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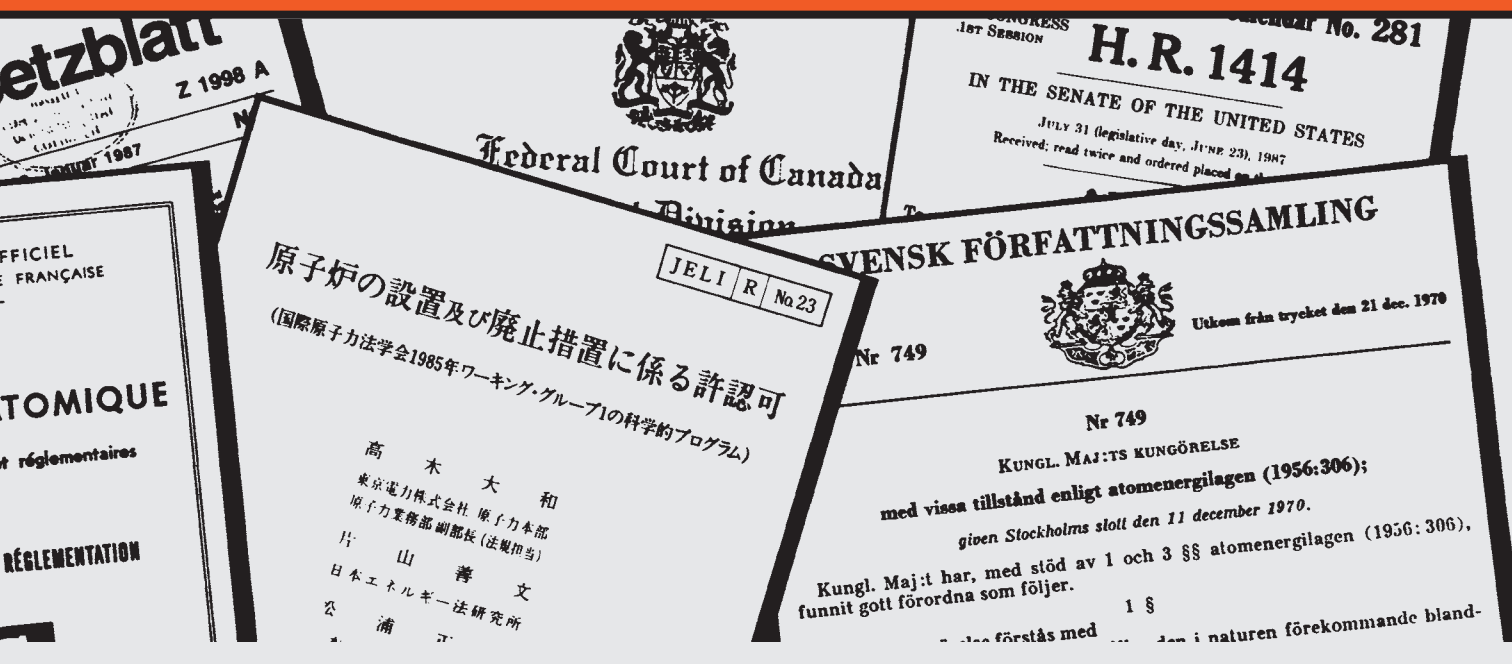

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Contents

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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 (14th 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 28 OECD member countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, Norway, Portugal, Republic of Korea, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities also takes part in the work of the Agency.

The mission of the NEA is:

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

Specific areas of competence of the NEA include safety and regulation of nuclear activities, radioactive waste management, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information. The NEA Data Bank provides nuclear data and computer program services for participating countries.

In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

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FOREWORD

As our regular readers are aware, the Nuclear Law Bulletin does not usually comprise a foreword. However, this is a very special edition as it is the last Bulletin published under the direction of Patrick Reyners, Head of Legal Affairs of the Nuclear Energy Agency, who shall retire from this post early in 2005.

Patrick has in fact been overseeing the Nuclear Law Bulletin since its inception in 1968, and therefore the number of this issue – NLB No. 74 – gives you an exact indication of how many editions have benefited from his invaluable contribution.

His colleagues at the NEA who contribute to the preparation of this publication would like to take this opportunity to thank him for his candour, integrity and unfailing guidance, which have helped make the Nuclear Law Bulletin a publication of international renown. They express their warmest wishes to him for the future.

The NLB Editorial Team.

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ARTICLES

The Comprehensive Nuclear-Test-Ban Treaty Eight Years after the Opening of the Treaty for Signature: What is the Situation?

by Gilbert Le Goff and Denys Rousseau*

The international community has just celebrated the eighth anniversary of the opening for signature, on 24 September 1996, of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). This event provides an opportunity to review briefly the current situation with regard to the Treaty and the international organisation responsible for preparing the various steps necessary for its implementation.

The purpose of this paper is not to give once again a detailed description of the history of the Treaty, the issues at stake and its prospects. Readers looking for such information will find it in the various publications cited in the bibliography.[1]

It is simply recalled that the major undertaking by States Parties to the Treaty is "not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control" [Article 1].

It is also useful to note that the Treaty provides for a verification regime consisting of the following four elements:

- creation of a permanent International Monitoring system (IMS);
- consultation and clarification procedures to be followed by states in the event of a suspicious occurrence;
- on-site inspections (OSIs), carried out at the request of a State Party;
- confidence-building measures.

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1. Bibliography: 1) Wolfgang Hoffmann: *Verification Yearbook* 2003 (Preface); 2) Ben Mines: Vertic brief (3 April 2003); 3) Merle Opelz: *Nuclear Law Bulletin* No. 58; 4) Joëlle Bourgois: *Nuclear Law Bulletin* No. 59.

On the eve of important deadlines particularly during 2005[2] for disarmament and non-proliferation, we felt it was useful to give a brief factual picture of the current Treaty situation and, above all, of the results obtained to date by the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).[3]

From a strictly political and legal standpoint, the situation of the Treaty can be summarised as follows, at 30 September 2004: 173 states out of the 194 Member States of the UN have signed the CTBT, and 119 states have ratified it, thus indicating its universal appeal.

The Treaty will enter into force when the 44 states[4] listed in Annex 2 have signed and ratified it. Again as of 30 September 2004, only 33 states on this list had done so. Amongst the 11 absentees are:

- three non-signatory states: India, North Korea and Pakistan;
- eight states which have signed the Treaty but not yet ratified it: China, Colombia, Egypt, Indonesia, Iran, Israel, United States, Vietnam.

In these circumstances it is difficult today to give any forecast whatsoever as to when the CTBT will enter into force, even though a very large majority of signatory states continue to support it, if only through the regular payment of their contributions to the budget of the CTBTO Preparatory Commission.

The drafters of the Treaty had anticipated such difficulties as Article XIV of the Treaty provides for the holding of Conferences of the States Parties, commonly referred to as "Article XIV Conferences". The main purpose of these Conferences is to examine the reasons why the Treaty has still not entered into force and to decide and implement measures "to facilitate the early entry into force of this Treaty". Following the first of these Conferences, to be held, according to the Treaty, three years after the date of its opening for signature and which was held in Vienna in 1999, two other Conferences have been held at the initiative of the States Parties, in New York and Vienna in November 2001 and September 2003, respectively. A fourth Conference is to be held in 2005. This series of Conferences, each of which gives rise to a final declaration, also demonstrates the support of the States Parties for the Treaty.

By a Resolution dated 19 November 1996, the States Parties also set up a Preparatory Commission, the main task of which is to prepare and validate the necessary means of implementing the verification procedure after the entry into force of the Treaty. This Preparatory Commission is made up of representatives from all the signatory states. It meets twice a year in ordinary session (usually in June and November). It has three subsidiary bodies which draft, in close collaboration with the Provisional Technical Secretariat, each in its own domain, the recommendations which are communicated to the Preparatory Commission:

- working group A, dealing with financial, administrative and staff matters;

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2. The Non Proliferation Treaty (NPT) Review Conference will take place in April 2005.

3. Resolution adopted on 19 November 1996 establishing the Preparatory Commission.

4. Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China (People's Republic of), Colombia, Congo (Democratic Republic of), Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran, Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Korea (Republic of), Korea (Democratic People's Republic of), Romania, Russian Federation, Slovak Republic, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States, Vietnam.

- working group B, dealing with technical issues;

- an advisory group, contributing financial expertise.

These subsidiary bodies, composed of representatives from the signatory states, sit regularly in Vienna.

It is noteworthy that until now, the Preparatory Commission has managed to deal with its entire agenda on a consensus basis, and has never had to resort to a vote.

The Preparatory Commission is also, and above all, helped by a permanent organisation, the Provisional Technical Secretariat (PTS), which has its headquarters in Vienna and holds the status of an international organisation. The PTS implements on an everyday basis the decisions of the Preparatory Commission and reports to it on its activities. It is directed by an Executive Secretary, a post held since its creation by the German Ambassador Wolfgang Hoffmann. At its November 2003 session, the Preparatory Commission noted that the Executive Secretary wishes to terminate his mandate on 1 August 2005. Consultations are already underway to nominate his successor.

From the budgetary and technical standpoint, the activities of the PTS started at the beginning of 1997. After a period of rapid expansion in terms of personnel and budget, the staff has remained more or less stable at 275 persons since the year 2000.

Its budget for 2004 was some 95 million US dollars (USD). States make annual contributions to this theoretical budget at a level which is normally around 93 to 95% which, as already indicated, in itself illustrates the commitment of states vis-à-vis the Treaty. Some 80% of this budget is allocated to expenditure directly related to the setting up of the verification regime, the remainder being spent on administrative support, logistics and promotion of the Treaty. Lastly, the PTS budget will for the first time in the year 2005 be established and spent using a double euro/dollar system, the purpose of which is to protect the Secretariat's budget from any adverse financial effects of fluctuations in the exchange rate between these two currencies.

Two main components of the verification regime require funding: the International Monitoring System (IMS) and the On-Site Inspections (OSIs).

I. The International Monitoring System

For the construction of the system, as strictly defined, the IMS was divided into three parts:

- a worldwide network of facilities, on the territory of 89 states, comprising 50 primary seismological stations, 120 auxiliary seismological stations, 11 hydroacoustic stations, 60 infrasound stations, 80 radionuclide stations, 16 radionuclide laboratories and 40 so-called "rare gas" stations;

- the Global Communications Infrastructure (GCI);

- the International Data Centre (IDC) in Vienna.

The performance of this network in terms of detection, characterisation and localisation is reliant not only on the performance of each sub-network but also on the bringing together of data provided by each technology.

A. There is a special investment fund for the IMS network of stations, with its own financial rules which allow, in particular, for state contributions to be carried over from one year to the next. The current estimate of this part of IMS investment is USD 276 million, excluding the funds required for recapitalisation and for the construction of the 40 "rare gas" stations planned after the entry into force of the Treaty. Including the 2004 contribution, some 80% of this investment has today been paid by states. The current objective is to have 90% of the network available at the end of 2007, and 100% by the end of 2009. At 30 September 2004, the situation, expressed in terms of the number of certified stations, i.e. those declared "ready for service", can be summarised as follows:

- 27 of the 50 primary seismological stations;
- 15 of the 120 auxiliary seismological stations;
- 4 of the 11 hydroacoustic stations;
- 21 of the 60 infrasound stations;
- 23 of the 80 radionuclide stations;
- 4 of the 16 radionuclide laboratories.

To these must be added some 50 stations which have not yet been certified but the performances of which are close to those required for certified stations and which send their data to the IDC in Vienna. Overall, some 50% of the network can be considered to be operational today.

B. The main tasks of the GCI are to transmit data acquired from the stations to the IDC in Vienna and to redistribute these data, before and after processing, to country national data centres. The basic technology used is satellite links and it may be noted that 60% of this network is today installed and functioning in nominal conditions.

C. Lastly, the IDC is operational with regard to the processing of seismic data. Optimising techniques between the number of events to be processed and the sensitivity of this sub-network is one of the questions which remains to be answered. Software development is under way with regard to other technologies. Thus, for example, 100 000 events were reported during the first eight months of the year 2004. The role of the Centre in promoting national activities relating to the implementation of the Treaty and fostering technical exchanges between countries in this field is decisive.

For the last two years, expenditure on operation of the system has been growing steadily as a result of the increasing number of certified stations. This means that states must pay more in this respect, while the investment burden has not yet decreased very much. For reasons of global budgetary constraints, the Preparatory Commission has decided, for this initial operation of certified stations, to "suspend" the operational specifications provided for upon entry into force and to establish provisional specifications which are not as stringent technically, and therefore are less expensive.

Along with all of these construction and operation activities, operational manuals for the four technologies and for the IDC have been drafted and should be approved by States during their first meeting after entry into force. The final provisions of these manuals determine the global costs of IMS operations.

Today, the question of the integration of the system is a pressing one. Given the progress achieved in all three of the components originally defined, it is necessary to prepare the conditions for

the successful operation of the IMS by the PTS, in direct liaison with station operators, who work under contract with the PTS, and the national data centres which use the system's data on behalf of their respective national authorities. It is to this end that the Preparatory Commission decided to implement the first system-wide performance test (SPT1) to be conducted in 2005, after a preparatory phase which started at the beginning of the year 2004. At the same time, it called for collective thinking about the development of the PTS structure so as to adapt it to its final role of IMS operator. For this purpose, it mandated an international team of nine experts of varying diplomatic and managerial expertise, which will be required to submit its conclusions in summer 2005. The goal is to set up an adapted structure at the beginning of the year 2006, in the light of the lessons drawn from SPT1.

II. On-Site Inspections (OSIs)

The objective of an on-site inspection is to gather, on a site localised by the International Data Centre, after detection of a suspect event, complementary information likely to corroborate or not the theory of a nuclear explosion. It is an investigative task. In any event, states remain the final judge as regards the conclusion. The second main component of the verification regime developed by the PTS raises both political and tactical questions.

An inspection is of an intrusive nature as it takes place on the territory of the inspected state. Depending on the object of the inspection, that state can attempt to protect issues which it considers to concern national security. The Treaty is very specific as regards the definition of available techniques and on rights and obligations of inspectors. However, these provisions need to be completed by implementing texts and procedures for the application of these techniques. This is the very objective of the revision of the OSI Operational Manual.

Tactical issues are very much conditioned by a "race against the clock" during each inspection. Signatures of a nuclear explosion have a very short lifespan. The most telling indicators are those which are detected by the simplest means but which disappear very quickly. These time restraints are amplified by the fact that potential inspectors will not be members of the CTBTO but rather will come from national "pools" thereby rendering their mobilisation more complicated and therefore longer. Finally, the delays necessary for preliminary negotiations leading to a decision to carry out an inspection slow down implementation considerably.

All of these difficulties and constraints are clearly demonstrated by the slow rate of progress with regard to the OSI Operational Manual which has been discussed at many technical meetings (roughly six weeks a year) and is very slow-moving.

Nevertheless, significant progress has been made through the use of exercises. In particular, an initial on-site half-scale experiment was conducted in Kazakhstan in September and October 2002. Based on a realistic scenario, this experiment enabled many lessons to be learned. It demonstrated in particular the efficiency of exercises in ensuring that the Manual is operationally effective. It resulted in strategic planning for all PTS activities with regard to the training of inspectors, the equipment necessary and the methodology and procedures to be used in conducting inspections. A full-scale exercise is planned for the end of 2007 (or beginning of 2008), which will focus essentially on PTS activities over the next three years in this field.

Conclusion

Although it is difficult to make predictions today about the entry into force of the Treaty, the progress achieved in recent years with regard to the setting up of the verification regime is highly significant. Inasmuch as the resources currently available to the PTS are at least maintained, demonstrating the feasibility of the International Monitoring System is a reasonable objective. This is less true in respect of OSIs. However, such a demonstration necessarily requires measuring the System's performances, which may seem akin to verification activities. This has an effect at the political level within the Preparatory Commission, since many states are against all verification activity before the entry into force of the Treaty. This fundamental difference in approach has led the Commission to opt today by consensus for a budget policy with close-to-zero growth. In the not too distant future, such an option will not necessarily be compatible with the major uncertainties which currently apply to:

- the cost of operating the IMS at the level of performance initially required by the Preparatory Commission for the Treaty to enter into force;
- any adjustments in investment needed to complete the whole network of stations;
- the real cost of developing and validating the On-Site Inspections part of verification, which remains to be estimated correctly today.

The first IMS operating results seem fairly promising in terms of technical performance. Accordingly, consideration is increasingly being given in recent times to the civil and scientific applications of CTBT technologies. Examples include the remarkable quality of the work conducted by the PTS and the World Meteorological Organisation as part of their collaboration agreement concluded in 2003.

Postscript

On 19 November 2004, during its 23rd Session, the Preparatory Commission nominated the Hungarian ambassador Tibor Toth to the post of Executive Secretary of the Provisional Technical Secretariat. He will therefore take over Wolfgang Hoffmann's position as of 1 August 2005. The nomination procedure involved a vote of the Preparatory Commission.

The Concept of Responsibility to Future Generations for the Management and Storage of Radioactive Waste

by Eugénie Vial*

People are afraid of nuclear power. In January 2003, the French research centre for the study and observation of living conditions (*Centre de recherche pour l'étude et l'observation des conditions de vie* – CREDOC) conducted an opinion poll on the French public's perceptions of and attitudes towards radioactive wastes. The answers to the first two questions in the poll confirmed and quantified the public's feelings about the civil nuclear industry, both as regards power generation and radioactive waste management:

> Question 1: With reference to environmental degradation what are the two main issues that people today need to be more informed about, in your opinion?

(Ranked in decreasing order)	**1st answer**	**2nd answer**	**Total**
Water pollution	28	15	43
Air pollution	18	23	41
Accident risks at nuclear power plants	18	13	31
Risks related to radioactive waste	12	17	29
Greenhouse effect and climate change	12	12	24
Deterioration of forests and flora	9	12	21
Endangered species	3	7	10
None of the above	0	1	1
Do not know	0	0	0

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Question 2: About which two subjects in the above list do you think that things are being kept hidden from the public?

(Ranked in decreasing order)	**1st answer**	**2nd answer**	**Total**
Risks of accident at nuclear power plants	37	17	54
Risks related to radioactive wastes	23	31	54
Air pollution	10	13	23
Water pollution	13	9	22
Greenhouse effect and climate change	7	12	19
Deterioration of forests and flora	5	9	14
Endangered species	3	6	9
None of the above	2	2	4
Do not know	1	1	2

In reaction to this latent fear, which is also a factor as regards environmental protection issues, a strong current of opinion has built up that considers industry not as a source of progress, but as a potentially destructive force for the environment, inevitably viewed as having been "better before". The growth of this technophobic trend was accompanied first by the declaration then the imposition of the fundamental, so-called ethical principles aimed at providing guidelines for industry and reconciling its conduct with a duly reassured public. These fundamental principles of environmental protection are: sustainable development; the precautionary principle; the principle of prevention and corrective measures, preferably at source; the polluter pays principle; and, lastly, the principle of public information and participation.

The management of radioactive wastes is governed by very specific legislation that draws on both the law on "conventional" waste management and nuclear law. Given the potential danger of the risks involved and their seriousness over distance and time, the nuclear industry – more than any other industry, including the chemical industry – is at the forefront of discussions on the practical implementation of these principles. Not welcomed by the public, by incorporating these principles – almost universally recognised as fundamental – the nuclear industry hopes that it will gain wider acceptance.

Central to this issue is the concept of the responsibility of present generations to future generations. Expressed by the nuclear industry, then widely disseminated, it is a concept that gives rise to a great many questions that will determine how radioactive waste is managed. For, while there is general agreement that waste – sometimes the legacy of a past not necessarily of our choosing – needs to be managed today, how it is to be managed remains to be determined, and this regardless of the ultimate fate of the civil nuclear programme. The choices to be made are not so simple when one considers the vast number of stakeholders involved in the decision-making process and their divergent interests:

- stakeholders in the nuclear industry, proposing tried and tested technical solutions;

- a public that is very attached to scrupulous adherence to liberal principles that, judging from experience, are difficult to reconcile with the management of an activity that carries major risks;

- policy-makers, who have to take the final decision after weighing up all of the scientific, technical, ethical, environmental, safety and economic and social considerations.

One of the problems today with radioactive waste management is that progress leads to endless questioning of scientific and technical developments. Far from having found the right solutions, nuclear industry actors are only at the research and observation stage: any discovery may corroborate a technique, lead to its further development, or condemn it. One can therefore see just how difficult it is to judge management methods that are still in constant flux by the yardstick of an ethical concept of responsibility to future generations, which itself is changing and ill defined. An ethical concept makes sense only in a specific context: in a changing context, the concept changes.

Long since recognised in the management of radioactive waste, the concept of responsibility to future generations does not have the same implications in 2003 as it did in the 1970s. It seems that as technical and scientific progress is made in the field of radioactive waste management, the implications of this concept grow steadily broader. With the achievement of each technical step towards steadily greater safety, the recognition of this concept requires still more. Hence, responsibility to future generations seems to be an argument that justifies an endless series of new avenues for research, and the progress that has already been achieved is never enough.

I. From the Need for Action…

Recognition of the concept of responsibility to future generations seems, at first, to imply the need to assume responsibility today for the radioactive waste legacy of the past as well as for the waste that is currently being generated. However, this view of things, or more precisely this interpretation, is clouded by the lack of a clear definition of the concept of responsibility towards future generations.

A. Ambiguity of the concept

The concept of the present generation's responsibility to future generations is based on several notions.

First, the notion of responsibility is open to interpretation depending on the context. In the above concept, it seems clear that the responsibility intended is not liability in the conventional legal sense of the term, binding the party or parties concerned to answer for damage before the law and make reparation for any consequences. Here, responsibility is viewed more from the moral angle: any member of the present generation must feel morally bound to contribute to the management of radioactive waste, although they will not be held legally responsible if they do nothing. However, these rudiments of a definition are inadequate inasmuch as there is no hard and fast, tangible dividing line that can be drawn around a moral concept: where does responsibility begin? Where does it end? What does it cover, subject to which principle does it not cover something? The moral concept of responsibility can vary from one actor to another, from one culture to another and from one year to another. Once we acknowledge that a notion cannot be definitively defined, how can it be utilised as part of a concept?

The phrase “present generation” is less ambiguous. It designates anyone and everyone at the same time. The use of this expression is intended to involve every individual citizen in a process that concerns society as a whole rather than the sum of the individuals that make up that society. This said, it is preferable, indeed necessary, that every actor be aware of the issues if society is to be committed.

Lastly, the reference to future generations is fraught with implications, but in legal terms is sufficiently ill defined as to render the concept impracticable. Without defining what is meant, where are we to assume that future generations start? Our children? The fourth generation? Where do they end? Are we to consider that we are morally bound to any generation that comes directly after us until the end of humankind or only to the generation that will grow up 100 years from now? Choosing any of these alternatives would introduce a degree of arbitrariness into the concept and would therefore justify its being interpreted in different ways by different actors and countries and in different times.

The concept of the present generation’s responsibility for future generations can have no indisputable definition in the light of an analysis of its component parts. In an attempt to narrow it down, we must investigate how it differs from other principles with which it is often “lumped together” or “confused”:

- the principle of sustainable development as defined in the Bruntland Report and later in the Rio Declaration is defined as development that “meets the needs of the present without compromising the ability of future generations to meet their own needs”. This principle has been adopted in numerous legally binding texts such as the Treaty of Amsterdam at EU level and the French Environment Code. The concept of responsibility to future generations can be interpreted as ensuing from the principle of sustainable development, but differs from that principle in that it does not, on the face of it, prejudge which choices future generations should make. Furthermore, the aim of the concept of responsibility is not to take decisions about meeting present needs but to assume as much responsibility as possible for whatever choices are made. That said, the principle of sustainable development is broadly provided for in the legislation applicable to radioactive waste;

- the concept of responsibility to future generations is often linked together with the precautionary principle, which states: “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation” (Rio Declaration). Like sustainable development, the precautionary principle has been incorporated into instruments of substantive law, such as the Treaty of Amsterdam and the French Environment Code. Here, again, it does not seem possible to link the concept of responsibility to future generations for the management of radioactive waste with the precautionary principle given that the risks engendered by the presence of radioactive waste are known and identified. There are therefore no grounds for claiming a “lack of full scientific certainty” since there is certainty about the potential risk of exposure to radioactivity.

Curiously, the concept of the present generation’s responsibility to future generations, which is so difficult to define clearly, is widely accepted and advocated. This could be because it can be construed in so many ways: as an ethical concept, not a legal one, it creates a moral duty that everyone can interpret differently and adapt to suit them. It is a “rag-bag” concept advocated both by stakeholders in the nuclear industry and their opponents. The former hold that the solutions proposed for radioactive waste management do not lay the burden of responsibility on the shoulders of future

generations, while the latter claim that, on the contrary, imposing solutions deprives future generations of the freedom to make their own choices and choose their own destiny.

Given the uncertainties that surround the meaning of this concept, it is easy to be critical of these stances, but it is not so easy to come up with a definition that will satisfy all of the actors concerned. That is why the legal frameworks for radioactive waste management make relatively little use of the concept of responsibility to future generations: while it may sometimes be referred to in the preamble to texts, it is very rarely used in prescriptive clauses. More often than not, no reference is made to the notion of responsibility, simply to the concept of taking future generations into account.

Conversely, the concept is frequently utilised in legal theory, which usually employs it without precisely defining what it means while drawing conclusions about it. As a result of dialogue and co-operation on research, the conclusions that are drawn about the application of this concept to radioactive waste management are often similar from one author to the next.

B. The rush to keep pace

No sooner was the concept of responsibility to future generations formulated with reference to radioactive waste than it was interpreted as a requirement to take immediate steps in order to minimise the obligations and risks for future generations. The reasoning behind this is that, since the present generation has benefited from the generation of electricity from nuclear power, it is up to this generation and this generation alone to take responsibility for managing the waste that has been generated in the process. In principle, future generations will not benefit from electricity being generated now and therefore should not have to be involved in managing waste for which they have not chosen to accept responsibility.

The concept has been used mainly in connection with long-lived radioactive wastes, which pose the greatest management problem as it so far exceeds any "human" scale of reference. Waste that is short-lived (30 years or so) is no more of a problem for future generations than a household waste landfill, even less so considering that once a disposal facility has been closed, the waste in it is no longer considered to be radioactive. Intermediate waste, which may be considered to have decayed after 300 years, poses problems that are more or less "manageable". In contrast, it is not possible to manage long-lived waste in the same way as others, i.e. by means of forward planning of human/technical operations. This is doubly so when the waste concerned is both highly radioactive and long-lived.

In the 1970s and 1980s, with the concept of responsibility to future generations in mind, the ideal solution was considered to be the construction of repositories in geological formations at depths varying with the radioactivity level of the waste to be disposed of. This solution relied on having a solid passive barrier to contain radioactivity: a geological barrier. With timescales so far in the future – the design basis for impact studies for deep underground repositories is 10 000 years – trusting any single technique is difficult. While the quality of packaging and the durability of the properties of the storage structures can be guaranteed for a number of years – approximately 300 with our current state of science and technology – it does not seem prudent to rely on only one technology in the long term.

Deep geological disposal was a concept that came at a time when some surface facilities were already in existence, and the technical aspects were more or less well under control. At the time, deep burial was an unexplored avenue on which experts and scientists could be put to work. This idea was behind the next 30 years of technical research.

Bequeathing as few burdens and risks as possible for future generations forms the basis of the policy defined by the Radioactive Waste Management Committee of the OECD Nuclear Energy Agency (OECD/NEA). A collective opinion, "The environmental and ethical basis of geological disposal of long-lived radioactive wastes", issued by this committee states that radioactive waste management policies should be founded on both intra-generational equity and inter-generational equity and favours the disposal solution over storage solutions, which require monitoring and postpone decision-making.

The deep disposal option thus allows long-lived waste to be managed in accordance with the concept of responsibility to future generations insofar as the study of these facilities permit us to state that they do not give rise to risks that are considered unacceptable by the present generation, the only source of reference that is available to us.

Following years of research, the techniques used to build and operate deep disposal facilities also proved to be manageable. Such a facility was no longer an impracticable dream, all that was left to be done was to actually construct and develop one.

At around the same time, in 1989, the Swedish Advisory Committee for Nuclear Waste Management – KASAM – raised a new aspect of the concept of responsibility to future generations in a report entitled "Ethical action in the face of uncertainty". According to this report, since the present generation at the time did not have sufficient knowledge to assume responsibility for all of the conceivable consequences for future generations, it would have to "guarantee coming generations the same right to integrity, ethical freedom and responsibility that we ourselves enjoy." The report's conclusion is, in itself, a good illustration of the approach it recommended: "A repository should be constructed so that it makes controls and corrective measures unnecessary, while at the same time not making controls and corrective measures impossible. In other words, our generation should not put the entire responsibility for maintenance of repositories on coming generations; however, neither should we deny coming generations the possibility of control".

These ideas were reiterated by the International Atomic Energy Agency (IAEA) and by the Radioactive Waste Management Committee of the OECD/NEA in 1995 when they considered the social and ethical aspects of nuclear waste management. However, no major modification was made to the concept of geological disposal since, by definition, a disposal facility must be definitively closed after a certain period of operation and monitoring.

Thus, the debate on the interpretation of the concept of responsibility to future generations has changed and so too have the implications of the concept: whereas yesterday deep disposal enabled the then present generation to feel that they were behaving responsibly towards future generations, today coming generations have to be guaranteed the right to make their own choices in accordance with their own acceptability criteria. This change in interpretation cannot be viewed in isolation from the scientific and technical progress that has been made: any new progress towards meeting the conditions that ensue from the recognition of this ethical concept raises a new set of questions about this principle and new, increasingly advanced technical requirements.

At the current stage of research, incorporating the concept of responsibility to future generations requires that the following two goals be met:

- to hand down to future generations a safety legacy comprising all the skills, scientific and technical knowledge, systems and other tools that the present generation has for controlling radioactive risks. Since a zero-risk legacy is not possible, the present

generation is preparing to leave future generations a risk that has been identified as far as possible, so that they will also be able to control it;

- to implement waste management solutions without delay, while ensuring that it is possible for future generations to reverse the choices made by the present generation and to make a different choice that is in keeping with their own criteria of social acceptability and technical progress.

The wording of these two objectives, guiding current research and decisions, in turn raises many questions. The concept of responsibility to future generations is pushing thinking a little bit further still and is forcing jurists to think about a framework that would provide the best guarantee of meeting these objectives.

II. … To the duty to create conditions that ensure that choices can be reversed

The concept of the responsibility of the present generation to future generations, interpreted in terms of our current state of knowledge and progress, brings us to an area of research where the dividing lines are not very clear. While the objectives have been set, the practical implications, particularly the legal implications relevant to us here, have often not been very clearly identified. However, the consideration of ethical concepts makes us think, or rather makes us re-think, a legal system that is not perfect, inconsistent or incomplete.

A. A widespread problem

Consideration for future generations has to be a factor in the management of all types of radioactive waste, be it short, medium or long-lived waste or very low, low, intermediate or highly radioactive waste. Obviously, the problems posed by each category are not the same but some are common and must therefore be studied carefully.

As a general rule the concept of responsibility, as pointed out above, has made us focus more closely on long-lived waste, whatever its level of radioactivity. The current alternatives for the management of radioactive waste – there are not all that many of them – may be:

- interim storage;
- final disposal;
- incineration;
- transmutation, to lower the radioactivity of the wastes.

The alternatives listed above are not all genuine solutions and, in our view, are no basis for compliance with the concept of responsibility to future generations. For that matter, by definition, storage is no more than a stop-gap solution; useful though it may be if technical progress offers no prospects of a definitive solution, it was never intended to last indefinitely. Stored waste is waste in transit and has to be retrieved so that it can be managed over the long term. Inevitably, this solution raises many questions since the radioactivity of the waste is going to decline during storage. Therefore, even if storage is not what we consider a “responsible” solution, it has to be controlled because it poses real problems.

The first of these problems is unquestionably monitoring: interim storage can be considered only as a cheaper option to final disposal. Consequently, larger numbers of basic facilities requiring less research call for more care to be exercised by facility operators and the authorities alike. Given the temporary nature of interim storage, the duration of which can be adjusted for the level of radioactivity and depth, it is reasonable to assume that it will always have an operator to supervise handling and that the administration will be responsible for monitoring.

Special care is needed when storage comes to an end: once all the waste has been removed and the storage facility is emptied, it can be closed. What should happen to the site? Should monitoring be maintained to ensure that the memory of the location is not lost? If so, who should be responsible for monitoring and for how long? Should the site be derestricted once the facility is closed or only after a period of time deemed long enough to ensure that there is no contamination? What happens if the site is identified as radioactive?

The incineration of radioactive waste is generally a more "low-profile" solution than the three alternatives. Perhaps this is because it is not technically possible today to incinerate all types of radioactive waste, such as long-lived radioactive waste or high-level radioactive waste. This solution, too, raises numerous problems with regard to the future of the site, but also as regards operating methods. The fact is that incineration can certainly dispose of radioactive waste, but it generates radioactive ashes. These, in turn, are classed as waste. As a result, incineration also requires another management solution for handling the radioactive waste that the facility would generate, much reduced in quantity, but with higher concentrations of radioactivity.

Transmutation suffers from this same drawback. The aim of this process is to "transform" highly radioactive waste into intermediate-activity waste, so it does not eliminate radioactive waste, just renders it less dangerous. This line of research, interesting though it may be from a technical standpoint, is not a waste disposal technique. That leaves us with final disposal, which would appear to be the only solution.

This said, all of these types of management raise similar issues.

- What legal procedures are they to be regulated by? On the face of it, it seems to me that it is not fair to subject an interim storage facility to the same licensing procedures as a final disposal facility, since it is not intended to be long term. However, it does also seem fair to seek to adapt the procedures to the radioactivity level of the waste it caters for. In any case, a strict and sufficiently clear legal framework should be adopted at national level.

  That legal framework must cover a wider scope than just the procedures needed to obtain a licence: site closure procedure, dismantling before de-restriction where applicable, monitoring requirements, etc. All of these are, in any case, requirements under the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (see *Nuclear Law Bulletin* No. 60), which invites signatory states to establish and maintain a legislative and regulatory framework at national level.

- What is to happen to the sites? Is it better, as evidence of our responsibility towards future generations, to set up a legal framework guaranteeing that sites that have taken or are now taking radioactive waste will not be used in the future or is it better to de-restrict some sites? Whatever the case, there does seem to be a duty to ensure traceability so that the memory of the activities that once took place there is not lost.

France seems to be tending towards a middle-of-the-road stance somewhere between these two options: sites that take long-lived waste cannot be derestricted and the authorities issue restrictions prohibiting access and use in the future. In contrast, other sites could be derestricted at the end of the monitoring period, the duration of which would vary with the level of radioactivity of the waste; in principle, 50 years for very low-level radioactive waste and 300 years for low-level and intermediate-level waste.

- Who is legally liable for what? The liability system has to be clearly established so that it is possible to identify the person responsible in the event of an accident in the future. There appears to be no moral justification for not clarifying the position of the various actors concerned today – be they waste generators, state or public authorities or waste management facility operators – under the pretext that they will very probably no longer be in existence by the time an accident occurs. It seems that, in the last resort, the state should at the very least take responsibility for such an accident since it is more likely to be longer-lived.

  On this same point, national legislators should be guided by the 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy and the 1963 Vienna Convention on Civil Liability for Nuclear Damage as regards the division of responsibilities. These two conventions should also be used as the basis for setting up an insurance scheme at national level: in the event of a nuclear incident, legal liability brings with it financial obligations to provide compensation, and the means of paying it has to be ensured.

- Who pays for what? We said that interim storage, confining ourselves to this sole issue, is only a stop-gap management technique: all of the waste being sent to an interim storage facility today will have to be removed from it in the future for incineration or final disposal. With the likelihood that interim storage will be the solution chosen, for want of an alternative, how will it be possible for us to estimate the cost of final disposal of this waste? Who should pay for final disposal from an interim facility? To put it still more simply, how can we possibly evaluate the costs, today, of operation and, more importantly, closure of a final disposal facility that will have to be monitored for at least 300 years?

  As an ethical concept, responsibility also obliges us to resolve these issues inside a legal framework so that we do not leave future generations to come up with makeshift solutions, or convert interim storage facilities into final disposal facilities without due precautions, simply to be rid of an embarrassing situation.

  At national level, some countries have already settled the finance issue by setting up ad hoc financial funds, to which waste generators have to contribute. At EU level, the creation of a fund to guarantee finance for the dismantling of nuclear power plants and the management of waste generated by this process is currently under consideration. However, the draft directive on radioactive waste is meeting with a lot of opposition on other points and it is unlikely that it will be adopted soon. Nevertheless, it is prompting discussion in Member States of the European Union that do not have such a fund, like France, where a bill is being drafted to set up a fund solely to finance dismantling.

B. Special features of final disposal facilities for HLLL waste

High-level, long-lived (HLLL) waste is, of course, the waste that poses the most technical problems. It was this category of waste that was behind both the invention of deep geological disposal

facilities with an expected reliability of 10 000 years and the controversy over the interpretation of the concept of the present generation's responsibility to future generations.

As we have seen, the recognition of this concept today brings with it a duty to turn our minds to a form of disposal that may not necessarily be final for future generations which wish to modify it, retrieve and utilise the waste in the facility or employ some new method of management.

Reversibility, a very popular concept, was introduced into the legislation by the United States in 1982 and requires that waste in geological repositories can, should the need arise, be retrieved in the 50-year pre-closure period so that any safety problems identified can be corrected or so that materials contained in the waste can be recovered. Canada followed the same course.

The stance taken by Sweden seems rather more paradoxical, since the regulations make final disposal compulsory but make provision for future generations to employ other management methods. It must be possible to leave final disposal facilities without monitoring and without danger of irradiation for man and environment and they must also be designed so that waste retrieval is possible. The apparent paradox has led to a novel commissioning process that combines a first pilot period of approximately ten years, at the end of which waste can be totally removed if an operating licence is not granted.

Switzerland and France are following the same avenues of research. Switzerland devised the concept of "monitored long-term geological disposal", which involves a step-by-step approach to final disposal and to its reversal. The justification for the final geological disposal phase is that, as acknowledged in the 1970s, final disposal affords the best long-term protection. France did not endorse the duty of reversibility until 2000, simply incorporating into the legislation an avenue of research that had been under investigation for years.

In response to this trend, the IAEA and the OECD qualified their pro-geological disposal stance, which held that it was the only way to meet our responsibilities to future generations: while reversibility has no clear place in the text (the word appears nowhere in the 1997 Joint Convention) and is presented only as yet another ethical argument, the OECD stated that it supported the need to be able to retrieve wastes in the pre-closure phase. It considered this an important factor that lent flexibility to the decision-making process, but avoided specifying whether it was a necessary requirement for disposal concepts, the main objective of which remained the final disposal of waste without the need for monitoring by future generations.

This stance by the OECD seems to be realistic in that it attempts to reconcile two contradictory approaches: how can one build a final disposal facility and yet not close it? The finality of this disposal mode is justified by safety considerations, which outweigh all others. However, it seems difficult to reconcile people on this basis alone and the possibility of retrieving waste might well make this option more acceptable to some. Therefore, one has to try to reconcile the irreconcilable.

Giving future generations the option of retrieving waste from disposal facilities could backfire, unless their right to do so is limited in time. Indeed, the idea of totally containing waste to ensure greater safety, conflicts with the idea of opening up disposal facilities on request as this could create an obvious contamination path. Reversibility must have an end and become irreversible at some stage.

It should also be pointed out that reversibility, a liberal principle, is not without cost for the present generation in terms of the research that it has necessitated over many years and the additional development that will be needed to achieve it. This said, neither is it without cost for future

generations, which will have to finance waste retrieval and, where the need arises, new disposal methods.

Furthermore, reversibility makes preserving the memory of the site a still more sensitive issue: how are we to ensure that future generations concerned by the possibility of retrieving the waste will know that it is a possibility?

As the last phase, to date, in the recognition of the concept of responsibility to future generations, reversibility has raised a number of issues and concerns not the least of which is that decisions are not being made but constantly postponed under the pretext of improving what is technically feasible.

STUDIES

Transposition into Swiss Law of the Paris Convention and the Brussels Supplementary Convention, as amended

by Renato Tami and Sandro Daïna*

1. General situation and law applicable

The Federal Act on Nuclear Third Party Liability of 18 March 1983 [LRCN, *Recueil systématique du droit fédéral* (RS) 732.44; see *Nuclear Law Bulletin* Nos. 23, 25, 29, 31, 33 and 49, the text of this act is reproduced in the Supplement to NLB No. 32] is based on the following principles:

- channelling of liability to the operator of a nuclear installation;
- causal liability of the operator of a nuclear installation;
- unlimited liability;
- limitation of the amount of cover to 1 billion Swiss francs (CHF) (approx. EUR 660 million) plus CHF 100 million (approx. EUR 66 million) to cover interest and legal costs.

The act is implemented by the Ordinance of 5 December 1983 on Nuclear Third Party Liability [ORCN, RS 732.441; see *Nuclear Law Bulletin* No. 61].

Under Section 11(1) LRCN, operators of nuclear installations must take out private third party liability insurance to cover insurable (or contractual) risks. When the act came into force (1 January 1984), private insurers were not in a position to insure the whole mandatory cover of CHF 1 billion (plus 100 million). The difference between the amount which private insurers could cover and the figure of CHF 1 billion was covered by the Swiss Confederation through federal insurance. Pursuant to an amendment of the ORCN, the amount to be covered by private insurance was raised in stages to reach CHF 1 billion. Thus, since 1 January 2001, the sum of CHF 1 billion has been covered entirely by private insurance.

For its part, the Confederation continues to insure non-contractual risks for up to CHF 1 billion, i.e. those which private insurers may choose not to cover (and which are indeed excluded from the

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cover offered by private insurance). These include: nuclear damage caused by exceptional natural phenomena or acts of war; claims in respect of which no action has been brought within ten years of the event causing damage or the end of prolonged exposure; claims in respect of which no action has been brought within 20 years of the loss, theft, abandonment or end of the possession of nuclear substances. As from 1 January 2003, the Confederation has also insured nuclear damage between CHF 500 million and 1 billion (EUR 330-660 million) caused by terrorist acts against which protection at a bearable cost is impossible [Sections 11(3) LRCN, and 4 ORCN]. Private insurance covers nuclear damage caused by terrorist acts of whatever kind up to CHF 500 million only.

As an insurer, the Swiss Confederation charges the operators of nuclear installations or transport licence-holders annual or occasional insurance premiums. These premiums, together with any interest they earn, are paid into the nuclear damage fund [Sections 14 and 15 LRCN]. At 31 December 2003, the nuclear damage fund amounted to CHF 321 million (approx. EUR 215 million). This money can be used only to compensate the victims of nuclear damage as defined in the LRCN.

2. Reasons for a revision of the Nuclear Third Party Liability Act

By adopting the principle of unlimited liability and establishing the amount of cover at CHF 1 billion, the 1983 Act on Nuclear Third Party Liability still corresponds today with international standards. When introducing unlimited liability, parliament was fully aware that Switzerland could not then ratify the international conventions on third party liability for nuclear damage which were in force at the time, given that these conventions were based, *inter alia*, on the principle of limited liability.

That is why the Swiss authorities have started work on revision to improve further the high level of protection enjoyed by victims under the present LRCN. Improvement is possible in two spheres in particular.

2.1 Raising the amount of cover

While the present cover of CHF 1 billion is high by international standards, it nevertheless remains relatively low compared to the huge potential damage a nuclear accident could create. At the request of the Federal Energy Office, the University of Zurich carried out a study of the costs involved in raising the amount of cover. If cover were doubled to CHF 2 billion (approx. EUR 1 320 million), this would lead to an increase in the price of electricity produced by nuclear power plants of around CHF 0.01 cents per kWh (approx. EUR 0.006 cents). Increasing the amount of cover to CHF 4 billion (approx. EUR 2 640 million) would lead to marginal costs of EUR 0.017 cents per kWh (approx. EUR 0.011 cents). The study concluded that such marginal costs would have almost no negative effect on the competitive capacities of nuclear energy.

To ensure enhanced protection for victims and in light of the planned ratification of the revised Paris and Brussels Conventions, it has been decided to increase the amount of cover at least up to the level offered under the revised Brussels Supplementary Convention, namely EUR 1 500 million (CHF 2.25 billion). A higher cover amount is, nevertheless, being discussed within the federal administration.

2.2 Ratification of the revised Paris and Brussels Conventions

The Paris and Brussels Conventions, as amended, expressly allow for a State Party to adopt, in its national legislation, the principle of the unlimited liability of nuclear installation operators. Article 7 of the revised Paris Convention no longer contains a maximum liability amount, but now lays down a minimum liability amount for nuclear installation operators. In Article 10 of the revised Paris Convention, there is even a provision relating to the amount of cover to be established where the liability of the operator is unlimited.

Ratification by Switzerland of the two revised Conventions would have the following advantages:

- a guarantee of equal treatment for Swiss victims in the event of a nuclear accident occurring abroad but with repercussions in Switzerland;
- the possibility of claiming compensation on the basis of the material and formal rules laid down by the conventions and which are applicable independently of national borders;
- the guarantee of non-discriminatory treatment and of the assessment of Swiss or foreign compensation claims by a single competent court;
- access to the third tier of the revised Brussels Supplementary Convention should nuclear damage caused by a foreign nuclear installation have prejudicial consequences in Switzerland.

The fact of Switzerland's not belonging to an international scheme for nuclear third party liability is a major disadvantage not only for Swiss victims of any nuclear accident but also for the operator responsible for a Swiss nuclear installation. In the absence of a public international law provision, it is extremely complicated to claim compensation given that victims have no choice other than to use ordinary foreign civil procedures to bring an action. They have, moreover, no guarantee that they will be treated on the same footing as victims of the state in which the accident took place, nor, indeed, do they have any guarantee of receiving any compensation whatsoever.

3. Incorporating the international conventions into Swiss law

The operative part of the revised Paris Convention [Articles 1 to 15] is formulated in such a way as to be directly applicable as if it were national law. National legislators do not have to transform this international Convention into national legislation for the courts to be able to apply it directly. This self-executing application means that there is no danger of misinterpreting the text of the Convention when reformulating it in national law.

This does not, however, apply to the Brussels Supplementary Convention. This Convention creates rights and obligations between Parties to the Convention exclusively, namely states. It does not apply to individuals, which explains why the Brussels Supplementary Convention needs to be reformulated in national law.

Ratifying the two Conventions therefore has a direct effect on the form and content of the revised Federal Act on Nuclear Third Party Liability. The directly applicable provisions of the Paris Convention will not be reformulated in the new draft LRCN, thereby avoiding difficulties of implementation and interpretation. The revised act refers as often as possible to the international

conventions and gives practical expression only to those few provisions of the conventions which are not directly applicable. The new bill also regulates areas which are not dealt with by the conventions or which the conventions leave to the jurisdiction of the national legislator.

Switzerland formulated two reservations when signing the Protocols to amend Paris and the Brussels Conventions:

Under Article 8(f) of the revised Paris Convention, any person suffering nuclear damage who has brought an accident for compensation within the time period provided may amend his claim in respect of any aggravation of such damage after the expiry of this period provided that final judgment has not been entered by the competent court. This does not, however, authorise any national legislation to provide that a final and enforceable judgment may be subject to review (appeal). The possibility of requesting final and enforceable judgments to be reviewed corresponds, however, to Swiss legal tradition. That is why both the current and revised LRCN provide that a request for a final and enforceable judgment to be reviewed can be made when the state of health of the victim deteriorates or when new facts or evidence are submitted [Section 10(3) LRCN].

The second reservation concerns Article 9 of the revised Paris Convention. This article excludes the operator's liability for any nuclear damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war or insurrection. Under the current LRCN, operators are also liable for damage caused by an incident due to acts of war. This liability must be maintained in the revised LRCN so as to maintain a degree of protection for victims which is as high as under the present act. That is why Switzerland formulated a reservation to Article 9 of the revised Paris Convention.

4. Work on revision of the Federal Act on Nuclear Third Party Liability

As part of the preparations for a first draft of the revised LRCN, a working party was set up under the supervision of the Federal Energy Office. It comprises a representative of nuclear operators, the Swiss Nuclear Insurance Pool, the Federal Finance Administration, the Federal Justice Office and the Public International Law Directorate. The working party engaged the services of Mr. Norbert Pelzer, from the University of Göttingen, as an expert in the field of nuclear third party liability.

The draft revised LRCN, together with an exhaustive explanatory report, were completed in mid-2004, but are only at an internal stage. It is now planned to distribute these documents as part of a large-scale external consultation procedure. Under this procedure, the cantons, political parties, organisations representing business and workers, economic policy organisations and associations for consumer and environmental protection, will all be consulted. Apart from these persons consulted officially, anyone may express an opinion about the documents made available for consultation. After analysing the results of the consultation procedure, the government will decide on any amendments to be made to the bill and explanatory report, before submitting them to parliament, probably in the course of the year 2005. The revised LRCN could enter into force in 2007.

5. Problem areas and pending questions

The main problem arising in relation to the incorporation into Swiss law of the revised Paris and Brussels Conventions lies in the complexity of the subject matter. These Conventions are difficult for the layperson to understand. Since the revised Paris Convention is directly applicable but not the revised Brussels Supplementary Convention, the draft revised LRCN appears as being incomplete and

not very detailed. The result is that it is a real challenge to draft the explanatory report on the bill and the revised Conventions. It was nevertheless necessary to make this report extremely clear to ensure that the project did not founder already during the consultation procedure.

Private insurers will not be in a position to make available the amount of cover required under the Brussels Supplementary Convention and equivalent to EUR 1 500 million or a higher amount. The Swiss Confederation will therefore have to substitute itself for private insurance and cover the difference between the amount available under such insurance and the maximum amount provided for under the revised Paris/Brussels system. Calculating the federal premium, to be paid into the nuclear damage fund (see Section 1, *in fine*), will be extremely delicate and complex given that it will have to take account of all non-treaty risks (those which are excluded from insurance policies) as well as the amount of damage arising from treaty risks but not covered by private insurance.

6. Conclusions and thanks

Apart from the considerable increase in the amounts of cover, two basic factors lie behind the Swiss government's decision to propose shortly to parliament a draft revised LRCN. These are, firstly, that the revised Paris/Brussels system still incorporates the principle of the limited liability of the operator of a nuclear installation but now contains a minimum liability amount (liability threshold) and no longer a maximum amount (liability ceiling), and secondly, that the States Parties are allowed to provide in their national legislation for the unlimited liability of operators. One of the aims of ratifying the revised Conventions is to enable most victims to obtain fair compensation on an egalitarian basis for damage caused by a nuclear incident, and also to join an international system for compensating nuclear damage based on solidarity between states, most of them nuclear.

The authors of this article wish to express their warm thanks to the Revision Group for the Paris/Brussels Conventions constituted by the States Parties (CPPC Group) for allowing Switzerland to take part in its work. This participation enabled the Swiss authorities to become more familiar with the highly complex compensation rules and mechanisms. This greatly assisted understanding of the texts and, in turn, their explanation to the working party responsible for revising the LRCN. We trust that our participation in the work of the CPPC Group will help us to explain better the need for our country to adhere to an international mechanism for compensating nuclear damage which applies in most European nuclear states and which, we are convinced, is set to spread further to some other of the states which joined the EU on 1 May 2004.

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

France

Judgement of the Appeal Court of Limoges Regarding the Dumping of Radioactive Waste by Cogema (2004)

Since 1949, the mining division of La Crouzille which is attached to the General Company for Nuclear Materials (*Compagnie générale des matières nucléaires* – Cogema) operated uranium mines in Haute-Vienne. Although the mining and processing of uranium came to an end in 2001, there are still residues present in this area. Doubts were raised as to the airtightness or sealed nature of the storage sites by nature protection associations, which demanded expert analysis of the situation. Tests were carried out in particular by the Independent Research and Information Commission (*Commission de recherche et d'information indépendantes* – CRII-RAD) and the Centre for the study of the metrology of nuclear radiation and dosimetry (*Centre d'étude de métrologie des rayonnements nucléaires et de dosimétrie* – CEMRAD). Some of these analyses demonstrated chemical and radioactive contamination of sediment taken from several streams and also the Saint-Pardoux lake.

A claim was lodged with the criminal court on 18 March 1999 by the association *Sources et Rivières du Limousin* (Springs and Rivers of Limousin). The complaint was based on a number of heads of action: the endangering of other peoples' lives (*mise en danger de la vie d'autrui*), the dumping of waste containing radioactive substances, as well as the release into water of pollutants causing damage pursuant to Articles L.432.2 (protection of fish fauna and its habitat) and L.216.6 (criminal sanctions for pollution damage) of the Environmental Code.

In March 2002, the federation entitled *France Nature Environnement* associated itself with this claim as another civil party to the action (*partie civile*).

In an Ordinance of 18 August 2003, the examining judge (*juge d'instruction*) considered that the head of action involving the endangering of other peoples' lives was not applicable. He did nevertheless order that the case be returned to the Magistrates' Court (*tribunal correctionnel*) to be judged in respect of the offences, committed since 1990, concerning the dumping of waste containing radioactive substances as well as water pollution causing damage to fish fauna.

An appeal was lodged by the State Prosecutor against this ordinance, in that it ordered that the Cogema case be returned to the Magistrates' Court. The judgment delivered on 25 March 2004 by the instructing chamber of the Court of Appeal of Limoges confirmed the litigious ordinance in all respects.

In relation to the offence of dumping of waste, the Court proceeded to examine the various requirements which Cogema is obliged to implement under the legislative and regulatory framework. It pointed to the absence of a clear definition of the notion of "nuclear waste". The 1977 Decree establishing the list of waste whose abandonment or disposal are punishable under Article L.541-46 of the Environmental Code by two years' imprisonment and a EUR 75 000 fine, does mention radioactive waste but does not provide a definition. The Court therefore took the approach taken by the International Atomic Energy Agency as a starting point, i.e. shall be considered as radioactive waste "material that contains or is contaminated with radionuclides at concentrations or radioactivity levels greater than clearance levels established by the appropriate authority and for which no use is foreseen".* The judgement proceeds to mention several national texts which define concentration levels for radionuclides or limits for exposure to radiation. It refers in particular to the 1966 Decree on general principles of protection against ionising radiation and 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 (see *Nuclear Law Bulletin* Nos. 52 and 58).

The Court, without ruling on an explicit definition of radioactive waste, carried out a comparison of these standards and examined the results of the tests in the file concluding that the radioactivity of the waste in question exceeded acceptable limits. The Court considered that the statement made by the state prosecutor, according to which Cogema had respected the various requirements to which it is subject, as the controlling authority, the Regional Directorate for Industry, Research and the Environment (*Direction régionale de l'industrie, de la recherche et de l'environnement* – DRIRE) had never issued statements of offences (*procès-verbal d'infraction)* to Cogema, was manifestly contradicted by several elements in the file. Several reports and analyses of springs and rivers close to the Cogema installations demonstrate the presence of radioisotopes whose concentration exceeds the limits established by radiation protection standards.

Concerning the allegations in relation to pollution of fish fauna and the fish habitat pursuant to the Environmental Code, the Court relied on previous case-law to demonstrate that the substances released, contrary to the mineral in its raw-material form, contained unstable and soluble radio-elements and that damage to stream beds causing (a) reductions in fish food and (b) radioactive contamination of fish flesh affecting its value as a comestible product. The Court rejected the argument made by the state prosecutor according to which these radioelements are naturally present in the water, and considered that the evidence of damage under Article L.432-2 of the Environmental Code linked to the release of radioelements was sufficiently established.

Concerning the moral element of the charge, the Court based itself on the culpable negligence of Cogema which, in view of its world-wide reputation based on its legal and technical expertise, and its efforts to protect the environment, could not have been unaware of the contamination of nearby streams and should have remedied this problem, even in the absence of intervention by the DRIRE.

The Court further noted that these offences allowed Cogema to lower operating costs, and therefore the environmental costs of these activities would be borne by the inhabitants of the Limousin area. In light of the substantial profits made by Cogema in the field of uranium mining, the Court judged that the polluter pays principle must be applied here.

The appeal lodged by Cogema against this decision was rejected by the French Supreme Court (*Cour de cassation*) on 3 November 2004. Therefore, the case will be returned to the Magistrates'

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* *Principles of Radioactive Waste Management*, Safety Series No. 111-F, IAEA, Vienna (1995).

Court (*tribunal correctionnel*) to be judged in respect of these offences concerning the dumping of waste containing radioactive substances.

Slovak Republic

Judgement of the Slovak Constitutional Court on Greenpeace claim (2004)

On 24 June 2004, the Constitutional Court of the Slovak Republic delivered its judgement in respect of the claim entered by Greenpeace Slovakia objecting to the breach of their basic constitutional rights by the ruling of the Supreme Court of 23 October 2003 (see *Nuclear Law Bulletin* No. 72).

Based on Act 211/2000 Coll. on Free Access to Information, Greenpeace had requested, in June 2002, that the Slovak Nuclear Regulatory Authority (NRA) provide certain information on thermal and hydraulic analysis in the safety reports concerning the reconstruction of the V-1 Bohunice NPP.

The NRA withheld the requested information on the basis of Article 10 of the Act on Free Access to Information, which provides that information which is classified as commercial secret shall not be made available to the public. Following a complaint issued by Greenpeace, the Head of the NRA conducted a second proceeding which confirmed the first decision.

Proceedings for judicial review were filed with the Supreme Court in October 2002. Greenpeace claimed that the NRA had 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 event, be considered to be a commercial secret. The NRA responded that information classified as a commercial secret should not be made available, and further it was not within the competence of the NRA to determine 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. These proceedings resulted in a ruling on 25 March 2003 in favour of the NRA, upholding its decision not to provide Greenpeace with the requested information. This ruling was confirmed by the Supreme Court upon appeal on 23 October 2003.

Greenpeace filed a complaint with the Constitutional Court of the Slovak Republic on the grounds that their basic rights under Article 26, Section 2 (right to information) and Article 46, Sections 1 and 2 (right to a fair trial) of the Constitution had been breached. Greenpeace requested that the previous ruling of the Supreme Court be overturned, the matter be reconsidered by the Supreme Court and that compensation of 50 000 Slovak crowns (approximately 1 250 EUR) plus costs be awarded.

On 24 June 2004, the Constitutional Court of the Slovak Republic ruled* that:

- the Supreme Court breached the right of Greenpeace Slovakia to information under Article 26, Section 2 of the Slovak Constitution, together with the right to have the lawfulness of a decision taken by a public administration body examined by a court. According to the Constitutional Court, the Supreme Court could not conclude that the NRA had the right to refuse to divulge the information requested without having

* An unofficial English translation of this ruling, kindly provided by the Slovak authorities, is available from the NEA upon request.

demonstrated that the public electricity company Slovak Electric could not be considered as a person required to diffuse the information requested;

- the ruling of 23 October 2003 of the Supreme Court is annulled and this matter shall return to that Court to be re-examined;
- the remaining part of the complaint filed by Greenpeace Slovakia is rejected;
- Greenpeace is entitled to reimbursement of legal fees by the Supreme Court.

This claim will therefore return to the Supreme Court for further proceedings. That Court will be bound by the findings and opinion of the Constitutional Court which are not subject to appeal.

ADMINISTRATIVE DECISIONS

Sweden

Decision of the Environmental Court on permits for Studsvik Nuclear AB and Svafo AB (2004)

Under Swedish legislation, operators of nuclear installations are required to obtain permits pursuant to both the 1984 Act on Nuclear Activities [Section 3] (the text of this act is reproduced in the Supplement to NLB No. 63) and the 1998 Environmental Code [Article 808] (see *Nuclear Law Bulletin* No. 63). Since the entry into force of the Environmental Code in January 1999, it is thus no longer sufficient to obtain a permit under the nuclear legislation alone. The transitional provisions of the Environmental Code provide that an operator which was already operating an installation when the new rules entered into force has until December 2005 to submit its application for a permit to the Environmental Court.

In assessing an application, the Court shall examine a broad range of questions. Along with the safety requirements laid down in the Nuclear Activities Act, the applicant shall also show that the installation it operates complies with the common rules of consideration laid down in Chapter 2 of the code.

According to these general rules, preventive measures shall be taken when any damage, or risk thereof, to human health or the environment can be foreseen. In practice, this requires that any person operating a nuclear facility shall have the necessary knowledge and take the appropriate protective measures. Consequently, this person shall select a suitable site for the activity, use the best possible techniques, envisage the possibility of re-use and recycling, and avoid using chemical products or bio-technical organisms that may involve risks and that can be replaced with similar less dangerous products or organisms.

Furthermore, the Environmental Code provides additional requirements to be complied with by the operator of a nuclear installation, such as maximum levels for noise, vibration, light and radiation, and sustainable management of resources. An application shall also contain an Environmental Impact Assessment (EIA) which must be approved by the Court in order to obtain a permit.

Studsvik Nuclear AB, a company that *inter alia* operates research reactors outside Nyköping, has held a permit for nuclear activities under the nuclear legislation since 1959. Pursuant to the provisions of Chapter 9 of the Environmental Code, in 2003 the company submitted an application for a permit under the Environmental Code to the Environmental Court of Stockholm.

Svafo AB, another company undertaking nuclear activities, primarily in the field of nuclear waste management, and also located in Studsvik, submitted a similar application for a permit under Chapter 9 of the Environmental Code. Since these two companies belong to the same group, and the application consisted of the same elements, the cases were handled jointly both by the applicants and by the Environment Court.

After written and oral proceedings, the Environmental Court of Stockholm made public its decision on 19 May 2004. It approved both applications, deciding that *Studsvik Nuclear AB* and *Svafo AB* are permitted to operate according to the Environmental Code. The *Studsvik* permit was made subject to a number of conditions concerning *inter alia* noise levels. *Studsvik Nuclear AB* was also obliged to establish financial security in the form of a bank guarantee designed to cover measures relating to shutdown and other decommissioning measures. The *Svafo AB* permit was also made subject to a certain number of conditions.

This is the first case where an Environmental Court in Sweden assessed and approved an application to carry out nuclear activities under the Environmental Code. In the near future, similar proceedings will take place, as other operators of nuclear power plants are also in the process of applying for permits under the Environmental Code.

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

Australia

Radiation protection

National Directory for Radiation Protection (2004)

At its meeting of 29 July 2004, the Australian Health Ministers' Conference (AHMC) endorsed the 1st Edition of the National Directory for Radiation Protection (NDRP)* as the uniform national framework for radiation protection in Australia. The development of this Directory was launched in August 1999 by AHMC with a view to achieving uniformity in radiation protection practices between jurisdictions. AHMC also agreed that upon approval of the provisions of the Directory, the regulatory elements of the Directory shall be adopted in each jurisdiction as soon as possible, using existing commonwealth/state/territory regulatory frameworks.

The NDRP provides:

- uniform requirements for the protection of people and the environment against exposure or potential exposure to ionising and non-ionising radiation;
- uniform requirements for the safety of radiation sources, including provision for the national adoption of codes and standards;
- clear regulatory statements for adoption by the commonwealth, states and territories into their legislation.

The development of the NDRP involved full consultation with stakeholders including: consultation within the National Competition Policy (NCP) Review in March 2001, government consultation within each of the jurisdictions in February 2002; the release of a discussion draft for public consultation from December 2002 to January 2003; and preparation of a Regulatory Impact Statement (RIS) and a further period of public comment on both the RIS and the consultation draft. This second public comment period took place from March to April 2004.

The NDRP will be completed in stages therefore some sections of the current edition do not contain details of radiation protection requirements or guidelines. Where this is the case, a short commentary has been provided on what can be expected in future editions of the NDRP. This edition will not apply to mining and mineral processing industries, which would require further consultation with the industry, completion of the Code of Practice on mining and mineral processing and

* This document can be downloaded from ARPANSA's Web site at the following URL: www.arpansa.gov.au/rps6.htm

development of a process for consideration of exemptions and specification of incident reporting requirements in the industry.

The Directory is made up of three parts. Part A sets out the agreed overall framework and general principles for radiation protection in Australia, including the justification of practices; limitation of radiation does and optimisation of protection and safety; management requirements for the establishment of a safety culture; technical requirements to ensure that radiation sources remain within control and are safe; processes for verification of safety and security; risk management principles and intervention actions. Legislation must include the objective of protecting the health and safety of people and the environment from the harmful effects of ionising and non-ionising radiation.

Part B of the Directory contains the uniform regulatory elements, which are to be adopted by each jurisdiction, within its particular regulatory framework. It specifies the scope of regulation by setting out exemptions and exclusions from the regulation. It also gives some guidelines to implement the authorisation procedure, as well as to adopt Codes and Standards.

Part C of the Directory contains Guidance for Best Practice that will assist regulators in adopting consistent approaches, but is not regulatory in nature. This part, which will be further developed in the next edition of the NDRP, is limited at present to intervention in radiological emergencies and chronic exposure situations, and on patient discharge recommendations.

Schedules to the Directory provide additional detailed requirements that form an integral part of the uniform regulatory elements of the Directory. They relate *inter alia* to dose limits, categories of non-ionising radiation, radiation facilities, exemption levels, competency requirements for authorisation to use radiation sources to specified practices, requirements for licensing specific practices and the national incident reporting framework.

Annexes to the Directory provide advisory material and background information on the provisions of the Directory.

Cameroon

Organisation and structure

Decree on the National Radiation Protection Agency (2002)

This Decree on the establishment, organisation and functioning of the National Radiation Protection Agency was adopted on 31 October 2002 in implementation of the 1995 Act on Radiation Protection (see *Nuclear Law Bulletin* Nos. 53 and 56).

The National Radiation Protection Agency is a public administrative body with legal personality and financial autonomy. It is placed under the technical supervision of the Ministry in charge of Scientific Research and under the financial supervision of the Ministry for Finance. The Agency is responsible for ensuring the protection of persons, property and the environment against ionising radiation. To this end, it proposes radiation protection standards and monitors compliance with the relevant regulations inside ionising radiation facilities. It is also responsible for establishing emergency plans.

The decree sets out the organisation and functioning of the Agency which comprises two bodies. The Board of Directors is composed of 12 members including the chairperson, all of whom are

designated by presidential decree. It has full powers to administer the Agency, define and establish its general policy and assess its management within the limits established by its statutes. It can also assign certain powers to the director general who reports back on the exercise of such powers. The chairperson of the Board convenes and chairs meetings of the Board which take place twice a year.

The Directorate General, the second Agency body, is headed by a director general designated by presidential decree. The director general is in charge of managing and implementing general policy of the Agency under the control of the Board of Directors to whom he/she reports. The director general is in charge of the technical, administrative and financial management of the Agency.

The financial resources of the Agency, which include public subsidies, are public funds managed in accordance with state financial rules. The Agency accounts are controlled by an accountant and an auditor.

Chinese Taipei

Radiation protection

Nuclear Emergency Response Act (2003)

This act, promulgated on 24 December 2003 by presidential decree, is aimed at establishing an emergency response system in the event of a nuclear accident and at strengthening emergency response functions in order to ensure the safety and health of the public and to protect their property.

The first of the seven chapters of this act establishes general principles. The Atomic Energy Council (AEC) is designated as the competent authority at central government level; at local level the municipal government and the county (city) government are responsible for emergency planning zones.

Chapter II provides further details on the organisation and responsibilities of the different bodies involved in emergency response. The competent central authority – the AEC – classifies nuclear accidents according to their gravity and lays down response and notification provisions accordingly. In the case of an accident, the AEC shall activate the National Nuclear Emergency Response Centre and the Radiation Monitoring and Dose Assessment Centre. The National Nuclear Emergency Response Centre shall *inter alia*:

- plan and supervise the implementation of response measures;
- notify the local authorities and the Ministry of Defence to activate other assistance mechanisms;
- make information available to the public; order public protection actions.

The local competent authority shall activate a Regional Nuclear Emergency Response Centre which will work in tandem with the National Centre on the above topics.

The Radiation Monitoring and Dose Assessment Centre is responsible for carrying out radiation measurements of persons, vehicles and the environment. It shall also evaluate the public radiation doses and propose protective measures accordingly.

There is also a Nuclear Emergency Support Centre activated by the Ministry of National Defence which carries out decontamination operations, carries out radiation measurements, and assists the regional centres in carrying out evacuation, transportation, sheltering, relocation, distribution of medical care and/or iodine.

Chapter III provides for the establishment of emergency preparedness measures, including an Emergency Planning Zone (EPZ) in the vicinity of a nuclear facility, which shall be reviewed and revised periodically. It establishes the responsibilities of the central competent authority (the AEC), the regional competent authorities and the licensees in respect of the definition and implementation of an Emergency Response Basic Plan and "local" response plans, all of which are submitted to the executive yuan for approval. Exercises and training are to be organised within the EPZ in co-operation with local authorities and the public.

Chapter IV of the act governs emergency response measures. Upon notification of a nuclear accident or risk of same, it provides for the activation of the National Nuclear Emergency Response Centre and the Radiation Monitoring and Dose Assessment Centre. It states that the government shall inform neighbouring countries and the competent international organisations, and shall request assistance where necessary.

A Nuclear Emergency Recovery Committee may be established under Chapter V to, *inter alia*, establish measures of recovery and supervise their implementation, notify government agencies and the licensee of the measures which should be implemented, coordinate staffing and resources for recovery.

Penal provisions, set out in Chapter VI, provide for penalties from 200 000 New Taiwan Dollars[1] (TWD) to TWD 5 million[2] in respect of violation of the provisions of this act.

Finally, Chapter VII provides that the Atomic Energy Council shall collect an annual premium from the licensees of nuclear installations in order to set up a Nuclear Emergency Response Fund to support response operations.

An English version of this act is available from the website of the AEC at the following URL: www.aec.gov.tw/english/

Estonia

Radiation protection

Radiation Act and its implementing regulations (2004)

A new Radiation Act was adopted on 24 March 2004 and entered into force on 1 May 2004. It was proclaimed by the president on 7 April 2004 and was published in the State Gazette on 16 April 2004. This act repeals and replaces the Radiation Act of 1997 (see *Nuclear Law Bulletin* No. 60; the text of this act was reproduced in the Supplement to NLB No. 61).

1. This amount is equivalent to approximately EUR 4 800.

2. This amount is equivalent to approximately EUR 120 000.

The objective of the act is to provide basic safety standards for the protection of persons and the environment against the dangers arising from ionising radiation and to establish the rights, obligations and liability of persons who use ionising radiation.

This act regulates radiation practices and activities involving natural radiation sources where such practices or activities may lead to a significant increase in the exposure of workers or members of the public. It also governs intervention in the event of a radiological emergency or in cases of lasting exposure resulting from the after-effects of a radiological emergency or a past practice. The act does not apply to exposure to radon in dwellings, to cosmic radiation prevailing at ground level or to aboveground exposure from radionuclides naturally present in the earth's crust.

An English translation of this legislation is currently underway and shall be published in a future edition of the *Nuclear Law Bulletin.*

The Radiation Act provides for adoption of a total of 15 implementing regulations. To date, nine of these regulations have been adopted:

- Regulation No. 41 of 29 April 2004 of the Minister of Environment governing the Procedure for Issuing Licences for Activities Involving Radiation, published in the State Gazette on 7 May 2004, entered into force on 10 May 2004;
- Government Regulation No. 163 of 30 April 2004 on the Bases for Calculation of Exemption Values, and the Exemption Values for Radionuclides, published in the State Gazette on 4 May 2004, entered into force on 7 May 2004;
- Government Regulation No. 193 of 17 May 2004 on Effective Dose and Equivalent Dose Limits for the Lens of the Eyes, Skin and Extremities for Exposed Workers and Members of the Public, published in the State Gazette on 26 May 2004, entered into force on 29 May 2004;
- Government Regulation No. 243 of 8 July 2004 on Procedure Specifications for Processing Documents relating to Import, Export and Transit of Radioactive Waste Based on Country of Origin and Destination, published in the State Gazette on 16 July 2004, entered into force on 19 July 2004;
- Government Regulation No. 244 of 8 July 2004 on Statutes for the Maintenance of the State Dose Register of Exposed Workers, published in the State Gazette on 16 July 2004, entered into force on 19 July 2004;
- Regulation No. 86 of 8 July 2004 of the Minister of Environment on Requirements for Exposed Workers' Radiation Safety Training, published in the State Gazette on 20 July 2004, entered into force on 23 July 2004;
- Regulation No. 93 of 14 July 2004 of the Minister of Environment on Intervention and Action Levels, and Emergency Exposure Guidance in a Radiological Emergency, published in the State Gazette on 27 July 2004, entered into force on 30 July 2004;
- Regulation No. 110 of 27 August 2004 of the Minister of Environment on Requirements for the Results of Individual Monitoring of Outside Workers, and for Formalising such Results, and for the Standard Format for the Dose Chart of Outside Workers, published in the State Gazette on 9 September 2004, entered into force on 12 September 2004;
- Regulation No. 113 of 7 September 2004 of the Minister of Environment on Requirements for the Rooms Where Radiation Sources are Situated and for Labelling

Thereof and for the Working Rules for the Radiological Work Performance, published in the State Gazette on 16 September 2004, entered into force on 19 September 2004.

France

Radiation protection

Act on Public Health Policy (2004)

This Act No. 2004-806 of 9 August 2004 provides, *inter alia*, for the establishment of a team of radiation protection inspectors.

Radiation protection inspectors are nominated by the administrative authority amongst:

- inspectors of installations classified for environmental protection purposes;
- administrative officers responsible for Mine and Quarry Surveillance;
- administrative officers of state departments in charge of environment, industry and health, as well as public bodies under the supervision of the Ministers for the Environment, Industry and Health with powers in the field of radiation protection;
- administrative officers of the Institute for Radiation Protection and Nuclear Safety (*Institut de radioprotection et de sûreté nucléaire*).

As regards installations and activities connected with national defence, inspections are carried out by officers designated by the Minister of Defence or the Minister for Industry depending on their respective responsibilities.

Inspectors are required to check compliance with provisions on the protection of workers and the public against the dangers of ionising radiation. As regards workers, inspectors exercise their professional responsibilities in tandem with labour inspectors.

Radiation protection inspectors are certified and subject to privilege and confidentiality requirements. They have access to sites, place, installations and means of transport subject to the regulations which they control between 8 a.m. and 8 p.m., or outside this timeframe when public access is authorised or when an activity is taking place. Irrespective of the criminal proceedings which can be initiated when access is denied, they can request authorisation to enter from the chairperson of the *Tribunal de grande instance* (higher civil court).

Inspectors can also ask for notification of all documents relevant for the accomplishment of their tasks in whatever format, make copies, take samples and ask for any necessary information or justification. Inspectors can issue tickets (*procès-verbaux*) in respect of infringements of the relevant legislation and regulations. Such tickets shall have the force of law unless proof of the contrary is provided. The public prosecutor is informed in advance of any planned actions to track down offenders and may oppose them. S/He must also be informed without delay of any infringements noted during their inspections.

Order Establishing Special Conditions for the Use of Industrial Radiography Devices Using Gamma Radiation (2004)

This Order of 2 March 2004 applies to industrial radiography devices using gamma radiation, radiographic controls carried out using these devices, and more generally to all operations affecting these devices. It prohibits the use of some of these devices and establishes conditions governing the assembling and dismantling, overhaul, transport, monitoring, use and storage of such devices.

Furthermore, other specific provisions govern the opening of a site subject to radiographic control which is subject to a notification signed by the owner of a licence delivered in conformity with Article L.1333-4 of the Public Health Code.

Finally, the order sets out special conditions governing the use of radioactive sources during radiographic control carried out using devices with gamma radiation.

Amendment to the Order on the Organisation of a National Network to Measure Radioactivity in the Environment (2004)

This Order of 3 March 2004 amends Sections 2 and 13 of the Order of 17 October 2003 on the organisation of a national network to measure radioactivity in the environment (see *Nuclear Law Bulletin* No. 73). Section 2 establishes the composition of the pilot committee, which provides its opinion on the general national policy established by the General Director for Nuclear Safety and Radiation Protection (*Directeur général de la sureté nucléaire et de la radioprotection*). Section 13 sets out the composition of the certification commission. This commission takes a decision on the basis of a request for certification submitted by the management of the laboratories mentioned in Article R.1333-11 of the Public Health Code. These laboratories may be certified by the Minister for the Environment and the Minister for Health to carry out analysis of radioactivity in the environment which they then transmit to the national network.

Order on the General Regime governing Licences and Declarations as defined in Chapter V-I "Ionising radiation" of the Public Health Code (2004)

This order adopted on 14 May 2004 provides details on procedures for notification and licensing or renewal of licences as established in the Public Health Code for activities listed in Article R. 1333.24 and which may result in a risk of exposure of persons to ionising radiation (use, possession of radionuclides for medical use, biological analysis or biomedical research; the use of electrical devices emitting ionising radiation for therapeutic purposes).

The application for a licence shall be addressed to the General Directorate for Nuclear Safety and Radiation Protection (*Direction générale de la sureté nucléaire et de la radioprotection* – DGSNR) on a standard DGSNR form and accompanied by supporting documents [Article R.1333-25 of the Public Health Code] as listed on the standard form. The application shall be signed by the head of the establishment and by the person in charge of the nuclear activity concerned. The application may involve the participation of the person in charge of radiation protection.

Notification requirements apply to the use of electrical devices emitting X-rays for dental and medical use. The notification should be addressed to the prefect of the department where the devices are established. The notification is registered on a standard DGSNR form and must be renewed every five years.

The order repeals Sections 1 to 9 of the Order of 23 April 1969, as amended, laying down the procedure for approval of equipment and installations using ionising radiation for medical purposes (see *Nuclear Law Bulletin* Nos. 4 and 22).

Regime of radioactive materials

Order Setting out Technical Conditions for the Accounting of Nuclear Materials (2004)

This Order of 16 March 2004 repeals the Order of 16 March 1994 (see *Nuclear Law Bulletin* No. 54) and sets out new procedures for the implementation of Order No. 81-512 of 12 May 1981 on the protection and control of nuclear materials (see *Nuclear Law Bulletin* No. 30).

This order specifies the role of the Institute for Radiation Protection and Nuclear Safety (*Institut de radioprotection et de sûreté nucléaire* – IRSN) regarding the accounting of nuclear materials. The main provisions of the order relate to:

- the quality management system: Section 1 provides that the licensee shall set up a quality management system in compliance with international standards in this field, which includes establishing a handbook and a quality programme or plan;
- the day book: the order supplements the information contained in the day book. In particular, the chronological entries shall include the reference of the document of the accounting declaration sent to the IRSN Directorate for Nuclear Defence Expertise;
- role of the IRSN: the IRSN Directorate for Nuclear Defence Expertise, under the authority of the Ministry for Industry, is in charge of centralising the accounting of nuclear materials within a national inventory system, and defining rules to be applied by the licensee to ensure this task is completed. The licensee shall send accounting data relating to any entry in its day book or any amendment thereto to the national inventory system. The documents containing accounting data are sent to the Directorate for Nuclear Defence Expertise on the same day. The format and manner in which the licensee sends this data are determined by the Directorate for Nuclear Defence Expertise, after consultation with the licensee, with special consideration given to the IT procedures and equipment used by the body or installation concerned, in order to ensure the quickest possible transmission. It should be noted that a detailed report on the annual physical inventory of nuclear materials carried out by the licensee is addressed to the Directorate for Nuclear Defence Expertise, at the latest within 45 days following the date on which the physical inventory is finished;
- external movements of materials: Section 12 of the order provides some additional requirements to those imposed on the sender. The latter shall in particular implement measures to ensure he/she knows the quantities and characteristics of the nuclear materials being sent, and that documents proving this knowledge are retained. If nuclear materials are shipped under seal, the sender is responsible for the quantities and characteristics of the nuclear materials until the seals are broken;
- documents which the licensee must possess: the order slightly amends the list of documents that the licensee shall possess in order to ensure the traceability of operations carried out on nuclear materials;
- retaining of documents: the order takes up most of the provisions contained in the former 1994 Order relating to the retaining of documents. However, it should be noted that the addressee may carry out controls after a five year period from the date on which nuclear

materials were shipped. In this case, the addressee informs the sender which was licensed at the time of the shipment, at least three months before the end of the five year period, so that the latter may take any necessary measures to retain information on shipped materials until the addressee agrees on the quantities and characteristics of nuclear materials received.

Gabon

Radiation protection

Act Setting out Guidelines in Respect of the Prevention and Protection Policy Applicable to Ionising Radiation (2001)

This act was adopted on 22 June 2001. It aims to promote a policy of prevention and protection against ionising radiation by establishing administrative, technical, and radiological safety bodies and by the peaceful and justified use of sources and ionising radiation generators. The act applies to all activities or practices which use sources or ionising radiation generators, as well as to chronic exposures or exposures due to intervention measures following a radiological emergency.

The act is divided into four chapters governing respectively the act's purpose, scope and definitions; the organisation of radiation protection; sanctions (reference is made to the appropriate regulations implementing the act); and final and transitional protections.

Chapter II is divided into two sections, covering the establishment of two bodies: the Commission for Radiological Safety and Prevention (*Commission de prévention et de sûreté radiologique* – CNPSR), responsible for issuing recommendations on national policy for protection against ionising radiation; and the National Centre for the Prevention of and Protection against Ionising Radiation (*Centre national de prévention et de protection contre les rayonnements ionisants* – CNPPRI), set up to establish a national radiation protection infrastructure.

The CNPPRI is a public body with legal personality and financial autonomy; it is under the supervision of the Ministry for Energy, and its annual budget is accounted for within the state budget.

The CNPPRI's specialised personnel make up technical support services in operational radiation protection and a national radiological emergency network. The CNPPRI is authorised to develop national regulations for radiation protection and the management of radioactive waste and to take the necessary preventive measures to reduce to the lowest level possible any risk associated with these sources. It is also empowered to deliver licences in respect of import, possession and use of ionising radiation sources. For this purpose and on a provisional basis, each individual or legal entity carrying out such activities is required to make a declaration to the CNPSR to be authorised to pursue their activities.

Order establishing the National Centre for the Prevention of and Protection against Ionising Radiation (2002)

This order, which was adopted on 16 October 2002 and entered into force on the same date, established the National Centre for the Prevention of and Protection against Ionising Radiation (*Centre national de prévention et de protection contre les rayonnements ionisants* – CNPPRI) and set up a Pilot Committee for the activities of this Centre. The Pilot Committee is entrusted to develop a

regulatory framework for radiation protection, to control and inspect all practices involving ionising radiation sources, and to carry out radiological control of former mines in Gabon.

Germany

Radioactive waste management

Amendment to the Ordinance on Advanced Financial Contributions for Final Disposal Repositories (2004)

The 1982 Ordinance on Advance Financial Contributions towards Construction of Federal Installations for Safe Containment and Disposal of Radioactive Waste as amended (see *Nuclear Law Bulletin* Nos. 30, 39, 46 and 68) was further amended by the Third Amending Ordinance of 6 July 2004 [*Bundesgesetzblatt* 2004 I p. 1476]. The main change consists of a modification to the method used to calculate the contributions due from those who are obliged to pay advance contributions under the ordinance [see in particular amended Sections 2(1), 4, 6, 7, 9 and 11].

Transport of radioactive materials

Ordinances to Amend the RID Regulations (2003, 2004)

The 11th and 12th Ordinances to Amend the International Order on the Carriage of Dangerous Goods by Rail (RID) were published in *Bundesgesetzblatt* 2003 II p. 1966 and *Bundesgesetzblatt* 2004 II p. 1434. The 2003 amendment covers the use and operation of suction/pressure tanks for waste. The 2004 amendment contains in its annex the entire RID Regulations valid as of 1 January 2005.

Ordinance on the Transportation of Dangerous Goods by Road and Rail (2004)

The Ordinance on the Transportation of Dangerous Goods by Road and Rail in its consolidated 2003 version (see *Nuclear Law Bulletin* No. 73) was amended by the First Ordinance of 24 March 2004 on the amendment of the Dangerous Goods Ordinance Road and Rail [*Bundesgesetzblatt* 2004 I p. 485]. This ordinance was also amended by Section 5 paragraph 1 of the Act on the Adapting of Competences in Genetic Engineering Law of 22 March 2004 [*Bundesgesetzblatt* 2004 I p. 455 (457)].

Regulations on nuclear trade (including non-proliferation)

Amendments to the 1961 Foreign Trade Act

The 1961 Foreign Trade Act (see *Nuclear Law Bulletin* Nos. 46, 54, 59 and 73) was amended by Section 4(65) of the Act to Modernise Accounting Law of 5 May 2004 [*Bundesgesetzblatt* 2004 I p. 718 (845)]; by Section 3 of the Act of 25 June 2004 to Amend the Provisions on Old Debts of Agricultural Enterprises and of Other Acts [*Bundesgesetzblatt* 2004 I p. 1383 (1387)]; by the 11th Act to Amend the Foreign Trade Act and the Foreign Trade Ordinance of 23 July 2004 [*Bundesgesetzblatt* 2004 I p. 1859]; and by Section 12(g) of the First Law to Modernise the Court System of 24 August 2004 [*Bundesgesetzblatt* 2004 I p. 2198 (2208)]. Section 2 of the Amendment of 23 July 2004 also amends the Foreign Trade Ordinance. The 2004 amendments of the Foreign Trade Act and of the

Foreign Trade Ordinance mainly deal with the acquisition of weapons suitable for use in wars and with the handling of restricted data and information.

Amendments to the Import List (2004)

The 149th Ordinance to Amend the Import List of 12 July 2004 is published in *Bundesanzeiger* 2004 p. 15237. The amendments adapt the ordinance to EU Law related to the liberalisation of imports.

Amendments to the Export List (2004)

The 103rd Ordinance to Amend the Export List is published in *Bundesanzeiger* 2004 p. 11405. This ordinance only contains minor amendments and is not relevant for the export of nuclear substances.

Ghana

Organisation and structure

Atomic Energy Commission Act (2000)

The Atomic Energy Commission Act, adopted on 27 November 2000, repeals and replaces the 1963 Act establishing the Atomic Energy Commission as amended (see *Nuclear Law Bulletin* Nos. 7 and 52). It modifies the composition of the Atomic Energy Commission, which now comprises a chairperson, the director-general of the Commission and five other members all of whom, with the exception of the director-general, shall be appointed for a period of five years (renewable) by the president acting in consultation with the Council of State.

The Commission is responsible *inter alia* for:

- making proposals to government for legislation in the field of radiation protection and radioactive waste management;
- advising the government on questions relating to nuclear energy, science and technology;
- establishing research institutes; encouraging and engaging in R&D;
- monitoring the implementation of radiation protection measures;
- maintaining relations with the IAEA and other international and national organisations in the field.

Iceland

Radiation protection

*Act on Radiation Protection (2002)**

A new Radiation Protection Act was adopted in Iceland on 8 April 2002. This legislation repeals and replaces the 1985 Radiation Protection Act (see *Nuclear Law Bulletin* No. 41).

The objective of this act is to ensure adoption of the necessary safety measures to protect against radiation from radioactive materials and radiological equipment, and to limit the detrimental effects of such radiation. Exposure to radiation resulting from practices covered under this act is to respect the ALARA principle. The act applies to:

- practices that can cause radiation exposure e.g. the production, import, export, delivery, possession, installation, use, handling and disposal of radioactive substances and radiological equipment;
- practices that result in increased levels of natural radiation in the environment;
- monitoring and research in respect of radioactive substances in the environment and foodstuffs;
- the radiological aspects of measures concerning radiological or nuclear emergencies.

Chapter II of the act provides that the Icelandic Radiation Protection Institute, under the auspices of the Ministry for Health and Social Security, is responsible for implementing radiation safety measures. It shall monitor and supervise the implementation of this act and its implementing rules and regulations, carry out inspections and research, monitor workers' exposure and provide training in radiation protection for workers, assess exposure of patients and that of the general public.

Chapter III provides that the production, import, ownership, storage, delivery or disposal of radioactive substances shall be subject to licensing by the Icelandic Radiation Protection Institute, with the exception of small quantities as determined by exemption levels. Any new types of practices that may cause radiation exposure are required to be assessed with regard to the economic, social or other benefits that they may bring as compared to their detrimental effects (Chapter IV). Chapter V sets out requirements governing the use of radioactive substances and radiological equipment, including the appointment of a designated supervisor for ionising radiation practices, an appropriate internal control scheme and the necessary emergency response measures.

Chapter VI focuses specifically on radiation protection in the workplace, reiterating the ALARA principle and providing for appropriate monitoring of workers' exposure, dose registers, information and training, and medical control. Chapter VII provides that medical exposure shall be subject to the justification and ALARA principles, and shall be protected by quality assurance and control. Chapter VIII governs the inspection of radiological equipment and radioactive substances and Chapter IX covers installation, modifications and maintenance of radiological equipment. The final Chapter provides that infringements of this act are subject to a fine or imprisonment of up to two years, and further provides that an implementing regulation shall be adopted to provide more detailed information on the application of this legislation and on the activities of the Icelandic Radiation Protection Institute.

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* The text of this act is reproduced in the Supplement to this edition of the *Bulletin*.

Ireland

Regulations on nuclear trade

Containment of Nuclear Weapons Act (2003) and Regulations (2004)

The Containment of Nuclear Weapons Act (No. 35 of 2003) provides the legislative basis to enable Ireland to implements its obligations under the Protocol Additional to the 1977 Nuclear Safeguards Agreement between the 13 Non-Nuclear Weapon States of the European Atomic Energy Community, the European Atomic Energy Community and the International Atomic Energy Agency (IAEA). The Safeguards Agreement was made in implementation of Article III (1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons. The Safeguards Agreement is the means by which the IAEA verifies, through a system of inspections and other means that Contracting Parties to the agreement are acting in compliance with their international non-proliferation obligations. The protocol is aimed at strengthening the effectiveness of the safeguards system by broadening the scope of the agreement to include the collection and reporting by Contracting Parties of information in relation to specified nuclear and non-nuclear materials relating to the nuclear industry.

The Containment of Nuclear Weapons Act, 2003 Regulations, 2004 (Statutory Instrument No. 123 of 2004) provides the regulatory basis to enable Ireland to implement these same obligations.

Italy

Radioactive waste management

Act Restructuring the Energy Sector (2004)

This Act No. 239 was adopted on 23 August 2004 and published in the Official Journal on 13 September 2004. It aims to implement recent EU legislation governing energy as well as to address issues relating to the management of nuclear waste which were not covered by Decree-Law No. 368 of 24 December 2003 (see *Nuclear Law Bulletin* No. 73).

As regards nuclear waste management, the act provides that:

- the Company for the Management of Nuclear Installations (*Società per la Gestione degli Impianti Nucleari* – SOGIN) will take over the safe temporary storage of category III waste (high-level radioactive waste) at sites to be identified according to the same procedure envisaged for waste categories I and II. An ad hoc commissioner, designated by the Prime Minister, is responsible for confirming site selection, in agreement with the Ministers of Internal Affairs and the Environment, once the Environment Ministry has carried out an environmental impact assessment and the National Environmental Protection Agency has provided its opinion on the site selection;
- a site for the final repository of category II (medium-level) radioactive waste shall be identified as a matter of urgency;
- a decree of the Prime Minister shall define the criteria and conditions to cover the relevant costs. SOGIN shall work towards the reduction of costs by optimising the use of sites and infrastructures, carrying out research and providing assistance;

- producers and holders of waste shall transfer their waste to the above-mentioned site or repository according to waste category. The timetable and conditions of such transfer shall be set out jointly by the Ministries of Industry and the Environment.

Ordinance on Radioactive Waste Management (2004)

This ordinance was adopted on 7 May 2004 to extend the validity of the decree adopted on 7 March 2003 (see *Nuclear Law Bulletin* No. 73). This ordinance governs the safe storage of radioactive material at nuclear power stations and at certain nuclear sites. The president of SOGIN also adopted, in June 2004, an ordinance relating to the timetable of activities required for the storage of such radioactive material.

Latvia

Radiation protection

Regulations on Procedural Requirements for the Construction of Radiation Facilities (2004)

On 13 July 2004, the Cabinet approved these regulations which establish requirements with regard to the acceptance of the design and the facility itself before its commissioning. These regulations only apply to "ionising radiation facilities of state significance" as defined in the 2000 Act on Radiation Safety and Nuclear Safety (see *Nuclear Law Bulletin* No. 67; the text of this act is reproduced in the Supplement to that NLB). The regulations aim to mitigate problems with local building inspectors, who do not have knowledge regarding radiation facilities and therefore are not qualified to make decisions on safety-relevant issues. A commission for such authorisations is therefore established and shall be composed from representatives from all relevant authorities, including representatives of local municipalities.

Regime of radioactive materials

Regulations on the Procedure Governing Activities Involving Nuclear Materials, Related Materials and Equipment (2003)

These regulations were approved by the government on 22 April 2004. They replace the 2002 Regulations on the same subject and aim to ensure implementation of EU regulations on safeguards into national legislation.

Regulations on nuclear trade

Act on Circulation of Strategic Goods (2004)

On 7 April 2004, the parliament adopted a new Act on Circulation of Strategic Goods, which establishes an updated system for the control of export, import and transit of dual-use goods and technologies under several international regimes related to the Nuclear Non Proliferation Treaty and arms control (e.g. Nuclear Suppliers Group, Australian Group). The previous regime, repealed and replaced by this act, was based upon the 1997/98 Regulations regarding Control of Strategic Goods and Import of Radioactive Substances (see *Nuclear Law Bulletin* No. 61).

Food irradiation

Regulations on Foods and Food Ingredients Treated with Ionising Radiation (2004)

On 20 April 2004, the Cabinet of Ministers approved Regulations on Mandatory Requirements for Foods and Food Ingredients Treated with Ionising Radiation and Additional Requirements for their Labelling, prepared by the Ministry of Health. These Regulations aim to implement Directive 1999/2/EC of the European Parliament and of the Council of 22 February 1999 on the approximation of the laws of the Member States concerning foods and food ingredients treated with ionising radiation. Under the Regulations, the control over implementation of these requirements shall be exercised by the Food and Veterinary Service; however practices related to irradiators shall be under the control of the Radiation Safety Centre.

Mauritius

Radiation protection

Radiation Protection Act (2003)

This act, promulgated by presidential decree on 24 November 2003, repeals and replaces the 1992 Radiation Protection Act (see *Nuclear Law Bulletin* No. 52). It aims to enforce the protection against the risks associated with exposure to ionising radiation, and to establish a Radiation Protection Authority.

The act is divided into four parts. Part I sets out definitions and defines its scope of application to cover every source of ionising radiation above the exemption level, other than radioactive substances found in nature and sealed sources or devices containing a sealed source where the dose rate at 10 cm from the source does not exceed 1 mSv per hour and the source activity does not exceed the exemption level. "Exemption level" is defined to mean (a) a quantity of radioactivity below 3.7 kilo Becquerel, or (b) a specific radioactivity below 74 Becquerel per gramme.

Part II of the act establishes the Radiation Protection Authority (replacing the Radiation Protection Board under the previous legislation) and provides details on its composition and functions. This Authority shall regulate, control and supervise all activities relating to the import, acquisition, use, transport and disposal of radioactive material, substances, waste, x-ray equipment and other sources capable of emitting ionising radiation. It shall also provide radiation protection services and promote research and development in radiation protection. In the pursuit of these objectives, it is empowered to:

- formulate policies, codes and standards in relation to radiation protection, and revise them regularly;
- promote measures for prevention of nuclear emergencies, organise and support emergency response plans;
- assess and control radiation safety conditions;
- ensure the respect of enacted regulations through coordination between public and private activities and through cooperation with related local, foreign and international organisations;

- advise the minister in charge of nuclear energy and fulfil the obligations of the state regarding conventions in the field of nuclear energy.

The Authority is administered by a Radiation Protection Council which is composed of a chairperson and of representatives of several national authorities. Members comprise one representative from each of the following: the Ministry for Energy; the Prime Minister's Office; the Ministry for Health; the Ministry for the Environment; the Ministry for Labour; the Ministry for Commerce, the Comptroller of Customs and the Institution of Occupational Safety and Health Managers. This Council shall meet at last once a month, but the chairperson may decide on additional meetings. Under the control of the Council, radiation protection officers, placed under the authority of a chief officer, are appointed to help the proper discharge of the Authority's functions under this act. The chief radiation protection officer is responsible for the execution of the policies and regulations of the Authority. As an "on-site" officer, he/she has extensive rights relating to visit, inspection and control, as listed in the act.

Part III provides that any activity under the scope of the Radiation Protection Act is subject to a licence delivered by the Radiation Protection Authority. Requirements to obtain or renew a licence or permit are set out under this section. Where a licensee has violated its obligations under the legislation or under the terms of the licence, the Radiation Protection Authority may modify, suspend or withdraw the licence. The licensee may then appeal to the minister, who shall appoint an Appeal Committee to re-examine this case.

The act also defines the duties of the licensee and its staff. These are mainly to ensure safety of the facilities (in particular by setting up an emergency intervention plan), to train and protect the workers, to immediately inform the Authority in the event of an incident, to safely manage radioactive waste and to acquire the necessary authorisations to transport nuclear materials.

Finally, Part IV provides for the establishment of several supplementary regulations and establishes criminal offences for any person violating the act.

Nigeria

Radiation protection

Basic Ionising Radiation Regulations (2003)

These regulations, which were promulgated by the Nigerian Nuclear Regulatory Authority on 20 November 2003 and entered into force on 31 December 2003, aim at implementing the Nuclear Safety and Radiation Protection Act of 1995.

The regulations cover any work or practice involving ionising radiation with the exception of those laid down in the First Schedule to the regulations. They establish the general principles and procedures to be followed by employers, and specify activities that require a prior authorisation from the Nigerian Nuclear Regulatory Authority (hereinafter referred to as "the Authority") and the necessary conditions to acquire such a licence. They also establish the principle of the primary responsibility of the licensee for safety and the justification, optimisation and dose limitation principles.

As regards physical protection and emergency preparedness and response, the employer bears prime responsibility for the security of his facilities and staff. In the event of a radiation accident, the

employer shall immediately inform the Authority and activate the on-site emergency plan, previously submitted to and approved by the Authority. The regulations set out specific radiation protection requirements in order to ensure the safety of controlled and supervised areas, to be enforced by the establishment of "local rules" in each controlled area. Such rules shall be appropriate to the radiation risks and the nature of operations carried out in that area. The employer shall also appoint radiation safety advisers and supervisors in compliance with the safety requirements. The employer must also provide information and training to radiation workers.

The regulations establish a classification and monitoring system. They specify the different categories of classified persons and the corresponding medical surveillance, radiation dose limits, prevention measures or response in the event of overexposure. Some specific restrictions are provided for persons under the age of 18 and pregnant workers. With regard to the control and monitoring of radioactive substances, articles or equipment, the employer shall ensure that such substances are moved, kept or stored in suitable and safe receptacles. Regular testing is required to detect leakage of radioactive substances.

Primary responsibility for radioactive waste management and its safety are imposed on the generator of the waste, except in cases where that generator is unfit to bear such responsibility, in which case it is transferred to the Authority. Waste generators are also responsible for on-site collection, categorisation, and temporary storage of radioactive waste; for notification to the Authority of any waste not expected to decay to clearance levels within one year from the time of its generation and for disposing waste only in licensed disposal facilities. Any imported sealed source must be returned to the supplier.

Some requirements are set out concerning the decommissioning of radiation sources or facilities with radioactive materials. The enactment by the Authority of further radioactive waste management regulations is also recommended by the regulations.

Finally, the regulations include provisions governing offences and penalties.

Poland

General legislation

Amendments to the Atomic Energy Act (2004)

On 12 March 2004, the Polish parliament adopted far-reaching amendments to the 2000 Atomic Energy Act (see *Nuclear Law Bulletin* Nos. 67 and 69, the text of this act is reproduced in the Supplement to NLB No. 68). These amendments were published in the Official Journal No. 70/632 and entered into force on 1 May 2004. The main objective of these amendments is to ensure the compliance of Polish legislation governing the peaceful use of nuclear energy with European Union legislation in this field. The scope of the Atomic Energy Act has been broadened by adding three additional groups of provisions:

- provisions ensuring compliance with Poland's international obligations, and in particular with EU legislation in the fields of nuclear safety, radiological protection and control of nuclear materials and technologies;
- rules governing the monitoring of activities carried out and contamination in the event of a nuclear or radiological emergency;

- procedures designed to ensure the protection of people exposed to ionising radiation for medical purposes.

In addition, some provisions of the act were modernised, and in particular Chapter 12 on civil liability for nuclear damage:

- simplification of certain provisions whose interpretation caused confusion (e.g. the concepts of nuclear damage and nuclear incident);
- introduction of rules governing the extent to which damage is compensated and the applicable procedure (e.g. limitation of compensation for environmental damage to the costs incurred in respect of reinstatement measures carried out by public authorities or other authorised persons);
- insertion of specific provisions relating to insurance coverage (insurance is now the only acceptable form of security to cover liability).

There is a completely new chapter devoted to problems relating to the medical use of nuclear materials in diagnostics and therapy. The act provides for a special licensing procedure for hospitals and other units intending to carry out activities using nuclear materials, and establishes public bodies and authorities to control and monitor these activities.

Portugal

Radiation protection

Council Resolution Providing for the Elaboration of a National Plan for Radiation Protection and Nuclear Safety (2004)

On 14 September 2004, the Council of Ministers approved Council Resolution No. 129/2004 providing for the elaboration of a National Plan for Radiation Protection and Nuclear Safety. This plan shall identify measures to coordinate and improve the action of bodies involved in the regulation, licensing and inspection of nuclear activities, as well as in the fulfillment by Portugal of its international commitments and obligations under EU legislation in the nuclear field. The plan is required to study the possible establishment of a nuclear regulatory body. A working group is established to prepare this plan.

Romania

Organisation and structure

Decision Amending the Regulations on the Organisation and Functioning of the National Commission for the Control of Nuclear Activities (CNCAN) (2004)

This governmental Decision No. 750 was adopted on 14 May 2004 and was published in the Official Gazette No. 459 of 21 May 2004. It amends the regulations on the organisation and functioning of the CNCAN approved by Decision No. 1627/2003 (see *Nuclear Law Bulletin* No. 73).

The main modifications established by the decision are the following:

- the CNCAN is placed under the authority of the Prime Minister through the Prime Minister's Chancellery. The CNCAN is no longer subordinated to the Minister in charge of the Co-ordination of Control Authorities;
- the CNCAN shall initiate legislation in the nuclear field and submit it for approval to the head of the Prime Minister's Chancellery;
- the CNCAN shall submit reports regarding control activities in the nuclear field in Romania on an annual basis or whenever necessary to the Prime Minister;
- any appointment or dismissal of CNCAN management personnel requires the endorsement of the Prime Minister's Chancellery;
- the organisational structure of the CNCAN is to be approved by order of its chairman endorsed by the head of the Prime Minister's Chancellery.

Decision on the Reorganisation of the National Uranium Company (2004)

This governmental Decision of 15 May 2004 was published in the Official Gazette No. 479 of 28 May 2004. It reorganises the National Uranium Company into the Radioactive Material Company – Magurele. This company has legal personality, is entirely state owned and is under the authority of the Ministry of Economy and Commerce. Its main activity is geological prospecting and exploration to identify radioactive deposits, as well as conservation works, shutting down operations, environment protection and rehabilitation. The decision provides more detailed provisions on the structure and financial management of the Radioactive Material Company.

Radiation protection

Health Norms for the Safe Conduct of Nuclear Activities (2004)

Order No. 381 was adopted on 5 April 2004 by the Minister of Public Health and published in the Official Gazette No. 527 of 11 June 2004. It approved the Basic Health Norms for the Safe Conduct of Nuclear Activities as published in the annex attached to the said order. Article 1 of the norms provides that authorisation for the purpose of human use or consumption of any product that has been irradiated or that contains radioactive materials shall be granted only in compliance with the health procedures provided for in these norms. Within the meaning of the norms, the authorisation of irradiated products or products that contain radioactive materials is to be achieved by way of a sanitary endorsement issued by the Ministry of Public Health – through the endorsement commissions within the public health institutes.

Radiological Safety Norms – Licensing Procedures for Mining, Uranium and Thorium Ore Processing Activities, Processing of Raw Materials and Producing of Nuclear Fuel (2004)

These norms were approved by Order No. 171 of the chairman of the CNCAN of 31 May 2004 and were published in the Official Gazette No. 530 of 14 June 2004. They provide a list of activities subject to licensing and set out the applicable procedure. Activities exempt from the licensing requirement are also listed.

Radiological Safety Norms – Measurement Systems for Radiation Sources (2004)

These norms were approved by Order No. 144 of 5 May 2004 of the chairman of the CNCAN and published in the Official Gazette No. 534 of 15 June 2004. They set out radiological safety requirements applicable to detection systems or measurement systems using sealed sources or radiation emitters. The CNCAN certifies and controls the manufacturing, import, export, supply, transfer, possession, storage, handling, transport and use of the above mentioned measurement systems.

Radiological Safety Norms – Radiotherapy Practice (2004)

Order No. 94 of 14 April 2004 of the chairman of the CNCAN, published in the Official Gazette No. 532 of 14 June 2004, approved the Radiological Safety Norms applicable to radiotherapy practice. The purpose of these norms is to establish the specific requirements of radiological safety in human medical radiotherapy. The norms also establish the licensing and inspection requirements of the CNCAN in relation to radiotherapy practice.

Regime of nuclear installations

Norms on the Classification of Bodies Qualified for the Exercise of Activities in the Nuclear Field (2004)

These norms were approved by Order No. 274 of 6 August 2004 of the CNCAN published in the Official Gazette No. 745 of 17 August 2004. They establish requirements for the authorisation of test laboratories, calibration laboratories, certification bodies for products, certification bodies for quality assurance systems and personnel certification bodies, as provided for in the 1996 Law on the Safe Conduct of Nuclear Activities (see *Nuclear Law Bulletin* Nos. 61 and 68).

Regime of radioactive materials

Norms on Exemption from Authorisation Requirements for Certain Materials (2004)

These norms were approved by Order No. 62 of 31 March 2004 of the chairman of the CNCAN and were published in the Official Gazette No. 393 (Part I) of 4 May 2004. They aim to regulate the release from control of materials generated through nuclear activities that do not present any risk for the public health or environment. It is necessary to demonstrate that it is improbable for the actual annual individual exposure following release from control to exceed 10 mSv and that it is virtually impossible for that same annual exposure to exceed 100 mSv. The release from the authorisation requirements is effective only subsequent to CNCAN approval. The norms provide that release from such requirements does not exonerate the authorisation holder from its obligation to comply with all other relevant legal provisions regarding the safekeeping of materials, including hazardous waste.

Decision Establishing the List of Dual-use Products and Technologies Subject to the Export and Import Control Regime (2004)

This governmental Decision No. 861 of 3 June 2004 was published in the Official Gazette No. 598 of 2 July 2004. The control applies, *inter alia,* to re-export operations; transfer of software or

technology by electronic means, by fax transmission or by phone outside Romania; export of technical assistance, international transit and international transfers; as well as the development and use of dual-use products or technologies. This decision aims to implement Council Regulation No. 149/2003 of 27 January 2003 amending and updating Regulation (EC) No. 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology.

Radioactive waste management

Order on the Management of Spent Nuclear Fuel and Radioactive Waste (2004)

Order No. 844 of 9 August 2004, issued by the Nuclear Agency and published in the Official Gazette No. 818 of 6 September 2004, approves the National Strategy for medium and long-term management of spent nuclear fuel and radioactive waste including final disposal and decommissioning of nuclear and radiological installations. It is part of the National Nuclear Plan as approved by governmental Decision No. 1259/2002.

The main objective of the national policy on radioactive waste management is to ensure that it causes minimum impact to the public and the environment. Specific goals are: (i) to ensure that the national database of radioactive waste contains a comprehensive inventory of such waste; (ii) to adopt appropriate technical and administrative measures to ensure the radiological safety of exposed workers, the public and the environment; (iii) to keep all interested parties informed, including the public, in order to guarantee the transparency of the decision-making process.

Norms on the Safe Management of Radioactive Waste (2004)

These norms were approved by Order No. 56 of 25 March 2003 of the chairman of the CNCAN and were published in the Official Gazette No. 393 (Part I) of 4 May 2004. They establish principles and general requirements in relation to the safe management of radioactive waste in accordance with the provisions of the 1996 Law on the Safe Conduct of Nuclear Activities (see *Nuclear Law Bulletin* Nos. 59 and 68).

The norms set forth the following principles:

- radioactive waste should be managed in such a way as to preserve an acceptable level of public health, and to secure an acceptable level of environmental protection;
- the estimated impact of such waste on future generations shall not exceed the impact currently deemed as acceptable and shall not generate an excessive burden for future generations;
- safety of storage or disposal facilities shall be ensured during the lifetime of the installation.

Norms on the Collection of Contributions from the Licensees for the Financing of the Activities of the National Agency for Radioactive Waste (2004)

These norms were approved by Order of the Ministry of Public Finances No. 1255 of 23 August 2004 and Order No. 622 of 26 August 2004 of the Ministry of Economy and Trade published in the Official Gazette No. 821 of 6 September 2004. The owners of a nuclear licence must provide an annual direct contribution to finance the activities of the National Agency for Radioactive Waste (see

Nuclear Law Bulletin No. 71). The amount of this contribution is calculated in accordance with the annual established electric and thermal power production and the estimated annual volume of low and medium radioactive waste conditioned to be disposed of. These incomes are administrated for the financing of activities like the co-ordination at national level of the management of spent nuclear fuel and radioactive waste.

Russian Federation

Organisation and structure

Establishment of New Federal Agencies in the Nuclear Energy Field (2004)

Presidential Decree No. 314 of 9 March 2004 introduced a major reform of the federal executive branch and established a new system of federal agencies in the nuclear energy field:

- the former *Minatom* (Ministry for Atomic Energy) has been dissolved and its previous functions have been divided between the Ministry of Industry and Energy (vested with law-making functions) and the Federal Agency for Atomic Energy (responsible for the application of the law, governmental services and management of the property of the former *Minatom*); this new Agency is called *Rosatom*;
- *Gosatomnadzor* – the Russian Federal Agency for Nuclear and Radiation Safety (see *Nuclear Law Bulletin* Nos. 51 and 70) – was transformed in March 2004 into a Federal Nuclear Regulatory Authority established within the new Ministry of Industry and Energy. In May 2004, this Federal Nuclear Regulatory Authority was merged with the Federal Technological Supervisory Service into a new Federal Ecological, Technological and Nuclear Supervisory Service which reports directly to the government. See also governmental Decree No. 401 of 30 July 2004 on this point; this new service is called *Rostechnadzor*.

The powers of the Federal Ecological, Technological and Nuclear Supervisory Service in the area of environmental protection are more extensive than those of the former *Gosatomnadzor*. However, the July 2004 Decree specifies that activities in relation to the development, production, testing, use and dismantling of nuclear weapons and nuclear military installations have been excluded from the scope of competence of this new service and shall be the responsibility of the Defence Ministry.

The July 2004 Decree provides that the Federal Ecological, Technological and Nuclear Supervisory Service is a federal agency of the executive branch exercising functions related to the adoption of legal acts, monitoring and surveillance in the areas of:

- environmental protection, in order to limit the negative effects caused by human impact on the environment (including waste management activities);
- safe conduct of activities related to the exploitation of natural resources and the protection of such natural resources;
- industrial safety;
- safety in the uses of nuclear energy (with the exception of weapons-related activities or military installations);
- safety of electrical and heating installations and networks;

- safety of hydro-technical structures at the industrial and power-generating sites;
- safety of the production, storage and application of industrial explosives.

This Service is nominated as the nuclear regulatory body under the 1994 Convention on Nuclear Safety (see *Nuclear Law Bulletin* Nos. 53 and 58). Its three principal functions are drafting of legislation, monitoring and surveillance of nuclear safety and licensing of activities in the nuclear field.

Specifically in the field of spent nuclear fuel management, the service is responsible for monitoring the timely return of spent fuel assemblies and the products of the processing thereof to the country of origin with which the Russian Federation has entered into an international agreement providing for imports into the Russian Federation of spent fuel assemblies from nuclear reactors for the purposes of temporary storage and processing subject to the return of the products of such reprocessing.

Regulations on nuclear trade

Decree on the List of Dual-use Equipment and Materials Subject to Export Controls (2003)

On 14 January 2003, Presidential Decree No. 36 on the adoption of the list of equipment and material of dual-use and respective technologies applied in the nuclear field that are subject to export controls was adopted. This decree was adopted in implementation with Article 6 of the Federal Law on Export Control of 18 July 1999. It repeals and replaces the previous list of dual-use equipment and materials dated 21 February 1996.

Decree on the List of Dual-use Goods and Technologies Subject to Export Controls (2004)

This Presidential Decree No. 580 on the adoption of the list of goods and technologies of dual use that can be applied in the production of weapons and military equipment and that are subject to export control was adopted on 5 May 2004. It repeals and replaces the previous lists on the same subject. The new list includes "conventional", "sensitive" and "highly sensitive" goods and technologies, and also those goods and technologies that are under control due to national security interests.

Slovak Republic

General legislation

Atomic Act (2004)

A new Atomic Act was adopted by the National Council (parliament) of the Slovak Republic on 9 September 2004 and entered into force on 1 December 2004 with the exception of certain provisions due to enter into force on 1 January 2007. Although it repeals and replaces the 1998 Act on the Peaceful Use of Nuclear Energy (see *Nuclear Law Bulletin* Nos. 60 and 61, the text of this act is reproduced in the Supplement to NLB No. 62), it maintains the original philosophy, structure and content of this legislation.

It contains provisions governing the following areas: rights and obligations of individuals and legal entities in relation to the peaceful uses of nuclear energy; nuclear materials; radioactive waste; physical protection; transportation of nuclear materials, radioactive waste and spent nuclear fuel; licensing of nuclear installations; nuclear safety; emergency planning; quality assurance; staff training; civil liability for nuclear damage; implementation of EU legislation into national law; and of course sanctions in the event of violation of the provisions of this legislation. The act no longer covers the supervision of the adverse effects of ionising radiation.

The principal modifications made by this act are as follows:

- definitions: the list of definitions has been extended and the existing definitions are more detailed;
- competences of the Nuclear Regulatory Authority: the NRA will no longer license and regulate supply activities. Its safety supervisory activities will focus henceforth on the operators of nuclear installations and their quality assurance systems. The NRA is to become a specialised nuclear installation construction authority, with the exception of land planning and expropriation proceedings. The licensing regime for the different stages of service life of a nuclear installation has been strengthened;
- status of the Authority's inspectors: their position is further defined and provisions governing their recruitment and appointment are specified;
- establishment of the National Agency for the Disposal of Radioactive Waste, which will report to the Ministry of Economy (these provisions shall enter into force only on 1 January 2007);
- safeguards: changes have been introduced to comply with EU legislative requirements, including provisions on record keeping and inspection of nuclear materials, transportation of radioactive waste to and from the EU, procurement of and authorisation for import and export of special materials and equipment;
- physical protection: more stringent verification of the qualifications required for persons entering a nuclear installation;
- civil liability for nuclear damage: liability limits are now expressed in Euro, rather than in Slovak crowns, and are raised to EUR 75 million for nuclear installations, and EUR 50 million for transport activities.

The entry into force of the new Atomic Act will require the adoption of new implementing regulations, and the amendment or repeal of existing regulations implementing the 1988 Law on the Peaceful Use of Nuclear Energy.

It is planned to publish the text of this legislation in the Supplement to a future edition of the *Bulletin*.

Sweden

Regime of nuclear installations

New SKI Regulations on Safety in Nuclear Facilities (2004)

Pursuant to the 1984 Act and Ordinance on Nuclear Activities as amended (the text of these instruments was reproduced in the Supplement to *Nuclear Law Bulletin* No. 33), the Swedish Nuclear Power Inspectorate (SKI) is the main regulatory body with authority to issue regulations concerning safety aspects of nuclear activities. On 15 June 2004, the SKI Board issued new regulations on Safety in Nuclear Facilities [SKIFS 2004:1]. The new regulations replace previous SKI Regulations of 1998 on Safety in Certain Nuclear Facilities, and will enter into force on 1 January 2005.

In the same manner as the previous regulations, the new instrument forms an umbrella or framework regulation, under which more specific regulations deal in more detail with particular aspects of nuclear safety. The new safety regulations have to some extent a more general scope than their predecessor. Whereas the latter only applied to nuclear facilities approved by the government, the new regulations apply to all nuclear facilities for which a licence is issued under Section 5 of the 1984 Act on Nuclear Activities. Thus, it will also apply to the kind of small-scale establishments that the SKI is empowered to approve according to Section 16 of the 1984 Ordinance on Nuclear Activities.

The new regulations consist of ten chapters. The first chapter deals with applicability, scope and definitions. In the second chapter there are basic standards on safety measures. These cover deficiencies in barriers and address defence-in-depth as well as questions related to the organisation and management of nuclear safety issues. This chapter also sets out basic requirements concerning physical protection. Chapter 3 includes provisions on the design and construction of nuclear facilities, and Chapter 4 deals with assessment and evaluation of establishments' safety. Chapter 5 contains provisions on operation of facilities, and Chapter 6 covers some basic questions related to the handling of nuclear waste and nuclear materials. In Chapter 7, there are provisions governing the reporting of occurrences and conditions to the regulatory and supervisory body (SKI), and Chapter 8 deals with documentation and retaining of documents. Chapter 9 covers decommissioning, while Chapter 10 provides that SKI may grant exceptions from the provisions of the 1984 Ordinance.

In general, the structure and content is to a large extent maintained from the previous safety regulations. Apart from amendments providing for increased clarification of certain requirements, the main novelties concern the widened scope and Chapter 9 on decommissioning. These regulations will continue to serve as an umbrella regulation under which more specific regulations will be adopted.

Ukraine

General legislation

Amendments to the 1995 Law on the Use of Nuclear Energy and Radiation Safety (2004)

Law No. 1417-IV introducing amendments into the 1995 Law on the Use of Nuclear Energy and Radiation Safety was adopted by the *Verkhovna Rada* (Parliament) on 3 February 2004. This law makes the following modifications:

- the term "radioactive materials" is introduced into this legislation, defined as sources of ionising radiation, nuclear materials and radioactive waste;
- suppliers who act as intermediaries and who participate in the conclusion of contracts for the supply of nuclear materials are required to retain all documents related to transactions performed either by them or on their behalf for at least one year after the expiry of the contract. Such documents shall contain the names of the contracting parties, the date of signature of the contract, data on quantity, form and composition of nuclear materials along with information on their origin and purpose;
- delivery of permits for the transportation of radioactive materials is now subject to further requirements in relation to the issue and retention of documents concerning the acceptance and transfer of nuclear materials during their transportation, in keeping with the procedure prescribed by the Cabinet of Ministers of Ukraine. The documents should contain the names of the parties taking over or receiving nuclear materials, as well as data on quantity, form and composition of nuclear materials, and should be kept by persons involved in transportation for at least one year;
- the state nuclear and radiation safety regulatory authority shall not refuse to issue a permit for shipment on Ukrainian territory of radioactive waste resulting from the reprocessing of nuclear fuel which is returning to its country of origin for storage and final disposal, if such a permit was granted for the primary transportation of the spent nuclear fuel, and where the shipment shall be carried out in line with Ukrainian legislation;
- the export of radioactive waste from Ukraine to foreign countries shall not be allowed if the state nuclear and radiation safety authority concludes that those countries lack the appropriate technical and other capabilities to ensure the safe treatment of such waste;
- the import of ionising radiation sources into Ukraine and their export to other countries shall be allowed subject to the consignee holding a licence to use such sources;
- with regard to the international transportation of radioactive materials, a transporter or final recipient must be an agent of management registered in Ukraine.

United States*

Regime of radioactive materials

National Defense Authorization Act for Fiscal Year 2005 (2004)

On 29 October 2004, the president signed into law the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (H.R. 4200).[1] Title 31 of this act contains provisions affecting authorities of the Department of Energy (DOE) including Section 3132 governing the acceleration of removal or security of fissile material, radiological and related equipment at vulnerable sites worldwide. This section authorises the president to establish in DOE a programme and Task Force on Nuclear Materials to undertake an accelerated, comprehensive, worldwide effort to mitigate threats

* This information note was kindly provided by Ms. Sophia Angelini, Attorney Adviser at the US Department of Energy.

1. The Senate and House Conferees approved H.R. 4200 on 8 October 2004 and sent it to the president for his signature. A Public Law number has not yet been assigned to the act.

posed by high-risk proliferation-attractive fissile materials, radiological materials, and related equipment located at sites potentially vulnerable to theft or diversion.

The section provides for activities that may include shipment, transportation, processing, packaging, security upgrades, disposition and technical support to the IAEA, other countries and entities in connection with such materials. The programme could also include development of alternative fuels and irradiation targets based on low-enriched uranium to convert research or other reactors fuelled by highly-enriched uranium; accelerated actions for blend down; provision of assistance in the closure and decommissioning of sites identified as presenting risks of proliferation; assistance in placement of employees displaced as a result of the programme; and conversion of sites identified as presenting risks of proliferation.

Radioactive waste management

National Defense Authorization Act for Fiscal Year 2005 (2004)

Title 31 of this new act (see above) contains provisions affecting authorities of the Department of Energy (DOE) including waste incidental to processing.

As background, in 2002, the Natural Resources Defense Council, Snake River Alliance and Yakima Nation filed suit over the Waste Incidental to Reprocessing (WIR) requirements in DOE Order 435.1. The US District Court for the District of Idaho ruled in 2003 that provisions of DOE Order 435.1, governing the Department's management and classification of waste streams generated by reprocessing of spent nuclear fuel, violated the Nuclear Waste Policy Act of 1982, as amended (NWPA) and were invalid insofar as they allowed the Department to determine that some waste associated with reprocessing did not constitute high-level waste. DOE appealed to the US Court of Appeals for the Ninth Circuit in San Francisco where oral argument took place on 5 October 2004.

Section 3116 of the act, entitled "Defense Site Acceleration Completion", authorises DOE to classify certain waste resulting from reprocessing as other than "high-level radioactive waste" which would result in the Department being able to continue tank cleanup at the Savannah River Site and INEEL (Idaho National Engineering and Environmental Laboratory). The Conferees noted that the legal uncertainty resulting from the 2003 US District Court decision in Idaho had halted certain cleanup activities, creating potential risks to the environment and public health. Further, they used existing NRC standards for low-level waste to establish new criteria for waste incidental to reprocessing in the states of Idaho and South Carolina.

Under Section 3116, notwithstanding other laws that define classes of radioactive waste,[2] where material is stored at a DOE site where activities are regulated by "covered" state closure plans or permits, the term "high-level radioactive waste" would specifically not include radioactive material resulting from reprocessing of spent nuclear fuel " if the Secretary of Energy determined that such material:

1. does not require permanent isolation in a geologic repository;

2. has had highly radioactive radionuclides removed to the maximum extent practical;

2. Nuclear Waste Policy Act of 1982, as amended; Section 202 of the Energy Reorganization Act of 1974, and other laws defining classes of radioactive waste.

3a. does not exceed NRC concentration limits for Class C low-level waste;[3] and will be disposed of:

i) in compliance with NRC performance objectives,[4] and

ii) pursuant to a state-approved closure plan or permit; or

3b. exceeds concentrations limits for Class C low-level waste but will be disposed of:

i) in compliance with NRC performance objectives;

ii) pursuant to state-approved closure plan or permit; and

iii) pursuant to plans developed by the secretary in consultation with the NRC.

Therefore, material resulting from reprocessing and stored at DOE sites does not constitute high-level radioactive waste where: 1) the secretary determines that the material does not require repository disposal; 2) radionuclides have been removed; and 3) disposal will be in accordance with NRC requirements, plans and performance objectives as well as state approved closure plans or permit – whether or not the waste exceeds NRC concentration limits for Class C waste.

Section 3116 clarifies DOE's authority to classify tank waste streams and facilitate long-term cleanup plans across all defense sites.[5] It permits resumption of state-approved tank closure actions in South Carolina and provide a disposal path for the low-activity fraction consisting of salts currently stored in the tanks. It also establishes a monitoring role for the NRC with respect to cleanup. DOE has been working with states to achieve consensus on a legislative proposal that would clarify the law and allow cleanup activities to proceed.

Third party liability

Price-Anderson Act (2004 renewal)

Title 31 of the National Defence Authorization Act contains provisions affecting authorities of the Department of Energy (DOE) including the 1957 Price-Anderson Act as amended.

Section 3141 of the act extends DOE's Price-Anderson Act authority to indemnify contractors for liability as a result of a nuclear incident from 31 December 2004 to 31 December 2006.[6] This

3. Class C low-level concentration limits in NRC regulations at 10 C.F.R. Part 61.55.

4. Performance objectives in NRC regulations at 10 C.F.R. Part 61, Subpart C.

5. DOE's environmental efforts include the cleanup of contamination resulting from over 50 years of nuclear weapons production and nuclear energy research. The 2005 Budget provides over USD 7.4 billion dollars for DOE's Environmental Management programme – the most funding ever for this programme – to cut in half the years remaining to complete site cleanups. More information on the status of DOE and NNSA programmes is available at the Office of Management and Budget, Executive Office of the President Web site at www.whitehouse.gov/omb/budget/fy2005/energy.html

6. First enacted in 1957 as an amendment to the Atomic Energy Act (AEA), 42 U.S.C. 2210, Price-Anderson, provides a system of financial protection for persons who may be injured by and persons who may be liable for a nuclear incident. It was intended to: 1) encourage development of the nuclear industry by providing private industry with financial protection for legal liability resulting from a nuclear incident;

provision shields from legal liability DOE contractors working at national laboratories and other facilities.[7]

As stated in a recent Issue Brief for Congress,[8] liability for damages to the general public from nuclear incidents is addressed by the Price-Anderson Act. The act, which was due for re-authorisation on 1 August 2002, was extended for the commercial reactors which all operate under NRC licences until 31 December 2003.[9] The legislation provides that without extension, existing reactors would continue to operate under the current Price-Anderson liability system although new reactors would not be covered. Price-Anderson coverage for DOE nuclear contractors was extended until 31 December 2004.[10]

Operation of the Price-Anderson Act:

As a condition for their NRC licences,[11] owners of commercial reactors must assume "public liability"[12] for nuclear damages and waive defences, such as immunity from public liability under federal and state law, following a nuclear incident.[13] To pay any such damages, each licensed reactor

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and 2) protect the public by assuring availability of funds to available to compensate victims for damages and injuries in the event of a nuclear incident. For DOE activities, the act achieves its objectives by requiring an indemnification in each DOE contract that involves the risk of a nuclear incident. This indemnification: 1) provides omnibus coverage of a DOE contractor and all other persons who might be legally liable for injury or damage resulting from a nuclear incident; 2) indemnifies fully all legal liability up to the statutory limit on such liability (approximately USD 10.4 billion for a nuclear incident in the United States); 3) covers any DOE contractual activity that might result in a nuclear incident in the United States; 4) is not subject to the availability of appropriated funds; and 5) is mandatory and exclusive. Standard indemnification clauses are incorporated into all DOE contracts and subcontracts involving source, special nuclear, or by-product (nuclear) material. *Report to Congress on the Price-Anderson Act*, U.S. Department of Energy (1998).

7. Daniel Whitten, Angela Y. Hardin, "Legal Protections for DOE Contractors Extended for Two Years by Congress", *Inside Energy*, 18 October 2004, at 3. In this article, the authors note that the extension opens the door for contractors interested in bidding on government-owned/contractor-operated facilities. The timing is especially important for companies that want to bid on contracts to manage the Los Alamos and Lawrence Berkeley national laboratories which deal with nuclear research and materials and whose contracts are set to expire next year. Contractors could be hesitant to bid on contract or operate a facility without Price-Anderson protection.

8. Mark Holt, Carl Behrens, *Nuclear Energy Policy,* Resources, Sciences, and Industry Division, Congressional Research Service, the Library of Congress. 1 September 2004. CRS-10-11. (Order Code IB88090). This CRS Issue Brief for Congress provides a comprehensive overview of current nuclear energy legislation affecting DOE programmes. The authors, Mr. Holt and Mr. Behrens, very graciously authorised quoting and reproducing from their work.

9. Pub. L. No. 108-7.

10. National Defense Authorization Act for FY 2003, Pub. L. No. 107-314.

11. AEA, Section 170a.

12. The term "public liability" means, in part, any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation. AEA, Section 11w.

13. The term "nuclear incident" means, in part, any occurrence, including an extraordinary nuclear occurrence, within the United States causing, within or outside the United States, bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting

must carry primary financial protection in the amount of the maximum liability insurance available, increased by the insurance industry from 200 million US dollars (USD) to USD 300 million on 1 January 2003. Any damages exceeding that amount are to be assessed equally against *all* covered commercial reactors. Those assessments – called "retrospective premiums" or "secondary insurance" – would be paid at an *annual* rate of no more than USD 10 million per reactor, to limit the potential financial burden on reactor owners following a major accident.[14] On 20 August 2003, the NRC adjusted for inflation the maximum retrospective payment at USD 95.8 million per reactor per incident. Including two that are not operating, 105 commercial reactors are currently covered by the Price-Anderson retrospective premium requirement.[15]

For each nuclear incident, the Price-Anderson liability system currently provides up to USD 10.9 billion in public compensation. That total includes the primary financial protection of USD 300 million in insurance coverage carried by the reactor that suffered the incident, plus the secondary insurance in the form of USD 95.8 million in retrospective premiums from each of the 105 currently covered reactors, totalling USD 10.4 billion. On top of those payments, a 5% surcharge may also be imposed, raising the total per-reactor retrospective premium to USD 100.6 million and the total available compensation to about USD 10.9 billion. Under Price-Anderson, the nuclear industry's liability for an incident is capped at that amount, depending on the number of covered reactors, the amount of available insurance, and the inflation adjustment made by the NRC every five years. Payment of any damages above that liability limit would require congressional approval.

Price-Anderson also covers contractors who operate DOE nuclear facilities and materials.[16] The liability limit for DOE contractors is the same as for commercial reactors, excluding the 5% surcharge, except when the limit for commercial reactors drops because of a decline in the number of covered reactors. In such a case, the DOE indemnification would not decrease. Because the most recent adjustments have raised the commercial reactor liability limit to a record high, the liability limit for DOE contractors is currently the same as the commercial limit (minus the surcharge) or USD 10.4 billion. Price-Anderson authorises DOE to indemnify its contractors for the entire amount, so that damage payments for nuclear incidents at DOE facilities would ultimately come from the U.S. Treasury. However, the act allows DOE to impose civil penalties on its contractors for safety violations.[17] The DOE Office of Price-Anderson Enforcement administers the nuclear safety

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from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material. AEA, Section 11q.

14. The NRC requires proof of primary and secondary insurance coverage of all licensees. Of the 103 operating nuclear power plants, 31 are owned by 11 limited liability companies which the NRC does not treat differently than other licensees. An overview of the requirements are in the US General Accounting Office Report to Congressional Requesters, available at www.gao.gov/new.items/d04654.pdf entitled *Nuclear Regulation NRC's Liability Insurance Requirements for Nuclear Power Plants Owned by Limited Liability Companies,* May 2004.

15. 42 U.S.C. 2282a(b)(2). (1994).

16. AEA, Section 170d.

17. AEA, section 234A "Civil Monetary Penalties for Violations of Department of Energy Safety Regulations" authorised up to USD 100 000 per violation per day, with each violation and each day of a violation constituting a separate violation. The amount has been adjusted for inflation and is now USD 110 000 per day per violation. See 10 C.F.R. Part 820.81 (2004). (The NRC has similar authority under the AEA at Section 234 to impose civil monetary penalties (CMP) for violations of licensing requirements and on 26 October 2004 issued its "Adjustment of Civil Penalties for Inflation", 69 Fed. Reg. 62393 (2004), raising the CMP to USD 130 000 per day per violation.)

enforcement programme.[18] Contractor employees and directors can face criminal penalties for "knowingly and wilfully" violating nuclear safety rules.[19] There is automatic remission of civil penalties for certain non-profit educational entities.

Uruguay

Organisation and structure

Decree Establishing the National Directorate of Energy and Nuclear Technology (2004)

Decree No. 151/004 was adopted on 5 May 2004 and published in the Official Bulletin on 28 July 2004. It provides that the National Directorate of Energy and the Directorate of Nuclear Technology (see *Nuclear Law Bulletin* No. 43), both previously under the jurisdiction of the Ministry of Industry, Energy and Mines, are merged to form this new directorate.

The new institution is headed by a director and is comprised of two principal divisions: (the Division of Energy, Radiological Protection and Safety, and the Unit of International Co-operation and Institutional Relations), the Department of Technical Management and a technical adviser.

The Division of Energy, Radiological Protection and Safety has two departments: the Department of Regulation and Licensing, and the Department of Supervision and Control. Its main functions are:

- regulatory tasks: to elaborate and control the enforcement of all regulations related to radiological safety, security and protection, in particular by conducting inspections in facilities using ionising radiation;
- licensing: to license facilities, authorise import, export and transportation of radioactive sources, radioisotopes or equipment generating ionising radiation, and authorise individuals to handle them;
- supervision: to supervise the Radiological Emergencies Group and to participate in the National Emergency System of the Presidency of the Republic, in the event of radiological incidents or accidents.

The Unit of International Co-operation and Institutional Relations is the national contact point for international co-operation in the field of energy and nuclear technology. In particular, it shall assure co-ordination with the IAEA and shall prepare Plans of Action implementing co-operation agreements with nuclear institutions of different countries.

The Department of Technical Management forms an interface between institutional bodies and private stakeholders involved in activities using ionising radiation. Its main functions and areas of activities are:

- institutional co-ordination: to implement the National Plan of Environmental Radiological Protection in co-operation and co-ordination with other institutions, and to work jointly with the Unit of International Co-operation and Institutional Relations;

18. U.S. Department of Energy *Office of Price Anderson Enforcement, Nuclear Safety Enforcement Program*, April 2004. (DOE/EH-0679). Available at www.eh.doe.gov/enforce.

19. 10 C.F.R. Subpart F "Criminal Penalties" Part 820.71 (2004).

- relations with private stakeholders: to establish commercial relations with clients, collaborators and competent institutions in Research and Development, and to carry out agreements and contracts with businesses;
- technical functions: to operate the Laboratory of Calibration and Metrology of Ionising radiation and to offer technologies related with the use of nuclear analytical techniques.

The role of the technical adviser is to provide advice to the directorate in relation to energy themes, quality control, nuclear law and treaties.

INTERNATIONAL REGULATORY ACTIVITIES

International Atomic Energy Agency

Resolutions Adopted by the IAEA General Conference (2004)*

The 48th Session of the IAEA General Conference was held in Vienna from 20 to 24 September 2004 with the participation of delegates from 125 Members States and representatives of various international organisations. A number of resolutions were adopted by the Conference in the following fields:

Nuclear Safety, Radiation, Transport and Waste Safety

In Resolution No. 10 on Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management [GC(48)RES/10], the General Conference requested the Director General to continue the current programme of legislative assistance to Member States, to assist them in improving their national infrastructures for nuclear installations, radiation, transport and waste safety. The Conference also encouraged Member States to continue requesting IAEA safety review services in order to enhance nuclear, radiation, transport and waste safety; and encouraged Member States to promote technical cooperation for the further enhancement of safety.

With regard to the Convention on Nuclear Safety, the General Conference appealed to all Member States, particularly those operating, constructing or planning nuclear power reactors, which have not yet taken the necessary steps to become party to the Convention on Nuclear Safety to do so. The Conference also urged Contracting Parties to participate actively in the Third Review Meeting of the Contracting Parties to this Convention, to be held in Vienna in April 2005.

On the subject of the safety of radioactive waste management, in particular, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the General Conference reminded Member States of the relevance of that Convention and appealed to all Member States which have not yet taken the necessary steps to become party to the Joint Convention to do so. The Conference welcomed the First Review Meeting of Contracting Parties to the Joint Convention, held in Vienna in November 2003, which highlighted, *inter alia*, the importance of all countries having long-term strategies for managing spent fuel and radioactive waste, including plans for integrated decommissioning and waste management, and endorses ongoing efforts by the Secretariat and the General Committee to promote the Joint Convention.

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* The texts of these resolutions are available on the Web site of the IAEA at the following URL: www.iaea.or.at/About/Policy/GC/GC48/Resolutions/index.html

With regard to the Code of Conduct on the Safety of Research Reactors, it should be noted that in September 2001, the Board of Governors requested and the General Conference subsequently endorsed [GC(45)/RES/10.A], that the Secretariat develop and implement, in conjunction with Member States, an international research reactor safety enhancement plan which included the preparation of a Code of Conduct on the Safety of Research Reactors. This Code was prepared at two meetings of an Open-ended Working Group of Legal and Technical Experts. In March 2003, this draft Code of Conduct (in the Annex to document GOV/2003/7) was considered by the Board, which decided that it should be circulated to all Member States for comment. The revised draft was circulated to all Member States for comment together with the report of the chairman of the expert Working Group. At the March 2004 meeting of the Board of Governors, the final text of the Code was adopted. The text of this Code will be reproduced in the next issue of the *Nuclear Law Bulletin*. The General Conference in Resolution No. 10 welcomed the adoption of the Code, encouraged Member States to apply its provisions and requested the Secretariat to continue to provide assistance with its implementation.

In the field of nuclear and radiological emergency preparedness and response, the General Conference in Resolution No. 10 urged all Member States to become parties to the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, thereby contributing to a broader and improved basis for international emergency response, to the benefit of all. The Conference also encouraged Member States to improve their own preparedness and response capabilities for nuclear and radiological incidents and accidents, including acts involving the malicious use of nuclear or radioactive material or threats of such acts, and to implement the Safety Requirements for Preparedness and Response to a Nuclear or Radiological Emergency [GOV/2002/5] and the updated procedures of the Emergency Notification and Assistance Technical Operations Manual.

With regard to transport safety, the General Conference emphasised 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, and welcomed the approval of the Action Plan on the Safety of Transport of Radioactive Materials by the Board in March 2004, based on the results of the International Conference on the Safety of Transport of Radioactive Material held in July 2003. It also welcomed the valuable work that INLEX has undertaken since its establishment (see *infra*) in this field.

With regard to the safety and security of radioactive sources, the General Conference in Resolution No. 10 welcomed the approval by the Board of Governors of the Policy for Promoting Effective and Sustainable National Regulatory Infrastructures for the Control of Radiation Sources, and continues to endorse the principles and objectives of the Code of Conduct on the Safety and Security of Radioactive Sources. The General Conference further welcomed the approval by the Board of Governors of the Guidance on the Import and Export of Radioactive Sources [GC(48)/13]. An article describing this Guidance will be reproduced in the next issue of the *Nuclear Law Bulletin*.

Resolution No. 10 makes further reference to recent developments in respect of the Agency's Safety Standards Programme, radiation safety initiatives, the International Action Plan on the Decommissioning of Nuclear Facilities and education and training activities in relation to nuclear, radiation, transport and waste safety.

Nuclear Security – Measures to Protect against Nuclear Terrorism

The General Conference also adopted Resolution No. 11 on Progress on Measures to Protect against Nuclear and Radiological Terrorism [GC(48)RES/11]. In particular, the Conference appealed to states that have not yet done so to accede to the Convention on the Physical Protection of Nuclear Material (CPPNM), and to work towards the adoption by consensus of amendments to strengthen that Convention.

It is recalled that in July 2004, draft amendments to the CPPNM were circulated to all States Parties, with a view to extending the scope of the Convention to cover, *inter alia*, the physical protection of nuclear material used for peaceful purposes, in domestic use, storage and transport and the physical protection of nuclear material and nuclear facilities used for peaceful purposes against sabotage. Should a majority (currently 53) of the States Parties to the CPPNM so request, the Director General will invite all State Parties to a diplomatic conference to consider the proposed amendments. For an amendment to be adopted at the Conference, Article 20 of the CPPNM requires a two-thirds majority. Consultations between States Parties to resolve a few outstanding issues continue. In his opening speech to this 48th General Conference, the IAEA Director General called on States Parties to move forward swiftly and in good faith to resolve any outstanding issues, so that he could convene a diplomatic conference in early 2005.

Strengthening the IAEA's Safeguards System

In Resolution No. 14, the General Conference reiterated the need to maintain effective safeguards in order to prevent the use of nuclear material for prohibited purposes, thus contributing to collective security. It welcomed the review of the Agency's strengthened safeguards system conducted during the past year by an independent evaluation panel and by the Standing Advisory Group on Safeguards Implementation. It requested all states that have not yet done so to promptly sign additional protocols and bring them into force. The Secretariat is requested to examine innovative technological solutions to strengthen the effectiveness and improve the efficiency of safeguards.

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

The General Conference, in Resolution No. 15, reiterated its concerns expressed at the 2003 General Conference (see *Nuclear Law Bulletin* No. 72) and asked the DPRK to reconsider those actions and announcements which run contrary to international non-proliferation obligations and to promptly accept IAEA safeguards.

Application of IAEA Safeguards in the Middle East

The General Conference, in Resolution No. 16, reiterated its concerns expressed at the 2003 General Conference (see *Nuclear Law Bulletin* No. 72) and calls against upon all parties concerned to take steps required for the implementation of the proposal to establish a mutually and effectively verifiable NWFZ in this region.

Establishment of INLEX

The Director General decided in 2003 to appoint a group of experts to explore and advise on issues related to nuclear liability. This Group called the International Expert Group on Nuclear Liability (INLEX) consists of 20 expert members from nuclear power and non-nuclear power countries and from shipping and non-shipping states. It serves three major functions, namely:

- to create a forum of expertise to explore and advise on issues related to nuclear liability;
- to enhance global adherence by nuclear and non-nuclear states to an effective nuclear liability regime, *inter alia,* on the basis of the Convention on Supplementary Compensation for Nuclear Damage and the Annex thereto, the Vienna Convention on Civil Liability for Nuclear Damage, the Paris Convention on Third Party Liability in the Field of Nuclear Energy, the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention, and the amendments thereto; and
- to assist in the development and strengthening of the national nuclear liability legal frameworks in IAEA Member States to protect the public and the environment, and to enhance nuclear safety.

INLEX has held three meetings to date, all at Agency headquarters. The first meeting was held on 16 and 17 October 2003, the second from 22 to 26 March 2004 and the third from 13 to 16 July 2004. In the course of these meetings, INLEX finalised the discussion and review of explanatory texts (including an overview of the modernised IAEA nuclear liability regime) on the nuclear liability instruments adopted under Agency auspices. It recommended the circulation of the explanatory texts to Member States as constituting a comprehensive study of the Agency's nuclear liability regime in order to aid the understanding and authoritative interpretation of that regime. The overview was submitted for information to the September 2004 Session of the Board of Governors and meeting of the General Conference, in the Annex to document GOV/INF/2004/9-GC(48)/INF/5. The explanatory texts were placed on the Agency Web site.

The explanatory texts will serve as a basis for the future work of INLEX, regarding in particular the further identification and exploration of issues pertaining to the application and scope of the nuclear liability instruments adopted under Agency auspices. In the context of recommending measures to be taken to enhance adherence to an effective nuclear liability regime, INLEX has, in cooperation with the Secretariat, developed, with a view to its being sent to Member States, a questionnaire on the status of adherence by Member States to nuclear liability instruments adopted under Agency auspices. INLEX's future programme of work will include the preparation of materials for regional and national workshops and for legislative assistance missions to target countries, organised with a view to strengthening Member States' legal frameworks related to nuclear liability.

INLEX will also consider the need to further develop the Agency's nuclear liability regime, taking into account concerns of countries both with and without nuclear power programmes. In this context, INLEX is working towards the identification of possible ambiguities and/or gaps in the existing international instruments. In addition, INLEX will undertake work relating to the identification of the advantages and/or disadvantages of adhering to a global nuclear liability regime.

European Union

Directive on Public Access to Environmental Information (2003)

This Directive 2003/4/EC of the European parliament and of the Council of 28 January 2003 repeals and replaces Council Directive 90/313/EEC of 7 June 1990 on the Freedom of Access to Information on the Environment. It was decided in the interest of increased transparency to replace Directive 90/313/EEC rather than to amend it, so as to provide interested parties with a single, clear and coherent legislative text.

Directive 2003/4/EC governs public access to information in the nuclear field, as "environmental information" is defined to include any information in any form on "factors, such as substances, energy, noise, radiation or waste, including radioactive waste, emissions, discharges and other releases into the environment, affecting or likely to affect the elements of the environment" [Article 2(1)(b)].

The new directive aims to correct shortcomings identified in the practical application of the 1990 Directive, to adapt the text to the so-called electronic revolution in order to make a "second generation" directive reflecting the changes in the way information is created, collected, stored and made available to the public, and to pave the way for Community ratification of the UN/ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention – see *Nuclear Law Bulletin* No. 62), signed by the EC on 25 June 1998, by aligning the provisions of the directive to requirements of the Convention regarding access to environmental information.

The Preamble of Directive 2003/4/EC notes that increased public access to environmental information and the dissemination of such information contribute to a greater awareness of environmental matters, a free exchange of views, more effective participation by the public in environmental decision-making and, eventually, to a better environment. The new directive imposes stricter obligations upon Member States, notably as regards the active dissemination of environmental information by public authorities and the extension of the right of access to information from citizens of the EU to any person, regardless of their residence.

The key requirements of the new directive include:

- access to information must be granted where the interests of the public outweigh the interests protected by the exceptions to such access. It is expected that it will be the exception rather than the norm to refuse requests for environmental information and companies will have no right to veto information they would prefer not to see in the public domain;
- public authorities will have 20 working days to supply information requested by the applicant; bodies which are under the control of public administrations will also have to supply environmental information when requested within 20 working days; and
- the directive introduces two types of review procedures (an administrative procedure as well as a judicial procedure) to challenge acts or omissions of public authorities in relation to a request for access to environmental information. The information commissioner will eventually oversee the judicial procedure.

Environmental information is defined to mean air, water and soil quality, biological diversity, noise and health and safety implications. Following implementation of the directive the applicant may

be able to request from the public authority environmentally significant information such as data collected on emissions.

The directive will be evaluated every four years after its entry into force and subject to revision based on the submission of reports by Member States outlining their experience. The directive obliges the Member States of the European Union to have their legislation in place at the latest by 14 February 2005.

Directive on Public Participation in Respect of Certain Plans and Programmes Relating to the Environment (2003)

Directive 2003/35/EC of the European parliament and of the Council providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC [OJ L 156 of 25/06/2003, p. 17] was adopted on 26 May 2003.

Such plans and programmes relating to the environment include nuclear power plants, installations for the production and enrichment of nuclear fuel, the reprocessing of spent fuel and the collection and processing of radioactive waste.

Directive 2003/35/EC provides for public participation in the preparation of environmental plans and programmes, in the sectors of waste management, air pollution and protection of water against nitrate pollution, and of projects with significant environmental impact. The directive implements the second pillar of the UN/ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention – see *Nuclear Law Bulletin* No. 62), signed by the EC on 25 June 1998, into EU legislation.

The directive introduces for the first time public participation in the decision-making on environmentally significant projects. To do so, it amends the EIA Directive (Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment) and the IPPC Directive (Directive 96/61/EC on integrated pollution prevention and control).

This directive further specifies the type of information to be provided to the public for the purposes of public consultation. Reasonable time-frames are required to ensure an effective involvement of the public in environmental decision-making at an early stage. The directive further establishes access to justice, giving the public a possibility to challenge the legality of decisions, acts or omissions subject to the public participation provisions.

Member States are obliged to adopt their laws and other provisions to comply with this directive by 25 June 2005 at the latest.

Proposals for Directives on Nuclear Safety and Radioactive Waste Management (2004)

Following the rejection in June 2004 of the January 2003 Commission proposals for Directives on the Safety of Nuclear Installations and on the Management of Spent Nuclear Fuel and Radioactive Waste (see *Nuclear Law Bulletin* No. 72), a revised package was presented by the Commission on 8 September 2004 [COM(2004)536].

The new proposal preserves the initial objective of the two texts but takes account of some of the comments expressed by the European parliament and the council.

With regard to the safety directive, the Commission maintains its proposal to establish a common framework for the enlarged EU to apply existing rules and principles in the nuclear safety field. These rules and principles are very close to the obligations outlined in the 1994 Nuclear Safety Convention and the requirements established over the past 25 years by national safety authorities within Commission Working Groups, and within the Western European Nuclear Regulators' Association (WENRA). However, revised Article 4 underlines that the responsibility for the safety of nuclear installations remains with the operators and national authorities. The same article also states that each Member State has to establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.

Another principal modification is that the requirement to ensure sufficient financial resources to cover decommissioning costs has been removed from the draft safety directive. The Commission has indicated that it will deal with this issue separately in another instrument. Furthermore, a new article in this revised directive proposes to set up a Committee of Regulatory Authorities composed of representatives of the national regulatory bodies. However, the idea of site inspections has been removed and therefore the notion of peer review as figured in the original proposal appears to have been discarded.

Concerning the waste directive, the Commission maintains its proposal for each Member State to be obliged to draw up a final radioactive waste management programme with deadlines, and the requirement to strengthen research and development activities in this field. However, the original deadline of 2018 for the operation of permanent waste repositories has been deleted. The Commission recommends "the possibility to give priority to the solution of deep geological disposal" but refers also to other options. It also proposes a Commission-based committee of experts to carry out tasks relating to reporting issues.

AGREEMENTS

BILATERAL AGREEMENTS

Note

The NLB editors have decided to change recent editorial policy in respect of bilateral agreements. We are aware that a high number of bilateral agreements on the peaceful uses of nuclear energy are concluded each year around the world. However, we at the NEA only receive information on a small proportion of these agreements. Consequently our reporting on such developments has been somewhat imbalanced in recent years. Furthermore, the emphasis of these agreements is often on wide policy declarations rather than on legal methods of implementation. For this reason, we have decided to limit the section of the Bulletin which deals with bilateral agreements to those that are of particular interest for NLB readers due to the fact that they contain specific legal requirements or are of interest from a regulatory point of view.

Germany – Russian Federation

Agreement Concerning Co-operation and Exchange of Information and Experience in the Field of Nuclear Safety and Radiation Protection (2003)

An agreement was concluded on 9 May 2003 between the Federal Ministry for the Environment, Nature Conversation and Reactor Safety of the Federal Republic of Germany and the Federal Agency for the Supervision of Nuclear and Radiation Safety of the Russian Federation on Co-operation, Exchange of Information and Experience in the Field of Licensing, Supervision and Assessing of Nuclear Safety and Radiation Protection. It was published in *Bundesgesetzblatt* 2004 II p. 448.

This agreement applies to nuclear facilities and activities which are covered under Article 1 of the 1986 Convention on Early Notification of a Nuclear Accident. The Parties shall exchange information relating to the regulation of nuclear safety and to relevant legislation in the field of nuclear legislation and radiation protection. The transfer of confidential information to other state authorities and their advisers requires mutual written consent and shall be in accordance with the respective national legislation of the Parties.

Each Party designates a co-ordinator who is responsible for implementing the Agreement. The Parties shall intensify scientific and technological co-operation in the field of safety regulation by exchange of information, joint seminars and consultations and by the implementation of joint projects. This co-operation applies to the following fields:

- nuclear safety and radiation protection related legislation;
- methods of safety assessment of nuclear facilities;

- licensing and supervision procedures;
- nuclear safety and radiation protection in connection with the handling of radioactive waste.

Further fields of co-operation shall be agreed by the Parties. This agreement was concluded for a period of five years and entered into force on the date of its signature. It will tacitly be prolonged for another five years unless one of the Parties requests termination three months prior to the end of the five-year period.

Romania – Ukraine

Agreement on Early Notification of Nuclear Accidents and Exchange of Information in the Field of Nuclear and Radiation Safety (2004)

This Agreement on Early Notification of Nuclear Accidents and Exchange of Information in the Field of Nuclear and Radiation Safety was signed on 22 September 2004 by the chairman of the State Nuclear Regulatory Committee of Ukraine on behalf of the Cabinet of Ministers of Ukraine and the Chairman of the National Commission on the Control of Nuclear Activities on behalf of the Government of Romania.

Referring to the 1986 Convention on Early Notification of a Nuclear Accident and the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the parties agree to respect the requirements of these respective Conventions through the conclusion of this bilateral agreement.

The agreement applies to accidents which take place or threaten to take place in nuclear installations or with nuclear materials, which could result in transboundary releases of radioactive substances which represent a threat for the other party to this agreement. The Parties agree to notify each other immediately about such events or the risk of such events, providing all information necessary to minimise radiological consequences.

The competent bodies of both Parties will communicate on the safety of nuclear installations and on all activities involving a risk of radioactive releases in quantities exceeding permissible limits. Representatives of competent bodies will meet, where necessary, at least once a year for the coordination of all questions on implementation of this agreement. The Contracting Parties further agree to strengthen scientific and technical co-operation between competent bodies in the field of nuclear safety and radiation protection, including monitoring of radioactive releases and emergency planning.

MULTILATERAL AGREEMENTS

Observations on the First Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*

1. Introduction

For more than twenty years, radioactive waste has been seen as a global problem because of the difficulties in finding an acceptable means for its disposal. This has had implications for the development of the nuclear electricity industry since many have taken the view that no further nuclear power plants should be constructed until the problem has been solved. The issue is broader, however, since radioactive waste disposal is also a matter of concern for countries without nuclear energy, notably in relation to the "sealed radioactive sources" used in research and medicine. In fact, technical solutions exist, are being applied for many types of radioactive waste and are at an advanced stage of development for the remainder. Nevertheless, there continues to be a common perception that radioactive waste is an unresolved issue and a potential threat to human health and the environment.

It was against this background that the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (the Joint Convention) came into being. The Convention was adopted at a Diplomatic Conference in Vienna in September 1997 and came into force in June 2001 when the required number of countries had ratified the Convention (25 countries, 15 with operational nuclear power plants). The text of the Convention is contained in IAEA INFCIRC/546[1] and it was the subject of an earlier article in this *Bulletin.*[2]

The First Review Meeting of the Parties to the Convention was held from 3 to 14 November 2003 in Vienna. The outcome of the Review Meeting is contained in a publicly available Summary Report.[3]

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* This article was kindly provided by Mr. Gordon Linsley, former Head of the Waste Safety Section of the International Atomic Energy Agency who led the Technical Secretariat at the First Review Meeting of the Joint Convention. This article is based on the Summary Report of the Contracting Parties but, in addition, under the headings "Observations", expresses the author's own views of the Meeting. The author is grateful for constructive criticism of the draft paper by George Jack of Canada.

1. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, International Atomic Energy Agency, INFCIRC/546, 24 December 1997.

2. Wolfram Tonhauser and Odette 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, December 1997.

3. Summary Report of the First Review Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, JC/RM.1/06/Final Version: www-rasanet.iaea.org/downloads/conventions/jointcon_summary_report_finalNov19.pdf

2. Purpose and contents of the Joint Convention

As stated in Article 1 of the Convention, one of its main objectives is "to achieve and maintain a high level of safety worldwide in spent fuel and radioactive waste management, through the enhancement of national measures and international co-operation, including where appropriate, safety related technical co-operation". The mechanism for achieving this goal will be described later in this article.

The scope of application of the Convention (Article 3) includes spent nuclear fuel and almost all types of radioactive waste, for example, it includes:

- nuclear fuel that has been used in nuclear power plants (spent nuclear fuel);
- waste from the operation of nuclear power plants;
- waste from the mining and processing of uranium;
- waste from the use of isotopes in medicine and industry, e.g. sealed sources whose useful life is over; and
- discharges of radioactive materials to the environment.

In addition, other types of spent fuel and waste can be included within the scope, if Contracting Parties wish to declare them, for example:

- spent fuel undergoing reprocessing to recover unused uranium or plutonium;
- waste from the manufacture of abrasives or other products using naturally occurring radioactive sands;
- waste from mining ores that incidentally contain radioactive materials; and
- waste from military applications of nuclear energy.

From this it can be observed that the Convention is relevant to almost all countries and not only to those countries with nuclear power plants.

3. The Review Mechanism

Article 30 of the Convention requires Contracting Parties to hold meetings, at intervals not exceeding three years, for the purpose of reviewing the National Reports submitted as required in Article 32.

The review process consists of:

- the preparation by Contracting Parties of National Reports in which "the measures taken to implement each of the obligations of the Convention" are addressed. In addition, the following aspects are to be addressed: spent fuel policy, spent fuel management practices, radioactive waste management policy, radioactive waste management practices, and the criteria used to define and categorise radioactive waste. Finally, the following information is to be provided: lists of spent fuel and radioactive waste facilities subject to the Convention, national inventories of spent fuel and radioactive waste and a list and the status of nuclear facilities undergoing decommissioning;

- the review of each National Report by other Contracting Parties in advance of the Review Meeting and, as appropriate, the questioning (in writing to the Contracting Party concerned) of matters contained in its National Report;
- the provision of answers by the Contracting Party to the questions of the other Contracting Parties in advance of the Review Meeting;
- the presentation and discussion of each National Report within a "Country Group" at the Review Meeting. At the First Review Meeting, Contracting Parties were allocated to five Country Groups by a prescribed mechanism. The Country Group arrangement was used because of the impracticability, in terms of time, of having all Contracting Parties present for each National Report presentation and discussion;
- the presentation of a summary of each of the five Country Group discussions to the Plenary of Contracting Parties by the relevant Country Group Rapporteur followed by a discussion of the findings.

In summary, the Joint Convention review process can be seen as:

- a self-assessment of national arrangements for radioactive waste management by each Contracting Party;
- an international peer review of those arrangements;
- an opportunity to benefit from the experience of other Contracting Parties; and
- a mechanism for promoting improvement through the feedback obtained from the ideas and comments of other Contracting Parties.

4. Details of the First Review Meeting

Thirty-two Contracting Parties participated in the Review Meeting, namely: Argentina, Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Republic of Korea, Latvia, Luxembourg, Morocco, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, and United States of America. In addition, Japan, a late ratifier, was allowed to participate fully as if it were a Contracting Party. The Nuclear Energy Agency of the OECD was present as an observer.

The meeting was conducted in accordance with the Joint Convention "Rules of Procedure and Financial Rules" [IAEA INFCIRC/602][4] and the "Guidelines Regarding the Review Process" [IAEA

4. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Rules of Procedure and Financial Rules, International Atomic Energy Agency, INFCIRC/602, 1 July 2002: www.iaea.org/Publications/Documents/Infcircs/2002/infcirc602.pdf.

INFCIRC/603].[5] The National Reports were prepared in accordance with the "Guidelines Regarding the Form and Structure of National Reports" [IAEA INFCIRC/604].[6]

5. Outcomes of the First Review Meeting

5.1 General

In their Summary Report, the Contracting Parties concluded that the Review Meeting process had already contributed significantly to achieving the objectives of the Convention and noted that several Contracting Parties had made improvements in their management of spent fuel and radioactive waste in the two or so years leading up to the Review Meeting, prompted by the forthcoming meeting. Several countries acknowledged the value and benefit of the "self-assessment" and "the international peer review" processes while, at the same time, commenting that they are time consuming and expensive. It was widely acknowledged that further improvements can be made to improve the safety of spent fuel and radioactive waste management in their countries and that they expected to make progress in the next years and to report on it at the next review meeting.

The National Reports, most of which are publicly available, constitute the most up-to-date and comprehensive record of the global status of radioactive waste management.

5.2 Specific technical issues

Long-term policies

The Review Meeting revealed that there is a wide variety in the long term radioactive waste and spent fuel management policies being practised and considered. Many countries favour geological disposal as a long term strategy but some intend to directly dispose of spent fuel while others intend to recover uranium and plutonium and dispose of only the residual fission products. At present, however, this spent fuel and waste are being stored while waiting for geological repositories to be developed. While some countries have overall national strategies in place for the management of this type of waste, most are still considering what approaches to follow and a few are still at the early stages of policy development. Some countries prefer to keep their management options open for the time being while others are engaged in public consultation on waste management strategies. The discussions also revealed that there is interest in possible bilateral and regional solutions to the disposal of spent fuel and high-level waste.

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5. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Guidelines Regarding the Review Process, International Atomic Energy Agency, INFCIRC/603, 1 July 2002: www.iaea.org/Publications/Documents/Infcircs/2002/infcirc603.pdf.

6. 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, International Atomic Energy Agency, INFCIRC/604, 1 July 2002: www.iaea.org/Publications/Documents/Infcircs/2002/infcirc604.pdf

Clearance policies

The discussions revealed a variety of approaches to the management of very low-level radioactive waste. In some countries clear criteria have been established which distinguish between radioactive waste and waste which can be freely recycled or disposed of with normal non-toxic waste. In other countries problems have been encountered in establishing such policies. It was agreed that it would be beneficial to have international guidance on suitable clearance criteria that could be used at the national level and also to facilitate international trade.

Decommissioning

The increased importance of decommissioning operations was recognised at the meeting. It was agreed that Contracting Parties need to make proper funding provisions for decommissioning and to develop integrated decommissioning and radioactive waste management plans in order to avoid leaving unwanted residues for future generations to manage.

Regulatory independence

Various regulatory regimes exist within the Contracting Parties and the problems of overlapping regulatory jurisdictions and of regulatory independence were discussed. Concern was expressed over the situation in a few of the Contracting Parties where organisations exist with multiple functions and where regulatory functions in relation to radioactive waste management may not be sufficiently independent of other functions of the organisations.

Public participation

From the reports of the Contracting Parties it is obvious that, increasingly, the public is being consulted in regard to decisions in the radioactive waste management area. The old approach of "decide, announce and defend" is no longer tenable.

Good practices

In the course of the discussions certain "good practices" were identified which, in the view of the meeting, could further the objectives of the Convention; some examples are: involving the public in decision making, establishing sound financial arrangements for decommissioning and waste disposal, returning disused sealed sources to the manufacturer, establishing regulatory frameworks that take into account chemical as well as radiological hazards.

International standards

The meeting identified the need for new or improved international safety standards in certain areas, namely, for the clearance of materials containing very low levels of radionuclides, for the design, operation and regulation of storage facilities, for the safety assessment of radioactive waste facilities and for the management of "mixed" waste, i.e., waste containing radioactive and other hazardous materials.

6. Observations on the review process at the First Review Meeting

Quality of Country Group discussions

As noted in the Summary Report, these sessions were very variable in quality and activity. In some sessions, the exchanges were open and frank and resulted in useful and constructive conclusions being drawn regarding the waste safety situation in the country concerned. In others, Contracting Parties were defensive in their approach – seemingly wishing to emerge without being criticised – leading to a rather superficial discussion on some National Reports. Concern over the attitude of some participants led to an observation during the Plenary Session discussions that each Country Group member has a responsibility to undertake a serious review of all the National Reports of his/her Country Group. Of course, it must be noted that an exchange had already taken place by means of the written questions and answers prior to the Review Meeting and this factor may have contributed to the indifferent level of discussion in some sessions. The role of the officers of the Country Groups (chairman, vice-chairman, rapporteur, co-ordinator) in stimulating and promoting discussion is obviously important and the Contracting Parties at the Review Meeting instituted work within the Secretariat to improve the guidance on the respective roles of these officers for future review meetings. Nevertheless, it is difficult to avoid the conclusion that, if there is to be significant improvement in the future, much will depend upon the participants bringing a more open and constructive attitude to the meeting.

Countries with different interests

It was apparent that the focus of interest of the nuclear power countries is different from that of the non-nuclear power countries, the former being mainly concerned with the management of spent fuel and the waste from nuclear power generation and the latter with the management of disused sealed sources and the waste arising from the use of unsealed sources in diagnostic and therapeutic medicine, and, in some cases, mining and milling waste. This means that, although the management of disused sealed sources is an issue for all countries, it is of lesser concern to the nuclear power countries and was given comparatively little attention in their National Reports and in the discussions at the Review Meeting. In the context of transboundary movement of materials [Article 27], the nuclear power countries will usually be in the role of suppliers of sources (states of origin) while the non-nuclear power countries will usually be the recipient countries (states of destination). This division of interest may be expected to become more marked as more developing countries become party to the Convention and it raises the question as to whether the existing review process is entirely satisfactory and whether some means of addressing specific issues of interest to particular groups of countries should be introduced.

National and international aspects

Radioactive waste management is principally a national concern; the solid waste is normally processed, stored and disposed of in the country where it is generated. This is indicated in pre-ambular paragraph (xi) of the Convention although it is also recognised that, in certain circumstances, there may be waste management agreements among Contracting Parties. Most attention in National Reports and in the discussions of Country Groups at the Review Meeting was therefore focussed on the situations within individual countries. Nevertheless, there are international or transboundary aspects of radioactive waste management to consider. Some of these are listed below:

- the control of radioactive discharges to the environment;

- the regulation of transboundary movement of radioactive materials, e.g, spent fuel and sealed sources;
- the regulation of the transboundary movement of very low-level radioactive material (international clearance policies);
- rules for establishing regional repositories.

It seems clear that, in future, there will be issues relating to some or all of these subjects to consider in the context of the Convention. Under the existing arrangements, "ad-hoc" discussions could be held during the Plenary Sessions of a Review Meeting, but in view of the potentially important role of the Convention in relation to international aspects, consideration should be given to providing for special sessions within the Review Meeting to allow for structured discussion of such issues.

7. Organisational aspects

Number of Contracting Parties

The Summary Report expresses the concern of existing Contracting Parties at the comparatively low level of ratification at present (34 Contracting Parties) and identifies a number of initiatives, mainly for the Secretariat, to improve the situation. The main concern is that a global convention of this type cannot become really effective unless it has a broadly based global membership. At present it is dominated by the countries with nuclear power plants.

Changes in organisational arrangements

An Open-ended Group was established during the meeting and it discussed, *inter alia*, possible changes to the Rules of Procedure and Financial Rules [INFCIRC/602] and to the Guidelines Regarding the Review Process [INFCIRC/603] in order to:

- relax admission to Country Groups (which at present is limited to those Contracting Parties that are members of that Country Group and to Contracting Parties that have posed written questions to members of the Country Group);
- relax rules on questions in Country Groups;
- simplify the balloting procedure;
- modify arrangements for appointing the officers of the Review Meeting;
- clarify procedures for late ratifiers of the Convention; and
- establish arrangements for "Topic Sessions" in the review process.

The changes proposed by the Open-ended Group were subsequently agreed by a Plenary Session of the Review Meeting.

Continuity of Joint Convention activities

A number of additional initiatives were discussed during the Review Meeting aimed at improving the effectiveness of the review process. In order to carry these initiatives forward and to

facilitate their introduction at the earliest possible time, it was decided that the General Committee of the Review Meeting (president, vice-presidents and chairs of Country Groups) would continue in existence until the next Organisational Meeting. It would review any drafts produced by the Secretariat in this context.

Transparency

The discussions at the Review Meeting indicated a desire on the part of many of the Contracting Parties to improve the transparency of the review process. In this context, most Contracting Parties (27 out of 34) voluntarily placed their National Reports on their own websites and, subsequently, they were placed on the Joint Convention website.[7]

Electronic submissions

For the First Review Meeting the official mechanism for distributing National Reports was by means of printed paper. The meeting was in favour of a move towards electronic submissions for National Reports and the Secretariat was asked to facilitate this transition as soon as possible. For the next review meeting, however, both methods will be allowed.

8. Observations on the organisational arrangements

Knowledge retention

In the interests of encouraging an open and frank exchange between Contracting Parties, the records of the Review Meetings are limited to the publicly available Summary Report and the President's Report (available to participants of the meeting). Formally, no records are retained of the discussions within the Country Groups, of the rapporteur's session summaries or of the rapporteur's presentation to the Plenary Session of the Review Meeting.

This approach is in conflict with the desire of Contracting Parties for transparency and, in addition, it is not consistent with a review process that seeks to achieve progressive improvement by each Contracting Party. It is clear that this aspect needs further consideration by the Contracting Parties. As a minimum, information should be retained between review meetings to allow the review of any changes that have taken place in the countries of the Country Groups.

Observers

Attendance at meetings of the Joint Convention is limited to Contracting Parties and to observers invited by a consensus of Contracting Parties [Article 33]. The observer status may be afforded to intergovernmental organisations competent in respect of matters governed by the Convention. (At the First Review Meeting the Nuclear Energy Agency of the OECD was invited to attend as an observer.) This limitation on attendance was established in order to encourage open exchange between Contracting Parties. It can be contrasted with the more liberal approach to observers

7. www-rasanet.iaea.org/conventions/waste-jointconvention.htm

in many other international conventions and might be seen as being in conflict with the desire of Contracting Parties for increased openness and transparency.

9. Conclusions

The First Review Meeting of the Joint Convention resulted in the assembly of the most comprehensive information yet available on the status of spent fuel and radioactive waste management in the world. The review process has prompted improvements in the safety of radioactive waste management in some states and the promise of improvements in others. The discussions in the two-week meeting addressed all of the important issues confronting countries in managing spent fuel and radioactive waste safely. It revealed areas for improvement at both the national and international levels.

The meeting showed the strengths and weaknesses of the Joint Convention review process, which had been inherited from the Convention on Nuclear Safety, and produced a number of ideas for its improvement and refinement.

The Joint Convention review process is designed principally for the review of the National Reports of Contracting Parties. However, there are also global issues in the area of spent fuel and radioactive waste management and issues of special interest to groups of countries to consider. The future development of the Convention may therefore have to include suitable additional mechanisms to allow these aspects to be addressed.

The Joint Convention has the potential to be a powerful mechanism for improving the safety of spent fuel and radioactive waste management in the world, but for the potential to be fully realized, a more globally representative membership of the Convention is required and an open and constructive approach from the Contracting Parties.

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Protocol Amending the European Convention on the Suppression of Terrorism (2003)

This Protocol amending the European Convention on the Suppression of Terrorism of 27 January 1977 was adopted by the Council of Europe on 15 May 2003. The 1977 Convention is designed to facilitate the extradition of persons having committed acts of terrorism. To this end, it lists the offences that Parties undertake not to consider as political offences, or as offences connected with political offences, or as offences inspired by political motives. The objectives of the amending protocol are to strengthen the fight against terrorism whilst protecting human rights. Its Article 1 extends the list of offences that Parties undertake not to consider as political offences to any offence within the scope of the Convention on the Physical Protection of Nuclear Material, adopted at Vienna on 3 March 1980. The texts of the European Convention on the Suppression of Terrorism and of its amending Protocol are available at the following URL:
http://conventions.coe.int/Treaty/Commun/ListeTraites.asp?CM=8&CL=ENG

Status of Conventions in the Field of Nuclear Energy

1979 Convention on the Physical Protection of Nuclear Materials

Since the last update in *Nuclear Law Bulletin* No. 73, two states, namely Cameroon and the Democratic Republic of the Congo have become Contracting Parties to this Convention (accession). Therefore, as of 12 November 2004, there are 106 Contracting Parties to this Convention.

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

Since the last update in *Nuclear Law Bulletin* No. 73, Chile has become a Contracting Party to this Convention (accession). Therefore, as of 12 November 2004, there are 90 Contracting Parties to this Convention.

1996 Comprehensive Test Ben Treaty

Since the last update in *Nuclear Law Bulletin* No. 73, seven states, namely the Democratic Republic of the Congo, Liechstenstein, Serbia and Montenegro, Sudan, Tanzania, Togo and Tunisia have become Contracting Parties to this Treaty (accession). Therefore, as of 12 November 2004, there are 119 Contracting Parties to this Treaty.

1996 Protocol amending the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter

Since the last update in *Nuclear Law Bulletin* No. 73, two states, namely France and Egypt, have become Contracting Parties to this Protocol (accession). Therefore, as of 12 November 2004, there are 20 Contracting Parties to this Protocol.

BIBLIOGRAPHY & NEWS BRIEFS

BIBLIOGRAPHY

OECD Nuclear Energy Agency

2002-2003 Update of the Analytical Study on Nuclear Legislation in OECD Member Countries

This 2002-2003 Update of the Analytical Study on Nuclear Legislation in OECD member countries was prepared in co-operation with the competent authorities in the countries listed herein. It is organised on the basis of a standardised format for all countries, thus facilitating the search for and comparison of information. The update consists of replacement chapters for Belgium, Canada, the Czech Republic, France, Germany, Ireland, Mexico, Poland, Portugal, Sweden, Switzerland and the United Kingdom. This update is based on information which was made available to the NEA Secretariat by the end of 2003. This publication may be ordered from the OECD Online Bookshop at the following address:
http://oecdpublications.gfi-nb.com/cgi-bin/OECDBookShop.storefront/

Austria

Internationales Atomhaftungsrecht: Anwendungsbereich und Haftungsprinzipien by Susanne Kissich, Baden Baden, 2004, 342 pages

The book, published in the German language, describes the nuclear third party liability system in international law, and in particular the regime established by the amended Paris and Brussels Conventions. It first provides an overview of developments in international nuclear law up to the adoption of the 2004 Protocols amending the above-mentioned Conventions. The author mainly aims to provide a comprehensive analysis of the geographical and technical scope of these Conventions. Technical scope is understood to mean all the prerequisites for the application of the Conventions, such as for instance the necessary occurrence of a nuclear damage in order to trigger the nuclear operator's liability.

In this context, the author tackles issues such as the liability of operators of final radioactive waste depositories, the application of the international Conventions to nuclear military installations, or to accidents occurring in high seas, their application to nuclear damage occurring in third states, and potential problems arising from gaps which exist in the scope of application of the Conventions.

United Kingdom

Nuclear Waste: Law, Policy and Pragmatism, by Peter Riley, 2004, 324 pages

Nuclear waste is a by-product of the nuclear weapons programme, the nuclear electricity programme and, to a lesser extent, from the use of radioactive isotopes in medical and industrial processes. Using as a starting point the laws framed in the early years of the UK nuclear power programme to regulate the industry, this book compares approaches to nuclear waste management in a number of countries including the United States, France, Finland, and Korea. The book identifies the current treatment and proposed future of nuclear waste, looking at wider policies, stakeholder perceptions, international pressures and future energy scenarios. The key argument of the book is that, in the future, the regulation of nuclear waste must be treated as a primary object of the law.

Uruguay

Ante un nuevo desafío: El terrorismo nuclear, by Diva E. Puig, Montevideo, 2004, 151 pages

This book, published in the Spanish language, and the title of which may be translated as "Facing a new challenge: nuclear terrorism" was written by Ms. Diva Elvira Puig Cardozo, Professor at the Law Faculty of the University of the Republic, Montevideo, who is a recognised expert in nuclear energy law.

Having described the main stages in the development of the uses of nuclear energy from its inception to today, the author analyses the various threats which arise for public security from the use of radioactive sources. Professor Puig then examines the legal framework governing nuclear security, including various international legal instruments and some specific national legislation, and determines to which extent these texts take into account risks related to nuclear terrorism. The annex to this book contains the Spanish versions of the treaties and other international standards it examines.

NEWS BRIEFS

International Nuclear Law Association

Nuclear Inter Jura 2005

The International Nuclear Law Association (INLA) will hold its 16th Congress from 9 to 14 October 2005 in Portorož, Slovenia.

These Congresses, organised on a two-yearly basis, provide INLA members, together with other interested persons, with an opportunity to review recent developments in nuclear law, and serve as a forum to discuss legal questions concerning the peaceful uses of nuclear energy.

Further information may be obtained from the Nuclear Training Centre (ICJT), Jamova 39, SI-1000 Ljubljana. Fax: +386 1 561 2276. Web site: www.ictj.org/INLA2005.

World Nuclear University

The World Nuclear University (WNU) was established in September 2003 under the auspices of the World Nuclear Association, whose headquarters are located in London. It also benefits from the sponsorship of the OECD/NEA, the IAEA and the World Association of Nuclear Operators (WANO). This "virtual university" aims to promote and consolidate scientific and technical educational programmes in the nuclear field. The first WNU Summer Institute will be held from 9 July to 20 August 2005 at the Department of Energy's Idaho National Laboratory in the USA. The course aims to attract some 60 participants from a wide array of countries who will follow a six-week training programme in a board spectrum of nuclear energy issues and engage in team-building and leadership exercises. One working session will be devoted to nuclear law and will be organised in cooperation with the ISNL. Further information on the programme of the WNU Summer Institute and an application form are available at the following address: www.world-nuclear-university.org.

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NUCLEAR ENERGY AGENCY
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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 (14th 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 28 OECD member countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, Norway, Portugal, Republic of Korea, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities also takes part in the work of the Agency.

The mission of the NEA is:

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

Specific areas of competence of the NEA include safety and regulation of nuclear activities, radioactive waste management, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information. The NEA Data Bank provides nuclear data and computer program services for participating countries.

In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

ICELAND

Act on Radiation Protection*

of 8 April 2002

CHAPTER I

Objectives and scope

Section 1

The objective of this Act is to ensure adoption of the necessary safety measures to protect against radiation from radioactive materials and radiological equipment and to limit the detrimental effects of such radiation. An effort shall be made to ensure that all exposure to radiation resulting from any practice covered by this Act shall be as low as reasonably achievable, taking into account economic and social factors.

The objectives of the Act shall be attained through specific measures, for example, the inspection of radioactive materials and radiological equipment, studies and research, monitoring of radioactive substances in the environment, measures against radiological emergencies, and through education and guidelines on radiation protection.

Section 2

The Act applies to:

1. safety measures against ionising radiation in respect of any practices that could cause a risk of radiation exposure to persons, for example, the production, import, export, delivery, possession, installation, use, handling and disposal of radioactive substances and radiological equipment;
2. safety measures against ionising radiation in practices that result in increased levels of natural radiation in the environment;
3. safety measures against ionising radiation from radioactive substances and radiological equipment insofar as this is not governed by other legislation pursuant to international conventions;
4. monitoring and research in respect of radioactive substances in the environment and foodstuffs;
5. radiological aspects of measures concerning radiological and nuclear emergencies.

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* Unofficial translation kindly provided by the Icelandic authorities.

Section 3

In this Act, the terms listed below are defined as follows:

1. *radiation:* ionising and non-ionising radiation;
2. *ionising radiation:* radiation from radioactive substances, X-rays, or other radiation with similar biological effects;
3. *non-ionising radiation:* ultraviolet radiation and all other electromagnetic radiation with longer wavelength, for example, microwaves or other electromagnetic waves that have similar biological effects, as well as electromagnetic fields;
4. *radiological equipment:* electrical equipment producing radiation, for example, X-ray equipment and sun lamps;
5. *medical irradiation:* any irradiation of individuals for diagnosis or treatment of disease, for scientific research or forensic purposes;
6. *practice:* work activity that may cause ionising radiation exposure to individuals;
7. *effective dose:* a measure of the quantity of ionising radiation where the health risk of an individual constitutes the basis;
8. *designated supervisor:* an employee with appropriate education and experience, who is appointed by an owner to act on his behalf as being responsible for radiation protection practices;
9. *quality assurance:* any organised or planned measure deemed necessary to create sufficient trust that the facilities, system, system parts, or measures work in a satisfactory manner and in accordance with accepted standards;
10. *quality control:* the part of the quality assurance that applies to measures (planning, coordination, implementation) intended to maintain or improve quality. Quality control entails control, assessment and observance of set limits in respect of any characteristic factors regarding the effectiveness of equipment that may be defined, measured and monitored.

CHAPTER II

The Icelandic Radiation Protection Institute

Section 4

The Icelandic Radiation Protection Institute is an institute under the auspices of the Minister of Health and Social Security. The Institute's role is to implement safety measures against ionising radiation from radioactive substances and radiological equipment.

The Minister appoints the Director of the Icelandic Radiation Protection Institute for a term of five years. The Director shall have a university degree in the Institute's sphere of activity. The Director is in charge of the management of the Institute. He/she shall ensure that it is operated in accordance with existing laws and regulations at all times, and is responsible for its daily operation.

Section 5

The Icelandic Radiation Protection Institute is responsible for:

1. monitoring and supervising the implementation of this Act and its implementing rules and regulations;
2. any inspections and research deemed necessary pursuant to this Act and its implementing rules and regulations;
3. monitoring workers' exposure to ionising radiation, and maintaining a dose register of the results of the dose estimates for every worker;
4. regular assessment of the total ionising radiation exposure of the general public from practices under this Act;
5. regular assessment of patients' exposure to ionising radiation from practices under this Act;
6. monitoring and researching radioactive substances in foodstuffs and the environment;
7. courses in radiation protection for workers who work with radiation, as well as dissemination of information to the general public and the mass media;
8. research in the field of radiation protection;
9. the radiological part of measures concerning radiological and nuclear emergencies, including the operation of emergency response and radiation measuring systems, and other measures relating thereto.
10. collaborating with foreign institutions in relation to radiation protection and nuclear issues;
11. other factors pertaining to the implementation of this Act, and other projects in the field of radiation protection in accordance with further decisions thereon by the Minister.

The Minister may request the Institute to address certain matters or projects relating to its duties under this Act.

The Institute shall prepare, apply for and maintain accreditation regarding certain elements of research and inspections it carries out.

The Institute is authorised to enter into agreements on certain elements of the implementation of this Act with parties who meet the professional criteria of the Institute.

Parties engaging in practices covered by this Act shall provide the Institute with the necessary information to facilitate the assessment of items 4 and 5 above in as realistic a manner as possible.

Section 6

The Minister shall appoint the Radiation Protection Council, which is a professional advisory body for the Icelandic Radiation Protection Institute. The Council shall consist of three persons with expertise in the Institute's field of work.

CHAPTER III

Permits for import, production, ownership, sale and delivery of radioactive materials

Section 7

The production, import, ownership, storage, delivery or disposal of radioactive substances, whether pure, mixed with other substances or installed in equipment, are subject to licensing by the Icelandic Radiation Protection Institute. The granting of licences is subject to conditions set out by the Institute, including provisions governing the handling of radioactive substances at the end of their use. Applications for such licences shall be submitted on the Institute's forms or in another format acceptable by the Institute.

A licence is not required in respect of radioactive substances if their total content or concentration per mass unit is under the exemption limits as determined by the Icelandic Radiation Protection Institute. Additionally, such licences are not required for phosphorescence watches, pocket compasses, meters, and other such equipment containing very small quantities of radioactive substances, to be determined by further decisions of the Icelandic Radiation Protection Institute.

The import of radiological equipment capable of producing ionising radiation is subject to reporting requirements. Importers shall dispatch a notification to the Icelandic Radiation Protection Institute on any such equipment imported. The reports shall be made on the Institute's form or in another format acceptable by the Institute.

The Minister may decide by means of a regulation that the import of certain categories of radiation equipment capable of producing non-ionising radiation, be subject to reporting.

CHAPTER IV

Assessment of the benefits and risks of using radiation

Section 8

Any new types or categories of practices that may cause ionising radiation exposure to people shall be assessed in advance with respect to the economic, social or other benefits in comparison with the risk of detrimental health impact such radiation may have. Parties intending to commence such a practice shall send a report to the Icelandic Radiation Protection Institute for an assessment of the proposed practice. Commencing such a practice prior to receiving the consent of the Icelandic Radiation Protection Institute is prohibited. An evaluation by the Directorate General of Public Health is also necessary in respect of medical activities. A review shall be made of a practice already taking place pursuant to an assessment as described in paragraph 1, when new essential information is available on its benefits or consequences.

CHAPTER V

Use of radioactive substances and radiological equipment

Section 9

Any use of radioactive substances or radiological equipment shall be in accordance with this Act and its implementing rules and regulations. The use of radioactive substances or radiological equipment with ionising radiation is prohibited without a licence from the Icelandic Radiation Protection Institute. Changes in practices that affect radiation protection are also subject to the authorisation of the Icelandic Radiation Protection Institute. The issue of a licence is subject to conditions as set out by the Institute. Applications for such licences shall be made on the Institute's forms or in another format acceptable by the Institute. In the case of a new practice, an assessment of the use shall be performed pursuant to Section 8.

By means of a regulation, the Minister may decide that the use of certain categories of radiological equipment emitting non-ionising radiation be subject to authorisation.

Section 10

The owner shall ensure that the use of radioactive substances and radiological equipment, and instruments, equipment and radiation protection practices are in accordance with this Act and its implementing rules and regulations.

With regard to practices using ionising radiation, the owner shall appoint a designated supervisor who has the appropriate education and experience. The Icelandic Radiation Protection Institute shall be informed of his/her name, education and experience. The appointment of the designated supervisor is subject to the approval of the Icelandic Radiation Protection Institute. The designated supervisor, who is mandated by the owner for this purpose, is responsible for ensuring that practices are in accordance with this Act and its implementing rules and regulations.

With regard to practices using ionising radiation, an appropriate internal control scheme shall be implemented for radiation protection.

The Minister shall adopt by regulation further provisions regarding the education, experience and duties of designated supervisors, and on the arrangements for and execution of the internal control.

Section 11

Persons entrusted with this task pursuant to this Act shall organise the appropriate response to radiological accidents, and shall provide information on special risk factors according to further rules thereon established by the Icelandic Radiation Protection Institute. They shall notify the Icelandic Radiation Protection Institute if a radiological accident occurs. They shall conduct an initial assessment of the possible consequences, and shall take all the appropriate measures to limit such consequences.

Section 12

The storage and disposal of radioactive substances shall always take place in accordance with the rules set by the Icelandic Radiation Protection Institute. The same applies to other waste, equipment or packaging which contains or is contaminated by radioactive substances.

The Icelandic Radiation Protection Institute shall be notified when an instrument or equipment capable of producing ionising radiation is finally taken out of use. For as long as equipment contains radioactive substances or is capable of producing ionising radiation, it shall be kept in safe storage, and shall be safeguarded in accordance with the rules established by the Minister pursuant to Section 10, paragraph 4. The Radiation Protection Institute is authorised to demand the disposal or removal of radioactive substances and radiological equipment no longer in use. If the Institute's demands on disposal or removal are not met within a specified deadline, the Institute may carry out such actions at the owner's expense.

CHAPTER VI

Radiation protection in the workplace

Section 13

Any exposure to radiation by workers and members of the public from practices covered by this Act shall be as low as reasonably achievable, economic and social factors being taken into account.

In instances of practices where work takes place using both ionising and non-ionising radiation, measures shall be taken to protect the workers and others against radiation. Such measures shall be in accordance with the scope of the risk in question. In instances of practices using ionising radiation, appropriate monitoring of workers' exposure and that of other persons relating to the practice shall be carried out. The workers shall have adequate education and shall be given training and instruction to ensure that they have sufficient knowledge of radiation protection and the safe use of radiation. Visitors and others who have access to the workplace shall be provided with information on the rules by which they must abide for radiation protection purposes.

In the case of practices resulting in increased natural ionising radiation, appropriate measures shall be taken to protect employees against such radiation.

The Minister shall establish further provisions in a Regulation on Radiation Protection in the Workplace, including arrangements for radiation protection and safety measures to reduce radiation, the age limits of those working with ionising radiation, the effective dose to workers, apprentices and members of the public, the monitoring of effective doses, the medical monitoring of persons working with ionising radiation, the classification of work areas and warning signs, shielding and installations of premises, education, professional training, and instructions to persons using radiation, or who work at areas where radiation is used.

Measures for protecting workers against the detrimental effects of non-ionising radiation in the workplace are subject to the Act on the Working Environment, and Health and Safety in the Workplace and its implementing rules.

Section 14

The dose register to be maintained by the Icelandic Radiation Protection Institute on the results of individual radiation monitoring, pursuant to Section 5, paragraph 1, item 3, shall be subject to the Act on the Protection and Processing of Personal Data. The results shall be stored for the entire period during which the worker is subjected to ionising radiation at work, and until such time he/she reaches or would have reached the age of 75 and in any event for not less than 30 years after that worker stops working in the position causing exposure to ionising radiation. Special notes shall be made of results that are not based on individual monitoring. The effective dose of a radiation accident shall be especially recorded, as well as the circumstances of the radiation, and the measures taken.

The results of individual monitoring shall be accessible to the worker, his/her employer, and the workplace physician, as well as by the health authorities pursuant to further rules to be established by the Minister.

CHAPTER VII

Medical irradiation

Section 15

The designated supervisor pursuant to Section 10 is responsible for the use of medical irradiation. He/she shall ensure that only competent persons with recognised special education shall carry out medical irradiation.

Before any use of medical radiation, the designated supervisor, or the person requested to carry out such irradiation, shall consider whether the use of radiation is justifiable with respect to the objective of the exposure, the patient's symptoms and condition.

Before any use of medical irradiation, the designated supervisor shall ensure that the radiation exposure is as low as reasonably achievable for the intended purpose of the exposure, the instruments and the equipment available, as well as other factors of impact.

Appropriate plans for quality assurance and quality control of the practice shall be established at any such place where medical irradiation is used.

Section 16

Persons intending to examine a group of people using ionising radiation, for scientific research for example, shall obtain an authorisation from the Icelandic Radiation Protection Institute. Such examinations may not commence until the Institute's authorisation has been granted, and also subject to the opinion of the Directorate General of Public Health.

CHAPTER VIII

Inspection of radiological equipment and radioactive substances

Section 17

Pursuant to Section 5, the Icelandic Radiation Protection Institute conducts regular inspections of the use of radioactive substances and radiological equipment for which licences are required under this Act.

The personnel of the Icelandic Radiation Protection Institute are authorised access to any such location where radioactive substances and radiological equipment capable of producing ionising radiation are used or stored. An effort shall be made to ensure that such inspection causes as limited disturbance as possible of the daily operation of instruments and substances.

The Administration of Occupational Safety and Health conducts inspections and takes measures to prevent detrimental effects on employees of non-ionising radiation in accordance with the provisions of the Act on the Working Environment, Health and Safety in the Workplace and its implementing rules.

The Minister shall establish by regulation further provisions on arrangements for and implementation of the inspections by the Icelandic Radiation Protection Institute.

Section 18

Owners of radiological equipment and radioactive substances shall implement any improvements which the Icelandic Radiation Protection Institute deems necessary before a specified deadline, failing which further use of instruments and equipment shall not be permitted until such improvements are made.

In the event that the safety equipment is deemed significantly lacking, the Icelandic Radiation Protection Institute shall order that further use of radioactive substances and radiological equipment be suspended until such time as improvements have been made.

Section 19

The registered owner of radioactive substances or radiological equipment capable of producing ionising radiation shall pay a charge for the regular inspections by the Icelandic Radiation Protection Institute pursuant to Section 17, for the evaluation of applications for licences pursuant to Sections 7, 9 and 20, and for the monitoring of employees' radiation doses pursuant to Section 5, paragraph 1, item 3. The Minister shall establish a tariff for such control on the basis of proposals by the Icelandic Radiation Protection Institute. The tariff shall be based on the costs of such control.

CHAPTER IX

Installation, modifications and maintenance of radiological equipment

Section 20

The installation of radiological equipment capable of producing ionising radiation is subject to a licence from the Icelandic Radiation Protection Institute. Modification of such equipment with respect to ionising radiation is also subject to a permit from the Icelandic Radiation Protection Institute. Persons intending to install radiological equipment or who intend to modify such equipment with respect to ionising radiation, shall present the Icelandic Radiation Protection Institute with a plan on such a project using the Institute's forms, or in another manner acceptable by the Institute. Commencing such a project prior to receiving the Institute's licence is not permissible.

Only persons who meet the requirements of the Icelandic Radiation Protection Institute in respect of knowledge and experience may repair, install and modify radiological equipment capable of producing ionising radiation.

Persons involved in the installation of such radiological equipment, its maintenance or modification with respect to ionising radiation, shall ensure that the equipment's safety arrangement is in accordance with the applicable law and regulations, or other implementing rules, and shall immediately notify the Icelandic Radiation Protection Institute if this is not the case.

CHAPTER X

Miscellaneous provisions

Section 21

By means of a regulation, the Minister shall establish further provisions on the implementation of this Act and on the activities of the Icelandic Radiation Protection Institute, and shall establish a tariff for services provided by the Icelandic Radiation Protection Institute, subject to the Institute's recommendations.

Section 22

Breach of the provisions of this Act is subject to a fine or imprisonment for up to 2 years, unless another Act provides for a more severe criminal penalty. Matters arising due to breaches of this Act shall be subject to criminal procedure.

Section 23

This Act shall take effect immediately, with the exception of the provisions on non-ionising radiation, emergency response (Section 5, paragraph 1, item 9) and accreditation [Section 5(3)] which shall take effect on 1 January 2003. The Act's provisions on inspections shall be reviewed within 5 years of the Act's entry into force. Upon the entry into force of this Act, Act No. 117/1985 (the Radiation Protection Act) shall be repealed.

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