Korea (DPRK)

The General Conference, under Resolution No. 12, commended the impartial efforts of the Director General and the Secretariat to apply comprehensive safeguards in the DPRK. Further, the General Conference deplored the steps taken by the DPRK which led the Board to find it in non-compliance with its NPT safeguards agreement, and the DPRK's continued unwillingness to enter into the substantive dialogue offered by the IAEA regarding the application of comprehensive safeguards. To this end, Resolution No. 12 urged the DPRK to reconsider those actions which run contrary to voluntarily undertaken, international non-proliferation obligations, to promptly dismantle any nuclear weapons programme in a transparent, verifiable and irreversible manner and to maintain the essential verification role of the IAEA. Resolution No. 12 stressed the desire for a peaceful resolution through dialogue to the DPRK nuclear issue, leading to a nuclear free Korean Peninsula with a view to maintaining peace and security in the region, and particularly welcomed the six-party talks which took place in Beijing from 27 to 29 August 2003.

Application of IAEA Safeguards Standards in the Middle East

Resolution No. 13 affirmed the urgent need for all States in the Middle East to accept the application of full-scope IAEA safeguards to all their nuclear activities as a step in enhancing peace and security in the context of the establishment of a nuclear-weapon free zone (NWFZ). Further it called upon States in the Middle East to take measures, including confidence-building and verification measures, aimed at creating a NWFZ. To this end, the General Conference requested the Director General to consult with the States of the Middle East to facilitate the application of safeguards to nuclear activities as relevant to the preparation of model agreements.

Implementation of United Nations Security Council Resolutions relating to Iraq

On 19 September 2003, the General Conference adopted Decision No. 12, endorsing a statement by the President to the effect that the General Conference commended the IAEA for its verification activities in Iraq under the mandate provided by UN Security Council Resolutions from November 2002 to March 2003. It also noted with satisfaction that there is no proliferation risk from the type and quantity of uranium compounds at the Baghdad Yellowcake Facility and expressed appreciation for the continuation by the IAEA of its NPT safeguards activities in Iraq.

European Union

In the past months, the Commission has adopted several regulations and legislative proposals based on the provisions of the Euratom Treaty to supplement or update the legislation in force in the field of nuclear energy. In addition, recent initiatives based on the provisions of the Treaty establishing the European Community and currently examined by the Council of the European Union may stand to affect nuclear activities in the European Union.

Proposals for Directives on nuclear safety and radioactive waste management (2003)

On 30 January 2003, the Commission adopted a proposal for a Council Directive setting out basic obligations and general principles on the safety of nuclear installations and a proposal for a Council Directive on the management of spent nuclear fuel and radioactive waste (COM/2003/0032/ final).

Both proposals are based on the provisions on Health and Safety in Chapter 3 of Title II, especially Article 32 of the Treaty which allows the basic safety standards to be revised or supplemented. These proposals are specifically designed to supplement the existing health standards in order to meet the objectives set in the Treaty; notably the obligation imposed by Article 2(b) to "establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied". In accordance with Article 32, they were adopted after consultation of the Group of Experts from the Member States provided for in Article 31 of the Euratom Treaty.

The first: "proposal for a directive setting out the basic obligations and general principles on the safety of nuclear installations" was drafted with the main objective to ensure that health protection against ionising radiation will be assured during the whole life of nuclear installations, from design to decommissioning. The proposal sets out basic obligations and general principles contained in the international conventions and gives them force of Community law. To ensure the credibility of the system the proposal institutes, in a Community framework, a cross-checking of the national safety authorities. Another objective of this initiative is to confirm the necessity to have available adequate financial resources to cover the cost of decommissioning of nuclear installations.

The objective of the second: "proposal for a directive on the management of spent nuclear fuel and radioactive waste" is to place an obligation on the Member States to establish a clearly defined programme for the disposal of radioactive waste, including deep disposal of high-level waste. The proposal sets out a concrete timetable to that end: in the case of short-lived low and intermediate-level waste, authorisation for the development of appropriate disposal site(s) shall be granted no later than 2008 and authorisation for the operation of the facility no later than 2013. The deadline for the authorisation for the operation of the disposal facility is fixed at 2018 for high-level and long-lived radioactive waste, which shall be disposed in a geological repository. The programmes may include, as an alternative solution to disposal, the shipment of radioactive waste or spent fuel to another Member State or third country under strict conditions of compliance. This alternative solution will require the agreement of the recipient of the waste. The proposal also intends to encourage co-operation between the Member States in common areas of research and technological development.

New Regulation on the application of Euratom safeguards (2002)

In 2002, the Commission proposed a new Commission Regulation (COM 2002/099 final) on the application of Euratom safeguards, which will replace the Regulation No. 3227/76.

The new Regulation will introduce additional requirements on reporting to the IAEA for which the Commission carries legal responsibility under the Protocols Additional to the Safeguards Agreements between Member States, the Community and the IAEA. Furthermore clear definitions of waste categories, new Inventory Change Codes and special annexes for reporting transfers of waste are to be introduced to reflect current practices in the industry and the experience gained in effective accountancy and control of waste under the Euratom Treaty. This part of the proposal is also in line with the wider reporting requirements for waste introduced by the Additional Protocols. Finally the new reporting format will introduce changes in the format and the content of accountancy reports.

Control of high activity sealed radioactive sources (2003)

On 24 January 2003, the Commission adopted a proposal for a Council Directive on the control of high activity sealed radioactive sources (COM/2003/0018 final). Based on Articles 31 and 32 of the Euratom Treaty, this proposal aims at supplementing the Basic Safety Standards Directive with a view to strengthening control by the competent national authorities on those sealed radioactive sources posing the greatest risk and to emphasise the responsibilities of holders of such sources.

This proposal is meant to contribute to higher safety and security for European citizens against the risks associated with the handling and storage of highly radioactive sources. It further sets-out to prevent exposure to ionising radiation arising from inadequate control of high activity sealed radioactive sources and to harmonise controls in place in the Member States by putting in place specific requirements to ensure that each source is kept under control.

Recommendation on the protection and information of the public with regard to the continued contamination of certain wild food products following the Chernobyl accident (2003)

On 14 April 2003, the Commission adopted Recommendation 203/247/Euratom on the protection and information of the public with regard to exposure resulting from the continued radioactive caesium contamination of certain wild food products as a consequence of the accident at the Chernobyl nuclear power station.

According to this recommendation, the Member States should take appropriate measures to ensure that the maximum permitted levels in terms of caesium-134 and caesium-137 are respected in the Community for the placing on the market of certain wild products and should inform the population in affected regions of the health risks involved. The Community Rapid Alert System laid down in Regulations (EC) No. 178/2002 of 28 January 2002 should be used for exchanging information between the Member States on recorded cases of exceeding the maximum permitted levels.

Proposals for decisions authorising the Member States to sign and ratify the Protocol to amend the Paris Convention (2003)

On 9 July 2003, the Commission adopted two proposals for Council decisions authorising the Member States which are Contracting Parties to the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy to sign and ratify the Protocol amending that Convention, or to accede to it, in the interest of the European Community.

The Protocol to amend the Paris Convention was negotiated by the Commission for matters falling within the jurisdiction of the European Community, in accordance with the Council's directives of 13 September 2002. However, since the Paris Convention and the Protocol to amend it are not open to participation by regional organisations, it has been deemed justified, on an exceptional basis, that the Community exercise its powers through its Member States which are Parties to that Convention. All Member States of the European Union, except Austria, Ireland and Luxembourg, are Contracting Parties to the Paris Convention.

Community authorisation was required previous to the signature of the Protocol to amend since it affects Community rules on jurisdiction and the recognition and enforcement of judgements in civil and commercial matters laid down in Council Regulation (EC) No. 44/2001 of 22 December 2002. Indeed, the Community has exclusive jurisdiction with regards to amending Article 13 of the Paris Convention, which determines the court that has jurisdiction in claims for compensation for damage caused by nuclear accidents, as it affects the corresponding rules of Council Regulation (EC) No. 44/2001.

Proposal for a Directive on environmental liability with regard to the prevention and remedying of environmental damage (2002)

On 23 January 2002, the Commission adopted a proposal for a Directive of the European Parliament and of the Council on environmental liability with regard to the prevention and remedying of environmental damage [COM (2002) 17 final].

The proposal aims to establish a framework whereby environmental damage, which is defined in the proposal as "biodiversity damage", "water damage" and "land damage", would be prevented or remedied through a system of environmental liability. Whenever possible, the operator that has caused the environmental damage or an imminent threat of such damage occurring must, in accordance with the « polluter-pays » principle, bear the cost associated with the implementation of the necessary liable or restorative measures. In cases in which no operator can be held liable or an operator is liable but unable to pay, Member States are required to find an alternative source of financing the measures in question.

The scope of the proposal does not cover such nuclear risks or environmental damage or imminent threat of such damage as may be caused by the activities covered by the Euratom Treaty or caused by an incident or activity in respect of which liability or compensation falls within the scope of any of the following international conventions:

- the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy and the Brussels Supplementary Convention of 31 January 1963;

- the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage;

- the Convention of 12 September 1997 on Supplementary Compensation for Nuclear Damage;

- the Joint Protocol of 21 September 1988 relating to the Application of the Vienna Convention and the Paris Convention;

- the Brussels Convention of 17 December 1971 relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material.

The proposal was discussed in a first reading by the European Parliament which adopted its Opinion on 14 May 2003. On 18 September 2003, the Council adopted its Common Position. The Common Position keeps nuclear activities out of the scope of the proposed directive and specifies that the exclusion of nuclear risks covered by international instruments extends to any future amendments to these instruments. However, it is now proposed that the report be submitted to the Commission before ten years after the entry into force of the Directive, which shall then conduct a review of the matters excluded from the scope of the directive including nuclear damage.

The Common Position has now been sent to the European Parliament for a second reading, in accordance with the co-decision procedure.

Proposal for a Regulation on the law applicable to non-contractual obligations (2003)

On 22 July 2003, the Commission adopted a proposal for a Regulation on the law applicable to non-contractual obligations, the so-called "Rome II" Regulation. The purpose of this proposal is to standardise the Member States' rules of conflict of laws regarding non-contractual obligations. This Regulation extends the harmonisation of private international law in relation to civil and commercial obligations which is already well advanced in the Community with the Council Regulation (EC) No. 44/2001 and the Rome Convention of 1980.

The proposed Regulation would apply to all situations involving a conflict of laws, i.e. situations in which there are one or more elements that are alien to the domestic social life of a country that entail applying several systems of law. It would cover all non-contractual obligations in civil and commercial matters, except those in matters listed in Article 1, paragraph 2.

The non-contractual obligations arising out of nuclear damage are among the matters excluded from the scope of the proposed Regulation. The importance of the economic and state interests at stake and the Member States' contribution to measures to compensate for nuclear damage in the international scheme of nuclear liability explain this exclusion.

AGREEMENTS

BILATERAL AGREEMENTS

Bulgaria – Russian Federation – Ukraine

Trilateral Agreement on Nuclear Transport (2002)

On 14 August 2002, the Russian Federation, Ukraine and Bulgaria signed this Agreement, which is valid for ten years, thereby allowing the transport of nuclear material between Russia and Bulgaria, via Ukraine. A shipment from the Kozloduy nuclear power plant in Bulgaria was expected to arrive in Russia by the end of 2002.

Estonia – Latvia

Agreement on Co-operation in Radiation Safety (2003)

On 28 May 2003, the Radiation Safety Centre of the Republic of Latvia and the Radiation Protection Centre of the Republic of Estonia signed this Agreement, which entered into force upon signature for a period of five years. The Agreement will be automatically extended for another term of five years. Ten years after the entry into force of the Agreement a meeting shall be convened to decide whether the Agreement shall continue indefinitely or shall be extended for an additional fixed period.

This Agreement focuses on the following activities:

- development of a national legal framework on radiation and nuclear safety, state supervision and control of radiation sources;
- establishment and development of national registers of radiation sources and occupational exposure of radiation workers;
- development of procedures relating to notification, registration and licensing, validation of practices and assessment of safety for practices and sources;
- emergency preparedness and response; and
- safeguards issues.

The Parties agreed to regularly exchange information on: the supervision and control of radiation sources and practices involving radiation sources; unknown or previously unidentified sources and practices, as well as the properties of those sources; and details on given practices that raise concern from a radiation safety viewpoint or that may have an impact on the safety of the population and the environment; any accident or incident which occurs in the territory of one of the Parties concerned and may have consequences in the other country; training activities, conferences, workshops and co-operation projects.

Euratom – Non-Member States of the European Union

Radiological emergency: Agreement between Euratom and Non-Member States of the European Union (2003)

On 29 January 2003, Euratom signed an Agreement negotiated between the European Atomic Energy Community and non-member States of the European Union on the participation of the latter in the Community arrangements for the early exchange of information in the event of a radiological emergency (Ecurie).

The Agreement is now open for signature and ratification by the Republic of Bulgaria, the Republic of Cyprus, the Czech Republic, the Republic of Estonia, the Republic of Hungary, the Republic of Latvia, the Republic of Lithuania, the Republic of Malta, the Republic of Poland, Romania, the Slovak Republic, the Republic of Slovenia, the Swiss Confederation and the Republic of Turkey. This Agreement also aims at replacing the existing bilateral agreement concluded in June 1995 between the Euratom Community and the Swiss Confederation. Euratom may invite other countries to become a party to this Agreement.

Closely based on the provisions of Council Decision 87/600/Euratom of 14 December 1987 which set up the Ecurie system, this agreement aims at extending the existing system to the future Member States, already before their formal accession to the EU. In the meantime, it provides for a framework for a future collaboration between the European Union and its neighbouring countries in the sensitive issues of early notification in case of a nuclear accident.

Euratom – Uzbekistan

Agreement for Co-operation in the Peaceful Uses of Nuclear Energy (2003)

This Agreement was signed on 6 October 2003 between the European Atomic Energy Community (Euratom) and the Government of the Republic of Uzbekistan. It will enter into force, on the date agreed upon by the Parties, by exchange of diplomatic notes and will remain in force for an initial period of five years. At the expiration of this period the Agreement will be tacitly renewed every five years.

The objective of this Agreement is to provide a framework for co-operation between the Parties in the areas of nuclear safety, research and development in the nuclear sector, trade in nuclear materials and provision of nuclear fuel cycle services, and other relevant areas of mutual interest.

In the area of nuclear safety, the co-operation shall pay particular regard to radiation protection (development of safety standards, training and education), nuclear waste management, research and development on safeguards of nuclear material (development of the systems of accounting for and control of nuclear materials) and the prevention of illicit trafficking of nuclear and radioactive material.

With regard to research and development in the nuclear sector, the Agreement covers, *inter alia*, applications of nuclear energy in the fields of medicine and industry, and the interaction between nuclear energy and the environment.

Finally, the Agreement provides that trade in nuclear materials and the provision of relevant services between the Parties shall be carried out at market-related prices. Transfers of nuclear materials shall be carried out for peaceful purposes.

France – United States of America

Agreement for Exchange of Technical Information and Co-operation in the Regulation of Nuclear Safety (2003)

On 17 April 2003, the United States Nuclear Regulatory Commission (NRC) and the French Directorate General for Nuclear Safety and Radiation Protection (DGSNR) signed this Agreement, which entered into force upon signature for a period of five years. The Agreement may be extended for a further period of time by written agreement of the Parties.

The Parties agreed to regularly exchange information, to the extent permitted under their laws, on the following types of technical information and policy directives related to designated nuclear facilities:

- Topical reports concerning technical safety, radiation protection, waste management, and environmental effects written by or for one of the Parties as a basis for, or in support of, regulatory decisions and policies.

- Documents relating to significant licensing actions and safety and environmental decisions affecting nuclear facilities.

- Detailed documents describing the NRC process for licensing and regulating certain United States facilities designated by the DGSNR as similar to certain facilities being built or planned in France and equivalent documents on such French facilities.

- Reports on operating experiences such as reports on nuclear incidents, accidents and shutdowns, and compilations of historical reliability data on components and systems.

- Regulatory procedures for the safety, radiation protection, waste management and environmental impact evaluation of nuclear facilities.

- Early advice of important events, such as serious operating incidents and government-directed reactor shutdowns, that are of immediate interest to the Parties.

- Copies of regulatory standards required to be used by the regulatory organisations of the Parties.

- Temporary assignments of personnel by one Party within the other Party's general organisation. Such activities will be considered on a case-by-case basis and will, in general, require a separate letter of agreement.

Republic of Korea – Romania

Memorandum of Understanding on Co-operation in Nuclear Energy Projects (2003)

The Memorandum of Understanding on Co-operation in the Nuclear Energy Projects concluded between the Ministry of Economy and Commerce of Romania and the Ministry of Commerce, Industry and Energy of the Republic of Korea, was signed in Seoul on 21 July 2003, and the Government Decision No. 112 of 25 September 2003 regarding this Memorandum was published in the Official Gazette *(Monitural Oficial*, Part I, No. 689) on 1 October 2003.

Under Article 1 of the Memorandum of Understanding (Scope of Co-operation), the signing Parties agree to co-operate on the construction plans of Units 3, 4, and 5 of the Cernavoda Nuclear Power Plant on a progressive basis. The Parties further agree to develop the projects as a joint effort and to find the most competitive financial mechanisms to back them up. The Korean Party shall act as consultant to the Romanian nuclear industry providing technical support and training with respect to the operation of Unit 1 and the construction of Unit 2.

Both Romanian and Korean institutions having concerns in nuclear matters may take part in the process initiated by the Memorandum of Understanding, and visits – by both parties – may be organised for predetermined periods. Prior to any such visits, the Parties shall agree on the size of the delegation, the duration and purpose of the visit. Each Party shall bear its own expenses such as they occur in the execution of the Memorandum of Understanding.

The Agreement includes a confidentiality clause that the proprietary rights in relation to all information and expertise acquired while enforcing the Memorandum of Understanding shall remain vested in the Party supplying them. To this effect, neither the Ministry of Economy and Commerce of Romania nor the Ministry of Commerce, Industry and Energy of the Republic of Korea shall disclose information that is confidential or property of the other Party and that has been acquired in the execution of the Memorandum of Understanding without the prior written consent of the other Party.

The initial duration of the Memorandum of Understanding is three years and shall be automatically extended by additional three-year periods, provided that neither one of the Parties gives notice of termination at least six months prior to the expiry of the current time period.

Norway – Russian Federation – United Kingdom – United States

Arctic Military Environmental Co-operation (2003)

In June 2003, the United Kingdom formally joined the Arctic Military Environmental Co-operation (AMEC), which currently comprises the Russian Federation, Norway and the

United States (see *Nuclear Law Bulletin* No. 58). AMEC provides a forum to address military-related environmental concerns in the Arctic. Established in 1996, the co-operation has developed technologies that minimise radioactive environmental contamination. A key focus for AMEC is to develop storage and treatment technologies to improve the decommissioning of Russian nuclear submarines and related facilities, a process that generates large volumes of solid radioactive waste. Without proper storage, the waste could release significant amounts of radiation into the environment.

Russian Federation – United Kingdom

Agreement on Nuclear Proliferation Prevention (2003)

On 26 June 2003, the United Kingdom and the Russian Federation signed the Agreement on Nuclear Proliferation Prevention that enables the United Kingdom to start spending tens of millions of pounds in aide to dismantle decommissioned Russian nuclear submarines and to store Russian spent fuel. The Agreement took effect immediately.

MULTILATERAL AGREEMENTS

Status of Conventions in the Field of Nuclear Energy

1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage

On 4 July 2003, the Republic of Belarus deposited an instrument of ratification of the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (see *Nuclear Law Bulletin* No. 60) whereby the requirements for its entry into force have been met. Pursuant to its Article 21.1, the Protocol "shall enter into force three months after the date of deposit of the fifth instrument of ratification, acceptance or approval".

The Protocol therefore entered into force on 4 October 2003. As of 11 November 2003, there are five Parties to this Protocol, as set out in the table below.

Status of signatures, ratifications, acceptances, approvals or accessions

State	Date of Signature	Date of Deposit of Instrument
Argentina	19 December 1997	14 November 2000 (ratification)
Belarus	14 September 1998	4 July 2003 (ratification)
Czech Republic	18 June 1998	
Hungary	29 September 1997	
Indonesia	6 October 1997	
Italy	26 January 1998	
Latvia	7 March 2001	5 December 2001 (ratification)
Lebanon	30 September 1997	
Lithuania	30 September 1997	
Morocco	29 September 1997	6 July 1999 (ratification)
Peru	4 June 1998	
Philippines	10 March 1998	
Poland	3 October 1997	
Romania	30 September 1997	29 December 1998 (ratification)
Ukraine	29 September 1997	

1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

Since the last update in *Nuclear Law Bulletin* No. 65, seven countries have become Contracting Parties to this Convention, namely Albania, Canada, Islamic Republic of Iran, Kuwait, Lithuania, Luxembourg and Saint Vincent and the Grenadines. Therefore, as of 11 November 2003, there are 86 Parties to this Convention, as set out in the table below.

Status of signatures, ratifications, acceptances, approvals or accessions

State	Date of Signature	Date of Deposit of Instrument
Afghanistan	26 September 1986	
Albania		30 April 2003 (accession)
Algeria	24 September 1987	
Argentina		17 January 1990 (accession)
Armenia		24 August 1993 (accession)
Australia	26 September 1986	22 September 1987 (ratification)
Austria	26 September 1986	21 November 1989 (ratification)
Bangladesh		7 January 1988 (accession)
Belarus	26 September 1986	26 January 1987 (ratification)
Belgium	26 September 1986	4 January 1999 (ratification)
Bosnia and Herzegovina		30 June 1998 (succession)
Brazil	26 September 1986	4 December 1990 (ratification)
Bulgaria	26 September 1986	24 February 1988 (ratification)
Cameroon	25 September 1987	
Canada	26 September 1986	12 August 2002 (ratification)
Chile	26 September 1986	
China	26 September 1986	10 September 1987 (ratification)
Costa Rica	26 September 1986	16 September 1991 (ratification)
Côte d'Ivoire	26 September 1986	
Croatia		29 September 1992 (succession)
Cuba	26 September 1986	8 January 1991 (ratification)
Cyprus		4 January 1989 (accession)
Czech Republic		24 March 1993 (succession)
Democratic People's Republic of Korea	29 September 1986	
Democratic Rep. of the Congo	30 September 1986	
Denmark	26 September 1986	
Egypt	26 September 1986	17 October 1988 (ratification)
Estonia		9 May 1994 (accession)
Food and Agricultural Organization		19 October 1990 (accession)

State	Date of Signature	Date of Deposit of Instrument
Finland	26 September 1986	27 November 1990 (approval)
France	26 September 1986	6 March 1989 (approval)
Germany	26 September 1986	14 September 1989 (ratification)
Greece	26 September 1986	6 June 1991 (ratification)
Guatemala	26 September 1986	8 August 1988 (ratification)
Holy See	26 September 1986	
Hungary	26 September 1986	10 March 1987 (ratification)
Iceland	26 September 1986	
India	29 September 1986	28 January 1988 (ratification)
Indonesia	26 September 1986	12 November 1993 (ratification)
Iran, Islamic Republic of	26 September 1986	9 October 2000 (ratification)
Iraq	12 August 1987	21 July 1988 (ratification)
Ireland	26 September 1986	13 September 1991 (ratification)
Israel	26 September 1986	25 May 1989 (ratification)
Italy	26 September 1986	25 October 1990 (ratification)
Japan	6 March 1987	9 June 1987 (acceptance)
Jordan	2 October 1986	11 December 1987 (ratification)
Korea, Republic of		8 June 1990 (accession)
Kuwait		13 May 2003 (accession)
Latvia		28 December 1992 (accession)
Lebanon	26 September 1986	17 April 1997 (ratification)
Libyan Arab Jamahiriya		27 June 1990 (accession)
Liechtenstein	26 September 1986	19 April 1994 (ratification)
Lithuania		21 September 2000 (accession)
Luxembourg		26 September 2000 (accession)
Malaysia	1 September 1987	1 September 1987 (signature)
Mali	2 October 1986	
Mauritius		17 August 1992 (accession)
Mexico	26 September 1986	10 May 1988 (ratification)
Monaco	26 September 1986	19 July 1989 (approval)
Mongolia	8 January 1987	11 June 1987 (ratification)
Morocco	26 September 1986	7 October 1993 (ratification)
Netherlands	26 September 1986	23 September 1991 (acceptance)
New Zealand		11 March 1987 (accession)
Nicaragua		11 November 1993 (accession)
Niger	26 September 1986	
Nigeria	21 January 1987	10 August 1990 (ratification)
Norway	26 September 1986	26 September 1986 (signature)
Pakistan		11 September 1989 (accession)
Panama	26 September 1986	1 April 1999 (ratification)
Paraguay	2 October 1986	
Peru		17 July 1995 (accession)

State	Date of Signature	Date of Deposit of Instrument
Philippines		5 May 1997 (accession)
Poland	26 September 1986	24 March 1988 (ratification)
Portugal	26 September 1986	
Republic of Moldova		7 May 1998 (accession)
Romania		12 June 1990 (accession)
Russian Federation	26 September 1986	23 December 1986 (ratification)
Saint Vincent and the Grenadines		18 September 2001 (accession)
Saudi Arabia		3 November 1989 (accession)
Senegal	15 June 1987	
Sierra Leone	25 March 1987	
Singapore		15 December 1997 (accession)
Slovak Republic		10 February 1993 (succession)
Slovenia		7 July 1992 (succession)
South Africa	10 August 1987	10 August 1987 (ratification)
Spain	26 September 1986	13 September 1989 (ratification)
Sri Lanka		11 January 1991 (accession)
Sudan	26 September 1986	
Sweden	26 September 1986	24 June 1992 (ratification)
Switzerland	26 September 1986	31 May 1988 (ratification)
Syrian Arab Republic	2 July 1987	
Thailand	25 September 1987	21 March 1989 (ratification)
Former Yugoslav Republic of Macedonia		20 September 1996 (succession)
Tunisia	24 February 1987	24 February 1989 (ratification)
Turkey	26 September 1986	3 January 1991 (ratification)
Ukraine	26 September 1986	26 January 1987 (ratification)
United Arab Emirates		2 October 1987 (accession)
United Kingdom of Great Britain and Northern Ireland	26 September 1986	9 February 1990 (ratification)
United States of America	26 September 1986	19 September 1988 (ratification)
Uruguay		21 December 1989 (accession)
Viet Nam		29 September 1987 (accession)
World Health Organisation		10 August 1988 (accession)
World Meteorological Organisation		17 April 1990 (accession)
Yugoslavia		9 April 1991 (accession)
Zimbabwe	26 September 1986	

1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

Since the last update in *Nuclear Law Bulletin* No. 70, Timor-Leste has become a Contracting Party to this Treaty. Therefore, as of 11 November 2003, there are 189 Contracting Parties to this Treaty.

1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters and its 1996 Protocol

Since the last update in *Nuclear Law Bulletin* No. 66, two States, namely Peru and Saint Vincent and the Grenadines have become Contracting Parties to this Convention. Therefore, as of 11 November 2003, there are 80 Contracting Parties to this Convention. Since the last update in *Nuclear Law Bulletin* No. 67, five States, namely Angola, Iceland, Ireland, New Zealand and Tonga have become Contracting Parties to the 1996 Protocol. Therefore, as of 11 November 2003, there are 18 Contracting Parties to the 1996 Protocol.

1979 Convention on the Physical Protection of Nuclear Materials

Since the last update in *Nuclear Law Bulletin* No. 71, seven States, namely Afghanistan, Algeria, Costa Rica, Malta, Oman, Seychelles and United Arab Emirates have become Contracting Parties to this Convention (accession). Therefore, as of 11 November 2003, there are 93 Contracting Parties to this Convention.

1986 Convention on Early Notification of a Nuclear Accident

Since the last update in *Nuclear Law Bulletin* No. 71, three States, namely Albania, Bolivia and Kuwait have become Contracting Parties to this Convention (accession). Therefore, as of 11 November 2003, there are 91 Contracting Parties to this Convention.

1994 Convention on Nuclear Safety

Since the last update in *Nuclear Law Bulletin* No. 70, Uruguay has become a Contracting Party to this Convention. Therefore, as of 11 November 2003, there are 55 Contracting Parties to this Convention.

1996 Comprehensive Nuclear Test Ban Treaty

Since the last up

date in *Nuclear Law Bulletin* No. 71, seven States, namely Afghanistan, Algeria, Cyprus, Eritrea, Honduras, Kyrgyzstan and Oman have become Contracting Parties to this Treaty. Therefore, as of 11 November 2003, there are 108 Contracting Parties to this Treaty.

1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

Since the last update in *Nuclear Law Bulletin* No. 71, two States, namely Australia (ratification) and Japan (accession) have become Contracting Parties to this Convention. Therefore, as of 11 November 2003, there are 33 Contracting Parties to this Convention.

BIBLIOGRAPHY & NEWS BRIEFS

BIBLIOGRAPHY

International Atomic Energy Agency

Handbook on Nuclear Law, Vienna, 2003

A new Handbook on Nuclear Law was published by the IAEA in August 2003. This publication is designed to provide IAEA Member States with a new resource for assessing the adequacy of their national legal frameworks governing the peaceful uses of nuclear energy. It further provides practical guidance for governments in efforts to enhance their laws and regulations, in harmonising them with internationally-recognised standards, and in meeting their obligations under relevant international instruments.

The Handbook is organised into five general parts:

- Part I provides a general overview of key concepts in the field: nuclear law and the legislative process; the regulatory authority; and the fundamental regulatory activities of licensing, inspection and enforcement.
- Part II deals with radiation protection.
- Part III covers various subjects arising from nuclear and radiation safety: radiation sources, nuclear installations, emergency preparedness and response, mining and milling, transportation, and waste and spent fuel.
- Part IV addresses the topic of nuclear liability and coverage.
- Part V moves to non-proliferation and security-related subjects: safeguards, export and import controls and physical protection.

The Handbook also reflects and refers to the extensive range of IAEA Safety Standards covering all fields relevant to peaceful nuclear technology.

The authors of the Handbook are Carlton Stoiber, a lawyer with over thirty years' experience in the US government in nuclear non-proliferation, safety and security; Alec Baer, professor of science and engineering at the University of Ottawa and former Chairman of the Board of Governors and the International Nuclear Safety Advisory Group (INSAG); Norbert Pelzer, professor of nuclear law at the

University of Goettingen and a recognised expert in nuclear liability; and Wolfram Tonhauser, co-ordinator of the IAEA's Nuclear Legislative Assistance activities.

OECD Nuclear Energy Agency

Nuclear Energy Today, Paris, 2003, 112 pages

This book published by the OECD Nuclear Energy Agency, in English and French, addresses today's important questions about nuclear energy by providing an authoritative and factual introduction to the relevant issues. It is primarily intended for policy makers, but should also be useful to interested members of the public, industrial managers, academics and journalists.

Chapter 1 gives a brief overview. The rest of the book describes the fundamental issues important to a discussion of nuclear energy today. Chapters 2 and 3 provide an introduction to the basic sciences and technologies involved. Chapter 4 to 8 set out the facts and issues connected with radioactive waste management, nuclear safety, radiological protection, economics, and international law and non-proliferation. The ninth chapter assesses nuclear energy in the context of sustainable development. The last chapter looks to the future, and to the potential of new nuclear-based technologies.

The information throughout is necessarily brief, but at the end of each chapter, there is an annotated list that guides to a fuller set of references at the end of the book that are appropriate for further study.

World Nuclear Transport Institute

Radioactive Materials Transport: The International Safety Regime, published by WNTI, London, 2001, 78 pages

The second edition of this publication, published in the WNTI Review Series No. I in 2001, describes the regime that applies to international transport of radioactive materials, by road, rail, sea, air and inland waterway. It focuses on safety standards and regulations, to ensure that people and the environment are protected from the different hazards presented by the transport of radioactive materials.

The paper explains how the development of standards and regulations for dangerous goods transports on a broad international basis was initiated by the United Nations, and focuses on the core of the system for radioactive material transports; the IAEA Regulations for the Safe Transport of Radioactive Material. It also explains how this basic system is completed by additional modal regulations for the safe transport of dangerous goods.

Along with the main provisions of the various standards and regulations, the report describes the international or regional organisations – the scope of activity and structure – which elaborate these texts, and also explains the process used to conduct this work.

NEWS BRIEFS

OECD Nuclear Energy Agency

2003 Session of the International School of Nuclear Law

The third session of the International School of Nuclear Law (ISNL), a teaching programme jointly organised by the OECD Nuclear Energy Agency (NEA) and the University of Montpellier 1, took place from 25 August to 5 September 2003 in Montpellier. The International Nuclear Law Association, the European Commission and the International Atomic Energy Agency also extended their patronage or support to the organisation of this session.

The International School of Nuclear Law aims to provide a high-quality programme on all aspects of the law governing the peaceful uses of nuclear energy. Classes are designed for both law students at the master's or doctoral level who are interested in specialising in this field and for professionals who are already active in the nuclear sector and wish to develop their knowledge.

The 2003 Session brought together 53 participants from 30 countries all over the world. Subjects covered included, *inter alia,* the origins of nuclear law, radiation protection, nuclear safety and accident prevention, emergency preparedness, spent fuel and radwaste management, physical protection and nuclear security, liability and compensation for nuclear damage. A major development in 2003 has been the establishment, under the authority of the University of Montpellier, of a Diploma of International Nuclear Law.

The 2004 Session of the School is due to take place in Montpellier from 23 August to 3 September 2004. Further information on the ISNL and its programme and application forms for its 2004 Session are available from the NEA Secretariat, Legal Affairs, 12 Boulevard des Îles, 92130 Issy-les-Moulineaux, France, and on the NEA Web site: www.nea.fr/html/law/isnl/index.html.

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SWITZERLAND

Act on Nuclear Energy*

of 21 March 2003**

The Federal Assembly of the Swiss Confederation,
having regard to Article 90 of the Constitution,[1]
having regard to the message from the Federal Council of 28 February 2001,[2]
hereby enacts:

Chapter 1

GENERAL PROVISIONS

Section 1

Purpose

This Act regulates the peaceful use of nuclear energy, and aims in particular to protect man and the environment from the hazards related thereto.

Section 2

Scope

1. This Act applies to:

   a. nuclear articles;

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* Unofficial translation provided by the OECD Secretariat.

** It is expected that this Law will take effect as of 1 January 2005, at the same time as its implementing ordinance.

1. RS 101.

2. FF 2001 2529.

b. nuclear installations;

c. radioactive waste:

1. produced in nuclear installations,

2. delivered as provided under Section 27(1) of the Radiological Protection Act of 22 March 1991 (RPA).[3]

2. The Federal Council may exclude from the scope of this Act:

a. nuclear articles not related to the use of nuclear energy;

b. nuclear installations in which nuclear materials and radioactive waste are present in small quantities or do not constitute a danger;

c. low-level nuclear articles and radioactive waste.

3. The provisions of the RPA shall apply unless the present Act provides otherwise.

Section 3

Definitions

In this Act:

a. *Observation phase* shall mean the prolonged surveillance period of a deep geological repository before it is closed, and from which radioactive waste can be easily recovered;

b. *Disposal* shall mean the conditioning, temporary storage and storage of radioactive waste in a deep geological repository;

c. *Deep geological repository* shall mean a facility in a deep geological formation which can be closed if the lasting protection of man and the environment is ensured by passive barriers;

d. *Nuclear installations* shall mean those installations used to exploit nuclear energy or to produce, manufacture, use, process or store nuclear materials, or to dispose of radioactive waste within the meaning of Section 2(1)c;

e. *Nuclear energy* shall mean all forms of energy liberated by the fission or fusion of the nuclei of atoms;

f. *Nuclear materials* shall mean substances which may be used to produce energy from the fission of the nucleus of an atom;

3. RS 814.50.

g. *Conditioning* shall mean all the operations to prepare radioactive waste for their temporary storage or storage in a deep geological repository, in particular grinding, decontamination, compacting, incineration, encapsulation, and packaging;

h. *Nuclear articles* shall mean:

1. nuclear materials,

2. components and equipment intended or necessary for the use of nuclear energy,

3. the technology necessary for the development, production or use of the materials, components and equipment referred to in 1 and 2, above;

i. *Radioactive waste* shall mean radioactive substances or materials contaminated by radioactivity which are not re-used;

j. *Handling* shall mean research, development, manufacture, temporary storage, transport, import, export, transit and brokerage;

k. *Brokerage* shall mean:

1. the creation of the conditions necessary to conclude contracts to supply, acquire or sell nuclear articles or radioactive waste, wherever they may be,

2. the conclusion of such contracts when the service is provided by third parties,

3. trading abroad in nuclear articles or radioactive waste from Swiss territory;

l. *Closure* shall mean the back-filling and sealing of all the underground sections of the access gallery to a deep geological repository, upon completion of the observation phase;

m. *Reprocessing* shall mean the mechanical removal of spent fuel elements, the chemical dissolving of the oxide fuel and the separation into uranium, plutonium and fission products.

Chapter 2

NUCLEAR SAFETY PRINCIPLES

Section 4

Principles applying to the use of nuclear energy

1. When nuclear energy is being used, man and the environment must be protected from ionising radiation, and radioactive substances may only be released in quantities not presenting any risk. In particular, the excessive release of radioactive substances and the excessive irradiation of persons must be prevented, in times of normal operation as well as in abnormal circumstances.

2. Account should be taken of the long-term consequences on the gene pool.

3. Preventive measures should include:

   a. all the measures which are required in the light of experience and of current science and technology;

   b. all additional appropriate measures to help reduce the risk.

Section 5

Protective measures

1. Protective measures in line with recognised international principles must be taken by persons who design, construct and operate nuclear installations. These include in particular, the use of high-quality building materials, the setting up of multiple safety barriers, several automated security systems, an appropriate organisation with skilled personnel, and the fostering of a strong safety culture.

2. Emergency protective measures must be established to limit damage in the event of the release of dangerous quantities of radioactive substances.

3. Measures must be taken to prevent third parties from compromising the security of nuclear installations and materials, and to ensure that nuclear materials cannot be stolen. Such measures should as far as possible be classified.

4. The Federal Council shall lay down the measures required.

Chapter 3

NUCLEAR ARTICLES

Section 6

Licensing regime

1. No one may handle nuclear materials without a licence from the authority designated by the Federal Council.

2. The Federal Council may introduce a licensing regime:

   a. for handling components and equipment intended or necessary for the use of nuclear energy;

   b. for the export and brokerage of the technology referred to in Section 3(h)3.

3. Licences shall be limited in time.

4. The Federal Council shall regulate the procedure.

Section 7

Conditions for granting licences

A licence shall be granted if:

a. the protection of man and the environment as well as nuclear security and safety are ensured;

b. there are no grounds for refusing it relating to the non-proliferation of nuclear weapons, in particular international control measures, not binding from the international law viewpoint but supported by Switzerland;

c. no constraining measure within the meaning of the Act of 22 March 2002 on Embargoes[4] has been adopted;

d. the cover required by the Act of 18 March 1983 on Nuclear Third Party Liability[5] is ensured;

e. this would not be in breach of any international commitment and if Switzerland's external security is not affected;

f. the persons responsible possess the necessary skills.

Section 8

Special measures against specific destination States; exceptions to the licensing regime

1. Independently of the licensing regime, the Federal Council or the authority designated by it may, in special cases concerning the non-proliferation of nuclear weapons, prohibit, or impose conditions and requirements on, the import, export, transit or brokerage of nuclear articles.

2. The Federal Council may, in order to comply with international agreements, provide that no licence shall be granted in relation to certain States or groups of States.

3. The Federal Council may alleviate the provisions of the licensing regime or make exceptions to it, especially in the case of supplies to States which are parties to international agreements on the non-proliferation of nuclear weapons or which participate in control measures supported by Switzerland.

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4. RS 946.231.

5. RS 732.44.

Section 9

Export for reprocessing

The export of spent fuel elements for reprocessing shall be authorised if, in addition to the conditions laid down in Section 7:

a. the destination State has approved in an international Convention the import of spent fuel elements for reprocessing and if Switzerland and the destination State have concluded an agreement on taking delivery of the waste;

b. the destination State has a suitable reprocessing plant, in line with current international science and technology;

c. the transit States have approved the transit;

d. the sender has formally agreed with the receiver, in agreement with the authority designated by the Federal Council, that he would take back the waste produced upon reprocessing or, where relevant, any spent fuel elements not yet reprocessed;

e. the destination State has ratified international Conventions on the safety of nuclear installations and the management of spent fuel elements and radioactive waste;

f. the reprocessing is monitored by an international organisation;

g. contracts exist as to the use, in mixed oxide fuel elements, of all the plutonium extracted.

Section 10

Air transport of nuclear materials containing plutonium

The transport of nuclear materials containing plutonium in Swiss air space is prohibited.

Section 11

Obligation to notify and to keep accounts

1. Licence holders must notify the supervisory authorities without delay of activities and special occurrences which could endanger nuclear security or safety. The Federal Council shall define such activities and events.

2. The Federal Council may require the possession of nuclear articles to be notified.

3. Persons in possession of nuclear materials must check their stocks, keep relevant accounts and periodically inform the supervisory authorities accordingly. These obligations shall apply also to nuclear materials held abroad.

Chapter 4

NUCLEAR INSTALLATIONS

Part 1
General licence

Section 12

General licence regime

1. No one may construct or operate a nuclear installation without a general licence issued by the Federal Council.

2. There shall be no subjective right to be granted a general licence.

3. A general licence shall not be required for low-risk nuclear installations. The Federal Council shall define such installations.

Section 13

Conditions for granting general licences

1. A general licence may be granted if:

   a. the protection of man and the environment can be ensured;

   b. there is no other ground for refusing it for under federal legislation, in particular as regards environmental protection, protection of nature and the countryside or territorial development;

   c. there is a plan for decommissioning or for an observation phase and a plan for closing the installation;

   d. it is shown that the radioactive waste produced will be disposed of;

   e. Switzerland’s external security is not affected;

   f. there is nothing in any international undertaking by Switzerland to oppose it;

   g. as regards deep geological depositories, geological studies confirm that the site is a suitable one.

2. A general licence may be granted to public limited liability companies, co-operative societies or corporate bodies governed by public law. Foreign companies must have a Swiss subsidiary listed on the commercial register. If not in breach of any international undertaking, the Federal Council may refuse a general licence to a company governed by foreign law when the State in which it has its headquarters does not grant reciprocity.

Section 14

Terms of general licences

1. The general licence shall designate:

   a. the licence holder;

   b. the site of the installation;

   c. the purpose of the installation;

   d. the outline of the project;

   e. the maximum exposure limit of persons to radiation in proximity to the installation;

   f. in addition, for a deep geological repository:

      1. the criteria for deciding that a proposed site is unsuitable,

      2. a provisional protection zone.

2. The outline of the project shall include an approximate indication of the size and location of the main buildings and, in particular:

   a. for a nuclear reactor: its system, power category and main cooling system;

   b. for a repository for nuclear materials or radioactive waste: the classification of the materials stored and the repository's maximum capacity.

3. The Federal Council shall lay down the time limit within which the construction licence must be requested. It may prolong this time limit where circumstances so warrant.

Part 2
Construction

Section 15

Construction licence regime

No one may construct a nuclear power plant without a construction licence issued by the Federal Department of the Environment, Transport, Energy and Communication ("the Department").

Section 16

Conditions for granting construction licences

1. A construction licence shall be granted if:

    a. the protection of man and the environment is ensured;

    b. the project complies with the principles of nuclear security and safety;

    c. there is no other ground for refusing it under federal legislation, in particular as regards environmental protection, protection of nature and the countryside or territorial development;

    d. the technically correct implementation of the project is ensured and if there is a programme of measures to ensure quality for the whole of the construction phase;

    e. there is a plan for decommissioning or for an observation phase and a plan for closing the installation.

2. In addition, for installations subject to a general licence, a construction licence shall be granted only if:

    a. the applicant possesses a general licence which has entered into force;

    b. the project meets the conditions laid down in the general licence.

3. Installations which are not subject to a general licence must in addition meet the requirements laid down in Section 13: (1)d to f, and (2).

Section 17

Terms of construction licences

1. The construction licence shall indicate:

   a. the licence holder;

   b. the construction site;

   c. the planned power of the reactor or capacity of the installation;

   d. an outline of the technical realisation;

   e. an outline of emergency protective measures;

   f. the constructions the execution of which, or the parts of the installation the incorporation of which, require a permit issued by the supervisory authorities.

2. The Department shall lay down the time limit within which work must begin. It may extend this time limit where circumstances so warrant.

Section 18

Implementation of the project

The construction licence holder must prepare a comprehensive dossier on the technical equipment installed and on the checks and controls carried out.

Part 3
Operation

Section 19

Operating licence regime

No one may operate a nuclear power plant without an operating licence issued by the Department.

Section 20

Conditions for granting operating licences

1. An operating licence shall be granted if:

   a. the applicant is the owner of the installation;

   b. the conditions laid down in the general licence and construction licence have been complied with;

   c. the protection of man and the environment is ensured;

   d. the planned installation and operation meet the requirements of nuclear security and safety;

   e. the requirements as regards personnel and organisation are met;

   f. measures to ensure quality have been taken for all the activities carried out by the enterprise;

   g. emergency protective measures have been taken;

   h. the insurance cover required under the Act of 18 March 1983 on Nuclear Third Party Liability[6] exists.

2. The operating licence may be granted at the same time as the construction licence if it is possible, at that stage, to judge that the conditions necessary for safe operation will be met.

3. With the permission of the Department, the owner of a nuclear reactor may store nuclear materials in his installation before the operating licence has been granted to him. Sections 20 to 24 shall apply by analogy.

Section 21

Terms of operating licences

1. The operating licence shall indicate:

   a. the licence holder;

   b. the authorised power of the reactor or capacity of the installation;

   c. the limits of the release of radioactive substances into the environment;

6. RS 732.44.

d. surveillance measures in the vicinity;

e. the security, safety and emergency protective measures the licence holder must take during operation;

f. the stages of commissioning, which may not begin until the supervisory authorities have issued the relevant permit.

2. Operating licences may be limited in time.

Section 22

General obligations of operating licence holders

1. Operating licence holders shall be responsible for the security of the nuclear installation and its operation.

2. To this end, they must in particular:

a. always give the required priority to nuclear security during operation, and must in particular comply with the operating limits and conditions imposed upon them;

b. set up a suitable organisation and recruit a sufficient number of specialised staff; the Federal Council shall lay down the minimum requirements and regulate the training of specialised staff;

c. take the measures required to maintain the installation in a proper condition;

d. throughout the lifetime of the installation, carry out systematic security and safety assessments as well as subsequent controls;

e. in the case of a nuclear power plant, carry out regular detailed safety checks;

f. regularly inform the supervisory authorities about the condition of the installation and its functioning, and communicate to them without delay any occurrences subject to notification;

g. re-equip the installation insofar as experience and the state of re-equipment technology so require, and beyond this if that helps to reduce further the risk and insofar as it is appropriate;

h. keep track of scientific and technical developments and the experience of the operators of comparable installations;

i. keep a comprehensive file on the technical equipment and on operations, and where necessary adjust the security and safety reports;

j. apply measures to ensure the quality of all the activities carried out in the enterprise;

k. keep the decommissioning plan, or the observation phase project and the plan to close the installation, up to date.

3. The Federal Council shall lay down the criteria obliging the licence holder to take his installation temporarily out of service and to proceed with re-equipment.

Section 23

Surveillance team

1. The Department may require an operating licence holder to recruit a surveillance team including armed guards, whose task will be to protect the nuclear installation against any attack or intrusion.

2. The Federal Council shall lay down the requirements which the surveillance team has to meet and specify its tasks and prerogatives after consulting the cantons.

3. The canton in which the installation is situated shall regulate the training of the surveillance team in collaboration with the competent federal service.

Section 24

Reliability tests

1. Persons carrying out key functions for nuclear security and the safety of the nuclear installation must submit themselves periodically to a reliability test.

2. This test may involve the processing of sensitive data on the health and mental state of such persons as well as data about their lifestyle which are important for security; a file may be made up on this topic.

3. These personal data may be communicated to the owner of the nuclear installation and to the supervisory authority.

4. The Federal Council shall designate which persons must submit themselves to reliability tests, and specify the procedure. It shall designate the service responsible for this procedure, for processing the data and for constituting a data bank.

Section 25

Measures to be taken in the event of extraordinary circumstances

In the event of extraordinary circumstances, the Federal Council may order the preventive closedown of nuclear power plants.

Part 4
Decommissioning

Section 26

Obligations related to decommissioning

1. The owner of an installation must decommission his installation:

   a. when he withdraws it definitively from service;

   b. when no operating licence has been granted to him, when it has been withdrawn or when it has lapsed in accordance with Section 68(1)a or b, and the Department has ordered it to be decommissioned.

2. He must in particular:

   a. meet the requirements of nuclear security and safety;

   b. transfer the nuclear materials to another nuclear installation;

   c. decontaminate the radioactive parts or treat them as radioactive waste;

   d. dispose of the radioactive waste;

   e. ensure that the installation is guarded until all sources of nuclear risk have been eliminated.

Section 27

Decommissioning project

1. The owner of the installation must submit a decommissioning project to the supervisory authorities who then set a deadline.

2. The project shall set out:

   a. the phases and timetable of the work;

   b. the successive steps of dismantling and demolition;

   c. protective measures;

   d. needs in terms of personnel and organisation;

   e. arrangements for disposing of the radioactive waste;

   f. the total cost as well as a guarantee of financing by the operating company.

Section 28

Decommissioning decision

The Department shall order the decommissioning work, specifying what work requires a permit from the supervisory authorities.

Section 29

End of decommissioning

1. Once decommissioning has been accomplished in accordance with the regulations, the Department shall issue a finding that the installation no longer represents a source of radiological risk and that it accordingly is no longer governed by the legislation on nuclear energy.

2. The winding up of the company responsible for decommissioning shall be subject to the approval of the Department.

Chapter 5

RADIOACTIVE WASTE

Part 1
General

Section 30

Principles

1. Radioactive substances must be handled in such a way as to produce the least radioactive waste possible.

2. Radioactive waste produced in Switzerland must in principle be disposed of in Switzerland.

3. Radioactive waste must be disposed of in such a way that the lasting safety of man and the environment is ensured.

Section 31

Disposal obligation

1. Whoever operates or decommissions a nuclear installation shall be obliged to dispose, in a safe manner and at his expense, of the radioactive waste produced by it. The essential preparatory work, such as research and geological studies, as well as the preparation in good time of a deep geological repository, form an integral part of the obligation.

2. The disposal obligation shall be fulfilled when:

   a. the waste has been placed in a deep geological repository and the financial resources required for the surveillance phase and closure have been ensured;

   b. the waste has been transferred to a disposal facility abroad.

3. In the event of the transfer of the general licence for a nuclear power plant to a new operator [Section 66(2)], the old and the new operators shall be responsible for disposing of the operating waste and spent fuel elements produced until the transfer.

4. The winding up of the company responsible for disposal shall be submitted to the Department for approval.

Section 32

Waste management programme

1. Persons responsible for disposing of radioactive waste must prepare a waste management programme. This shall include a plan for financing up until the withdrawal from service of the nuclear installations. The Federal Council shall fix the time limit for setting up this programme.

2. The authority designated by the Federal Council shall examine the programme. The Department shall submit it to the Federal Council for approval.

3. The authority designated by the Federal Council shall ensure compliance with the programme.

4. Persons responsible for disposing of waste must regularly adapt the programme to changing circumstances.

5. The Federal Council shall regularly inform the Federal Assembly of the programme’s progress.

Section 33

Disposal by the Confederation

1. The Confederation shall dispose of:

   a. radioactive waste delivered in accordance with Section 27(1) of the RPA;[7]

   b. other radioactive waste, paid for out of the management fund, if the person responsible fails to fulfil his obligations in this respect.

2. To this end, it may:

   a. participate in geological studies or carry them out itself;

   b. participate in the construction and operation of a waste facility, or construct and operate such a facility itself.

Section 34

Handling radioactive waste

1. Sections 6 to 11 shall apply by analogy to the handling of radioactive waste outside nuclear installations.

2. A licence to import radioactive waste from nuclear installations outside Switzerland but to be disposed of in Switzerland, may exceptionally be granted if the conditions laid down in Section 7 are met, and if:

   a. Switzerland has, in an international Convention, approved the import of the radioactive waste for this purpose;

   b. it has a suitable disposal facility, in line with current international science and technology;

   c. the transit States have approved the transit;

   d. the receiver has formally agreed with the sender, in agreement with the State of origin of the waste, that the sender will take it back if necessary.

3. A licence to export radioactive waste for conditioning shall be granted if the conditions laid down in Section 7 are met, and if:

   a. the destination State has, in an international Convention, approved the import of radioactive waste for this purpose;

7. RS 814.50.

b. it has a suitable disposal facility, in line with current international science and technology;

c. the transit States have approved the transit;

d. the sender has formally agreed with the receiver, in agreement with the authorities designated by the Federal Council, that he will take back the conditioned radioactive waste or that resulting from the conditioning and, if necessary, any radioactive waste not yet conditioned.

4. The export of radioactive waste for purposes of storage may exceptionally be authorised if the conditions laid down in paragraph 3, a to c are met and if, in addition, the sender and receiver have agreed by contract, in agreement with the authorities designated by the Federal Council, that the sender will take it back if necessary.

Part 2
Geological studies

Section 35

Regime and conditions for granting a licence

1. Geological studies carried out in a possible location region in order to gather information about the feasibility of constructing a deep geological repository shall be subject to a licence from the Department.

2. The Department shall grant such a licence if:

a. the planned studies are likely to provide the information which will make it possible subsequently to assess the safety of a deep geological repository without prejudicing the suitability of the site;

b. there is no other ground for refusing it under federal legislation, in particular as regards environmental protection, protection of nature and the countryside or territorial development.

3. The Federal Council may exclude from the licensing regime studies which involve only minor prejudice.

Section 36

Terms of licences

1. Licences to proceed with geological studies shall establish:

   a. the outline of the studies, notably the approximate location and extent of the drilling and underground construction planned;

   b. studies which may not be undertaken without a permit from the supervisory authorities;

   c. the scale of the geological documentation.

2. Licences shall be limited in time.

Part 3
Particular provisions for deep geological repositories

Section 37

Licences to operate deep geological repositories

1. A licence to operate a deep geological repository shall be granted if the conditions laid down in Section 20(1) are met, and if:

   a. the information gathered during construction confirms that the site is suitable;

   b. it is reasonably feasible to recover the radioactive waste up until the closure of the deep geological repository.

2. The operating licence shall establish the definitive protection zone of the deep geological repository.

3. It shall lay down the requirements, in particular the activity limits of the waste to be placed therein. A permit from the supervisory authorities shall be required for the storage of each category of waste.

Section 38

Specific obligations of the holder of a licence to operate a deep geological repository

1. The Federal Council may require that the holder of a licence to operate a deep geological repository take charge of radioactive waste originating from Switzerland, in exchange for cost-price compensation, provided that such waste meets the conditions laid down in the operating licence.

2. Operating licence holders shall be obliged to maintain comprehensive records about the information gathered up until the conclusion of the observation phase and which is important for security, about the plans for the deep geological repository and about the inventory of the waste stored.

3. For as long as the deep geological repository is regulated by nuclear energy legislation, the operating company may not be wound up without the approval of the Department.

Section 39

Observation phase and closure of the deep geological repository

1. The owner of the deep geological repository must submit an updated project for the observation phase and a project for eventual closure:

   a. when the disposal of the radioactive waste is completed;

   b. when the operating licence has been withdrawn or ceased to be valid in accordance with Section 68(1)a or b and the Department has ordered the presentation of a project.

2. Once the observation phase is over, the Federal Council shall order work on closure if the lasting safety of man and the environment is assured.

3. After closure in accordance with the regulations, the Federal Council may order an additional surveillance period.

4. After closure or at the end of the additional surveillance period, the Federal Council shall declare that the deep geological repository is no longer regulated by nuclear energy legislation. The Confederation may take measures beyond this period, in particular measures to monitor the environment.

Section 40

Protection of deep geological repositories

1. The protection zone shall be the underground area in which any intervention might prejudice the security of the deep geological repository. The Federal Council shall lay down the criteria applicable to protection zones.

2. Anyone intending to conduct deep drilling, pierce an underground gallery, carry out mining operations or any other activities affecting a protection zone must apply for a licence from the authority designated by the Federal Council.

3. Once a general licence has been issued, the authority designated by the Federal Council shall declare, so that it can be entered in the property register, the provisional protection zone, as well as the definitive protection zone once the operating licence has been issued. The canton shall enter in the property register the buildings affected by the protection zone which are not already registered. Those which have not already been officially measured shall be measured for this

purpose (initial measurement or new measurement). The Federal Council shall regulate the arrangements for this.

4. The canton shall enter the protection zone in its development plan and its land-use plan.

5. If the deep geological repository is not built or not brought into service, the authority designated by the Federal Council shall abolish the provisional protection zone and invite the Land Registry Office to delete the relevant entry. The canton shall amend its development and land-use plans accordingly.

6. The Federal Council shall ensure that the documents relating to the deep geological repository, to waste placed therein and to the protection zone, as well as the information concerning them, are preserved. It may communicate information pertaining to them to other States or international organisations.

7. The Federal Council shall prescribe permanent marking for deep geological repositories.

Section 41

Communication and use of geological data

1. The unprocessed data and the results obtained from geological studies and the construction of deep geological repositories shall, at its request, be communicated to the Confederation free of charge.

2. The Federal Council shall regulate access to such data and their use. It shall ensure that the interests of the owners of geological data are protected.

Chapter 6

PROCEDURE AND SURVEILLANCE

Part 1
General licence

Section 42

Opening of the procedure

Applications for a general licence must be sent together with the necessary documents to the Federal Energy Office (the “Office”), which checks whether the file is complete and, if necessary, has it completed.

Section 43

Expertise and opinions

1. The Office shall commission the necessary expertise, relating in particular to:

   a. protecting man and the environment;

   b. disposing of the radioactive waste.

2. It shall invite the cantons and the specialised services of the Confederation to give an opinion on the application for a general licence and on the expertise, within three months. The other time limits laid down for the environmental impact study shall be maintained. If circumstances so warrant, the Office may extend this time limit.

3. The resolution of differences within the Federal Administration shall be regulated by Section 62*b* of the Act of 21 March 1997 on the Organisation of the Government and the Administration.[8]

Section 44

Participation of the canton in which the installation is to be located

The Department shall invite the canton in which the installation is to be located, as well as the cantons and States in the immediate proximity, to participate in preparing the draft decision to grant the general licence. The concerns of the canton in which the installation is to be located, as well as of the cantons and States in the immediate proximity, shall be taken into account inasmuch as they do not constrain the project in a disproportionate manner.

Section 45

Enquiry and publication

1. An enquiry must be opened for three months in respect of applications for a general licence, of the opinions of cantons and specialised services and of the expertise.

2. The enquiry must be published in the official bodies of the cantons and communes concerned and in the *Feuille fédérale* (Official Gazette).

8. RS 172.010.

Section 46

Objections and opposition

1. During the three months following the date of publication, anyone may submit in writing to the Office, duly reasoned objections to the granting of a general licence. The Office may extend this three-month time period upon reasoned request. Objections are recorded free of charge; no expenses are awarded.

2. Anyone qualifying as a party by virtue of the Federal Act of 20 December 1968 on Administrative Procedure (AP)[9] may register his opposition with the Office within three months of the date of publication. Communes shall assert their interests by way of opposition. In addition, the provisions of the AP shall apply.

3. Parties domiciled abroad must elect a domicile in Switzerland to which notifications can be sent. Failing this, notifications might not be sent to them or be published in the *Feuille fédérale*.

Section 47

Opinions on objections and opposition

1. The Office shall invite the cantons, specialised services and authors of expertises to communicate to the Federal Council their opinions on the objections and opposition recorded.

2. The resolution of differences within the Federal Administration shall be regulated by Section 62*b* of the Act of 21 March 1997 on the Organisation of the Government and the Administration.[10]

Section 48

Decisions

1. The Federal Council shall decide what follow-up to give to an application for a general licence and to any objections and opposition.

2. It shall submit its decision to the Federal Assembly for approval.

3. If the Federal Council refuses to grant a general licence and the Federal Assembly does not approve this decision, it shall instruct the Federal Council to grant the general licence with any requirements decided by it and to submit to it a new decision for approval.

4. The decision of the Federal Assembly regarding the approval of a general licence shall be subject to referendum.

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9. RS 172.021.

10. RS 172.010.

Part 2
Licence to construct a nuclear installation and licence to proceed with geological studies

Section 49

General

1. The procedure for granting a licence to construct a nuclear installation or to proceed with geological studies shall be regulated by the provisions of the present Act, and subsidiarily by those of the AP[11] and the Federal Act of 20 June 1930 on Expropriation (FAE).[12]

2. The licence shall cover all the licences required under federal law.

3. No licence or plan under cantonal law shall be required. Cantonal law shall be taken into account inasmuch as it does not constrain the project in a disproportionate manner.

4. Before granting a licence, the Department shall consult the canton in which the installation is to be located. If the Department issues a licence contrary to the opinion of the canton, the latter shall have a right of appeal.

5. The service facilities and the areas required for the construction and operation of a nuclear installation shall also form part of the installation itself. Areas used to recycle or store materials arising from digging, excavation and demolition shall form part of deep geological repositories and must be included in the geological study when they are in the immediate vicinity of the planned installation and are of direct use to it.

Section 50

Opening of the procedure

Licensing applications, together with the required documents, must be sent to the Office which shall verify that the dossier is complete and, if necessary, have it completed.

Section 51

Right of expropriation

The applicant shall have a right of expropriation in order to:

a. construct, operate and decommission a nuclear installation requiring a general licence;

11. RS 172.021.

12. RS 711.

b. proceed with geological studies which require a licence;

c. construct the service facilities and areas required for the projects referred to in a) and b);

d. prepare sites for the temporary storage or recycling of digging, excavation and demolition materials which are located in the immediate vicinity of the planned installation and which are of direct use to it.

Section 52

Staking and models

1. Before the licence application enquiry, the applicant must mark out, with stakes, the changes that the future installation or planned studies will make on the site; if buildings are to be constructed, he shall build models.

2. Objections against the staking or construction of models must be sent to the Office without delay, and at the latest before expiry of the time limit for starting the enquiry.

Section 53

Consultation, publication and enquiry

1. The Office shall send the licence application to the cantons concerned and invite them to give their opinion within three months. If circumstances so warrant, it may extend this time limit.

2. The licensing application must be published in the official bodies of the cantons and communes concerned and in the *Feuille fédérale*, and shall be opened to an enquiry for 30 days.

3. The opening of the enquiry shall institute the expropriation ban referred to in Sections 42 to 44 of the FAE.[13]

Section 54

Personal opinion

In accordance with Section 31 of the FAE,[14] the applicant must send to persons concerned, at the latest when the enquiry concerning the licence application begins, a personal opinion informing them about the expropriation rights.

13. RS 711.

14. RS 711.

Section 55

Opposition

1. Persons who qualify as a party under the AP[15] or FAE[16] may notify the Office of their opposition during the period of the enquiry. Any person who has not done so shall be excluded from the rest of the procedure.

2. All objections concerning expropriation and all claims for indemnity or compensation in kind must be submitted within the same time limit. Any opposition or claims notified subsequently under Sections 39 to 41 of the FAE must be sent to the Office.

3. Communes shall assert their rights by means of opposition.

4. Section 46(3) shall apply to parties domiciled abroad.

Section 56

Resolution of differences within the Federal Administration

The resolution of differences within the Federal Administration shall be regulated by Section 62*b* of the Act of 21 March 1997 on the Organisation of the Government and the Administration.[17]

Section 57

Decisions

When granting a licence, the Department shall also give a ruling on objections to expropriation.

Section 58

Assessment procedure, early possession

1. After completion of the licensing procedure, an assessment procedure is begun if necessary before the Assessment Commission, in accordance with the FAE.[18] Only those claims which have been produced shall be taken into consideration; Section 38 of the FAE shall apply.

15. RS 172.021.

16. RS 711.

17. RS 172.010.

18. RS 711.

2. The Office shall send the approved plans, the expropriation plan, the table of expropriated rights and any claims which have been produced, to the Chairman of the Assessment Commission.

3. The Chairman of the Assessment Commission may authorise early possession when the licensing decision is enforceable. The expropriator shall be presumed to have suffered serious prejudice if he does not enjoy early possession. In addition, Section 76 of the FAE shall apply.

Section 59

Claims regarding expropriation relating to the protection zone

1. Where prejudice to property rights due to the establishment of a protection zone is equivalent to an expropriation, it shall be fully compensated. Compensation shall be calculated on the basis of the conditions prevailing at the time of the entry into force of the limitation on the property right.

2. Compensation shall be the responsibility of the possessor of the deep geological repository.

3. Persons suffering prejudice to their property rights must send their claims for compensation in writing to the possessor of the repository within five years of the definitive recording in the land registry [Section 40(3)]. If the claims are wholly or partially contested, Sections 57 to 75 of the FAE[19] shall apply.

4. This procedure relates to stated claims only. Subsequent proceedings for prejudice to property rights shall be excluded.

5. Interest shall be paid on compensation as from the date when the prejudice to the property right takes effect.

Section 60

Participation of the cantons in disposing of digging, excavation or demolition materials

1. If the geological studies or the construction of a deep geological repository produce a considerable quantity of digging, excavation or demolition materials which can be neither recycled nor stored nearby, the canton concerned shall designate the sites required for their disposal.

2. If, at the time of the granting of the construction licence or the licence to proceed with geological studies, the canton concerned has not issued a permit or if the permit has not yet entered into force, the Department may designate a site for the storage of the materials and establish the requirements and conditions for its use. In such cases, the provisions of the present Part on procedure shall apply. The canton shall, within five years, designate the sites required for the disposal of the materials.

19. RS 711.

Part 3
Licence to operate a nuclear installation, decommissioning of a nuclear installation and closure of a deep geological repository

Section 61

Licence to operate a nuclear installation

The procedure concerning licences to operate nuclear installations shall be governed by Sections 49(1) to (4), 50, and 53 to 59.

Section 62

Decommissioning of a nuclear installation

The procedure concerning the decommissioning of a nuclear installation shall be governed by Sections 49(1) to (4), 50 to 58, and 60.

Section 63

Closure of a deep geological repository

The procedure concerning the closure of a deep geological repository shall be governed by Sections 49(1) to (4), 50, 53 and 55.

Part 4
Other decisions, including implementation permits

Section 64

1. The AP[20] shall apply to the decisions based on the present Act other than those referred to in Parts 1 to 3.

2. Section 46(3) shall apply to parties domiciled abroad.

3. In the procedure for granting an implementation permit by the supervisory authorities, only the applicant shall qualify as a party.

20. RS 172.021.

Part 5
Modification, transfer, withdrawal and cessation of validity of decisions

Section 65

Modification

1. A modification of the general licence, using the granting procedure, shall be necessary:

   a. to change the purpose or main lines of a nuclear installation subject to the general licensing regime; the decommissioning and closure of such an installation do not fall within the scope of this provision;

   b. to renovate entirely a nuclear power plant with a view to extending its operating life significantly, notably by replacing the pressure vessel.

2. Any important difference in relation to the construction licence or the operating licence, the licence to proceed with geological studies or the decision on decommissioning or closure shall make it necessary to modify the licence or the decision, such modification being carried out in accordance with their respective granting procedures.

3. If the modifications do not differ significantly from the licence or decision within the meaning of paragraph 2, but may have an impact on security or nuclear safety, the operator must ask the supervisory authorities for an implementation permit.

4. Any other modification must be notified to the supervisory authorities.

5. In the event of doubt, it shall be the responsibility of:

   a. the Federal Council to decide whether the general licence should be modified;

   b. the Department to decide whether a licence or decision within the meaning of paragraph 2 should be modified;

   c. the supervisory authorities to decide whether an implementation permit is required.

Section 66

Transfer

1. The authority which granted a licence may transfer it to a new operator provided he meets the conditions for granting the licence.

2. The general licence for a nuclear installation may be transferred if, in addition, the former operator has provided financing for the decommissioning of the installation and the disposal of the waste in proportion to the period during which he operated the installation.

3. The Federal Council shall decide on the transfer of a general licence. A prior opinion from the canton in which the installation is located shall be required.

4. The construction and operating licences are transferred along with the general licence. They cannot be transferred separately.

5. In the procedure for transferring a general licence, only the applicant and the former licence holder are parties. The provisions of the AP[21] shall apply.

6. Licences to handle nuclear articles and radioactive waste may not be transferred.

Section 67

Withdrawal

1. The authority which granted a licence shall withdraw it:

   a. if the conditions on which it was granted have not been, or are no longer, met;

   b. if the licence holder, in spite of a reminder, has failed to meet a requirement or perform a task imposed upon him by a decision.

2. The Federal Council shall decide whether to withdraw a general licence.

3. The decision of the Federal Council shall be submitted to the Federal Assembly for approval.

4. Withdrawal of the general licence shall entail withdrawal of the construction and operating licences.

5. In the event of the withdrawal of a general licence, the provisions of the AP[22] shall apply.

Section 68

Cessation of validity

1. A licence shall cease to be valid:

   a. when the time limit has expired;

   b. when the licence holder declares to the authority that he relinquishes it;

   c. when the Department or, under Section 39 (4), the Federal Council, finds that the installation no longer falls within the scope of nuclear energy legislation.

21. RS 172.021.

22. RS 172.021.

2. A general licence shall cease to be valid if the application for a construction licence has not been made within the time limit laid down. A construction licence shall cease to be valid if the construction work has not begun within the time limit laid down.

3. The cessation of validity of a general licence shall mean that the construction and operating licences also cease to be valid.

Section 69

Continuation of certain licence conditions

1. Operating licence conditions necessary for the security of the installation, even after decommissioning, shall continue to be valid after the licence is withdrawn or ceases to be valid, and that up until work on decommissioning and closure has been ordered.

2. Paragraph 1 shall apply by analogy to the withdrawal or cessation of validity of a licence within the meaning of Section 20(3).

Part 6
Surveillance

Section 70

Supervisory authorities

1. The Federal Council shall designate the supervisory authorities.

2. No one may give technical instructions to the supervisory authorities, who are formally separate from the competent licensing authorities.

Section 71

Nuclear Installation Safety Commission

1. The Federal Council shall nominate a Nuclear Installation Safety Commission.

2. This Commission shall give advice to the Federal Council and the Department. It will, in particular, study fundamental nuclear safety issues, monitor the operation of nuclear installations and give its opinion on applications for nuclear installation licences.

Section 72

Tasks and powers of the supervisory authorities

1. The supervisory authorities shall examine projects submitted to them and ensure that licence holders and those in possession of nuclear articles fulfil their obligations under the present Act.

2. They shall order all measures, in line with the principle of proportionality, necessary to maintain nuclear security and safety.

3. In the event of imminent danger, they may order emergency measures diverging from the relevant licence or decision.

4. If necessary, they may sequestrate nuclear articles and radioactive waste and eliminate sources of risk at the expense of the person in possession of them.

5. They may call on cantonal and communal police forces and the investigatory services of the customs administration for assistance. If there are indications that the present Act has been breached, they may call on the Federal police services concerned for assistance. The customs service shall be responsible for border controls.

6. The supervisory authorities shall keep accounts of the nuclear materials and radioactive waste located in Swiss nuclear installations. Accounts shall also be kept of nuclear materials and radioactive waste abroad if they are in the possession of a Swiss licence holder. Accounts shall give comprehensive information about the use, processing and storage of such materials and waste.

Section 73

Obligation to provide information and documents, access

1. Any information or document enabling the supervisory authorities to judge the situation or carry out a control must be provided to them spontaneously or handed over on request if this is required for the enforcement of the present Act, its implementing provisions or decisions based on these.

2. The supervisory authorities shall be entitled to visit, without notice, the sites, buildings and installations of persons obliged to give information, as well as sites on which geological studies, within the meaning of Section 35, have been carried out, install monitoring equipment, affix seals, take samples of equipment and of soil, and consult files. They shall sequestrate any components needed in evidence.

Section 74

Informing the public

1. The competent authorities shall regularly inform the public of the state of nuclear installations and of the situation relating to nuclear articles and radioactive waste.

2. They shall inform the public of any particular occurrences.

3. Manufacturing and business confidentiality shall be respected.

Section 75

Protection of data

1. The licensing and supervisory authorities may process personal data within the limits of the present Act.

2. They may not process sensitive personal data relating to legal proceedings or administrative or criminal sanctions. They may process other sensitive personal data only if this is essential in a given case.

3. The electronic storage of data shall be allowed.

Part 7
Legal recourse

Section 76

An appeal may be brought before the Appeals Board of the Federal Department of Environment, Transport, Energy and Communication (DETEC) against decisions of the Department, the authorities designated by the Federal Council to grant licences, the supervisory authorities designated by the Federal Council and the administrative boards referred to in Section 81(2).

Chapter 7

FINANCING GUARANTEE FOR DECOMMISSIONING AND WASTE DISPOSAL

Section 77

Decommissioning Fund and Waste Disposal Fund

1. The Decommissioning Fund shall ensure the financing of the decommissioning and dismantling of nuclear installations withdrawn from service, and that of the disposal of the waste produced thereby (decommissioning costs).

2. The Waste Disposal Fund shall ensure the financing of the disposal of radioactive operating waste and of spent fuel assemblies, after withdrawal from service of nuclear installations (disposal costs).

3. The owners of nuclear installations shall contribute to the Decommissioning Fund and to the Waste Disposal Fund. The Federal Council may exempt the proprietors of installations with low decommissioning and disposal costs.

Section 78

Credit

1. Each contributor shall have a credit of an amount equal to that paid by him plus the income from the capital, minus expenses. This credit may not be sold, given or taken as security, nor form part of assets in bankruptcy.

2. If a contributor’s credit exceeds the amount paid by the Fund, the surplus shall be paid back to him in the year following the closing of the accounts.

3. In the event of a bankrupt nuclear installation being taken over, the credit shall transfer to the new owner, who must then pay the contributions due by the bankrupt company.

4. If, following bankruptcy proceedings, a company is struck off the commercial register with the approval of the Department and if the installation is not taken over by another company, the contributions paid by it shall be returned to the Funds. They shall be used to finance the decommissioning of the installation and the disposal of the waste. The Federal Council shall decide how any monies left over should be attributed.

Section 79

Fund services

1. If a contributor's credit does not cover the costs, he must pay the shortfall.

2. If the contributor proves he is unable to pay this sum, the Decommissioning Fund or the Waste Disposal Fund shall make up the shortfall, using all the resources available. This shall apply also to the case provided for in Section 78(4).

3. The Waste Disposal Fund shall use the contributions to cover the cost of disposing of the radioactive waste for which the Confederation is responsible under Section 33(1)b. If the contributions do not suffice, all the Fund's available resources shall be used.

Section 80

Supplementary payments

1. If the payments by a Fund to a claimant exceed the amount of the credit, the claimant must reimburse the difference, plus interest calculated at the usual market rate.

2. If the claimant cannot make the reimbursement within the time limit laid down by the Federal Council, the other contributors and creditors of the Fund in question shall be obliged to pay the difference by making supplementary payments in proportion to their contributions.

3. The obligation to make supplementary payments shall also exist:

   a. in the case provided for in Section 78(4), if the monies returned to the Fund are not sufficient to cover the decommissioning or waste disposal costs;

   b. in the case provided for in Section 79(3), if the person responsible for disposing of the waste does not pay the difference back to the Fund.

4. If covering the difference represents an unbearable economic burden for the operators obliged to make supplementary payments, the Federal Assembly shall decide whether the Confederation will help pay for the costs which are not covered and if so, to what extent.

Section 81

Legal form and organisation of the Funds

1. The Funds, which have legal personality, shall be supervised by the Confederation.

2. The Federal Council shall nominate for each of them an administrative board which shall act as the directing body. The Boards shall establish the amount of the contributions paid by each contributor to the Funds, and the amount of the payments made by the latter.

3. If necessary, the Funds may grant loans, and the Confederation may grant them loans; these shall be remunerated on the basis of usual market conditions.

4. The Funds shall be exempt from all direct Federal, cantonal and commune taxes.

5. The Federal Council shall lay down the necessary procedures; it shall establish the bases for calculating contributions and the main options for investing this money. It may merge the Funds.

Section 82

Guarantee of the financing of other waste disposal operations

1. To finance the waste disposal for which they are responsible before the withdrawal from service of nuclear installations, the owners of such installations shall make provisions in application of Article 669 of the Code of Obligations,[23] on the basis of the costs calculated by the Waste Disposal Fund.

2. In addition, they must:

   a. submit the plan for making provision for risks and costs to the authority designated by the Federal Council for approval;

   b. designate the assets dedicated to covering disposal costs, for an amount corresponding to the provision for risks and costs;

   c. submit to the authority designated by the Federal Council the report by the review body certifying conformity with the plan for making provision for risks and costs and the exclusive allocation of such provision.

3. The review body shall check the financing and long-term investment plans and consider whether the amounts available are sufficient to cover the cost of waste disposal before the withdrawal from service of nuclear installations and whether reserves have been constituted in accordance with the plan.

23. RS 220.

Chapter 8

EMOLUMENTS, COMPENSATION AND INCENTIVES

Section 83

Emoluments and surveillance taxes received by the Confederation

1. The Federal authorities shall receive emoluments from applicants and possessors of nuclear installations, nuclear articles and radioactive waste, and shall require them to reimburse expenses arising in particular from:

    a. the granting, transfer, modification, adaptation or withdrawal of a licence;

    b. the establishment of an expertise;

    c. surveillance activities;

    d. research and development which they carry out or commission in relation to their obligation of surveillance of a given installation.

2. In addition, they shall charge the possessors of nuclear installations an annual surveillance tax to cover the costs of surveillance not relating to a specific installation. This tax shall be calculated on the basis of the average cost of the five preceding years; it shall be divided between nuclear installations in proportion to the emoluments due by those possessing them.

3. The Federal Council shall regulate the arrangements.

Section 84

Emoluments received by cantons

The cantons may receive emoluments from those possessing nuclear installations, nuclear articles and radioactive waste, and require them to reimburse the expenses arising in particular from:

    a. the planning and implementation of emergency protection measures;

    b. the protection by the police of nuclear installations and the transport of nuclear materials and radioactive waste;

    c. training surveillance teams;

    d. officially measuring buildings in the protection zone, registering them and entering them on the land register.

Section 85

Compensation for infringing cantonal sovereignty

1. If a licence holder exercises sovereign cantonal rights, whether by reason of the geological studies referred to in Section 35, the construction of a deep geological repository or the establishment of a protection zone, he must fully compensate the canton concerned.

2. Full compensation within the meaning of paragraph 1 must also be paid when the construction of a nuclear power plant involves using cantonal water rights.

3. In the event of a dispute, the Assessment Commission shall establish the compensation amount using the procedure laid down in Sections 57 to 75 and 77 to 86 of the FAE.[24]

Section 86

Encouraging research and the training of experts

1. The Confederation may encourage applied research on the peaceful use of nuclear energy, in particular on the security of nuclear installations and the disposal of radioactive waste.

2. It may support the training of experts or train them itself.

3. As a general rule, financial assistance shall be given to an individual only if he pays at least 50% of the costs.

Section 87

Contributions paid to international organisations and participation in international projects

The Confederation may pay contributions to international organisations working in the field of the peaceful use of nuclear energy, notably to promote the non-proliferation of nuclear weapons, security, health and the environment, and participate in international projects.

24. RS 711.

Chapter 9

PENAL PROVISIONS

Section 88

Breaches of security and safety measures

1. A punishment of imprisonment or a fine of up to 500 000 Swiss francs shall be imposed on anyone who intentionally:

   a. manufactures or delivers defective components intended for a nuclear power plant and which are decisive for nuclear security or safety;

   b. in a nuclear installation, damages, removes, renders unusable, operates in breach of the requirements or withdraws from service, fails to install or to render workable, a device decisive for nuclear security or safety;

   c. in handling nuclear materials or radioactive waste, fails to take the protective measures which are decisive for nuclear security or safety.

2. Any person knowingly endangering the life or health of a large number of persons or property of considerable value belonging to third parties shall be punished by imprisonment. He may also be sentenced to a fine of up to 500 000 Swiss francs.

3. If the author of an offence acted negligently, he shall be punished by imprisonment or a fine of up to 100 000 Swiss francs.

Section 89

Offences relating to nuclear articles or radioactive waste

1. A punishment of imprisonment or a fine of up to one million Swiss francs shall be imposed on anyone who intentionally:

   a. without a permit, handles nuclear articles or radioactive waste, or fails to comply with the conditions and obligations laid down in the licence;

   b. in an application, gives false or incomplete information which is decisive for the granting of the licence, or who uses an application drafted by a third party;

   c. notifies in an inexact manner nuclear articles or radioactive waste, or does not notify them upon import, export or transit;

d. personally or through the intermediary of another person, delivers, transfers or procures for somebody else, nuclear articles or radioactive waste to or from a final purchaser or destination other than that mentioned in the licence;

e. has nuclear articles or radioactive waste delivered to a person whom he knows or must assume will transfer them, directly or indirectly, to a final purchaser not licensed to receive them;

f. participates in arrangements to pay for the trafficking of nuclear articles or radioactive waste, or serves as an intermediary in the financing of such trafficking.

2. The punishment in serious cases shall be imprisonment for up to ten years. A fine of up to five million Swiss francs may also be imposed.

3. If the author of an offence acts negligently, he shall be punished by imprisonment of up to six months and a fine of up to 100 000 Swiss francs.

Section 90

Breach of the obligations imposed by a nuclear installation licence

1. A punishment of imprisonment or a fine of up to 500 000 Swiss francs shall be imposed on anyone who intentionally:

a. constructs or operates a nuclear installation without a licence;

b. is in breach of the obligations relating to the licence to operate a nuclear installation (Sections 22 and 38), decommissioning (Section 26), the disposal of radioactive waste or the closure of a deep geological repository [Sections 31 and 39(1) and (2)];

c. carries out, without permission, measures prejudicing the protection zone of a deep geological repository;

d. carries out a measure requiring a permit without having obtained it.

2. If the author of an offence acted negligently, he shall be punished by imprisonment of up to six months or a fine of up to 100 000 Swiss francs.

3. Anyone who, intentionally or negligently, carries out, without a licence, other measures subject to the licensing regime under the present Act or an implementing Order, shall be punished by imprisonment of up to six months or a fine of up to 100 000 Swiss francs.

Section 91

Breach of confidentiality

1. A punishment of imprisonment or a fine of up to 500 000 Swiss francs shall be imposed on anyone who intentionally:

a. tries to find out about secret facts or arrangements relating to the protection of nuclear installations, nuclear materials or radioactive waste against attacks by third parties or against the consequences of war, in order to reveal them or make them accessible to unauthorised persons or to use them himself in an illegal manner;

b. reveals or makes accessible such facts or arrangements to unauthorised persons.

2. If the author of the offence acted negligently, he shall be punished by imprisonment of up to six months or a fine of up to 100 000 Swiss francs.

Section 92

Relinquishing possession

1. Anyone who intentionally relinquishes the possession of nuclear materials or radioactive waste without being so authorised, shall be punished by imprisonment or a fine of up to 100,000 Swiss francs.

2. If the author of the offence acted negligently, he shall be punished by imprisonment of up to six months or a fine.

Section 93

Breaches

1. A punishment of arrest or a fine of up to 100 000 Swiss francs shall be imposed on anyone who intentionally:

a. refuses to give information, supply documents, grant access to the premises of the enterprise or allow consultation of documents in accordance with Section 73, or who gives false information with regard thereto;

b. breaches the obligation to notify, carry out a control or keep accounts, or to constitute a file as required under the present Act or an implementing Order;

c. breaches in some other way the present Act, one of its implementing provisions the breach of which is declared punishable, or a decision referring to the present Section, but whose behaviour is not punishable on the grounds of some other offence.

2. Attempt and complicity shall be punishable.

3. If the offender acted negligently, he shall be punished by a fine of up to 40 000 Swiss francs.

Section 94

Offences committed in enterprises

Section 6 of the Federal Act of 22 March 1974 on Penal Administrative Law[25] shall apply to the offences mentioned in the present Act.

Section 95

Offences committed abroad, participation in such offences

1. Swiss citizens who commit abroad a crime or offence within the meaning of Sections 89 and 91 shall be punishable even if no proceedings are taken against their actions in the place where they were carried out.

2. Swiss penal law shall apply to anyone who participates in Switzerland in a punishable act committed abroad if the main act is punishable under Swiss law, irrespective of the legislation of the State in which it was committed.

Section 96

Prescription

The prescriptive period for offences under the present Act shall be five years. The prescriptive period for criminal proceedings shall in any event be half the normal period.

Section 97

Confiscation of objects

Irrespective of whether a person is punishable or not, the court shall pronounce the confiscation of the objects concerned if no guarantee can be given that they can be used subsequently within the law. The Confederation shall become the owner of objects confiscated as well as of any proceeds from their sale.

Section 98

Confiscation of securities and compensatory credits

The Confederation shall become the owner of confiscated securities or compensatory credits.

25. RS 313.0.

Section 99

Relationship with the Penal Code

In addition, confiscation within the meaning of Sections 97 and 98 of the present Act shall be regulated by Articles 58 and 59 of the Penal Code.[26]

Section 100

Jurisdiction, obligation to denounce

1. The Federal criminal courts shall have jurisdiction to pursue and sentence the crimes and offences defined in Sections 88 to 92.

2. The breaches referred to in Section 93 shall be pursued and sentenced by the Office. The procedure shall be governed by the Act of 22 March 1974 on Penal Administrative Law.[27]

3. The authorities responsible for granting licences, the supervisory authorities, the police services of cantons and communes as well as the customs services shall be obliged to inform the Confederation's Public Minister of any offences under the present Act which they discover or are informed about in the course of their duties.

Chapter 10

FINAL PROVISIONS

Section 101

Implementation

1. The Federal Council shall adopt implementing provisions.

2. It may delegate to the Department or subordinate services the power to lay down requirements, having regard to their scope.

3. The authority designated by the Federal Council shall maintain a central service responsible for gathering, processing and communicating the information required to implement the present Act, to prevent offences and punish those which have been committed.

4. The authorities granting licences and the supervisory authorities shall be bound by professional secrecy and shall take all necessary precautions to prevent economic espionage in their sector.

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26. RS 311.0.

27. RS 313.0.

5. The Federal Council may involve the cantons in implementing the present Act.

6. Within the limits of its powers, the implementing authority may call on third parties, in particular to conduct examinations and controls.

Section 102

Mutual administrative assistance in Switzerland

The competent Federal services and the cantonal and communal police services may communicate to each other and to the supervisory authorities the information necessary for implementing the present Act.

Section 103

Mutual administrative assistance involving foreign authorities

1. The Federal bodies competent in matters of implementation, control, preventing offences and conducting criminal proceedings may collaborate with the competent foreign authorities and with international organisations and bodies, and co-ordinate their investigations, inasmuch as the implementation of the present Act or the corresponding foreign legislation so requires and provided the foreign authorities, organisations and bodies in question are bound by professional secrecy or an equivalent obligation of discretion.

2. They may in particular request the foreign authorities and international organisations and bodies to communicate necessary information to them. In order to obtain such information, they may supply them with data on:

    a. the nature, quantity, place of destination and of use, use and the person receiving nuclear articles or radioactive waste;

    b. persons participating in the manufacture, supply, brokerage or financing of nuclear articles or radioactive waste;

    c. the financial arrangements for the operation;

    d. accidents and other occurrences involving security.

3. If the foreign State accords reciprocity, they may, on their own initiative or on request, communicate to it the data mentioned in paragraph 2 if the foreign authority gives an assurance that:

    a. such data will be used only for purposes in compliance with the present Act; and

    b. they will only be used in criminal proceedings if they have been obtained subsequently in accordance with the provisions relating to international judicial mutual assistance.

4. They may also communicate the data in question to international organisations or bodies if the conditions laid down in paragraph 3 are met, notwithstanding the reciprocity requirement.

5. The provisions relating to international judicial mutual assistance in criminal matters shall apply.

Section 104

International Conventions

1. The Federal Council may conclude bilateral international Conventions on:

   a. the handling of nuclear articles and radioactive waste;

   b. safety and control measures for nuclear articles and radioactive waste;

   c. information exchange on the construction and operation of nuclear installations.

2. Within the limit of the appropriations voted, it may conclude agreements on the participation of Switzerland in international projects within the meaning of Section 87.

Section 105

Repeal and amendments of the law in force

The repeal and amendments of the law in force are regulated in the annex hereto.

Section 106

Transitional provisions

1. Nuclear installations in service which are subject to a general licence under the present Act may continue to be operated without such licence for as long as no modification is made which would require the modification of the general licence provided for in Section 65(1).

2. The owners of nuclear power plants in service must prove within ten years that the disposal of their radioactive waste is ensured, if the Federal Council does not consider that this has already been proved. If circumstances so warrant, the Federal Council may extend this time limit by five years.

3. A licence to operate an existing nuclear power plant may be transferred to a new operator without a general licence. Sections 13(2), 31(3) and 66(2) shall apply by analogy.

4. Spent fuel assemblies may not be exported for reprocessing for a period of ten years as from 1 July 2006. During this time, they must be disposed of as radioactive waste. The Federal Council may make exceptions to this for research purposes, Section 34(2) and (3) applying by

analogy. The Federal Assembly may, by simple Federal Order, extend this time limit by up to ten years.

Section 107

Referendum and entry into force

1. The present Act shall be subject to referendum.

2. The Federal Council shall publish the present Act in the *feuille fédérale* if the "Moratorium plus" and "Phase-out Nuclear" popular initiatives are withdrawn or rejected.

3. The Federal Council shall establish the date of entry into force.

Council of States, 21 March 2003
President: Gian-Reto Plattner
Secretary: Christopher Lanz

National Council, 21 March 2003
President: Yves Christen
Secretary: Christophe Thomann

Date of publication: 27 May 2003[28]
Referendum time limit: 4 September 2003

28. FF 2003 3242.

Annex

(Section 105)

Repeal and amendments of the law in force

I

The following shall be repealed:

1. The Act of 23 December 1959 on Atomic Energy[29]

2. The Federal Order of 6 October 1978 concerning the Act on Atomic Energy[30]

II

The following legislation shall be amended as follows:

1. FEDERAL ACT ON JUDICIAL ORGANISATION OF 16 DECEMBER 1943[31]

Section 99(1)e

1. There shall be no right of administrative appeal against:

   e. The granting or refusal of licences to construct or operate technical installations or vehicles, except for air navigation installations and nuclear installations;

Section 100(1)u

1. In addition, there shall be no right of administrative appeal against:

   u. In the field of nuclear energy:

      1. decisions relating to the general licence for nuclear installations,

      2. decisions relating to the closure of deep geological repositories,

29. RO 1960 541 585, 1983 1886, 1987 544, 1993 901, 1994 1933, 1995 4954.

30. RO 1979 816, 1983 794, 1990 1646, 2001 283.

31. RS 173.110.

3. decisions relating to the requirement of an implementation permit or to the modification of a licence or a decision,

4. decisions relating to the approval of a plan making provision for the disposal costs incurred before the decommissioning of a nuclear installation,

5. implementation permits.

2. PENAL CODE[32]

Article 226bis[33]

Risks attributable to nuclear energy, radioactivity and ionising radiation

1. Any person intentionally endangering the life or health of persons or property of considerable value belonging to third parties by using nuclear energy, radioactive materials or ionising radiation shall be punished by *réclusion* (deprivation of liberty with an obligation to work) or imprisonment and by a fine of up to 500 000 Swiss francs.

2. If the author acted negligently, he shall be punished by imprisonment of up to five years and by a fine of up to 500 000 Swiss francs.

32. RS 311.0

33. Upon the entry into force of the amendment of 13 December 2002 of the Penal Code (FF 2002 7658), Article 226bis shall read as follows:

Article 226bis

Risks attributable to nuclear energy, radioactivity and ionising radiation

1. Any person intentionally endangering the life or health of persons or property of considerable value belonging to third parties by using nuclear energy, radioactive materials or ionising radiation shall be punished by being deprived of his liberty or by a fine. In the event of deprivation of liberty, a fine shall also be pronounced.

2. If the author acted negligently, he shall be punished by deprivation of liberty for up to five years or by a fine. In the event of deprivation of liberty, a fine shall also be pronounced.

Article 226ter[34]

Punishable preparatory measures

1. Any person who systematically prepares, from a technical or organisational point of view, measures endangering the life or health of persons or property of considerable value belonging to third parties by using nuclear energy, radioactive materials or ionising radiation, shall be punished by *réclusion* of up to five years or imprisonment, and by a fine of up to 100 000 Swiss francs.

2. Any person who has produced radioactive substances, constructed installations or manufactured devices or objects containing them or which are capable of emitting ionising radiation, has obtained such, transferred them to third parties, received them from a third party, kept, hidden or transported them, and who knew or should have assumed that they were intended for illegal use, shall be punished by *réclusion* of up to ten years or imprisonment, and by a fine of up to 100 000 Swiss francs.

3. Any person who has supplied a third party with information on how to produce such substances or make such installations, devices or objects, and who knew or should have assumed that they were intended for illegal use, shall be punished by *réclusion* of up to five years or imprisonment, and by a fine of up to 100 000 Swiss francs.

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34. Upon the entry into force of the amendment of 13 December 2002 of the Penal Code (FF 2002 7658), Article 226ter shall read as follows:

Article 226ter

Punishable preparatory measures

1. Any person who systematically prepares, from a technical or organisational point of view, measures endangering the life or health of persons or property of considerable value belonging to third parties by using nuclear energy, radioactive materials or ionising radiation, shall be punished by being deprived of his liberty for up to five years or by a fine. In the event of deprivation of liberty, a fine shall also be pronounced.

2. Any person who has produced radioactive substances, constructed installations or manufactured devices or objects containing them or which are capable of emitting ionising radiation, has obtained such, transferred them to third parties, received them from a third party, kept, hidden or transported them, who knew or should have assumed that they were intended for illegal use, shall be punished by being deprived of his liberty for up to ten years or by a fine. In the event of deprivation of liberty, a fine shall also be pronounced.

3. Any person who has supplied a third party with information on how to produce such substances or make such installations, devices or objects, and who knew or should have assumed that they were intended for illegal use, shall be punished by being deprived of his liberty for up to five years or by a fine. In the event of deprivation of liberty, a fine shall also be pronounced.

Article 340, Chapter 1, paragraph 4[35]

1. The following shall be subject to Federal jurisdiction:

   The crimes and offences laid down in Articles 224 to 226ter;

3. ACT OF 18 MARCH 1983 ON NUCLEAR THIRD PARTY LIABILITY[36]

Section 1(1)c to e

In addition, the Confederation shall, insofar as the injured party has not caused the damage intentionally, cover nuclear damage, out of general funds and up to the amount specified in Section 12:

c. where the damage is caused by a deep geological repository which is no longer governed by nuclear energy legislation;

d. *current paragraph c)*

e. *current paragraph d)*

4. ACT OF 22 MARCH 1991 ON RADIOLOGICAL PROTECTION[37]

Section 2(2) and (3)

2. Handling shall include producing, manufacturing, processing, marketing, installation, use, storage, transportation, disposal, import, export, transit and any other form of transferral to a third party.

3. Sections 28 to 38 shall not be applicable to activities requiring a licence under the terms of the Act of 21 March 2003 on Nuclear Energy.[38]

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35. Upon entry into force of the amendment of 13 December 2002 of the Penal Code (FF 2002 7658), Article 336(1)d shall read as follows:

    Article 336(1 d

    1. The following shall be subject to Federal jurisdiction:

       d. the crimes and offences laid down in Articles 224 to 226ter;

36. RS 732.44.

37. RS 814.50.

38. RS …; RO … (FF 2003 3242).

Section 3(a)

In addition to the provisions of this Act, the following in particular shall also apply:

a. the Act of 21 March 2003 on Nuclear Energy:[39] to nuclear installations, nuclear articles and radioactive waste;

Section 25(3) and (4)

3. Radioactive waste originating in Switzerland shall be disposed of domestically. An export licence for the disposal of radioactive waste may exceptionally be issued where:

   a. the destination State has, in an international Convention, approved the import of the radioactive waste in question for this purpose;

   b. the destination State has a suitable nuclear installation, in line with current international science and technology;

   c. the transit States have approved the transit;

   d. the sender has formerly agreed with the receiver, in agreement with the authority designated by the Federal Council, that he will take back the radioactive waste if necessary.

4. A licence to import radioactive waste not originating in Switzerland but destined for disposal there, may exceptionally be issued where:

   a. Switzerland has, in an international Convention, approved the import of the radioactive waste for this purpose;

   b. Switzerland has a suitable nuclear installation, in line with current international science and technology;

   c. the transit States have approved the transit;

   d. the receiver has formally agreed with the sender, in agreement with the State of origin, that the sender will take back the radioactive waste if necessary.

Section 26(3)

3. Such radioactive waste as is not permitted to be released into the environment shall be retained in a suitable manner or safely enclosed and, as appropriate, solidified, collected and stored in a place approved by the supervisory authority whilst awaiting delivery or disposal.

39. RS …; RO … (FF 2003 3242).

Section 27, Title and paragraphs 2 to 4

Delivery

2. Such persons shall pay the costs of disposal.

3. The Federal Council shall lay down rules for the processing of waste in the installation and its delivery.

4. Whenever it is not possible, for reasons of radiological protection, to deliver or dispose of waste immediately, it shall be placed in supervised interim storage.

Section 30

Licensing authorities

The Federal Council shall designate the licensing authorities.

Section 43

Unjustified exposure of third parties to radiation

1. Anyone who intentionally subjects a third party to manifestly unjustified radiation exposure shall be punished by imprisonment or a fine of up to 100 000 Swiss francs.

2. Anyone who intentionally subjects a third party to manifestly unjustified radiation exposure with a view to harming his health shall be punished by *réclusion* or imprisonment.

3. Anyone who intentionally subjects a third party to manifestly unjustified radiation exposure shall be punished by imprisonment or a fine.

Section 43a

Illegal handling of radioactive substances;
unjustified exposure of property to radiation

1. A prison sentence or a fine of up to 100 000 Swiss francs shall be imposed on anyone who intentionally:

   a. stores, disposes of or releases into the environment, radioactive substances in contravention of the regulations;

   b. subjects property of great value belonging to third parties to manifestly unjustified radiation exposure with a view to prejudicing their usefulness.

2. If the guilty party acted negligently, the sanction shall be imprisonment of up to six months or a fine.

Section 44(1)a

1. Sequestration or a fine shall be imposed on anyone who intentionally or negligently:

   a. carries out activities requiring a licence without being in possession of a licence, obtains a licence illegally or fails to comply with the conditions or requirements linked to a licence;

Section 46(1)

1. The offences referred to in Sections 43 and 43a shall be subject to federal criminal jurisdiction.

Section 47(2) and (3)

2. It may delegate to the competent Department or subordinate services, the power to lay down radiological protection requirements for the activities for which the Act of 21 March 2003 on Nuclear Energy[40] requires a licence. It shall take into account the scope of such requirements.

3. *current paragraph 2*

5. ACT OF 2 SEPTEMBER 1999 REGULATING VALUE ADDED TAX[41]

Section 29bis

End of tax liability of the owners of nuclear installations

The owners of nuclear installations shall remain liable to value added tax after such installations have been withdrawn from service up until completion of the decommissioning work and disposal of the waste; they shall be entitled to deduct the withholding tax for the duration of the decommissioning work and disposal of the waste. This deduction shall apply to all the expenses relating to decommissioning, demolition and waste disposal.

40. RS …; RO … (FF 2003 3242).

41. RS 641.20.

6. ENERGY ACT OF 26 JUNE 1998[42]

Section 5bis

Distinctive electricity marking

In order to protect final users, the Federal Council may lay down provisions concerning distinctive markings, notably as to the type of production and the origin of the electricity. It may introduce a distinctive marking requirement.

Section 7(7)

7. The extra expense incurred by electricity distribution firms as a result of using electricity supplied by independent producers shall be financed by the operators of the transmission network by means of a supplement applied to the costs of providing high-voltage networks.

Section 28(1)abis

1. A sentence of imprisonment or a fine of up to 40 000 Swiss francs shall be imposed on anyone who intentionally:

abis infringes the provisions relating to distinctive electricity marking (Section 5bis);

42. RS 730.0.

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