The Convention on Nuclear Safety

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Foreword

1. The Convention on Nuclear Safety was opened for signature on 20 September 1994 in conjunction with the 38th regular session of the General Conference of the IAEA. 50 states signed the Convention.[1] On 17 June 1994, it had been adopted without a vote by the representatives of 84 countries at the Diplomatic Conference convened in Vienna by the IAEA from 14-l7 June 1994. The Convention will enter into force on the 90th day after the deposit with the Director General of the IAEA of the 22nd instrument of ratification, including the instruments of 17 states "each having at least one nuclear installation which has achieved criticality in a reactor core."[2]

2. The large number of countries involved in this treaty making process reflects the intense international interest for all matters regarding nuclear safety and the willingness of countries both with and without nuclear power programmes to actively contribute to the safety of nuclear power plants wherever they are located.

3. At the present juncture, it is, however, not easy to foresee how soon the Convention will enter into effect. The number of states required for its entry into force (22) is huge compared to the IAEA's Convention on Early Notification of a Nuclear Accident[3] that entered into force 30 days after consent to be bound had been expressed by three states only; the requirement is similar to the Convention on the Physical Protection of Nuclear Material (21 states), but modest in comparison with the 40 "other" states in addition to the three depositaries required by the Treaty on the Non-Proliferation of Nuclear

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1. Algeria, Armenia, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Cuba, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Rep. of Korea, Luxembourg, Netherlands, Nicaragua, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Slovak Republic, Slovenia, South Africa, Sudan, Sweden, Syria, Tunisia, Turkey, Ukraine, United Kingdom, United States.

2. The Diplomatic Conference was attended by 84 states. Four international organisations attended as observers. The Final Act was signed by 71 states. Convention on Nuclear Safety, IAEA, INFCIRC/449, Article 31.

3. Article 14, in INFCIRC/335. The same applies to the Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency, Article 14, para. 3, INFCIRC/336.

Weapons.[4] Coupled with the requirement that 17 states must be included in this sum of 22 that have at least one operating nuclear plant, the entry into force provision reveals the intention of the drafters: in order to be an effective and meaningful instrument, about half of the world's 32 states with nuclear power plants in operation must have expressed their agreement to be bound before the convention can become operational.

I. Introduction and background

4. International law making is rarely attributable to a single factor but, frequently enough, the decision to prepare a binding instrument is triggered off by major events, often a catastrophe – perceived *ex post* as having been potentially avoidable by the enactment and enforcement of proper legal norms. Such was the case of the Torrey Canyon oil tanker accident which led to the adoption of several instruments regarding liability and compensation for oil pollution damages; the chemical industry accident at Seveso which brought about intensified efforts to develop an instrument on the International Movement of Hazardous Wastes as well as EC Directives on this subject,[5] and more recently, the International Civil Aviation Association (ICAO) Convention on Monitoring Plastic Explosives (1991) resulted from "the need for a legal regime" to preclude the recurrence of terrorist acts such as those which took place in 1988 and 1989.[6]

As to the nuclear field, it is recalled that in May 1986 the Board of Governors of the IAEA having "considered the recent reactor accident at the Chernobyl Nuclear Power Station and other accidents in the past" and noting "the evident need for greater co-operation in nuclear safety…"[7] decided on the setting up of groups of government experts "to draft on an urgent basis international agreements" regarding early notification and information about nuclear accidents as well as the co-ordination of emergency response and assistance in the event of a nuclear accident. The Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency were thereafter prepared, adopted and signed within a few months only.

5. As regards the Convention on Nuclear Safety, however, it appears to have its political origins and motivation in the intention to prevent rather than cure. In 1990, at a meeting of the policymaking organ of the IAEA, the Member States of the European Community proposed the convening by the IAEA of an international conference in 1991 on the "Safety of Nuclear Power: Strategy for the Future".[8] It was the intention of the promoters of this initiative that the conference and its results should be a contribution by the IAEA to the United Nations Conference on Environment and Development (1992, Rio de Janeiro).

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4. NPT, Article IX.2, in INFCIRC/140. Note: The Basel Convention Article (X) also required 20 ratifications. The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, Article XXI, required 65 ratifications.

5. EC Council Directive 84/631 of 6 December 1984.

6. See "Contemporary Practice of the United States relating to International Law" in *American Journal of International Law*, January 1994, Vol. 88, No. 1, p. 89-93.

7. Decision adopted on 21 May 1986, GOV/OR.649.

8. Note: At the Conference the proposal to establish a Nuclear Safety Convention was made by the Minister for Environment, Nature Conservation and Nuclear Safety of Germany, Mr. Toepfer. See Proceedings GC(XXXV)/970.

6. The Safety Conference, in its "Major Findings", declared that there was "a need to consider an integrated international approach to all aspects of nuclear safety, including safety objectives for radioactive wastes … which would be adopted by all governments"; "the governing bodies of the IAEA" were requested to organise "the preparation of a proposal on the necessary elements of such a formalised international approach, examining the merits of various options and taking into account the activities and roles of relevant international and intergovernmental bodies and using the guidance and mechanisms already established in the IAEA." The Conference in its final declaration, however, also recalled that "safety should be primarily enforced at national levels by conscientious application of existing safety principles, standards and good practices at each plant, and within each regulatory body, making best use of national legal frameworks and working practices."[9]

7. Soft law and good practices, a national legal framework and international norms were thereby well described as being the essential – co-existing – components of an international nuclear safety "regime".

8. The 35th regular session of the IAEA General Conference[10] in September 1991 gave its support to this idea and, "noting in particular that the International Safety Conference recognised the potential value of a step-by-step approach to a framework convention for the promotion of an international nuclear safety regime", invited the Director General "to prepare, for the Board's consideration in February 1992, an outline of the possible elements of a nuclear safety convention taking into account the activities and roles of relevant international and intergovernmental bodies and drawing on the advice of standing groups like INSAG, NUSSAG and INWAC, and also on expertise made available by Member States and competent international organisations."[11]

9. With this consensus endorsement, the stage was set to start preparatory work on the Convention on Nuclear Safety.

II. Drafting by lawyers and technicians: the Group of Experts on a Nuclear Safety Convention

10. The resolution of the General Conference did not specify the form or the type of instrument to be established nor did it provide clear indications as to its possible scope and contents. It referred rather to technical bodies, to standing groups of the IAEA and to international organisations that would be competent to give advice, thereby indicating the procedure to be followed and expressing the need to consult all available sources. The mandate of the technical standing groups of the IAEA[12] together with those of the international organisations[13] having competence in matters of nuclear safety encompasses however all facets of nuclear safety: the areas covered range indeed from protection of workers from ionising radiation (International Labour Organization) and health (World Health Organization) to the transport of nuclear material, and radioactive waste. The first task of the Director

9. Ibid.

10. IAEA GC(XXXV)/RES/553 preambular paragraph (e).

11. Ibid, paragraph 4. INSAG: International Safety Advisory Group; NUSSAG: Nuclear Safety Standards Advisory Group; INWAC: International Nuclear Waste Advisory Committee.

12. SAGSTRAM was added to the listing above (Standing Advisory Group on the Safe Transport of Radioactive Material).

13. The following international organisations were invited: ILO, WHO, the NEA/OECD as observers and the Commission of the EC initially as a participant.

General of the Agency, pursuant to the mandate received from the General Conference, was therefore to find ways and means of defining options and delimiting the possible substance and form of a future Convention. Both legal and technical expertise were required.

11. To fulfil this first task, the Director General convened, from 9 to 13 December 1991, an initial group of 36 experts from Member States and competent international organisations (the Commission of the European Communities was invited as a participant, the ILO and the OECD Nuclear Energy Agency as observers) and also included the chairpersons of NUSSAG, INWAC and SAGSTRAM to advise on the structure and contents of possible elements of an international nuclear safety convention. The Group of Experts elected as its chairperson E.A. Ryder, (UK) chairperson of NUSSAG. It based its discussions on a working paper prepared by the Secretariat as well as on two recent draft Agency documents namely "Safety Fundamentals: The Safety of Nuclear Installations", of 1991[14] and "Draft Safety Fundamentals: The Principles of Radioactive Waste Management, a publication within the RADWASS Programme", also of 1991.

12. The first document, the so-called "Safety Fundamentals", was later accepted by the experts as the main technical reference text for the convention, in view of the fact that it presented an international consensus on basic concepts for the regulation, management of safety and operation of nuclear installations. It determined the scope and the contents of the convention. The document on waste management was not used.

The concepts enounced in the "Safety Fundamentals" document, drafted from a national regulatory perspective, proved however to not be automatically translatable into international treaty language, notably as regards the relation between the responsibility of the operator of a plant and that of the State Party to the convention. (An informal working group of lawyers and technicians was set up to translate the Safety Fundamentals into draft convention language).

13. In the report to the Director General, the chairperson of the Group of Experts stated that there was a need for an international instrument on nuclear safety and urged that preparatory work for the establishment of such an instrument begin as soon as possible; a decision on the structure of a convention should be taken after agreement had been reached on its scope and contents. The experts considered that the convention should give emphasis to general principles and procedures rather than to technical details regarding nuclear safety.

14. By a decision taken by the Board of Governors in February 1992 in the light of a report submitted by the Director General on the Group's work, a new "open-ended" (i.e. open to all IAEA Member States) group of legal and technical experts was established and entrusted with the task of carrying out the necessary substantive preparations for a Convention on Nuclear Safety.[15] The Group, composed of about 100 experts from 45 countries, the CEC, NEA/OECD and ILO, elected as its chairman Mr. Z. Domaratzki of the Atomic Energy Control Board of Canada. It took the Group of Experts two years and seven meetings to reach agreement on the substance and form of the draft convention.

15. From the outset, the experts addressed both the possible form and contents of such an instrument. As to form, the experts "recognised that several types of international instruments could be

14. The document was later published in the Safety Series, No. 50 "The Safety of Nuclear Installations", 5 December 1993.

15. GOV/2567, February 1992.

envisaged."[16] The Agency's Secretariat had initially considered and proposed a framework type convention:[17] a main general agreement supported by annexes or protocols – covering the different types of nuclear activities – which could be developed either simultaneously or over time. The structure that prevailed and was preferred by most experts, notably from countries with large nuclear power programmes, however, was a single document, without protocols, possibly with an annex only, to be adopted at the same time

16. As regards the desirable contents, the experts agreed that the "Safety Fundamentals" document would provide all technical input required. The "elements for inclusion in a convention" were thus to be drawn essentially from the principles and basic requirements contained therein: a legislative and regulatory framework, the "management" of safety, the technical aspects of safety, and verification of safety. The objectives to be achieved by the convention would also be based on the same source:

i) a general nuclear safety objective: "To protect individuals, society and the environment from harm by establishing and maintaining in nuclear installations effective defences against radiological hazards";

ii) a radiation protection objective: "To ensure that in all operational states radiation exposure within the installation or due to any planned release of radioactive material from the installation is kept below prescribed limits and as low as reasonably achievable, and to ensure mitigation of the radiological consequences of any accidents"; and as a main goal;

iii) the technical safety objective: "To take all reasonable practicable measures to prevent accidents in nuclear installations and to mitigate their consequences should they occur; to ensure with a high level of confidence that, for all possible accidents taken into account in the design of the installation, including those of very low probability, any radiological consequences would be minor and below prescribed limits; and to ensure that the likelihood of accidents with serious radiological consequences is extremely low."[18]

17. The obligations of Parties to the convention would be derived from these "fundamental" principles: i.e. to establish a legislative and regulatory framework, which should define the discrete responsibilities of the government, the regulatory body and the operators; to take necessary measures for the education and training of the workforce; and for the safety of the nuclear facilities (including matters of siting, design, construction, commissioning, decommissioning), to require the continued surveillance of the safety of the facilities; to secure the safe operation and maintenance of the facilities; and to take necessary measures for the safe management and disposal of radioactive waste should such wastes be included in the scope of the convention.

18. It was clear however that a listing of general obligations defined only in terms of principles for the safe operation of nuclear installations would not suffice. If the convention was to contribute to promoting "the highest level of nuclear safety worldwide", it required a mechanism commensurate with the objectives set out.

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16. Report of the "Expert Group on an Outline of the Possible Elements for an International Convention on Nuclear Safety", dated 13 December 1991. Unpublished document made available to members of the Board of Governors at the February 1992 Session [GOV/2567].

17. The Director General in his first report to the Board of Governors on the findings of the Group argued in support of a framework convention allowing for a more comprehensive approach from the outset. GOV/2567; implementation of resolution GC(XXXV)/RES/553.

18. Safety Fundamentals, see note 14.

The difficulty encountered in devising for the convention a mode of verifying compliance with the convention's obligations without introducing at the same time exceptions to the principle that the safety of nuclear power plants was primarily a question of national responsibility was resolved with the help of the convincing argument that enlightened self-interest of states in matters of nuclear safety would be stronger than any form of outside control devised under international law: this self-interest would be developed and promoted among the Contracting Parties with nuclear installations, that is the "peer group"; peer group "pressure" or "persuasion" would be effective in compelling the Parties to meet their obligations under the convention, and as a result, improve nuclear safety in all power plants. A "meeting" of all Contracting Parties would be the appropriate method of focusing these "peer group" effects.

The experts also agreed in the context of this approach and, in the same spirit, that their objective was to establish a convention with an "incentive character" to which a large number of states could adhere. The term "incentive", though not defined, was inserted in the Preamble of the convention; it is not to be understood in a material sense, but rather as synonymous with "encouragement" or "emulation".

19. As to the issue of the scope of the instrument and, accordingly, the elements that would need to be included in addition to reactor safety, it remained open until the last phase of the negotiation process reflecting two main schools of thought – two possible approaches.[19]

According to one approach, the convention would cover all nuclear facilities and activities of the civil nuclear fuel cycle and include the safety of research reactors and the safe management and disposal of radioactive waste; the instrument would be drafted as a framework agreement with annexes or protocols added over time and containing detailed standards. A second view, which was to be the determinant one, gave preference to a unified document, restricted to operating nuclear power plants and based on broad principles.

The first school grouped the countries (mainly European) with few or no nuclear power plants; it also argued in favour of a more detailed, prescriptive form of convention, some countries expressing the wish for some form of mandatory international safety controls implemented by the IAEA.

20. The second, represented by regulators, nuclear technicians and heads of national authorities of countries with large nuclear power programmes, expressed a preference for a single text without technical annexes, for an incentive-oriented convention that would encourage all countries, including the developing countries and the countries of central and eastern Europe, to strengthen safety programmes and safety culture, and for the peer group mechanism described above.

After four meetings of the Expert Group, major disagreements were resolved and compromises accepted. The last three meetings of the Expert Group were therefore able to be devoted to drafting after a compromise text had been established by the Group's chairman.

III. The Convention: its structure and contents

21. The Convention on Nuclear Safety consists of a preamble and 35 articles; there are no annexes and no protocols to the convention.[20] In a style similar to many recent instruments,[21] the convention

19. See *supra* para. 15.

20. The Diplomatic Conference that adopted the convention also decided to adopt an attachment to the Final Act entitled "Some Clarification with respect to Procedural and Financial Arrangements, National

opens with a long preamble containing elements from the "Safety Fundamentals", notably the reference to the environment, as well as language based on resolutions adopted by General Conferences [GC(XXXV)/RES/553, GC(XXXIV)/RES/529]. It also refers to the other conventions relating to nuclear safety adopted under IAEA auspices.[22] Preambular paragraphs of an early draft (June 1992) of the Nuclear Protocol to the draft European Energy Charter are also included.

22. The most relevant elements of the preamble are its last two paragraphs: paragraph (ix) affirms "… the need to begin promptly the development of an international convention on the safety of radioactive waste management…" and paragraph (x) refers to the "safety of other parts of the nuclear fuel cycle" which "in time" would also be covered by international instruments. These two paragraphs reflect the political compromise reached after protracted negotiations, which also included the IAEA Board of Governors, to limit the scope of the convention to land-based civil nuclear power plants, but to express, at the same time, a commitment to developing an instrument on the safety of waste management as soon as the technical document to serve as substantive backbone of such instrument has been agreed upon. Other parts of the fuel cycle, and e.g. research reactors, raising different safety problems which, to some extent are of a more limited national dimension would, in the intention of the negotiators, also be covered by international instruments to be developed at a later stage.

Paragraph (viii) deserves special mention as it also results from a compromise on whether or not to include reference to the Agency's Nuclear Safety Standards (NUSS); the phrase "internationally formulated safety guidelines which are updated from time to time" is in fact a description of the NUS[S] standards.

Although not in a strict legal sense, the content of these preambular paragraphs recalls the original concept of an international nuclear safety framework built on several successive instruments of a similar nature.

23. In addition to the general premises enumerated in the preamble, the convention defines three sets of "Objectives" in Article 1 which, as explained above, are based on the "Safety Objectives" of the "Safety Fundamentals" document:[23] (i) General Nuclear Safety Objective, (ii) Radiation Protection Objective and (iii) Technical Safety Objective.[24] In the convention, the first objective set by the drafters is the achievement and maintenance of "a high level of nuclear safety worldwide" adding that this should be carried out by way of enhancement of measures taken at a national level, and by "international co-operation including, where appropriate, safety related technical co-operation." This requirement was particularly stressed by China and some technologically advanced developing countries.

Reports and the Conduct of Review Meetings, envisaged in the Convention on Nuclear Safety" in Final Act of the Diplomatic Conference, 17 June 1994 [INFCIRC/449/Add.1].

21. See for instance Vienna Convention for the Protection of the Ozone Layer, 1985; Convention on the Transboundary Effects of Industrial Accidents, Helsinki, 1992; the UN Framework Convention on Climate Change, New York, 1992; Base1 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989.

22. Convention on the Physical Protection of Nuclear Material, 1980; Convention on Early Notification of a Nuclear Accident, 1986; Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, 1986.

23. Ibid. p. 2-3.

24. See *supra* para. 15.

24. In fact, much political negotiation lies behind the language finally adopted in Article 1(i) and in preambular paragraph (viii). Whilst it was generally agreed that international co-operation on nuclear safety should be promoted and that, *ipso facto*, the convention would serve this purpose, two different views were held as to the need for a specific provision on the transfer of technology through technical co-operation. In the opinion of major OECD countries, such provision would create for Contracting Parties an obligation to provide assistance; the additional concern being that international co-operation in nuclear safety could be de-linked from adherence to binding non-proliferation commitments – notably the Non-Proliferation Treaty. In the opinion of most developing countries and China, assistance in upgrading nuclear safety through technical co-operation was an essential component of the convention. The formulation of the objective of the convention takes this view into consideration without, however, creating a separate obligation for bilateral or multilateral assistance.

25. The convention applies to "the safety of nuclear installations" [Article 3, Scope of Application]. "Nuclear installation" is defined in Article 2 to mean "for each Contracting Party any land-based civil nuclear power plant under its jurisdiction"; an addition is made as to waste: i.e. "storage, handling and treatment facilities for radioactive materials as are on the same site and are directly related to the operation of the nuclear power plant." The definition also clarifies that "a plant ceases to be a nuclear installation when all nuclear fuel elements have been removed permanently from the reactor core and have been stored safely in accordance with approved procedures and a decommissioning programme has been agreed to by the regulatory body." The concept of "jurisdiction" was given preference over the term "location".[25] Preambular paragraph (iii) reaffirms "that responsibility for nuclear safety rests with the state having jurisdiction over a nuclear installation." The location of a plant may, in practice, not always be sufficient for defining responsibility, notably in connection with the granting of licence by a regulatory body having the legal authority to do so.

26. The question of delineating the responsibility of the operator[26] (the "licence holder" as provided in Article 9 of the convention) within an international instrument where, by definition, obligations spelled out are entered into by the States Parties to the convention is addressed in several provisions of the convention: the preamble refers to the responsibility for nuclear safety of the state having jurisdiction over an installation; Article 9 provides for the "prime responsibility" of the licence holder[27] for the safety of a nuclear installation. The "overall responsibility"[28] of the state is distinct from the "prime"[29] responsibility of the operator as the first establishes the responsibility to take the legislative measures required to ensure that the licence holder meets its responsibility.

27. The obligations[30] to be undertaken by the Contracting Parties pursuant to the convention are contained in Chapter 2. Principally these obligations are of two different types: (i) the first is a general

25. The Vienna Convention on the Law of Treaties, 1980, provides in Article 29, Territorial Scope of Treaties: "unless a different intention appears from the treaty or is otherwise established, a treaty is binding upon each party in respect of its entire territory.

26. Vienna Convention on Civil Liability for Nuclear Damage; Convention on Third Party Liability in the Field of Nuclear Energy (Paris Convention).

27. The concept of "licence holder" has broader international acceptance than the term "operator" or "operating organisation" used in the "Safety Fundamentals" document and in the draft Nuclear Protocol of the European Energy Charter; the term "operator" is understood in a narrow sense as individual actor in some countries.

28. Nuclear Protocol (Text Nu8) preambular paragraph (v).

29. lbid para. (vi).

30. The obligations also include in Article 6 a provision entitled "Existing Nuclear Installations". Although in legal terms all nuclear installations to which the definition of Article 2(i) applies are covered by the

obligation *de moyens*,[31] namely the requirement to take legislative, regulatory and administrative measures in order to implement its obligations under the convention; these obligations are categorised as follows:

(a) Legislation and regulation

"Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations", [Article 7, para. 1] including the establishment of applicable national nuclear safety requirements and regulations; a system of licensing, and the prohibition of operating an installation without a licence; a system of regulatory inspection, and the enforcement of the applicable regulations coupled with sanctions which include "suspension, modification or revocation" [para. 2]. As to the regulatory body, which has to hold the "authority, competence, financial and human resources" to fulfil its responsibilities [Article 8], the convention provides that its functions should be effectively separated from those of organisations concerned with the "promotion or utilisation of nuclear energy".

(b) General safety considerations

Under this title, the convention groups a number of different obligations: the obligation regarding "priority to safety" binding Contracting Parties to establish safety policies; the undertaking that adequate financial resources as well as "sufficient numbers of qualified staff with appropriate education, training and retraining" are available "throughout the life" of a nuclear installation to support the safety of each installation; Contracting Parties are also held to "ensure that the capabilities and limitations of human performance are taken into account" – most certainly a modern and unusual

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convention *ipso facto*, this provision addresses the need to "review as soon as possible" the "safety of nuclear installations existing at the time the convention entered into force." The undertaking of the Contracting Parties in this context is "to ensure" "where necessary" that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installations. The obligation goes further: "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." Worded in a non-discriminatory manner, this obligation is however clearly directed at the concern for power plants built to and operated under standards that are not in line with the safety requirements of the convention and are located in central Europe and in the countries of the former Soviet Union.

31. For general obligations, see: Convention on the Physical Protection of Nuclear Material, Article 3: "Each State Party shall take appropriate steps within the framework of its national laws and consistent with international law to ensure as far as practicable that, during international nuclear transport, nuclear material within its territory, or on board a ship or aircraft under its jurisdiction insofar as such ship or aircraft is engaged in the transport to or from that state, is protected at the levels described in Annex 1." International Convention for the Safety of Life at Sea, Article 1: "The Contracting governments undertake to promulgate all laws, decrees, orders, and regulations and to take all other steps which may be necessary to give the present convention full and complete effect, so as to ensure that from the point of view of safety of life, a ship is fit for the service for which it is intended." ICAO Convention on International Civil Aviation, Article 37, paragraph 1: "Each Contracting State undertakes to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organisation in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation."

treaty provision. Of a more common technical nature are the obligations regarding "quality assurance" and "assessment and verification of safety" – to be carried out throughout the life of an installation.

Contracting Parties also commit themselves to an obligation regarding radiation protection. Article 15 provides that "in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits".

Among the few safety-related provisions which are *expressis verbis* addressed to countries with and without nuclear installations on their territory, Article 16 provides for a system of emergency preparedness to be organised and tested by each Contracting Party. The concept of "vicinity" of the nuclear installation with the connotation of proximity or closeness is included here. The same concept is used in the context of the provision regarding the siting of installations [Article 17] where the convention contains an obligation to consult "Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation".

(c) Safety of installation

This chapter is entirely based on the Safety Fundamentals document ("Technical Aspects of Safety") and covers the obligations of Contracting Parties regarding the nuclear installation itself, rather than the general issues concerning overall nuclear safety matters. In particular, these obligations relate to:

i) the siting of new installations: Article 17 provides for evaluation of "all relevant site-related factors likely to affect the safety of a nuclear installation…", "the likely safety impact of a proposed nuclear installation on individuals, society and the environment"; the need to ensure "the continued safety acceptability", and the obligation to consult Contracting Parties in the vicinity of a proposed installation";

ii) design and construction [Article 18] which includes the concepts of "defence in depth", i.e. several levels of protection against the release of radioactive materials into the environment and a "specific consideration of human factors and the man-machine interface"; and

iii) the operation of a nuclear installation [Article 19] covering all of its stages.

The second obligation binding upon the States Parties to the convention is of a different nature from the first set of obligations discussed above: Article 5 (Reporting) creates a reporting requirement linked to an implementation mechanism *sui generis*; states undertake to establish national reports on the measures taken "to implement each of the obligations of [this] convention" and to submit such reports for "review" to meetings of the Contracting Parties.

28. These "review meetings" referred to by the negotiators as "peer" review by analogy to a practice set up a number of years ago by nuclear regulators and other nuclear authorities and technical bodies, notably in the context of the WANO (World Association of Nuclear Operators) and the IAEA, are to be the main innovative and dynamic element of the convention.

IV. The Peer Review Mechanism

29. The convention provides for "Meetings of the Contracting Parties" in Chapter 3, Articles 20 to 28. These meetings called "Review Meetings" are to be held at intervals not exceeding three years. A

preparatory meeting shall be convened no later than six months after entry into force of the convention, the first review meeting not later than 30 months after entry into force. Rules of Procedure and Financial Rules for the review meetings shall be drawn up at the preparatory meeting.

30. Although the drafters of the convention appeared to leave much flexibility to the Contracting Parties to determine the general conditions and *modus operandi* of their meetings and avoided the setting up of rigid structures or institutional mechanisms, they provided nonetheless a few clear markings and points of reference specifying their intentions. In fact, the provisions on the review meetings [Chapter 3] contain the most carefully worded language of the convention. Since the fourth meeting of the Expert Group (May 1993), which reached agreement on the main elements of the convention, several proposals[32] were made as to the basic concepts of a review mechanism and illustrative examples of its possible operation. The need to further determine the modalities of the review process remained a major concern of the negotiators and led to the adoption of a document attached to the Final Act (see note 18).

This document, which is intentionally attached to the Final Act of the Diplomatic Conference and not to the convention itself, should provide some guidance on questions where the text of the convention is silent or not sufficiently explicit. The usefulness of such a document was felt in the last round of negotiations and it became the common denominator for different concerns regarding the national reports, the conduct of review meetings and financial implications for the Contracting Parties and for the Secretariat in implementing the convention. The main concepts expressed in the "clarification" are added emphasis on the "national responsibility for nuclear safety", the need for detailed and comprehensive reports to be submitted to and discussed by technical experts, consensus rule for all major decisions and confidentiality. Furthermore, costs to Contracting Parties and to the Secretariat should be limited.

(a) Pattern of a meeting

As described above, Article 21 provides that a preparatory meeting of the Contracting Parties shall be held no later than six months after the date of entry into force of the convention. The first review meeting is to take place no later than 30 months after entry into force. Although the Parties shall be free to determine the date of the second review meeting, and any meeting thereafter – the convention provides that intervals between review meetings shall not exceed three years. Article 23 provides that extraordinary meetings may also be convened.

(b) Subject matter of the meetings

In accordance with Article 5, the requirement is to submit in advance of a meeting and for its review, a report established by the Contracting Party "on the measures it has taken to implement each of the obligations of [this] convention", it being understood, *mutatis mutandis*, that certain obligations can only be met by Parties with nuclear installations under their jurisdiction. The preparation, submission and presentation of the national report are the responsibility of the Contracting Party: in preparing the report, or any part thereof, the Contracting Party is however free to request and involve outside expertise be it from other countries ("peer review" in a narrower sense) or from international organisations, notably the IAEA.

32. GOV/INF/723. INSAG prepared a report dated 9 July 1993 on the proposed Nuclear Safety Convention entitled "Basic Concepts and Review Mechanisms".

At the preparatory meeting, the Contracting Parties are to establish the Rules of Procedure and the Financial Rules[33] for the regular review meetings. In this context, they will notably address both form and structure – including contents – of the national reports.

After the fifth meeting of the Group of Experts (October 1993) the chairperson of the Group established a small informal group of experts chaired by C. Stoiber (USA) which developed a "conference room" paper containing Draft Rules of Procedure for the review process, elements of a budget for the meeting of Contracting Parties and a scenario on the mechanism of the review process. This paper, which was not further discussed by the Group, will presumably serve as a first input for the preparatory process after entry into force. A few months earlier, upon request by the Director General, INSAG prepared a report on "Basic Concepts and Review Mechanisms"[34] of the convention. The report describes the reporting obligation of Contracting Parties as the "commitment to a process"; stressing the national responsibility for preparing the report, INSAG outlines the possible steps leading from a "peer review mechanism on the national level" to the "national report" and the "meeting of the Contracting Parties". This report will probably also be consulted in the preparatory process after entry into force of the convention.

(c) Modus operandi: the "review" process

At review meetings, sub-groups may be established for the purpose of reviewing specific subjects contained in the reports: it is expected that such groups would be set up to discuss matters concerning e.g. the safety of installations [part (d) of Chapter 2], individual questions relating to emergency preparedness for instance [Article 16] or, possibly, an issue regarding a particular existing installation [Article 6]. Reporting and discussion of reports would be protected by the strict confidentiality rules of Article 27, but allow for clarification to be sought and obtained pursuant to the provisions of Article 20, paragraph 3.

(d) Secretariat

The convention establishes [Article 28] that the IAEA shall provide the secretariat for the meetings of the Contracting Parties. Other services which Contracting Parties may also require in "support" of the review meetings shall equally be provided by the IAEA – either in the frame of its regular programme and budget or as separately funded activities.

The Director General of the IAEA shall be the depositary of the convention [Article 34].

V. Provisions of the convention regarding disputes, final clauses

31. The convention provides only for a simple consultation mechanism to resolve possible disputes – referred to as "disagreement[s]" among Contracting Parties concerning the interpretation or application of the convention: Article 29 provides that Parties "shall consult within the framework of a meeting of the Contracting Parties with a view to resolving the disagreement." The nature of this

33. Following the 5th meeting of the Group of Experts, an informal group (chaired by the expert from the US Mr. Stoiber) developed Draft Rules of Procedure for meetings of the Contracting Parties.

34. Report of INSAG dated 9 July 1993, not published.

provision is in keeping with the pragmatic "peer group" approach devised by the negotiators.[35] Disputes should be settled in an amicable manner within the existing structure, i.e. the meeting of Parties and not be brought to any court.

32. No provision is included in the convention as to reservations.[36]

33. The convention is subject to ratification, acceptance or approval by the signatory states; after entry into force, it is open for accession by all states. As many other recent instruments, the convention also provides for signature or accession by "regional organisations of an integration or other nature, provided that any such organisation is constituted by sovereign states and has competence in respect of the negotiation, conclusion and application of international agreements in matters covered by this convention." Such organisations shall, however, not hold any vote additional to the vote of its Member States.

Amendments

34. Changes to the convention can only be made through a stringent formal amendment process laid out in Article 32; proposals for changes are to be considered either at regular review meetings, or at extraordinary meetings to be held if so agreed by a majority of the Contracting Parties, or, at the written request of one Party if such request is supported by a majority of the Contracting Parties. The text of any proposed amendment and the reasons for it shall be communicated through the depositary to the Contracting Parties. Amendments require consensus. In the absence of consensus, a two-thirds majority of the Contracting Parties can decide to submit a proposed amendment to a diplomatic conference where, in the absence of consensus, amendments shall be adopted with a two-thirds majority of the Contracting Parties. Amendments as adopted require ratification, acceptance, approval or confirmation by the Contracting Parties.

Denunciation

35 The convention is of unlimited duration. However, each Contracting Party has the right to withdraw from the convention without providing reasons, by way of written notification to the depositary. Denunciation takes effect one year – or later if so specified – following the date of receipt of the notification by the Depositary.

35. The provision of Article 29, "Resolution of Disagreements" is unusual. Bilateral agreements sometimes refer to "diplomatic channels" as a means of settlement by negotiations only. Most conventions provide for reference to a permanent political or administrative body, a court – the ICJ – or an arbitral tribunal. See *The Treaty Maker's Handbook*, *op.cit* Sec. 10, p. 117-129.

36. The Vienna Convention on the Law of Treaties provides in Article 19: "A State may, when signing, ratifying, accepting, approving or acceding to a treaty, formulate a reservation unless: (a) the reservation is prohibited by the treaty; (b) the treaty provides that only specified reservations, which do not include the reservation in question, may be made; or (c) in cases not falling under sub-paragraphs (a) and (b), the reservation is incompatible with the object and purpose of the treaty.

VI. Internal application[37]

36. The convention provides under Article 4 "Implementing Measures" that "Each Contracting Party shall take, within the framework of its national law, the legislative, regulatory and administrative measures and other steps necessary for implementing its obligations under this convention."

The convention does not provide for any specific authority, focal point or other national institution to be created for the purpose of its implementation;[38] nor does it prescribe any specific national law to be adopted.[39]

Outlook

Despite the apparent technical character of the convention, the negotiators and drafters have achieved the establishment of an instrument that can be implemented by countries with very different industrial, regulatory and legal systems, at different stages of development, and even with widely differing approaches to nuclear power. The first international binding instrument directly addressing the safety of civil nuclear power plants, hopefully, will soon enter into force.

37. For variations on internal application clauses, see *The Treaty Maker's Handbook*, Hans Blix and J.H. Emerson, Dag Hammarskfold Foundation, 1973, Sec. 13, p. 168-172.

38. This is the case e.g. for the London Dumping Convention [Article VI]; Basel Convention [Article 5].

39. As e.g. Convention on the Physical Protection of Nuclear Material, Article 7 acts "to be made punishable offences under national law."

