NUCLEAR LAW BULLETIN No. 44

Contents

This Bulletin includes a supplement

December 1989
Nuclear Energy Agency
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, the Federal Republic of 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) and New Zealand (29th May 1973)

The Socialist Federal Republic of Yugoslavia takes part in some of the work of the OECD (agreement of 28th October 1961)

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 all European Member countries of OECD as well as Australia Canada Japan and the United States The commission of the European Communities takes part in the work of the Agency

The primary objective of NEA is to promote co-operation among the governments of its participating countries in furthering the development of nuclear power as a safe environmentally acceptable and economic energy source

This is achieved by

- *encouraging harmonisation of national regulatory policies and practices with particular reference to the safety of nuclear installations protection of man against ionising radiation and preservation of the environment radioactive waste management and nuclear third party liability and insurance*
- *assessing the contribution of nuclear power to the overall energy supply by keeping under review the technical and economic aspects of nuclear power growth and forecasting demand and supply for the different phases of the nuclear fuel cycle*
- *developing exchanges of scientific and technical information particularly through participation in common services*
- *setting up international research and development programmes and joint undertakings*

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

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FOREWORD

The accident at Chernobyl triggered still continuing numerous reactions in the international community, notably to make improvements on a legal level, as evidenced by the IAEA Conventions on Early Notification and on Assistance, European Community Regulations on contamination levels and the work in progress within NEA and IAEA on nuclear third party liability questions

This issue of the Bulletin includes an article on the above IAEA Conventions and reproduces the most recent Community regulations on maximum permitted levels of contamination of foods and foodstuffs Also, new countries have acceded to the Vienna Convention on Civil Liability for Nuclear Damage and have signed or ratified the Joint Protocol relating to the application of that Convention and the Paris Convention The Bulletin gives the status of signatures and ratifications of the Vienna Convention and the Joint Protocol

As regards bilateral co-operation, in particular, three European countries, the Federal Republic of Germany, France and the United Kingdom have declared their intention to strengthen their co-operation in the field of industry The Bulletin also reproduces the text of an agreement on peaceful nuclear co-operation between Canada and Switzerland

As usual, the latest developments in national legislation and regulations are reported In particular, Finland has revised its nuclear third party liability legislation to conform to amendments of the Paris and Brussels Conventions by the 1982 Protocols, the Supplement to the Bulletin contains the text of the consolidated Act.

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STUDIES AND ARTICLES

ARTICLES

THE IAEA CONVENTIONS ON EARLY NOTIFICATION OF A NUCLEAR ACCIDENT AND ON ASSISTANCE IN THE CASE OF A NUCLEAR ACCIDENT OR RADIOLOGICAL EMERGENCY*

by Hon. Prof. em. Rechtsanwalt DDr. Berthold Moser, Salzburg

Abstract

This article provides a comprehensive analysis of the provisions of both Conventions. Special attention is paid to the rules of the Convention on Early Notification which identify the events subject to notification and the content and addressees of the information to be provided with regard to a nuclear accident, as well as to the provisions of the Convention on Assistance concerning the request and grant of international assistance with regard to a nuclear accident and the duties attributed in this field to the IAEA. The author also considers the liability questions raised by that Convention

I. GENERAL

In the wake of the Chernobyl reactor accident on 26th April 1986, discussions were initiated in the International Atomic Energy Agency (IAEA) with the object of strengthening international co-operation in the development and use of nuclear energy To that end the intention, among other things, was that IAEA Member States (and the IAEA itself) should be under an obligation, in the event of an accident in their own country, to notify any other States for which there was a danger of harmful radiological effects as quickly as possible It was also the intention that Member States and the IAEA should agree on an undertaking to provide assistance in the case of a nuclear accident or a radiological emergency The Chernobyl accident in the Ukraine

* Responsibility for the ideas expressed and the facts given rests solely with the author

had had radiological consequences on an unprecedented scale, on the territory of other States, not limited to those bordering on the USSR The disaster was in no way attributable solely to reactor staff; a major factor was the extremely risky design of this type of reactor in which the drawbacks are so serious that the construction of this type of power plant has hardly ever been authorised in any other country [1] For this reason, it is not possible to compare the potential danger of such an installation with that of other nuclear plants and yet it was vitally important to take the fullest possible precautions for the future [2]

Both Conventions, drawn up in a very short space of time, had their precursors in the form of bilateral agreements between various neighbouring European States In their scope, however, they go far beyond these agreements to the extent that they are not confined to relations between neighbouring countries, indeed the geographical situation of countries affected by a radiation accident is immaterial

II. THE SUBSTANTIVE PROVISIONS OF THE TWO CONVENTIONS

A. The Convention on Early Notification

1. The essential substantive content of this Convention (Article 2) consists of the obligation to notify and inform those States affected or likely to be affected by a nuclear accident To notify means to advise that the accident has occurred and to inform means to provide further information. Accident means essentially an effect occurring suddenly or within a very short space of time An accumulation of minor damage within a short time may also constitute an accident. Personal injury or damage to property must have been brought about by the incident Whether the accident was foreseeable or not is irrelevant A further point is that the territory of a State being physically affected is also covered regardless of whether the affected part of the country is subject to use or not In addition, the traditional definition of an accident requiring that there has to be actual damage is extended insofar as the probability of damage or harm is sufficient to cause the Convention to come into effect The authentic English and French wordings of the Convention read " accident from which a release of radioactive material occurs or is likely to occur" and " accident qui entraîne ou entraînera probablement un rejet de matieres radioactives ..". Where there is no certainty, therefore, there has to be the probability of a release of radioactive materials

Thus the Convention needs two conditions to come into operation

- the actual or probable release of radioactive materials, and
- the actual or possible crossing of frontiers by the materials actually or probably released

The accident is a nuclear accident if it is caused by radioactive material released by specific plant or because of specific activities

in such a way that radiological consequences occur or may occur in the territory of another State Who the owner or operator of the plant happens to be or who performs the activity is irrelevant Whether it is the government itself or natural persons, corporations or companies with a legal personality under its jurisdiction or control is also irrelevant. In every case the duty to notify and inform lies with the State in which the plant is located or the activity performed

2 The plants and activities concerned are listed by types in Article 1, paragraph 2 They are as follows: nuclear reactors, nuclear fuel cycle and radioactive waste storage facilities, the storage of nuclear fuels or radioactive wastes, the manufacture, use, storage, disposal and transport of radioisotopes [3] for agricultural, industrial, medical and related scientific and research purposes and lastly, the use of radioisotopes for power generation in space objects Whether the use of nuclear energy is for civil or military purposes is, as far as the application of the Convention is concerned, immaterial This list by types applies unless a State Party to the Convention extends the list unilaterally or by agreement between two or more States Parties. Under Article 3 States Parties are at liberty to notify other States of other nuclear accidents caused by radioactive materials This applies in particular to accidents caused by nuclear weapons or during tests of nuclear weapons

The purpose served by the nuclear reactor is of no importance It may be for the production of electrical power or heat, for research, experimental or instructional purposes, for the recovery of certain radioactive materials or for any other purpose. The location of the nuclear reactor and whether it is stationary or mobile is of no importance. Radioactive waste treatment plants may similarly differ in their type, the main ones being reprocessing plants and plants for the conditioning of waste for purposes of safe disposal

The Convention also refers, under the different types of plant and activities, to the transport and storage of nuclear fuels or radioactive wastes Transport embraces all types of transport, by road, rail, sea, waterway or air. For transport by ship or by aircraft, responsibility for notification under the Convention lies with the State to which the means of transport "belongs" This, in the case of State-owned ships and aircraft, is the owning State and, in the case of privately-owned ships and aircraft, the State where the ship or aircraft is registered since that is the State that exercises jurisdiction The storage of nuclear fuels means both intermediate and final storage.

The Convention also applies to accidents caused by radioactive materials that are neither fuel nor fuel wastes since it refers to radioisotopes for agricultural, industrial, medical and related scientific and research purposes and to the production and use of such radioactive materials as well as their storage, disposal and transport In many cases the plants handling nuclear fuel and fuel wastes may also be used for the intermediate or final storage or reprocessing of radioisotopes

One type of use of radioisotopes is specifically listed in the Convention, namely their use for power generation in space objects Here the obligation to notify and inform after the occurrence of an accident lies with the launching country This is the country that launches the space object or causes it to be launched or from whose territory or installations a space object is launched, the reason being that this is the State having jurisdiction or control over the event

3 The plants and activities listed in Article 1, paragraph 2 do not, as already pointed out, include all possible sources of damage with transboundary radiological consequences In particular there is no mention of plants and activities connected with nuclear weapons and the testing of such weapons Article 3 allows for such cases but in incomplete fashion It says that States Parties may notify in the event of nuclear accidents other than those specified in Article 1 This supplementary field of application of the Convention is therefore purely optional. It is a regrettable omission but can be explained by the fact that States in possession of nuclear weapons are not prepared for their military sector to be subject to international regulations in respect of nuclear or any other type of weapon [4]. Whether and to what extent notification and information are given following an accident in connection with nuclear weapons or nuclear weapon testing is left to the discretion of the State where the accident has taken place Furthermore, Article 3 refers only to notification Since, in any case, the initiative for notification in such cases is a matter for the discretion of the States the provision of further infoimation is not ruled out.

4 The content of the notification and information to be supplied is specified in Article 2(a) and paragraphs 1 and 2 of Article 5 Article 2(a) relates to the basic obligation to provide information whereas Article 5 sets out what this information should contain Apart from the fact of its occurrence, the notification of a nuclear accident has to specify its nature, time of occurrence and, if possible, exact location Where the State concerned is in a position to do so, the information given has to include the following further details the facility or activity involved in the accident, the assumed or established cause of the nuclear accident, its foreseeable development relevant to the transboundary release of the radioactive materials and its predicted behaviour over time, the general characteristics of the radioactive release including the nature, probable physical and chemical form and the quantity, composition and effective altitude of the radioactive release, the meteorological and hydrological conditions necessary for forecasting the transboundary release and lastly, the offsite protective measures taken or planned Since the purpose of all this information is to keep the radiological consequences in other States to the minimum, Article 6 of the Convention provides that affected States Parties may request further information or consultations from the State providing the information This right to request further information only applies to a State Party affected by the accident but not to a State that is not affected or to a State that is affected - even if a member of IAEA - that is not a Party to the Convention

Under paragraph 3 of Article 5, there is in principle no restriction on the use of any of this information The only exception concerns information provided in confidence.

5 Article 8 of the Convention makes provision for assistance to countries which do not have nuclear activities themselves but border on a State having an active nuclear programme but which is not a Party to the Convention For such States the feasibility and establishment of an appropriate radiation monitoring system is to be facilitated, the responsibility for providing this assistance lying with the IAEA

B. The Convention on Assistance

1 Like the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance is also not limited to accidents originating in nuclear installations but also applies to accidents caused by other kinds of radioactive materials Similarly, it is applicable not only to neighbouring States but generally and without reference to the location of the State exposed to radiation However, its scope exceeds that of the Convention on Early Notification in that it applies not only to accidents but also to radiological emergencies The definition of these terms is not easy since several circumstances have to be borne in mind First and foremost is the fact that this Convention and the Convention on Early Notification of a Nuclear Accident were drawn up in the IAEA prompted by the same event - the Chernobyl accident on 26th April 1986 - and have a considerable similarity in their content The term nuclear accident therefore has to be understood in the same way as in the Convention on Early Notification

Though the meaning of nuclear accident is thus established, extreme difficulties arise in defining the term "radiological emergency" A first point is that a radiological emergency can be understood as being less than a nuclear accident because radiological emergency also covers a process that has certainly or probably caused no injury or damage but may possibly give rise thereto Assistance is then requested to prevent or at least minimise the occurrence of injury or damage in all cases

What is more, in the absence of closer definition, radiological emergency could also apply to those cases where damage or injury or the threat of damage or injury originates in installations or activities connected with nuclear weapons or the testing of nuclear weapons If so, a situation calling for assistance would arise if the territory or population of a State at war suffered damage as the result of belligerent activity in which atomic weapons were used or if damage were caused to a State not involved in the hostilities Would the Convention on Assistance apply in such cases or not? Of itself the expression radiological emergency would have to be understood in its unlimited sense and would therefore include damage or the threat of damage due to the testing and use of atomic weapons On the other hand, however, the role of the IAEA is to concern itself with the peaceful uses of nuclear energy so that measures connected with the use of atomic weapons for military purposes are excluded from its field of

responsibility - and this would apply to regulations drawn up within the IAEA framework Against this, however, there is the fact that Article 3 of the Convention on Early Notification leaves it to the States Parties to decide whether to notify in cases other than the accidents listed in Article 1 as set out above, and these include the military sector. Because of this confusion it would seem important to clarify the situation by making the necessary additions to the wording of the Convention on Assistance This could be done by an amendment as provided under Article 16.

2 From the substantive viewpoint, the Convention on Assistance contains various provisions that can be divided into three groups The first group, which may well be described as the fundamental provisions because they govern the preconditions for and the content and scope of the measures of assistance, includes Articles 1, 3 and 5 The second group relates to questions of reimbursement of costs and compensation, the relevant provisions here being contained in Articles 7, 10 and 11. The third group is to do with special provisions for assistance personnel and the State providing the assistance, the relevant provisions here being Articles 8 and 9. In detail the situation is as follows

a) As regards the assistance arrangements, Article 1 lays down the principle that the States Parties should co-operate between themselves to minimise the consequences of a nuclear accident or radiological emergency and thus to protect life, property and the environment Agreement on bilateral and multilateral arrangements or a combination of these is recommended as the most effective way of achieving this object The IAEA should also be asked to lend its aid in arriving at this co-operation In actual fact there are already a fair number of such bilateral arrangements

About the detailed nature of such assistance arrangements nothing further is said in the Convention, they will depend on the requirements of each individual case. For this reason only general indications are given as set out in Article 2. First, the Article makes it clear that whether the nuclear accident or radiological emergency has its origin in the State requesting the assistance or has started elsewhere is irrelevant, its effects having come into that State across its borders The State requesting assistance has to specify the scope and type of assistance If it is impracticable to give this information immediately the two States shall decide upon the scope and type of assistance by joint consultation The State requested to provide the assistance must promptly notify the requesting State, either directly or via the IAEA, whether and to what extent it is able to provide such assistance The assistance will, in any case, include medical treatment and the temporary relocation of people into the territory of the State affording assistance [5].

The request for assistance does not have to be directed to other States alone It may also be addressed to the IAEA so that experts and articles of equipment and other material may be made available or assistance requested of other States by the IAEA itself The

IAEA also has the responsibility of co-ordinating assistance at the international level. Where such co-ordination is not ensured by the IAEA and if no other arrangement is made then the direction, control, co-ordination and supervision of the assistance within its territory shall, under Article 3 of the Convention, be the responsibility of the requesting State The requesting State is also responsible for protecting personnel, equipment and materials brought into its territory and ensuring their safe return In addition to the general indications given in Article 3, the IAEA's field of responsibility in the provision of assistance is set out in Article 5 as follows: in addition to the supply of experts, equipment and materials and the transmission of requests for assistance to other States, the IAEA also has to supply the requesting State with information on methodologies, techniques and results of research relating to response to emergencies Even in the absence of any actual emergency situation the IAEA is required to respond to requests from individual States - even if they are not IAEA Member States - for assistance in precautions against possible future emergency situations with advice of the most varied kind. This includes preparing emergency plans, recommending appropriate legislation, developing training programmes for emergency personnel, developing warning systems, establishing and maintaining liaison with relevant international organisations for the purpose of exchanging information and data, etc [6]

Termination of the assistance may be requested both by the State requesting the assistance and by the State providing it Provision for this is made in Article 11 Once such a request is made the two States have to consult together The request to terminate assistance has to be made in writing Where assistance has been provided by the IAEA, the same provisions, mutatis mutandis, apply

b) Since assistance understandably entails cost, Article 7 makes the necessary provisions The basic principle is that the assisting State provides its help without claiming back the cost Departures from this principle are, however, possible by mutual agreement, this having to relate to whether the assistance is to be wholly or partly reimbursed In the decision as to whether the assistance should be provided without cost or wholly or partly on a reimbursement basis, various factors are to be taken into account including: the nature of the emergency, the place of origin of the accident and the needs of developing countries and of countries without nuclear facilities. However, even in cases where reimbursement has been agreed, the State providing the assistance is at all times free to waive part or all of the reimbursement of its costs Reimbursement is to be provided promptly and be freely transferrable Since Article 7 refers to "assisting parties" in general the above principles are also applicable to assistance provided by the IAEA.

c) It is also understandable that various kinds of injury and damage could be sustained on the territories of both the requesting and the assisting State in the course of providing assistance This may include personal injury, damage to or loss of property and

damage to the environment. Unless otherwise agreed the provisions of Article 10 apply The rule is that the State requesting assistance has no claim for compensation against the State providing it. This has several implications First of all the requesting State is not allowed to bring any legal proceedings against the assisting party or persons or other legal entities acting on its behalf Next, the requesting State must assume responsibility for claims of this nature brought by third parties. In such cases the State that has received assistance must either come to an arrangement with the persons claiming compensation or hold the State against which the claim is made and persons acting on its behalf harmless and blameless. This does not apply in cases where those persons acting in the name or on behalf of the assisting State have caused damage intentionally The requesting State is free to decide whether to make these provisions binding in whole or in part on its own nationals or permanent residents

d) In order that assistance personnel may reach the target location as quickly as possible and once there perform their duties unhindered, various exceptions have to be made on their behalf to the provisions of the generally applicable local legislation To that end, the requesting State has to grant a number of immunities and privileges to persons sent by the assisting State or acting on its behalf. This is conditional on such personnel having been duly declared to and accepted by the requesting State. Assistance personnel may not be arrested or detained in respect of acts or omissions in connection with the assistance they are rendering They are also immune from legal process including criminal, civil and administrative jurisdiction and exempt from all taxation, duties or other charges, the only exception being those normally incorporated in the price of goods or services, e g. value added tax In addition, they must have freedom of entry into and departure from the territory of the requesting State The requesting State is free to decide whether or not to provide its own nationals and permanent residents with the same privileges and immunities as non-national assistance personnel Conversely, all beneficiaries of such privileges and immunities have a duty to respect the laws and regulations of the requesting State and not to interfere in the domestic affairs of that State

The assisting State itself is also exempt from taxes and other charges on the equipment and other materials that it causes to be brought in for assistance purposes nor may such articles be seized or searched In addition the requesting State is required to facilitate the importation and exportation of items of equipment and other materials Should such articles become radioactive during the provision of assistance the State that has been assisted is responsible for their decontamination.

Should it be necessary for assistance personnel or equipment to be routed through another State then, under Article 8, that State is required, at the request of the State requesting or providing assistance, to facilitate transit across its territory However,

such personnel, equipment and other property must be duly notified for this purpose to the country of transit

III. PROCEDURAL PROVISIONS OF THE TWO CONVENTIONS

A. The Convention on Early Notification

1 The essential provisions are contained in Article 2 which governs notification and the provision of information in the event of a nuclear accident. Two possibilities are provided for In the first, both the States which may be affected by radiation and the IAEA are immediately and directly notified. In the second there is no direct notification and information of the States that may be affected, notification of and provision of information to the IAEA alone being sufficient The choice is left to the judgment of the State responsible In either case the IAEA becomes a centre for the receipt and distribution of notifications and information. Since the purpose of this provision of information is to minimise radiological consequences it would be advisable in order to save time in particularly urgent cases to notify directly any States that may be affected as well as the IAEA

Under Article 4 of the Convention, the IAEA must immediately convey every notification of a nuclear accident, together with the information it contains, to those States that are or may be affected and to the relevant international organisations [7] This duty of notification also applies with regard to States that are neither Party to the Convention nor even IAEA Member States

Under Article 7, the issue and receipt of the notifications and information referred to in Article 2 has to be via points of contact These have to be decided,by the States Parties and made known to the IAEA and, either directly or via the IAEA, to the other States Parties Within the Agency, a similar focal point has to be set up for the receipt and issue of these reports The States Parties are also required to indicate the authority responsible for the ongoing performance of the duties set out in the Convention. Other international organisations concerned with protection against nuclear accidents may also set up points of contact The points of contact both of the States Parties and of the IAEA must be continuously available The IAEA is to be promptly informed of any changes in the responsible authorities or points of contact

The Convention does not specify the way in which notifications and information are to be conveyed Each State Party is therefore free to choose the method of transmission unless some particular mode is agreed with the IAEA or other States.

2 A further procedural provision concerns the settlement of disputes between States that are Party to the Convention or between one or more States Parties and the IAEA on the interpretation or application of the Convention Article 11 provides, on the pattern of other international

agreements, that consultations should be held in such a case with a view to settling the dispute by negotiation or other peaceful means If a dispute cannot be settled in this way, it has to be submitted to arbitration or to the International Court of Justice at the request of one of the Parties. If no agreement can be reached on an arbitrator, the President of the International Court of Justice or the Secretary-General of the United Nations may be asked to appoint one or more arbitrators

Every State Party is entitled to declare that it does not consider itself bound by this dispute settlement procedure. Declarations to that effect may, however, be withdrawn at any time [8].

B. The Convention on Assistance

1 In the same way as in the Convention on Early Notification of a Nuclear Accident, States that are Party to the Convention on Assistance are required under Article 4 to make known to both the IAEA and other States Parties the responsible authorities and the points of contact authorised to make and receive requests for and to accept offers of assistance. The more detailed provisions on this point are the same as those in the Convention on Notification These provisions, however, are supplemented by a special article on the confidentiality of requests for assistance.

This is Article 6 which says that if any information is given by the requesting State to any other State or the IAEA in confidence, that confidentiality must be respected and the information may only be used for the purpose of the assistance Where possible, the assisting State or the IAEA must obtain the agreement of the requesting State before releasing information to the public

2 Like the Convention on Early Notification, the Convention on Assistance also contains provisions for the settlement of disputes. These are set out in Article 13. Since the wording of the two Conventions is identical on this point reference is directed to III A 2 above

IV. RELATIONSHIP WITH OTHER INTERNATIONAL AGREEMENTS

1. Article 10 of the Convention on Early Notification leaves the States Parties free to conclude bilateral or multilateral agreements relating to matters covered by the Convention and in accordance with the object and purpose of the Convention. Such agreements are unaffected by the Convention Article 9 even suggests that such additional agreements should be considered by the States Parties Existing international agreements relating to the subject-matter of the Convention are also unaffected As regards future agreements, the rule is clear· they have to be in accordance with the object and purpose of the Convention. If not, then the Convention takes precedence in every case However, the provision is less clear regarding international agreements that

already exist in that these could possibly be in conflict with the Convention. If so, do the provisions of the Convention apply or do those of the earlier agreement? In such a case the preferred interpretation must presumably be that the provisions of the Convention take precedence as being later in date.

2. Article 12 of the Convention on Assistance also says that international agreements which relate to the matters covered by the Convention are not affected. States Parties are also free to conclude bilateral or multilateral agreements on the subject in the future. As already pointed out in the commentary on Article 1, such agreements or combinations of such agreements should be concluded to facilitate co-operation between them.

V. ADOPTION, ENTRY INTO FORCE AND DENUNCIATION OF THE CONVENTIONS

Both Conventions were adopted by the General Conference of the IAEA at a special session in Vienna on 26th September 1986 and were open for signature by all States as of 26th September 1986 at the IAEA headquarters and as of 6th October 1986 at UN headquarters. Each Convention entered into force thirty days after three States had expressed their consent to be bound by its provisions For the Convention on Notification this was 27th October 1986 and for the Convention on Assistance it was 26th February 1987 [9]

For each State the Convention entered into force thirty days after it declared itself bound by the Convention but each Signatory State was free to declare that it would apply the Convention provisionally even though the Convention had not yet entered into force in its respect.

Articles 15 and 17 respectively provide for possible denunciation of the Conventions. Notification must be in writing and takes effect one year following its receipt by the IAEA.

Like all documents to be sent to the IAEA, late accessions and denunciations have to be addressed to the Director General who, under Articles 16 and 18 respectively, is the depositary of both Conventions This applies in particular to the declaration regarding provisional application of the Convention and the reservations in respect of certain provisions The Director General of the IAEA is required to inform the other States Parties immediately on receipt of such declarations

VI. AMENDMENTS TO THE CONVENTIONS

Under Articles 14 and 16 respectively, every State Party is entitled to propose amendments to the Director General of the IAEA as depositary of the Conventions As provided for any other declarations, the latter has to inform all the other Party States thereof immediately. At the request of a majority of Member States a conference then has to be called to discuss the proposed

amendments If the amendment is carried by a two-thirds majority it is laid down in a protocol which will be open for signature by all Member States in Vienna and New York and enter into force after three States have expressed consent to be bound

VII. AUTHENTIC TEXT

The original of the Conventions deposited with the Director General of the IAEA in accordance with Articles 17 and 19 is in six languages - Arabic, Chinese, English, French, Russian and Spanish - all six texts being equally authentic

VIII. CONCLUDING REMARKS

The two IAEA Conventions represent a considerable advance on the previous legal situation since early notification of a nuclear accident and assistance in the event of a nuclear accident or radiological emergency considerably reduce the risk to other countries and often make it easier to repair the damage. After the Chernobyl accident, the consent of the States affected was forthcoming only after great hesitation so that it was relatively late before the necessary protective measures could be taken. Nor did any prior arrangements exist for assistance from other countries, so that help from outside was the exception Let us hope that the two IAEA Conventions rarely have to be applied and that, should a nuclear accident or radiological emergency occur, it will be on a far smaller scale than the Chernobyl disaster.

NOTES AND REFERENCES

[1] The moderator used in the Chernobyl 1000 megawatt reactor (a type known as RBMK 1000) is a graphite block of slightly oval shape, average diameter 11.8 m and 7 m. high The graphite is carbon. The moderator is needed in order to slow down the fast neutrons released by nuclear fission to a lower energy level by collision with the atoms of the moderator material, since only a few fast neutrons are sufficient to cause further nuclear fission. The radioactive fissile material is contained in the approximately 7 m long metal alloy (zircalloy) rods which are cooled by water circulating in cooling channels in the graphite block. It is clear that the cooling system failed, causing the fuel in the rods to overheat. This burst open the jackets which were oxidised by the vaporised water and the direct contact with the fissile material caused the graphite to burn The gases generated by the fire exploded upward throwing radioactive material from the fuel rods as high as some 1500 metres in the air.

In contrast with graphite-moderated reactors, the moderator used in other countries is water - light water or heavy water. The United Kingdom (together with a few other countries) is an exception to the rule, having long built mainly graphite-moderated reactors Their design, however, is not the same as that of the Chernobyl units and the power rating very much lower. In the other types of reactor water is used as both coolant and moderator. Water cannot burn.

However, there was another major determinant in the course taken by the Chernobyl disaster Unlike other types of reactor, RBMK 1000 reactors have no steel and concrete protective shield (containment) which is why the burning gases were released into the open air without the slightest hindrance In the nuclear reactors operated in the Federal Republic of Germany, France and Switzerland, for example, the provision of a protective shield of this type goes without saying

Cf. Wenger, Sicherheitsaspekte in Kernkraftwerken, in Der Kernkraftwekunfall von Tschernobyl, Forum Wissenschaft und Energie, Zurich 1986, p. 13 et seq , and Sonneck, Aufbau und Funktionsweise des Reaktors von Tschernobyl - Unfallhergang mit Freisetzung von Radionuklide, Seibersdorf 1986.

[2] Some 17-18 reactors of this dangerous design are still in service in the USSR. See SVA Bulletin, Bern 1989, Vol 11, p. 21

[3] The term "radioisotope" means the same thing as radioactive material Although nuclear fuels are also no different from radioactive materials, for brevity's sake in legal language the term radioisotope or radionuclide is used for radioactive materials that are neither nuclear fuel nor wastes from nuclear fuel and are therefore not or no longer used in the operation of nuclear power plants.

[4] The Representative of India specifically complained of this omission on the occasion of the signing of the Convention IAEA, INFCIRC/335/Add 2 of 20th May 1988.

[5] In a technical annex on emergency assistance in his book "The IAEA Notification and Assistance Conventions in case of a Nuclear Accident", London 1987, Graham and Trotman, p. 199 et seq , Adede, former head of the IAEA legal department summarises the staff and material (technological and medical) requirements for effective assistance in the case of a nuclear accident or radiological emergency. Adede sees three phases of assistance: the initial phase when the most urgent measures have to be taken and which may last anything from a few hours to two days, an intermediate phase ranging from a number of days to several weeks and a final phase which may last months or even years

As regards the very many individual measures see also IAEA publication Mutual Emergency Assistance for Radiation Accidents, IAEA-TECDOC-237, IAEA, Vienna, 1980, together with Supplement IAEA-TECDOC-284, Vienna, 1983

[6] The IAEA sent out a detailed questionnaire to all Member States on preparations for assistance applicable to any kind of radiological

accident Each country had to state those kinds of assistance it could provide and those it could not The results of the survey are published in IAEA Safety Series No 50-SG-06, Vienna, 1982, p. 55 et seq

[7] Including the Organisation for Economic Co-operation and Development (OECD) and its Nuclear Energy Agency (NEA), the International Labour Organisation (ILO) and the World Health Organization (WHO).

[8] It should be noted that, when signing each Convention, a number of States Parties entered reservations about Article 11 and rejected the compulsory method for the settlement of disputes by an arbitrator or the International Court of Justice IAEA INFCIRC/335 Add 1 and 336 Add.2 of May 1987 and 335 Add.2 and 336 Add 3 of 20th May 1988.

[9] IAEA INFCIRC/335 of 18th November 1986 and INFCIRC/336/Add.1 of 10th March 1987

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The text of both Conventions is reproduced in the Supplement to Nuclear Law Bulletin No 38

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

• *United States*

BACKFITTING OF NUCLEAR REACTORS

On 25th January 1989, in Union of Concerned Scientists v USNRC, the US Court of Appeals for the District of Columbia Circuit handed down a judgment on the validity of the NRC's revised rule on backfitting, with additional nuclear safety requirements, issued in 1988 (see Nuclear Law Bulletin Nos 40 and 42)

This rule made explicit the NRC's policy that costs were not to be considered, either when backfitting is necessary to ensure adequate protection of public health and safety or when the NRC defines or redefines the adequate protection standard. The Court held that this rule was in full accord with the Atomic Energy Act and the previous decision of the Court of Appeals concerning when the Commission may consider costs upon imposing backfits The Court also held that the NRC's revised rule concerning backfitting of nuclear reactors did not have to contain a set of objective standards for determining what constitutes "adequate protection" for public health and safety, but that the NRC may decide that question on a case-by-case basis

ADMINISTRATIVE DECISIONS

• Switzerland

AGREEMENT ON STOPPAGE OF WORK ON THE KAISERAUGST NUCLEAR POWER PLANT

For many years now, the Kaiseraugst Nuclear Power Company Ltd. (societé anonyme Energie nucléaire de Kaiseraugst) has been wanting to construct a nuclear power plant at Kaiseraugst near Basle In 1985, with Federal Assembly (Parliament) approval, that Company obtained the general licence required under Swiss nuclear legislation (see Nuclear Law Bulletin No. 36). The Company had invested over one billion Swiss francs in the project However, the constant opposition shown in the area resulted in submission of a Parliamentary motion in Spring 1988, requesting that the project be abandoned against reasonable indemnification The Confederation accordingly concluded an Agreement with the Company to the effect that work on the plant should stop - against payment of 350 million Swiss francs Parliament approved the Agreement on 17th March 1989 (Federal Order of the same date) As this decision was not put to a referendum, it entered into force on 27th June 1989 without referral to the population

DECISION NOT TO RATIFY THE PARIS CONVENTION AND THE BRUSSELS SUPPLEMENTARY CONVENTION (1989)

On 23rd August 1989, the Swiss Federal Council (the Government) decided not to ratify the above Conventions for the time being

The decision was based on the following considerations·

Switzerland enacted legislation on nuclear third party liability (LRCN) fairly recently, that is in 1983 (for text of the Act see the Supplement to Nuclear Law Bulletin No. 32) The primary purpose of that Act was to introduce unlimited nuclear third party liability in accordance with the general principles of Swiss third party liability legislation It was acknowledged at the time that unlimited nuclear third party liability legislation was incompatible with the Paris Convention It was considered preferable not to ratify the Convention, at least as long as unlimited third party liability was an obstacle Other rules were also adopted on points diverging from the Paris Convention, generally for the benefit of victims (e g concept of damage, time-limit for bringing claims).

It would seem that today, most Parties to the Paris Convention accept the principle of unlimited third party liability since the Federal Republic of

Germany, a Party to the Convention, has adopted that principle However, given other divergences, ratification of both Conventions would entail revising the LRCN, which entered into force only a short while ago

Swiss legislation governing nuclear activities is currently under scrutiny and the Act on Nuclear Third Party Liability (LRCN) will be the last item to be considered. However, the overall exercise was postponed for a few years due to internal policy matters This has affected revision of the LRCN and ratification of the Conventions.

In addition, all Swiss third party liability legislation is currently being reorganised It would seem advisable to await completion of the revision before tackling certain facets of this legislation

Even though ratification of both Conventions has been postponed, Switzerland continues to follow closely the evolution of nuclear third party liability legislation on the international level and participates in this work The national competent authorities have been asked to submit to the Government a status report on the situation by 1992

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

• Algeria

RADIATION PROTECTION

1986 Decree on radiation protection and control of radioactive substances

Decree No 86-132 of 27th May 1986 sets out the rules for protecting workers against the hazards of ionizing radiation as well as rules on controlling the possession and use of radioactive substances and radiation-emitting equipment. The Decree was published in the Official Gazette of the Algerian Republic of 28th May 1986. The Act provides that the Ministry for Public Health will specify by order the conditions for possession and use of such substances and equipment as well as the classification of radionuclides (see below)

The dose limits of exposure to radiation are also to be fixed by order, and be different according to whether they concern workers likely to receive a dose higher than 3/10^{ths} of one of the annual dose limits (A category) or workers unlikely to receive such a dose (B category)

As regards the technical systems for protection, the Decree prescribes that all employers holding radiation sources or radiation-emitting equipment must delimit a controlled area, organise its protection and set the conditions of access to it. Also, when exposure or contamination risks exceed the prescribed dose limits, the employer concerned must set up especially regulated or prohibited areas All facilities must have adequate radiation protection equipment, in particular for protection against external exposure and radioactive contamination Special provisions apply to possession and use of unsealed sources, to fixed or mobile radiation-emitting equipment as well as to storage and packaging of radioactive sources.

Furthermore, possession and use of radioactive substances or radiation-emitting equipment are subject to a prior licence or approval issued by the High Commission for Research (within which a Radiation Protection and Safety Centre has been set up) All activities involving occasionally ionizing radiation and defined radioisotopes are subject to the licensing system. The approval system governs all activities in installations which

permanently use such ionizing radiation or radioisotopes. The Decree specifies the devices and substances which are exempted from this requirement as well as the information to be supplied with applications Licences or approvals may be revoked or suspended in case of irregularities.

Finally, the Decree contains provisions relating to the medical protection of workers occupationally exposed to radiation and to conditions of employment.

Interministerial Orders relating to the control of radioactive sources and protection against ionizing radiation (1988)

A series of seven Orders dated 10th February 1988 was published on 31st August 1988 in the Official Gazette of the Algerian Republic These texts were made pursuant to the above Decree of 1986 on radiation protection and control of radioactive substances

The first of these Orders sets down detailed rules for the purposes of the above Decree with respect to radiation sources and their protection devices as well as systematic environmental controls.

The second Order establishes annual dose limits for exposure to ionizing radiation for workers and the public.

The third establishes conditions for the use of individual dosimeters for the control of doses received by workers subject to external exposure risks.

The fourth sets the limits and markings of controlled and prohibited areas in view of the radioactivity hazards in nuclear installations

The fifth classifies the principal radionuclides by reference to their radiotoxicity.

The sixth establishes limits derived from the concentrations in the air and the limits of annual ingestion as well as the quality factor values and neutron flux strength.

The seventh Order was made by the Minister of Public Health (in contrast to the preceding six which were made by interministerial Order) It establishes rules for the possession and use for medical purposes of radioactive substances and of devices emitting ionizing radiation

• Argentina

FOOD IRRADIATION

Regulation concerning the operation of food irradiation facilities (1989)

The Minister of Health and Social Matters published in the Official Gazette of 20th March 1989 a resolution whose object is to introduce into the Argentine Food Code (Article 174, Annex 1) a code of practice relating to the operation of facilities for the irradiation of food for human consumption

It covers facilities equipped with gamma ray sources (Co-60 or Cs-137) or devices emitting X-rays (up to 5 MeV) or electrons (up to 10 MeV).

This text sets down in detail conditions for the operation of these facilities, notably from the point of view of radiation protection methods and techniques. It also deals with packaging of irradiated food

• Belgium

REGULATIONS ON NUCLEAR TRADE

Royal Order relating to the transfer of nuclear material and technology to non-nuclear weapon States (1989)

The Act of 9th February 1981 concerning the conditions for export of nuclear materials, equipment and technological data (see Nuclear Law Bulletin No. 28) established a system of prior authorisation for the above operations, leaving the detailed mechanisms to be established by Royal Order

This Royal Order of 12th May 1989 relating to the transfer of nuclear material, equipment and technological data and their by-products to non-nuclear weapon States (published in the Moniteur belge of 15th June 1989) sets down these detailed mechanisms. The object of the Royal Order is to ensure that these transfers are only carried out for exclusively peaceful purposes and in conformity with Belgian obligations under the Treaty on the Non-proliferation of Nuclear Weapons.

Applications for authorisations are to be made to the Central Office for Quotas and Licences, on a form provided by the Minister responsible for energy matters.

The Order also sets up an advisory commission on the non-proliferation of nuclear weapons (CANPAN) to advise this Minister on each application for an authorisation The members of this Commission are representatives of the various administrations concerned, the Commission is to be serviced by the Ministry of Economic Affairs

Authorisation may not be granted unless the following conditions are satisfied

The materials, installations or technologies to be transferred must not be used for manufacturing nuclear weapons.

They must be covered by International Atomic Energy Agency safeguards or by an equivalent system.

They must be subject to effective physical protection to prevent any non-authorised access, use or handling.

Products from the operation of transferred installations must also satisfy these requirements.

After having received the advice of the Commission, the Minister is to inform the Central Office for Quotas and Licences of his decision to grant or to refuse authorisation and that Office is to inform the applicant

When a transfer is both submitted for authorisation and for the granting of a licence, the two applications are to be presented simultaneously to the Central Office and the licence may only be granted after the transfer has been authorised

In its Annex, the Order sets down a list of the articles requiring authorisation for transfer. With respect to nuclear materials, the list concerns in particular special and other fissile products, raw materials, deuterium and heavy water and, nuclear quality graphite, with respect to equipment, it concerns installations, materials and equipment for the isotopic separation of uranium, for the reprocessing of irradiated fuels, for the production of heavy water and deuterium, and for the production of uranium hexafluoride as well as nuclear reactors and their equipment, with respect to technological data, it concerns data on enrichment, fuel fabrication, fast breeders, reprocessing and heavy water production

• Brazil

ORGANISATION AND STRUCTURE

Act to amend the 1974 Act on the competence of the Nuclear Energy Commission (1989)

Act No 7 781 of 27th June 1989 was published in the Diario Oficial of 28th June 1989 and entered into force on that same date It amends Act No 6 189 of 16th December 1974 so as to extend the competence of the Nuclear Energy Commission - CNEN (see Nuclear Law Bulletin No 23).

The new Act provides, in particular, that in addition to the duties assigned by the 1974 Act, the CNEN will promote and induce the production of and trade in nuclear materials and equipment, including nuclear technology transfers to the national industry through the setting up of trading associations or agreements.

Act to amend the 1981 Environmental Policy Act (1989)

The National Environmental Policy Act (No 6.938) of 31st August 1981 (see Nuclear Law Bulletin No. 29) has been amended by Act No 7.804 of 18th July 1989 published in the Diario Oficial of 20th July 1989. These amendments have been made to take into account the environmental protection provisions of the new Brazilian Constitution promulgated on 5th October 1988, including those relating to pollution from nuclear activities.

To this effect, the 1989 Act sets up a High Council for the Environment (CSMA), responsible for advising the President of the Republic on the formulation of the national environmental policy and the required Government directives The Council is headed by the President himself and its members include Ministers as well as private citizens

A Brazilian Institute for the Environment and its Resources (IBAMA) has also been set up by the Act to implement the above-mentioned Goveinment directives and control their application

REGIME OF NUCLEAR INSTALLATIONS

1989 Order on the licensing of mines and plants for uranium and thorium ore reprocessing

By Order of 25th July 1989 (No 03) the Executive Director of CNEN *approved Regulations on the licensing of mines and plants for uranium and* thorium ore reprocessing published as CNEN-NE-1 13 in the Diario Oficial of 8th August 1989

The Regulations provide that applications for licences must be sent to the CNEN which issues approvals for each stage of the licensing procedure as follows:

- approval of site or premises;
- approval of construction;
- approval of use of nuclear materials;
- approval of initial operation,
- approval of permanent operation

Information accompanying the application includes, inter alia, geological, hydrological, seismological and ecological data, radiation protection measures, safety analyses, radioactive waste disposal plans and emergency plans.

1989 Order relating to meteorological studies in support of nuclear power plants

By Order of 28th July 1989 (No 04) the Executive Director of CNEN approved Regulations for the determination of atmospheric parameters in the siting, construction and operating stages of nuclear power plants The Regulations have been published as CNEN-NE-1.22 in the Diario Oficial of 8th August 1989

The Regulations set out the requirements for establishing such meteorological studies and refer, in particular, to the collection of meteorological data

• Canada

GENERAL LEGISLATION

Atomic Energy Control Act (1985)

The Revised Statutes of Canada 1985 entered into force on 12th December 1988, revoking the previous Atomic Energy Control Act and replacing it with a new version The new Act (Chapter A-16 of the Revised Statutes) updates the previous text and makes some linguistic corrections

The Atomic Energy Control Act establishes the Atomic Energy Control Board and sets out its duties and powers which include, in particular, the

making of regulations for developing, controlling and licensing the production, application and use of atomic energy

REGIME OF RADIOACTIVE MATERIALS

Amendment of the Atomic Energy Control Regulations (1988)

The Atomic Energy Control Regulations were amended on 25th February 1988 (SOR/88-144 published in the Canada Gazette, Part II, 16th March 1988)

The amendments mainly concern naturally-occurring radioactive prescribed substances (namely, uranium, thorium, radium, etc). Any naturally-occurring radioactive material in a mineral or other material which has not been related to an activity associated with the development, application or use of atomic energy, is exempted from the scope of the Regulations The Regulations will therefore not apply to radioactive substances such as uranium or thorium present in building materials or in minerals commonly used in industrial activities which are not associated with the nuclear fuel cycle

This exemption does not apply to such material in connection with import control and preparation for transport

Uranium and Thorium Mining Regulations (1988)

The above Regulations were made by the Atomic Energy Control Board on 21st April 1988, pursuant to the Atomic Energy Control Act (SOR/88-243, published in the Canada Gazette, Part II, 11th May 1988)

The purpose of the Regulations is to deal with radiological health and safety in uranium mining facilities and in effect, they formalise previous requirements imposed on such facilities through licence conditions A "mining facility" is defined as a removal or excavation site, a mine or a mill or any combination of those

The Regulations provide that licences are required for

- removing uranium or thorium,
- excavating uranium or thorium,
- siting, constructing or operating a mine or a mill,
- decommissioning all or part of a mining facility

Applications for licences include technical conditions relevant to each type of activity concerned, the common condition being detailed descriptions of the activity, the radiation protection and environmental protection measures as well as the radiation monitoring programme.

No licence is issued by the Board (or a designated officer) unless it is satisfied that the applicant has adequately provided for the protection of health, safety and the environment.

The Regulations do not apply to prospecting activities or surface exploration for uranium or thorium.

TRANSPORT OF RADIOACTIVE MATERIALS

Amendment of Transport Packaging of Radioactive Materials Regulations (1989)

The above Regulations of 24th September 1983 (reported in Nuclear Law Bulletin No. 33) were amended on 24th August 1989 (SOR/89-426 published in Canada Gazette, Part II, 13th September 1989).

Most of the amendments clarify the original text and further specify certain requirements. In particular, the definitions of "A_1", "A_2", "Fissile Class III package" and "Special Form Radioactive Material" have been revoked and replaced by new definitions.

Also, a new condition has been added regarding Special Form Radioactive Material Henceforth, no such material may be transported without a certificate attesting that the material meets the requirements set out in Schedule XII of the Regulations. The Regulations specify the information to be provided in the application for such a certificate

THIRD PARTY LIABILITY

Nuclear Liability Act (1985)

As explained above regarding the Atomic Energy Control Act, the Revised Statutes of Canada 1985, which entered into force on 12th December 1988, also revoked the Nuclear Liability Act of 1970, replacing it with a new version The new Act (Chapter N-28 of the Revised Statutes) updates the previous text and makes some linguistic corrections

The text of the Act of 1970, the principles of which remain unchanged, is reproduced in the Supplement to Nuclear Law Bulletin No 6

• Finland

THIRD PARTY LIABILITY

1989 Act to amend the Nuclear Liability Act

The Nuclear Liability Act of 8th June 1972 has been amended by an Act of 15th September 1989 to bring its provisions in line with those of the Paris Convention and the Brussels Supplementary Convention as amended respectively by the 1982 Protocols

The 1989 Act also raises the limit of the nuclear operator's liability from 42 million Finnish marks (approximately 8 million Special Drawing Rights - SDRs) to 100 million SDRs

The text of the Nuclear Liability Act as amended by the 1989 Act is reproduced in the Supplement to this issue of the Bulletin

• France

RADIATION PROTECTION

Order exempting certain products from the licensing regime for artificial radioelements (1989)

This Order, dated 12th May 1989 and published in the Official Gazette of 26th May 1989, establishes the categories of products containing radioelements with a low specific activity or having a limited radiotoxicity which are exempted from the licensing regime for artificial radioelements for non-medical or other uses or which do not concern human biology

The relevant provision of the Public Health Code is Article R 5235, eighth paragraph. It is recalled that this Article was amended by Decree of 13th January 1986 (see Nuclear Law Bulletin No 38)

These exemptions are not applicable to the preparation, importation and exportation of these products

REGIME OF RADIOACTIVE MATERIALS

Amendment of the 1980 Act on the protection and control of nuclear materials (1989)

The above-mentioned Act of 25th July 1980 is, in France, the basic text dealing with protection from risks of loss, theft and misappropriation of nuclear materials - notably fissile materials - and their control The text of this Act was reproduced in Nuclear Law Bulletin No 26 and was analysed in Volume II of the Study on Nuclear Trade published by the NEA in 1988

This Act was amended and supplemented by Act No. 89-434 of 30th June 1989, published in the Official Gazette on 1st July 1989

This text was adopted at the same time as the Act authorising the ratification by France of the International Convention on the Physical Protection of Nuclear Material (Act No 89-433 of 30th June 1989) It is intended to supplement the national legislation as provided for by this Convention and to extend French penal jurisdiction to cover breaches committed abroad in this field

To this effect Article 689-4 is inserted in the Penal Procedure Code

"Article 689-4 - To implement the Convention on the Physical Protection of Nuclear Material, opened for signature at Vienna and New York on 3rd March 1980, any person who is in France and who had, outside of France,

1) committed any of the acts constituting crimes under Section 6-1 of Act No 80-572 of 25th July 1980 on the protection and control of nuclear materials; or

2) committed any of the acts constituting crimes under Articles 295 to 298, 301, 304, 305, 306, 309, 310, 311, 312, 318, 379, 381, 382, 384, 400, 405, 408, 434, 435, 436, 437 and 460 of the Penal Code or acts constituting the crime of improper appropriation as laid down by Section 6 of Act No. 80-572 of 25th July 1980 mentioned above, provided that the act was committed using nuclear materials covered by Articles 1 and 2 of the above-mentioned Convention or otherwise bearing on such nuclear materials,

shall be subject to French jurisdiction both with respect to arrest and trial."

TRANSPORT OF RADIOACTIVE MATERIALS

Memorandum on measures to be taken by the authorities in case of an accident during the maritime transport of radioactive materials (1989)

This Memorandum of the Prime Minister of 7th September 1989 was published in the Official Gazette of 14th September 1989. The Memorandum, called "Plan Nucmar", defines the general principles for the organisation of measures to be taken by the authorities in case of an accident occurring during a civilian maritime transport of radioactive materials entailing or possibly entailing damage which would affect the health of man or the marine environment

The Plan applies to any accident occurring within French territorial waters and beyond them when the coast and related interests are endangered and concerns the transport of Class 7 materials (radioactive materials with a specific activity exceeding 70 Bq/kg) under the International Maritime Dangerous Goods Code, mainly

- nuclear reactor spent fuels,
- fresh fuels or plutonium,
- basic materials such as uranium hexafluoride or uranium concentrates;
- various products arising from reprocessing

To deal with the radiological and, possibly, the chemical hazards of such accidents for man and the environment, there are three types of measures to be implemented

- preventive measures, so as to avoid such an accident,
- preparedness measures, so as to give the authorities in charge the means to intervene rapidly in case of an accident,
- measures to fight against the possible consequences of an accident

• Federal Republic of Germany

GENERAL LEGISLATION

Amendments to the Atomic Energy Act (1989)

Section 2 of the Act of 9th October 1989 on the Establishment of a Federal Office for Radiation Protection (see under Organisation and Structure

below) amends the control and licensing provisions of the Atomic Energy Act of 15th July 1985 as amended by the Act of 18th February 1986 (see the Supplement to Nuclear Law Bulletin No 36 and No. 37).

A new subsection (3) is added to Section 6 of the Atomic Energy Act It provides that a licence for the private storage of irradiated nuclear fuels or of solidified or liquid highly radioactive fission-product solutions, which originate from the reprocessing of irradiated fuels, needs a prior public hearing ("Anhörungsverfahren"). The relevant provisions of the 1977 Ordinance concerning the procedure for the licensing of nuclear installations are applicable to the procedure for this hearing (see Supplement to Nuclear Law Bulletin No 30 for text of Ordinance)

Section 12, subsection (1) No. 9 of the Atomic Energy Act is modified to extend the regulatory powers of the Federal Government This provision now specifies that federal regulations may also fix criteria for the safe use of radioactive by-products and of removed or dismantled components of installations, as well as the requirements for the treatment and storage of radioactive waste before delivery to the collection points of the Länder and the federal disposal installations The regulations may further determine how radioactive waste must be accounted for during such treatment, storage and delivery as well as during transport.

Section 12, subsection (1) No. 10 concerning the power of the Federal Government to regulate the physical protection of radioactive substances and nuclear installations is amended to include the waste collection points of the Länder and the federal disposal installations

A new Section 12b is inserted into the Act It empowers the Federal Office for Radiation Protection and the Länder authorities, in the exercise of their control and licensing functions, to investigate the reliability of persons engaged in the handling or transport of nuclear substances or the construction and operation of nuclear installations Details are to be determined by Ordinance

The new Section 12c deals with the Register of Occupational Exposures Section 12, subsection (1) No 4 already empowered the Federal Government to collect data on the exposure of persons occupationally exposed to radiation Section 12c provides for the collection of such data in the Register established with the Federal Office for Radiation Protection An Ordinance is to specify the conditions and procedure concerning the access to these data

Further amendments are made to Section 21b, subsection (3) with respect to the calculation of contributions of nuclear operators to the federal radioactive waste disposal installations, and to Section 23, subsection (1) regarding the administrative procedure

Finally, the Act of 9th October 1989 provides for a number of other amendments to the Atomic Energy Act, the 1986 Preventive Radiation Protection Act (see Nuclear Law Bulletin No 39), the 1975 Act on the Carriage of Dangerous Goods, and the 1986 Federal Civil Servants' Salaries Act, these amendments are of a formal nature and consequential to the establishment of the Federal Office for Radiation Protection.

ORGANISATION AND STRUCTURE

Act on the Establishment of a Federal Office for Radiation Protection (1989)

The above Act of 9th October 1989 which implements a decision taken by the Federal Government in March 1988 (see Nuclear Law Bulletin No 41) was published in the Federal Gazette (Bundesgesetzblatt) of 12th October 1989, Part I, p. 1830

As far as the Federal Office is concerned, the Act corresponds to the Bill of 24th February 1989 analysed in Nuclear Law Bulletin No. 43. As explained above, it also amends the Atomic Energy Act.

This Act entered into force on 1st November 1989

Ordinance on the transfer of functions under the Preventive Radiation Protection Act (1989)

On 3rd August 1989, the Federal Government issued an Ordinance on the transfer of functions concerning measurements and assessments for monitoring of environmental radioactivity under the 1986 Preventive Radiation Protection Act (see Nuclear Law Bulletin No 39 for text of the Act) The Ordinance was published in Bundesgesetzblatt 1989, I, p 1582.

The tasks in respect of the monitoring of radioactivity are to be fulfilled by the following bodies·

- the German Meteorological Service (Deutscher Wetterdienst) and the Federal Office for the Environment (Umweltbundesamt) for the permanent investigation of the total beta- and iodine 131 activity in the air;

- the Institute for the Radioactivity of the Atmosphere (Institut für Atmosphärische Radioaktivität, the German Meteorological Service, and the Federal Institute for Physics and Technology (Physikalisch-Technische Bundesanstalt, for the analysis of nuclides with an activity concentration less than 100 microbecquerels in one cubic metre of air

ADIATION PROTECTION

·idment of Radiation Protection Ordinance (1989)

On 18th May 1989, the Federal Government issued a Second Ordinance to ·d the Radiation Protection Ordinance of 13th October 1976 ·desgesetzblatt 1989, I, p 943) A consolidated version of the Ordinance published on 30th June 1989 (Bundesgesetzblatt 1989, I, p 1321) which

replaces the 1976 version (see Nuclear Law Bulletin Nos 18 and 28) The new Ordinance entered into force on 1st November 1989

The amendment mainly aims at adjusting the Radiation Protection Ordinance to the European Community Directives of 15th July 1980 and 3rd September 1984 on basic standards for health protection against ionizing radiation and of 3rd September 1984 on basic measures for radiation protection of persons undergoing medical treatment (see Nuclear Law Bulletin Nos 25, 33, 34). The Directives implement the Recommendations Nos 26 and 30 of the International Commission on Radiological Protection (ICRP), which now form the basis of the Radiation Protection Ordinance

The main points of the amendment are.

- improving the provisions on the medical use of radioactive substances;
- clarifying the activities to be licensed under the terms of the Atomic Energy Act and the Ordinance;
- enhancing the supervision and control of the transport of nuclear substances;
- improving the protection of the public by including a new radio-ecological calculation procedure,
- introducing a dose limit comprising the entire occupational exposures during a professional life, the effective occupational life exposure is limited to 400 millisievert,
- amending the provisions on physical radiation protection control,
- improving the provisions on nuclear waste disposal

THIRD PARTY LIABILITY

1989 Act to ratify the IAEA Early Notification and Assistance Conventions (liability clause)

By Act of 16th May 1989 (Bundesgesetzblatt 1989, II, p 434), the German Parliament ratified the 1986 IAEA Convention on Early Notification of a Nuclear Accident and the 1986 IAEA Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (for text of the Conventions see Supplement to Nuclear Law Bulletin No 38) In order to bring the requesting State's liability under the Assistance Convention in line with the principle of channelling of liability of the Paris Convention on Nuclear Third Party Liability, the 1989 Act provides for a subrogation of claims in case the requesting State compensates damage according to the Assistance Convention, that State acquires the rights which the person compensated had against the operator liable under the Paris Convention

• Norway

REGIME OF RADIOACTIVE MATERIALS

Amendment of the Regulations on the Physical Protection of Nuclear Materials (1989)

The above Regulations, laid down by Royal Decree on 2nd May 1984 (see Nuclear Law Bulletin No 35) were amended by Royal Decree of 25th August 1989

The Decree, which entered into force on 20th October 1989, inserts a new Section in the 1984 Decree to the effect that in accordance with the 1979 Regulations on the transport of dangerous goods by air as amended, nuclear materials shall be transported in compliance with the relevant Technical Instructions of the International Civil Aviation Organisation (ICAO)

REGULATIONS ON NUCLEAR TRADE

1989 Regulations relating to control of the export of strategic goods, services and technology

The above Regulations of 10th January 1989 were made by the Ministry of Foreign Affairs in pursuance of Act No 93 of 18th December 1987 relating to the control of the export of strategic goods, services and technology, in particular nuclear material, equipment, technology and services The Regulations entered into force on 15th February 1989

The Ministry of Foreign Affairs compiles lists of goods requiring an export licence or permission which also cover nuclear installations, material and equipment The Regulations provide that the Ministry may require that an application for export of such goods, etc be accompanied by a statement on the final use of the goods concerned (end-use statement) ascertaining that they will not be re-exported without the consent of the Norwegian authorities

1989 Royal Decree relating to the export of heavy water

This Royal Decree, adopted on 10th March 1989, lays down regulations on the export of heavy water and entered into force on the same date The Decree was made in pursuance of the above-mentioned Act No 93 of 18th December 1987 relating to the control of the export of strategic goods, services and technology

The Decree prohibits generally the export of heavy water from Norway Heavy water means deuterium oxide and deuterium gas in which the ratio of deuterium to hydrogen is greater than 1 5000 The Ministry of Foreign Affairs may, however, grant an export licence when the heavy water concerned is to be

used exclusively for peaceful purposes, namely for research, medical or other pharmaceutical purposes. The Ministry may also grant a licence in the context of international co-operation by Norway

An export licence may be granted for an order of heavy water in which the deuterium content exceeds 10 kg only if the authorities of the receiving country submit a valid import certificate, and/or an officially certified end-use statement concerning the heavy water and a declaration to the effect that re-export will not take place without the consent of the Norwegian authorities As regards an order of heavy water in which the deuterium content does not exceed 10 kg, the Decree provides that an end-use statement is sufficient.

• Portugal

ORGANISATION AND STRUCTURE

1988 Decree on the National Uranium Undertaking

The National Uranium Undertaking (Empresa National de Urânio - ENU) was set up by a Decree of 6th May 1977 (see Nuclear Law Bulletin No 20) for the purpose of prospecting for, extracting and marketing uranium ores

This Decree, No. 29 of 5th September 1988 (published in the Official Gazette of 8th September 1988), expands the activities of ENU It empowers the Undertaking to work in fields other than uranium and to participate financially in public or private companies.

ENVIRONMENTAL PROTECTION

1987 Act on the Environment

The purpose of Act No. 11 of 7th April 1987 (published in the Official Gazette on the same date) is to provide the basis for an environmental policy in Portugal

Section 25 of the Act deals with radioactive substances It provides that control of any contamination likely to be caused by these substances should be undertaken as follows, with a view to preventing its effects on the health and welfare of the population.

Assessing the effects of radioactive substances on the ecosystems

Setting disposal limits for chemical and physical radioactive effluents resulting from activities involving extraction, transport, conversion and use of radioactive materials.

Establishing the preventive measures required to respond immediately to any radioactive contamination

Assessing and controlling the effects of transfrontier contamination, including the technical and diplomatic measures required to avert such effects

Setting rules governing the transit, transfer and deposit of radioactive materials on the national territory, in the territorial seas and the exclusive economic zone

• Spain

ORGANISATION AND STRUCTURE

Order made pursuant to the 1984 Decree authorising the setting up of ENRESA (1988)

This Order of 30th December 1988 (published in the Official Gazette of 4th January 1989) was made in pursuance of Royal Decree No 1522/1984 which set up the National Radioactive Waste Company (Empresa Nacional de Residuous Radiactivos - ENRESA) (see Nuclear Law Bulletin No. 34).

ENRESA has overall responsibility for radioactive waste management and its duties include identification and operation of sites for the interim and final storage of radioactive waste, which necessarily has an incidence on the areas selected

The 1988 Order authorises ENRESA, in the discharge of its tasks, to assign funds to local councils on whose municipal territory are located installations specifically designed for the storage of radioactive waste.

1989 Decree amending the Statute of the Nuclear Safety Council

Royal Decree No 643/1989 of 2nd June 1989 (published in the Official Gazette of 13th June 1989) partly amends the Statute of the Nuclear Safety Council set up by an Act of 22nd April 1980 (for text of the Act see Nuclear Law Bulletin No 25, see Nuclear Law Bulletin No 30 for Statute of the Council) The Decree entered into force the day following its publication.

The Nuclear Safety Council is the national body competent for all nuclear safety and radiation protection questions and is assisted in its work by different Directorates.

This Decree provides for a reorganisation of the Council's work and amends a provision in the Statute concerning the Technical Directorate In particular, it sets up several Subdirectorates under its responsibility the Subdirectorates for Nuclear Power Plants, for Radioactive and Nuclear Fuel Cycle Installations, for Radiation Protection, for Analysis and Evaluation, for Siting and for Co-operation Programmes at national and international levels

RADIATION PROTECTION

1989 Order relating to the Council of Ministers' approval of the Nuclear Emergency Plan

The above Order of 29th March 1989 sets out the approval by the Council of Ministers of the Basic Nuclear Emergency Plan (PLABEN) together with the Plan itself The Order was published in the Official Gazette (Boletin Oficial del Estado) on 14th April 1989.

This Basic Plan contains the instructions to be complied with when nuclear emergency plans are established at Province level in accordance with the radiological criteria laid down by the Nuclear Safety Council, in the event an area is affected by an accident originating in a nuclear power plant

The Governor of a Province where a nuclear power plant is located is designated as the Director of the Province Plan. He is responsible for declaring the emergency and for deciding the appropriate measures to be taken He is also responsible for determining and co-ordinating public information concerning the occurrence and the protection measures required

At a technical level, local groups are to be set up to deal with the emergency, to co-ordinate the information and operations and to take action regarding the radiological, health protection and logistics aspects, including a possible evacuation.

The Basic Nuclear Emergency Plan is supplemented by Annexes giving the different intervention levels, area limits, protection measures and transmittance plans as well as a glossary of the terms contained in the Plan

REGIME OF NUCLEAR INSTALLATIONS

Decree to amend 1985 Decree on the reorganisation of activities in the nuclear fuel cycle (1988)

Royal Decree No 1611/1985 had amended Royal Decree No 2967/1979 on the organisation of activities in the nuclear fuel cycle by providing in particular that the National Uranium Undertaking (Empresa Nacional del Uranio - ENUSA) should progressively reduce its stockpile of nuclear fuels (see Nuclear Law Bulletin Nos. 25 and 36)

The 1985 Decree has now been amended by Royal Decree No 813/1988 of 15th July 1988 (published in the Official Gazette of 27th July 1988). The amendments provide, inter alia, that after the first nuclear fuel loading, pressurized water and boiling water reactors (PWR and BWR) in nuclear power plants should have a stockpile of fuel elements available at all times The number of elements will be fixed for each plant by the Ministry of Industry and Energy

The Decree also provides that additional regulations are to be made by the Ministry in implementation of its provisions

1989 Order changing the storage conditions of fuel elements for nuclear power plants

The Order of 20th July 1989 (published in the Official Gazette of 25th July 1989) was made in furtherance of the above Decree. It establishes new requirements regarding fuel elements for PWRs and BWRs, namely by providing that their operators should have in stock enough fuel elements for one load at least two months prior to the planned loading Other plants should have the number of fuel elements necessary for their continuous operation for four months at 80 per cent of their nominal power

• Sweden

ORGANISATION AND STRUCTURE

1988 Ordinance providing instructions for the State Institute for Radiation Protection

This Ordinance of 19th May 1988 (SFS 1988:295) sets out the duties of the State Institute for Radiation Protection, giving the Director General of the Institute greater powers. It repeals the Ordinance of 17th June 1978 (SFS 1978:481) on the same subject (see Nuclear Law Bulletin No. 21).

The Institute is the central administrative authority regarding protection against ionizing and non-ionizing radiation In particular, the Institute provides guidance on radiation protection to the public authorities responsible for protection of the public, should an accident occur in nuclear installations within or outside Sweden

The duties of the Institute include research and development in the field of radiation protection, dissemination of information on the subject, establishment of international radiation protection standards at national level, etc.

1988 Ordinance providing instructions for the State Nuclear Fuels Board*

This Ordinance of 19th May 1988 (SFS 1988 296) sets out the duties of the State Nuclear Fuels Board. It repeals the Ordinance of 1st July 1981 (SFS 1981 672) establishing the Board and defining its tasks (see Nuclear Law Bulletin No 30)

The Board is the central authority in Sweden for supervising research and development in the field of spent nuclear fuels and the 1988 Ordinance specifies in particular that its duties include the following

- monitor developments in the handling and final disposal of spent nuclear fuels and the resulting nuclear wastes, as well as in the decommissioning and dismantling of reactors,

- to ensure that the general public is kept informed of activities involving spent nuclear fuels and resultant radioactive wastes and the decommissioning and dismantling of reactors

The Ordinance also provides for the membership of the Board and its working procedures

1988 Ordinance providing instructions for the State Nuclear Power Inspectorate

This Ordinance of 2nd June 1988 (SFS 1988 523) sets out the duties of the State Nuclear Power Inspectorate and repeals the Ordinance of 31st May 1974 (SFS 1974 427) originally defining its tasks (see Nuclear Law Bulletin No 14).

The Nuclear Power Inspectorate is the central authority in Sweden regarding nuclear safety The 1989 Ordinance specifies that the Inspectorate is responsible for

* This Note and the two following ones are based on information published in the World Health Organization International Digest of Health Legislation, 1989, 40(1)

- monitoring developments in the field of nuclear energy, in particular, on safety matters,

- taking initiatives on measures to improve safety in nuclear installations,

- taking initiatives on research and development in connection with safety in nuclear installations and handling and in the transport of nuclear materials or wastes,

- making an active contribution towards providing the general public with insight and information on activities in the field of nuclear safety in Sweden, and

- providing technical advice to the authorities responsible for protection of the population in the event of an accident in a nuclear installation in Sweden or abroad

The Ordinance also provides for the membership of the Inspectorate and its working procedures

1988 Ordinance providing instructions for the Advisory Board for Nuclear Waste Matters

This Ordinance of 2nd June 1988 (SFS 1988 524) sets out the duties of the Advisory Board for Nuclear Waste Matters and repeals an Ordinance of 1985 (SFS 1985: 686) on the same subject

This Board is the expert advisory and consultative body in Sweden on nuclear waste and on decommissioning of nuclear installations The 1989 Ordinance provides that it shall in particular.

- promote information transfers between the State Institute for Radiation Protection, the State Nuclear Power Inspectorate, and the State Nuclear Fuels Board concerning these authorities' research into the handling of nuclear wastes and the decommissioning of nuclear installations, and

- submit reports on these subjects, at the request of the above-mentioned bodies

The Ordinance also provides for the membership of the Board and its working procedures

• United Kingdom

GENERAL LEGISLATION

Atomic Energy Act 1989

The above Act of 25th May 1989 was brought into force on 1st September 1989 by the Atomic Energy Act (Commencement) Order 1989 Although its title does not specify it, the Act contains a series of provisions on varied subjects The following paragraphs provide a brief explanation of the provisions of the Act and the amendments it has made to other legislation

British Nuclear Fuels plc

The Act increases to £2 000 million the limit imposed by the Nuclear Industry (Finance) Act 1977 on the commitment of public finance to British Nuclear Fuels plc (private limited company). The limit was previously £1 500 million, having been progressively increased from the limit of £300 million set in 1977.

Amendments to the Nuclear Installations Act 1965

The provisions of the above Act relating to the recovery of the expenses of maintaining the Nuclear Installations Inspectorate are amended such tasks are now conferred directly on the Health and Safety Executive which is responsible for appointing the inspectors In addition, the Executive may recover from the applicant expenses attributable to dealing with an application for a nuclear site licence Also, the range of expenses which may be recovered so as to include expenses incurred in connection with research into nuclear safety are extended From 1st April 1990, the Health and Safety Executive will assume responsibility on behalf of the Health and Safety Commission for managing certain research of this kind presently carried out by the United Kingdom Atomic Energy Authority (UKAEA) and financed by the Department of Energy

The Act has also been amended regarding insurance and cover for liability (Section 18) The 1989 Act provides that any insurance held by the UKAEA should be taken into account in computing the amount to be made available under the Nuclear Installations Act 1965 to meet compensation claims for personal injury or damage to property arising from a nuclear accident It is recalled that, since 1986, the UKAEA operates as a trading fund, i e the UKAEA keeps its accounts as if it were a commercial company (see Nuclear Law Bulletin No 37), and henceforth, it must take out insurance or other financial security to cover liability for any accidents occurring in nuclear installations operated by it

The definition of "cover period" in the Act (Section 19) has been amended so as to prevent the grant of a new nuclear site licence bringing the current cover period to an end where the new licence is, in effect, a continuation of the old licence with amendments This is relevant to a

nuclear operator's obligation to provide insurance cover not only for the current cover period but also for any cover period which ended in the last ten years

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

The 1989 Atomic Energy Act enables the above Convention to be ratified by the United Kingdom. The Convention includes provisions for giving and receiving assistance which may involve the Secretary of State for Energy in expenses. It also requires certain immunities from civil and criminal jurisdiction and from taxation to be granted to personnel from another State who provide assistance in accordance with the Convention. The 1989 Act empowers the Secretary of State to take the measures required to meet such obligations where necessary

• United States

RADIATION PROTECTION

Emergency preparedness for fuel cycle and other radioactive material licensees (1989)

The Nuclear Regulatory Commission (NRC) has amended its Regulations in 10 CFR Parts 40, 50 and 70, effective from 7th April 1990, to require major NRC fuel cycle and other radioactive material licensees to maintain emergency plans The plans are for coping with serious accidents involving licensed radioactive materials for which responses by off-site organisations (such as police, fire and medical organisations) might be needed

The criteria selected for establishing whether a licensed facility would be required to establish and maintain an emergency plan for significant accidental releases were whether a credible severe accident could theoretically deliver a radiation dose to a member of the public of 1 rem effective dose equivalent, 5 rems to the thyroid, or soluble uranium intake exceeding 2 milligrams

The criteria for application of the emergency preparedness requirements are based on whether the doses could exceed the Environmental Protection Agency's Protective Action Guides for Whole Body Exposure.

Early site permits, standard design certifications, and combined licences for nuclear power reactors (1989)

The NRC has added a new Part 52 to its Regulations in 10 CFR, effective from 18th May 1989, which provides for issuance of early site permits, standard design certifications, and combined construction permits and operating licences with conditions for nuclear power reactors The new Part sets out the review procedure and licensing requirements for applications for these new licences and certifications It is intended to achieve the early resolution of licensing issues and enhance the safety and reliability of nuclear power plants.

Subpart A - Early Site Permits - allows any prospective applicant for a construction permit or a combined construction permit and conditional operating licence to apply for an early site permit even if an application for a construction permit or a combined licence for a facility has not been filed The application must describe, among other things, the number, type and thermal power level of the facilities for which the site may be used The Regulation requires that the application contain a place for redress of the site for use in the event that site preparation activities are performed under the permit and the permit expires without have been referenced in an application for a construction permit or a combined licence Finally, the Regulation requires the application to demonstrate that the area surrounding the site is amenable to emergency planning which would provide reasonable assurance that adequate protective measures could be taken in the event of a radiological emergency at the site An early site permit is valid for an initial period of twenty years and may be extended

Subpart B - Certified Standard Designs - sets forth the procedures and requirements for NRC approval of standard designs by rulemaking The NRC is currently developing safety criteria for application in the review of advanced reactor designs These criteria will define minimum safety requirements for advanced reactors and will provide for assessment and documentation of the enhanced safety the NRC expects these reactor designs to embody Part 52 deals only with procedural aspects of the certification of reactor designs NRC staff will advise the prospective applicant for certification on precisely what information is required for the staff's consideration of the application

Certification of a reactor design which differs significantly from a reactor which has been built and operated may be granted only after the design has been shown to be sufficiently mature It is presumed that this maturity will have to be demonstrated through comprehensive testing of a prototype The Regulation sets forth the criteria which must be satisfied if the presumption is to be proved correct The same criteria must be satisfied by any applicant proposing to demonstrate the maturity of a design by means of a prototype of only part of the design. If an applicant for a construction permit or combined licence under Part 52 chooses to reference a final design approval for a design whose maturity must be demonstrated by prototype and has not yet been so demonstrated, the applicant will be subject to the requirements of Part 50 regarding research and development to confirm the adequacy of the design

Ideally, designs for which certification is sought will be for an essentially complete plant The designs would make more straightforward the preparation of a probabilistic risk assessment and safety analysis and would help minimise the extent of the staff's review of the licence applications which reference a single design The designs would also help assure that no two plants of the same design would vary significantly from each other. For these reasons, the NRC will give priority in allocation of resources to support review and approval of applications for essentially complete designs However, the NRC will entertain applications for certification of a major portion of a plant if, and only if, that portion contains all buildings, structures, systems, and components that can significantly affect the safe operation of the plant

Applications for certification of any design must contain a level of detail comparable to that required for a final design approval under Part 50 and sufficient to enable the staff to judge the applicant's proposed means of assuring that construction conforms to design, and to reach a final conclusion on all matters which must be decided before the certification can be granted

The certified standard design will initially be valid for ten years, but may be renewed for period of an additional five-ten years.

Subpart C concerns combined construction permits and conditional operating The Atomic Energy Act has since its enactment permitted the NRC to issue a single licence for construction and operation of nuclear facilities However, no application has even been made for such a licence for a nuclear power plant.

The application for a combined licence may, but need not, reference a standard design which has been certified under Subpart B, or a site for which an early site permit has been issued under Subpart A If the facility is to be of a design which has been certified, the scope of the proceeding on the application for a facility licence is narrowed, the major safety questions having been resolved in the earlier rulemaking on the design Similarly, if the facility is to be located on a site for which an early site permit has been issued, the scope of the facility licence proceeding is further narrowed If an early site permit is not referenced, the early site review procedures of 10 CFR Part 2 remain available to expedite the environmental review Obviously, the efficiency and effectiveness of the combined licensing process is maximised if both a certified standard design and a pre-approved site are referenced. For this reason, the NRC anticipates that this will be the preferred approach, particularly with regard to standard designs In order to encourage standardisation, the NRC will give priority among applications to those which reference certified standard designs and pre-approved sites

The applicant must make good faith efforts to obtain the necessary certifications from State and local governmental agencies that the proposed emergency plans are practicable and that the responsible agencies are committed to execution of their responsibilities under the plans If the certification cannot be obtained, the applicant must nonetheless demonstrate that the proposed plans provide reasonable assurance that adequate protective measures will be taken in the event of a radiological emergency at the plant The antitrust review will be conducted as it has been done in the past for construction permit applications Because antitrust review can proceed in

parallel with the technical review, the antitrust review should not affect the efficiency of the combined licence proceeding.

Subpart C incorporates, where appropriate, the technical standards and requirements of Part 50 as they would be applied to power plant licence applicants and licensees under the existing system.

The combined licence hearing will be governed by the appropriate sections of 10 CFR Part 2. The Advisory Committee on Reactor Safety (ACRS) review of the application is mandatory, although the scope of the report will be much narrower if the application references a certified standard design or a pre-approved site that the ACRS has previously reviewed

RADIOACTIVE WASTE MANAGEMENT

Processing of applications related to licensing of a geologic repository for the disposal of high-level radioactive waste

On 5th August 1987, the NRC formed a High-Level Waste Licensing Support System Advisory Committee ("negotiating committee") to develop recommendations for revising the NRC's Rules of Practice in 10 CFR Part 2 for the adjudicatory proceeding on the application for a licence to receive and possess high-level radioactive waste ("HLW") at a geologic repository operations area ("HLW licensing procedure"). The negotiating committee sought consensus on the procedures that would govern the proceeding, focusing primarily on the use of an electronic information management system known as the Licensing Support System ("LSS") The objective of the negotiated rulemaking was to develop the essential features of the procedural rules for effective NRC review of the US Department of Energy (DOE) licence application within the three-year time period required by Section 114(d) of the Nuclear Waste Policy Act of 1982, as amended ("NWPA") (see Nuclear Law Bulletin No. 41). Based on the Committee deliberations, the NRC published a proposed rule that would revise 10 CFR Part 2 to establish the procedures for HLW proceeding on 3rd November 1988 Final amendments to 10 CFR Part 2 were then published by the NRC after consideration of public comments.

The LSS is intended to provide for the entry of, and access to, potentially relevant licensing information as early as practicable before DOE submits the licence application for the repository to the NRC The LSS would contain the documentary material generated by DOE, NRC and other parties to the licensing proceeding, which are relevant to licensing of the repository All parties would then have access to this system well before the proceeding begins. Because the relevant information would be readily available through access to the LSS, the initial time-consuming discovery process, including the physical production and on-site review of documents by parties to the HLW licensing proceeding, is substantially reduced

Procedures regarding environmental impact studies in the disposal of high-level radioactive wastes in geologic repositories (1989)

The NRC has amended its Regulation in 10 CFR Parts 2, 51 and 60, effective from 2nd August 1989, to specify procedures for implementation of the National Environmental Policy Act of 1969 with respect to geologic repositories for high-level radioactive waste In accordance with the Nuclear Waste Policy Act of 1982, as amended, the NRC will adopt to the extent practicable, the final environmental impact statement (EIS) prepared by the DOE that accompanies a recommendation to the President for repository development The rule recognises that the primary responsibility for evaluating environmental impact lies with the DOE and, consistent with this view, it sets out the standards and procedures that would be used in determining whether adoption of the Department's final environmental impact statement is practicable

The NRC noted, in the notice of rulemaking, but not in the text of the amendments, that upon review of the text and statutory history of Nuclear Waste Policy Act·

1 The Commission will conduct a thorough review of DOE's draft EIS, and will provide comments to DOE regarding the adequacy of the statement,

2 If requested by Congress pursuant to the NWPA, the NRC will provide comments on DOE's EIS to the Congress with respect to a State or Indian Tribal notice of disapproval of a designated site,

3. The NRC will find it practicable to adopt DOE's EIS (or any DOE supplemental EIS) unless

   a) the action proposed to be taken by the NRC differs in an environmentally significant way from the action described in DOE's licence application; or

   b) significant and substantial new information or new considerations render the DOE EIS inadequate, and

4 The DOE EIS will accompany the application through the NRC's review process, but will be subject to litigation in NRC's licensing proceeding only where factors 3(a) or 3(b) are present.

THIRD PARTY LIABILITY

Amendment of Regulations concerning financial protection consequent upon the 1988 amendment of the Price-Anderson Act (1989)

The Nuclear Regulatory Commission (NRC) has revised, effective from 1st July 1989, its Regulation 10 CFR Part 140, Financial Protection Requirements and Indemnity Agreements, to conform to changes made to the Price-Anderson Act by the Price-Anderson Amendments Act of 1988 (see

Supplement to Nuclear Law Bulletin No 42 for consolidated text of the Act) The NRC also amended Part 140 to increase the level of the primary layer of financial protection required of large power reactor licensees, that is licensees of facilities designed to produce substantial amounts of electricity and having a rated capacity of 100 000 electrical kilowatts or more The provisions of Section 170 of the Atomic Energy Act of 1954, as amended, require production and utilisation facility licensees to have and maintain financial protection to cover public liability claims resulting from a nuclear incident or precautionary evacuation. Therefore, the NRC amended Part 140 of its Regulations to coincide, as statutorily required, with the increase in the level of the primary layer of insurance provided by private nuclear liability insurance pools from $160 million to $200 million

• Yugoslavia

GENERAL LEGISLATION

1989 Act prohibiting the construction of nuclear power plants in Yugoslavia

Following the example of a similar Act in the Social Republic of Slovenia (see Nuclear Law Bulletin Nos 40 and 41) and on the initiative of opponents of nuclear energy from that Republic, the Assembly of the Socialist Federative Republic of Yugoslavia approved the above-mentioned Act on 15th June 1989 It was published in the Official Gazette of the SFRY No 35/89 and entered into force on 24th June 1989

However, compared to the Slovene Act of 1987 postponing the construction of nuclear plants until the year 2000, the Federal Act of 1989 is more rigorous It prohibits such construction without fixing a time limit and refers also to fuel element fabrication plants and fuel reprocessing facilities, in addition to nuclear power plants Not only the construction, but also investment decisions and the elaboration of investment programmes and technical documentation are prohibited The Federal Act of 1989 also includes penal provisions the responsible person in an enterprise or in the regulatory body, who contravenes the above-mentioned prohibitions, is subject to imprisonment from six months to five years

Scientific, mining and geological research activities, as well as staff training are excepted from the 1989 Act The same exception applies to the final disposal of radioactive waste, but only if the waste derives from the existing facilities in Yugoslavia

INTERNATIONAL REGULATORY ACTIVITIES

• *International Atomic Energy Agency*

WORKING GROUP ON LIABILITY FOR NUCLEAR DAMAGE

In accordance with the requests, in the form of a resolution, of the IAEA General Conference, the IAEA Board of Governors established on 23rd February 1989, the above Working Group to study all aspects of liability for nuclear damage. In particular, the Working Group was charged with the task of considering ways of complementing and strengthening the existing civil liability regime and the question of State liability The study undertaken by this Working Group may lead to a revision of the Vienna Convention on Civil Liability for Nuclear Damage

This Working Group has met twice, from 29th May to 3rd June 1989 and from 30th October to 3rd November 1989.

At the first meeting of the Working Group issues with respect to civil and State liability were identified for further consideration These issues included subjects in relation to which it was considered that the current Conventions on civil liability might be open to improvement, such as their geographic scope, the definition of the damage covered, the financial limits on liability for damage and the time limits on the submission of claims

The second meeting of the Working Group considered the issues previously identified and discussed possible improvements to the civil liability Conventions. The meeting generally agreed that a revision of these Conventions was desirable

In particular, there was general agreement that the existing financial limits on the liability of a nuclear operator provided for under the Conventions were too low Various methods for funding higher liability levels were discussed including private insurance, pooling of funds by nuclear operators, the provision of funds by the State of the operator and the pooling of the public funds of States

On a related matter, there was also general support for the proposal that the Vienna Convention be revised to adopt Special Drawing Rights (SDR) as its unit of account The Convention currently defines financial amounts by reference to the value of gold. This approach was adopted at a time when the international monetary system of the IMF was based on the existence of an official gold price. This is no longer the case. Consequently the reference to the value of gold could lead to difficulties in the interpretation and application of the Vienna Convention. The SDR was adopted as the unit of account under the Paris Convention by a 1982 Protocol to that Convention

The Working Group discussed the current definitions of the damage covered by the civil liability Conventions. These definitions refer to personal and property damage and leave to national courts the role of determining the precise coverage of the Conventions Reference was made during the meeting to elements such as economic losses, damage to the environment, preventive measures and consequential losses There was general agreement that the Conventions are ambiguous as to their coverage of these elements. Many participants considered that the Conventions should be clarified in this respect

The existing 10-year time limit for the submission of claims was also considered by the Working Group. In particular, concern was expressed that this limitation period would be likely to expire before all cases of personal injury caused by a nuclear accident become apparent Proposals were accordingly made to extend the period of limitation in relation to personal injury claims. Periods of 30-35 years were suggested as more appropriate

The meeting also discussed the role of States in the compensation of nuclear damage The relationship of such a role to the civil liability regime was identified as an important matter requiring early attention Discussion ranged from consideration of the possibility that States might provide financial guarantees to cover the liability of the nuclear operator beyond the limits to which he can obtain insurance, possibly along the lines of the Brussels Supplementary Convention, to questions of State responsibility and State liability for damage caused by acts not prohibited by international law With respect to the latter issue, the meeting was assisted by the Special Rapporteur of the International Law Commission on this topic, Dr Barboza

• European Communities

REGULATIONS ON RADIOACTIVE CONTAMINATION

Following the accident at Chernobyl (USSR) on 26th April 1986, the Council of the European Communities adopted, inter alia, Regulations on maximum permitted levels of contamination of foodstuffs and feedingstuffs [Regulation (EURATOM) No 3954/87] and on conditions governing imports of agricultural products [Regulation (EEC) No 3955/87]. The texts of both

Regulations were reproduced in Nuclear Law Bulletin No. 41 of June 1988. Since then, the Council adopted other Regulations in that field, amending in particular, Article 7 and completing the Annex to Regulation (EURATOM) No. 3954/87. The amended Article and the Annex to that Regulation, as well as the new Regulations are reproduced in the "Texts" Chapter of this issue of the Bulletin

AGREEMENTS

BILATERAL AGREEMENTS

• Canada - Hungary

ADMINISTRATIVE ARRANGEMENT PURSUANT TO THE AGREEMENT FOR CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (1989)

On 14th August 1989, an Administrative Arrangement to facilitate the effective implementation of the 1987 Agreement between the Government of Canada and the Government of Hungary for Co-operation in the Peaceful Uses of Nuclear Energy (see Nuclear Law Bulletin No. 42 for text of the Agreement) entered into force between the Atomic Energy Control Board of Canada and the National Atomic Energy Commission of Hungary. Such administrative arrangements are required by Article X.2 of the Agreement

This Arrangement establishes mechanisms to facilitate the implementation of Article V of the Agreement which provides that nuclear material, equipment and technology covered by the Agreement is not to be transferred to a third party without the prior consent of the other Party to the Agreement In particular each Party will provide information in the form of an annual report on all nuclear material, equipment and technology subject to the Agreement in its territory

• Canada - Switzerland

AGREEMENT FOR CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (1987)*

Canada and Switzerland concluded an Agreement for nuclear co-operation on 22nd December 1987

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* Note by the Swiss authorities.

This Agreement replaces the one concluded in 1958 and revised several times and enables co-operation, suspended between both countries since 1977, to be resumed Following the Indian explosion in 1974, Canada, wishing to establish more stringent supply conditions, asked for a revision of the agreements concluded with its different partners. Negotiations with Switzerland were inconclusive by the deadline, and Canada stopped its deliveries on 1st January 1977

The new Agreement conciliates the diverging positions of both countries by taking into account the non-proliferation rules agreed between exporting countries these past years It is to a great extent identical to the agreements Canada has concluded with its other partners, for example EURATOM and Japan (see Nuclear Law Bulletin Nos 29 and 36 and 23 and 25), and to the agreement between Switzerland and Australia (see Nuclear Law Bulletin No 36).

This outline Agreement contains no obligations regarding purchase or sale, but establishes non-proliferation safeguards respecting co-operation between private or public undertakings in both States In particular, the Parties undertake to use the goods exchanged solely for peaceful and non-explosive purposes and entrust the International Atomic Energy Agency with verifying this use Retransfer of such goods to a third country is also subject to very specific conditions Finally, the Parties undertake to apply adequate security measures to the nuclear goods subject to the Agreement

The Agreement entered into force on 13th June 1989. It is reproduced in the "Texts" Chapter of this issue of the Bulletin

• Canada - United States

ADMINISTRATIVE ARRANGEMENT FOR CO-OPERATION AND THE EXCHANGE OF INFORMATION IN NUCLEAR REGULATORY MATTERS (1989)

On 21st June 1989, the United States Nuclear Regulatory Commission (USNRC) and the Atomic Energy Control Board of Canada (AECB) concluded an Administrative Arrangement on co-operation and exchange of technical information relating to the regulation of the health, safety, security, safeguards and environmental protection aspects of nuclear facilities and materials as well as of radioactive substances and waste.

Informal arrangements on exchange of this information already existed between both Agencies. The Arrangement, which was concluded for five years and is renewable, sets them out more formally and in writing

• France - F.R. of Germany

JOINT DECLARATION ON CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (1989)

On 6th June 1989, France and the Federal Republic of Germany made a Joint Declaration on co-operation between the two countries in the field of the peaceful use of nuclear energy. This Declaration follows upon the signing of a Protocol of intent on 3rd April 1989 by VEBA, the major energy consortium in the Federal Republic of Germany supplying nuclear power, and COGEMA, the French State-owned nuclear fuel company and aims to provide a broad framework for co-operation between the two countries

The Declaration, in particular, covers co-operation in the fields of reprocessing, production of MOX fuel, uranium enrichment, nuclear reactors, information relating to nuclear installations, transport of nuclear material and community aspects

With respect to reprocessing, the Declaration refers to and approves the objectives of the Protocol of intent between VEBA and COGEMA with respect to the reprocessing of fuel elements in the Hague UP3 centre for an initial period of 15 years from 1999. The Governments agree not to place any obstacle

- in the way of the access of Federal Republic of Germany electricity producers to the reprocessing capacity of the UP3 centre,
- the transport of irradiated fuel from the Federal Republic of Germany to France before reprocessing;
- or the return to the Federal Republic of Germany of fissile material recuperated by reprocessing and any resulting waste

In this context, the two Governments state that they have no objection in principle to German enterprises participating, by way of part-ownership of capital, in the COGEMA UP3 factory. In addition, France is to favourably examine the possibility of participating in projects on reprocessing technology, pure and applied research into the reprocessing of fuel from super-reactors, and light water and MOX fuel proposed by the Federal Republic of Germany

The Declaration also records the decision of the two Governments to establish a group of French and German experts to consider questions relating to the safety of nuclear installations at the back-end of the fuel cycle

In relation to the production of MOX fuel, the two Governments record that they are in favour of examining the possibility of projects involving French and German participants and that they welcome the proposed negotiations for this purpose between French and German companies The Governments undertake to consult on the possibility of co-operation in the field of uranium enrichment.

In addition, the Governments welcome the recent Agreement between SIEMENS and FRAMATOME on the marketing and development for export of pressurised water reactors. They agree to establish an ad-hoc working group at the level of the government safety bodies of each country, to study safety options for the common reactor envisaged by the Agreement with a view to the authorities of both countries approving the reactor. Links between the research institutes of both countries specialising in nuclear safety are to be put in place and the two Governments also encourage the electricity producers of both countries to establish a joint body concerned with the joint reactor project, particularly in relation to the field of safety. The interest of both Governments in the development of co-operation in relation to high temperature reactors is also recorded.

Both Governments agree to inform each other fully about their radioactivity monitoring activities. With respect to the transport of nuclear materials, the two Governments confirm that it should not be impeded and agree to move towards harmonization of standards. Finally, the two Governments note that French and German companies should consider national and EC cartel law in their negotiations on joint projects and record that, should it appear that in the long term the concept of a European enterprise as foreseen in the EURATOM Treaty could facilitate co-operation in the nuclear fuel cycle, they will consult with a view to studying this subject

• F.R. of Germany - United Kingdom

JOINT DECLARATION ON CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (1989)

This Declaration, signed on 25th July 1989, records the intention of the Governments of the Federal Republic of Germany and the United Kingdom to increase their existing co-operation in the peaceful use of nuclear energy.

In particular, both Governments record their support for long-term co-operation between German and British companies in the reprocessing of German nuclear fuel elements German spent fuel is to be reprocessed at British Nuclear Fuels' Thermal Oxide Reprocessing Plant (THORP). In this context, the two Governments have agreed not to place any obstacles in the way of

- access by German generators to reprocessing capacity in THORP,
- the transport, before reprocessing, of irradiated fuel elements from the Federal Republic of Germany to the United Kingdom, or
- return to the Federal Republic of Germany of the wastes arising from the storage, reprocessing, waste management and decommissioning related to the irradiated fuel elements together with the fissile material so arising.

The Declaration also emphasises the importance of the continuing development of safety technology at nuclear power plants It provides for the United Kingdom Regulatory Authorities and the Federal Ministry for the Environment, the Protection of Nature and Reactor Safety to extend their existing bilateral contacts to include the subject of safety standards for reprocessing plants in both countries, especially in relation to design

In addition, the two Governments confirm that they will place no obstacles to the safe transport of radioactive materials and that national transport concepts are to be recognised and agree to work towards mutual recognition and technical usability of containers permitted in either of their countries

The Governments also agree to aim to link the relevant national nuclear installations and radiation protection monitoring systems in order to provide a full exchange of monitoring information

Apart from establishing arrangements and obligations between the two countries, the Declaration formally records the interest of the two Governments in further co-operation, in particular in the fields of the fabrication of fuel elements and reprocessing.

Finally, the two Governments note that German and British companies should consider national and EC cartel law in their negotiations and propose that they examine whether, in the long term, the concept of a European enterprise as foreseen in the EURATOM Treaty could facilitate co-operation in reprocessing or the nuclear fuel cycle as a whole

• India-Pakistan

AGREEMENT ON THE PROHIBITION OF ATTACKS AGAINST NUCLEAR INSTALLATIONS AND FACILITIES (1988)

Conscious of the importance of confidence-building measures in promoting peaceful bilateral relations, the Government of the Republic of India and the Government of the Islamic Republic of Pakistan signed the above Agreement on 31st December 1988.

This Agreement provides that each country shall refrain from undertaking, encouraging, or participating in, directly or indirectly, any action aimed at causing the destruction of, or damage to, any nuclear installation or facility in the other country. Under the Agreement, "nuclear installations or facilities" means nuclear power and research reactors, fuel fabrication, uranium enrichment, reprocessing facilities etc , as well as establishments storing significant quantities of radioactive materials

Each country shall inform the other on 1st January of each calendar year of the location of its nuclear installations and facilities and whenever there is any change in this respect

This Agreement is subject to ratification

MULTILATERAL AGREEMENTS

VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE AND JOINT PROTOCOL

The Vienna Convention of 21st May 1963 on Civil Liability for Nuclear Damage has a world-wide vocation, with Mexico and Hungary as its newest Parties. A Joint Protocol, linking it to the so far regional Paris Convention of 29th July 1960 on Third Party Liability in the Field of Nuclear Energy was adopted on 21st September 1988, thus giving the Parties to each Convention the benefit of coverage by the other (see Nuclear Law Bulletin No 42 for text of Joint Protocol, see also Nuclear Law Bulletin No 41).

Tables of the status of signatures and ratifications of the Vienna Convention and the Joint Protocol as at 30th October 1989 are set out below

VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE

Status of signatures, ratifications and accessions

State	Date of Signature	Date of Deposit of Instrument	
Argentina	10th October 1966	25th April 1967	(ratif.)
Bolivia		10th April 1968	(access.)
Cameroon		6th March 1964	(access)
Chile	18th August 1988		
Colombia	21st May 1963		
Cuba	10th December 1964	25th October 1965	(ratif)
Egypt	19th August 1965	5th November 1965	(ratif.)
Hungary		28th July 1989	(access)

State	Date of Signature	Date of Deposit of Instrument
Mexico		25th April 1989 (access)
Morocco	30th November 1984	
Niger		24th July 1979 (access)
Peru		26th August 1980 (access)
Philippines	21st May 1963	15th November 1965 (ratif)
Spain	6th September 1983	
Trinidad and Tobago		31st January 1966 (access)
United Kingdom	11th November 1964	
Yugoslavia	21st May 1963	12th August 1977 (ratif)

JOINT PROTOCOL RELATING TO THE APPLICATION OF THE VIENNA CONVENTION AND THE PARIS CONVENTION

Status of signatures and ratifications

State	Date of Signature	Date of Deposit of Instrument
Argentina*	21st September 1988	
Belgium**	21st September 1988	
Cameroon*	7th December 1988	
Chile*	21st September 1988	
Denmark**	21st September 1988	26th May 1989
Egypt*	21st September 1988	10th August 1989
France**	21st June 1989	
Germany** (Federal Republic)	21st September 1988	
Finland**	21st September 1988	
Greece**	21st September 1988	
Hungary*	20th September 1989	
Italy**	21st September 1988	
Morocco*	21st September 1988	
Netherlands**	21st September 1988	
Norway**	21st September 1988	
Philippines*	21st September 1988	
Portugal**	21st September 1988	
Spain**	21st September 1988	
Sweden**	21st September 1988	
Switzerland**	21st September 1988	
Turkey**	21st September 1988	
United Kingdom**	21st September 1988	

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* = Vienna Convention State

** = Paris Convention State

CONVENTIONS ON EARLY NOTIFICATION OF A NUCLEAR ACCIDENT AND ON ASSISTANCE IN CASE OF A NUCLEAR ACCIDENT OR RADIOLOGICAL EMERGENCY

The above Conventions, opened for signature on 26th September 1986, entered into force on 27th October 1986 and 26th February 1987 respectively. Tables giving the status of the Conventions were reproduced in Nuclear Law Bulletin No 43, June 1989. Since then, the following countries have deposited instruments ratifying, acceding or approving both Conventions on the same date

Federal Republic of Germany	14th September 1989	(ratif)
Israel	25th May 1989	(ratif.)
Monaco	19th July 1989	(appro.)
Pakistan	11th September 1989	(access.)
Spain	13th September 1989	(ratif.)

Iceland ratified the Early Notification Convention on 27th September 1989.

STATUS OF INTERNATIONAL CO-OPERATION ON THERMONUCLEAR FUSION RESEARCH (1989)

In recent years, international co-operation in the field of thermonuclear fusion has accelerated and expanded, leading to a pooling of resources and know-how and avoiding duplication of themes. International co-operation has taken the form of multilateral agreements sponsored by the competent international agencies as well as bilateral agreements between countries interested in developing this form of energy The following paragraphs briefly review the agreements to date

Joint European Torus (JET) Joint Undertaking (1978)

On 30th May 1978, the Joint European Torus (JET) Joint Undertaking was established for a period of twelve years by Decision of the Council of the European Communities. JET is based at Culham in the United Kingdom, the aim of the project is to construct, operate and exploit a large torus facility of a tokamak type and auxiliary facilities (see note in Nuclear Law Bulletin No 22, the text of the Decision is reproduced in the Supplement to that issue).

Agreement for Co-operation in Development of the Stellarator Concept (1985)

On 31st July 1985, the European Atomic Energy Community (EURATOM) and the United States Department of Energy (US DOE) concluded a Co-operative Agreement on the Stellarator Concept for a period of five years under the aegis of the International Energy Agency of the OECD.

The objective of the co-operation is to improve the physics base of the Stellarator concept and to enhance the effectiveness and productivity of

research in that field The term "Stellarator" refers generally to all toroidal concepts based on external confinement of fusion plasmas

The programme of work includes exchanges of information and computer codes; assignment of specialists to the facilities of each Party, joint planning of experimental programmes and organisation of seminars and symposia

Agreement on a Co-operative Programme for the Investigation of Toroidal Physics in, and Plasma Technologies of Tokamaks (1985)

On 31st July 1985, EURATOM and the United States Department of Energy (US DOE) concluded, for a period of ten years, another Agreement on a Co-operative Programme for the Investigation of Toroidal Physics in, and Plasma Technologies of Tokamaks with Poloidal Field Divertors This Agreement was also concluded under the aegis of the International Energy Agency of the OECD

The programme of work includes the same type of activities as those in the Agreement on the Stellarator concept

Co-operation Agreement on Large Tokamak Devices: JET, TFTR and JT-60 (1986)

On 15th January 1986, EURATOM, the United States Department of Energy (US DOE) and the Japan Atomic Energy Research Institute (JAERI) concluded a Co-operation Agreement on Large Tokamak Devices for a period of five years, again under the aegis of the International Energy Agency of the OECD

Its aim is to establish the scientific and technological foundations for the development of the three kinds of large-sized tokamak devices JET, TFTR and JT-60 The terms of the Agreement include exchanges of information and personnel and the organisation of workshops

Agreement of Participation in the International Thermonuclear Experimental Reactor (ITER) Conceptual Design Activities (1988)

In 1988, the European Atomic Energy Community (EURATOM), Japan, the Union of Soviet Socialist Republics and the United States of America agreed to participate in the International Thermonuclear Experimental Reactor (ITER) Conceptual Design Activities The project, which was launched under the auspices of the International Atomic Energy Agency (IAEA) in April 1988, will be completed by 31st December 1990. The overall objective of ITER is to demonstrate the scientific and technological feasibility of fusion power The aim is to provide a design that is available for the Parties to use either in their own national programme or as part of a larger international collaborative programme

The agreed terms of reference concerning the ITER Conceptual Design Activities are as follows

- to define a set of technical characteristics of an ITER and subsequently to carry out the design work necessary to establish its conceptual design;

- to define needs for future research and development and to draw up estimates of cost, manpower and schedule for the realisation of such a device;

- to define the site requirements for an ITER and to perform a safety and environmental analysis; and

- to carry out in a co-ordinated manner specific validating research and development works supportive of the design activities.

The ITER Conceptual Design Activities are directed and managed by a Council and a Management Committee set up by the Agreement The Parties each nominate two members to the ITER Council and one member to the ITER Management Committee. The ITER Council is advised by a Scientific and Technical Advisory Committee, chosen by the Council so as to ensure that all areas of expertise for execution of the work are represented therein, there are three members per Party The functions and rules of procedure of these bodies are set out in the Agreement.

The Agreement provides that the design activities require joint work at one technical site for periods of several months, as well as design work conducted at each Party's home site. It is also provided that workshops will be organised on specific technical issues The research and development activities are performed in each Party's laboratories

The IAEA provides administrative support to the ITER activities This includes, inter alia, meeting and office space at IAEA headquarters, secretarial and support services, organisation of ITER meetings, publishing ITER technical reports and providing a forum for presentation of ITER results at the IAEA Conference on Plasma Physics and Controlled Nuclear Fusion Research to be held in October 1990

Agreement for Co-operation between EURATOM and Japan in the Field of Controlled Thermonuclear Fusion (1989)

On 20th February 1989, the European Atomic Energy Community (EURATOM) and Japan signed an Agreement for co-operation in the field of controlled thermonuclear fusion

The Agreement aims at maintaining and intensifying co-operation between the European Communities and Japan in order to develop the scientific understanding and technological capability underlying a fusion power system Co-operation covers tokamaks and alternative lines, fusion technology, plasma physics, and other mutually agreed fields It takes the form of exchange of information and personnel, meetings, execution of joint studies, etc.

The Agreement provides for the establishment of a Co-ordinating Committee composed of an equal number of members from each Party, to facilitate the co-ordination and implementation of co-operative activities

Switzerland, which had been associated with EURATOM's work on thermonuclear fusion and plasma physics since 1987, renewed its contract of association in October 1989 until 1992 Switzerland may therefore have access to and participate in the exchange of information between EURATOM and Japan in this field.

The Agreement entered into force on the date of its signature for three years and will continue in force unless terminated by either Party at the end of the initial period or at six months' notice thereafter

• Canada - Switzerland

AGREEMENT OF 22ND DECEMBER 1987 BETWEEN THE GOVERNMENT OF CANADA AND THE SWISS FEDERAL COUNCIL FOR CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (WITH ANNEXES)

The Government of Canada (hereinafter referred to as Canada) and the Swiss Federal Council (hereinafter referred to as Switzerland), and both hereinafter referred to as the Parties;

CONSIDERING their close co-operation in the development, use and control of the peaceful uses of nuclear energy pursuant to the Agreement between the Government of Canada and the Government of the Confederation of Switzerland to Provide for Co-operation in the Peaceful Uses of Atomic Energy signed at Ottawa on 6th March 1958, as extended by the Exchange of Letters of 26th November 1964, 23rd April 1969, and 1st December 1971;

DESIRING to strengthen the friendly relations that exist between the Parties;

MINDFUL of the advantages of effective co-operation in the peaceful uses of nuclear energy;

RECOGNISING that Canada and Switzerland are both non-nuclear-weapon States Party to the Treaty on the Non-Proliferation of Nuclear Weapons done at London, Moscow and Washington on 1st July 1968 (hereinafter referred to as the NPT) and, as such, have undertaken not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices and that both Parties have concluded agreements with the International Atomic Energy Agency for the application of safeguards in connection with the NPT,

UNDERLINING further that the Parties to the NPT have undertaken to facilitate, and have the right to participate in, the fullest possible exchange of nuclear material, equipment and scientific and technological information for the peaceful uses of nuclear energy and that Parties to the NPT in a position to do so may also co-operate in contributing together to the further development of the applications of nuclear energy for peaceful purposes;

INTENDING, *therefore, to co-operate with one another to these ends,*

HAVE AGREED as follows

Article I

For the purpose of this Agreement:

a) "The Agency's Safeguards System" means the safeguards system set out in the International Atomic Energy Agency document INFCIRC/66 Rev 2 as well as any subsequent amendments thereto;

b) "Appropriate governmental authority" means for Canada, the Atomic Energy Control Board, and for Switzerland, the Federal Office of Energy, or such other authority as the Party concerned may from time to time notify the other Party,

c) "Equipment" means any of the equipment listed in Annex B to this Agreement,

d) "Material" means any of the material listed in Annex C to this Agreement;

e) "Nuclear material" means any source material or any special fissionable material as these terms are defined in Article XX of the Statute of the International Atomic Energy Agency which is attached as Annex D to this Agreement Any determination by the Board of Governors of the International Atomic Energy Agency under Article XX of the Agency's Statute, which amends the list of material considered to be "source material" or "special fissionable material", shall only have effect under this Agreement when the Parties to this Agreement have informed each other in writing that they accept that amendment;

f) "Persons" means individuals, firms, corporations, companies, partnerships, associations and other entities, private or governmental and their respective agents; and

g) "Technology" means technical data in physical form including technical drawings, photographic negatives and prints, recordings, design data and technical and operating manuals, designated by the supplying Party after consultation with the recipient Party, prior to the transfer, as important for the design, construction, operation and maintenance of enrichment, reprocessing or heavy water production facilities or major critical components thereof, and any other technology relevant in terms of non-proliferation and important for the design, production, operation or maintenance of equipment or for the processing of nuclear material or material as may be jointly determined by the Parties, but excluding data available to the public, for example in published books and periodicals, or that which has been made available internationally without restrictions upon its further dissemination

Article II

The co-operation contemplated under this Agreement relates to the use, development and application of nuclear energy for peaceful purposes and may include, inter alia:

a) the supply of information, which includes technology, related to

i) research and development,

ii) health, nuclear safety, emergency planning and environmental protection,

iii) equipment (including the supply of designs, drawings and specifications),

iv) uses of nuclear material, material and equipment (including manufacturing processes and specifications), and

v) transfer of patent and other proprietary rights;

b) the supply of nuclear material, material, and equipment,

c) the implementation of projects for research and development as well as for design and application of nuclear technology for use in such fields as agriculture, industry, medicine and the generation of electricity,

d) industrial co-operation between persons in Switzerland and in Canada;

e) technical training and related access to and use of equipment;

f) the rendering of technical assistance and services, including exchanges of experts and specialists, and

g) the exploration for and development of uranium resources

Article III

1 The Parties will encourage and facilitate co-operation between persons under their respective jurisdictions on matters within the scope of this Agreement

2 Subject to the terms of this Agreement, persons under the jurisdiction of either Party may supply to or receive from persons under the jurisdiction of the other Party nuclear material, material, equipment and technology, on commercial or other terms as may be agreed by the persons concerned

3 Subject to the terms of this Agreement, persons under the jurisdiction of either Party may provide persons under the jurisdiction of the other Party with technical training in the application of nuclear technology for peaceful uses on commercial or other terms as may be agreed by the persons concerned.

4 The Parties, in accordance with their respective laws and regulations, will make efforts to facilitate exchanges of experts, technicians and specialists related to activities under this Agreement.

5 The Parties shall take all appropriate precautions in accordance with their respective laws and regulations to preserve the confidentiality of information including commercial and industrial secrets transferred between persons under the jurisdiction of either Party.

6. The Parties may, if appropriate and subject to terms and conditions to be mutually determined, collaborate on safety and regulatory aspects of the production of nuclear energy including (a) exchange of information and (b) technical co-operation and training.

7 A Party shall not use the provisions of this Agreement for the purpose of securing commercial advantage or for the purpose of interfering with the commercial relations of the other Party.

Article IV

1 Identified nuclear material, material, equipment, facilities and information subject to the 6th March 1958 Agreement between the Government of the Confederation of Switzerland and the Government of Canada to Provide for Co-operation in the Peaceful Uses of Atomic Energy shall, at the time of its termination, be subject to the present Agreement A list of such items shall be jointly determined by the appropriate governmental authorities

2 Unless otherwise decided by the Parties, nuclear material, material, equipment and technology contained in Annex A shall be subject to this Agreement

3 The Parties may, in particular circumstances not covered in paragraphs 1 and 2 above, apply mechanisms other than those set forth in this Agreement in order to (a) make items subject to the Agreement or (b) remove items from coverage of the Agreement There shall be prior written agreement between the Parties in each case on the conditions under which such mechanisms are to be applied

4 The appropriate governmental authorities of both Parties shall establish notification and other administrative procedures in order to implement the provisions of this Article, including the principles of proportionality and equivalence applicable to nuclear material

Article V

Nuclear material, material, equipment and technology subject to this Agreement shall not be transferred beyond the jurisdiction of a Party to this Agreement to a third Party without the prior written consent of the other Party. An agreement to facilitate the implementation of this provision may be established by the Parties.

Article VI

Nuclear material subject to this Agreement shall not be enriched to twenty (20) percent or more in the isotope U-235 or reprocessed without the prior written consent of both Parties Such consent shall include the conditions under which the resultant plutonium or uranium enriched to twenty (20) percent or more may be stored and used. An agreement to facilitate the implementation of this provision may be established by the Parties.

Article VII

1. Nuclear material, material, equipment and technology subject to this Agreement shall not be used to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices The use, development or application of nuclear energy for peaceful purposes shall not include the development, manufacture, acquisition or detonation of nuclear devices

2. With respect to nuclear material, the commitment contained in paragraph 1 of this Article shall be verified pursuant to the safeguards agreements between each Party and the International Atomic Energy Agency, in connection with the NPT However, if for any reason or at any time the International Atomic Energy Agency is not administering such safeguards within the territory of a Party, that Party shall forthwith enter into an agreement with the other Party for the establishment of such safeguards or of a safeguards system that conforms to the principles and procedures of the Agency's Safeguards System and provides for the application of safeguards to all items subject to this Agreement

Article VIII

1 Nuclear material shall remain subject to this Agreement until·

a) it is determined that it is no longer either usable or practicably recoverable for processing into a form in which it is usable for any nuclear activity relevant from the point of view of safeguards referred to in Article VII of this Agreement. Both Parties shall accept a determination made by the International Atomic Energy Agency in accordance with the provisions for the termination of safeguards of the relevant safeguards agreement to which the Agency is a Party,

b) it has been transferred from the jurisdiction of the recipient Party in accordance with the provisions of Article V of this Agreement; or

c) otherwise decided between the Parties.

2 Material and equipment shall remain subject to this Agreement until

a) transferred from the jurisdiction of the recipient Party in accordance with the provisions of Article V of this Agreement; or

b) otherwise decided between the Parties.

3 Technology shall remain subject to this Agreement until otherwise decided between the Parties.

Article IX

1. Each Party shall take all measures necessary, commensurate with the assessed threat prevailing from time to time, to ensure the physical protection of nuclear material subject to this Agreement and shall, as a minimum, apply levels of physical protection as set out in Annex E to this Agreement

2. The Parties shall consult at the request of either Party concerning matters related to the physical protection of nuclear material, material, equipment and technology subject to this Agreement including those concerning physical protection during international transportation

Article X

1. The Parties shall consult at any time at the request of either Party to ensure the effective fulfilment of the obligations of this Agreement The International Atomic Energy Agency may be invited to participate in such consultations upon the request of the Parties

2. The appropriate governmental authorities shall establish administrative arrangements to facilitate the effective implementation of this Agreement and shall consult annually or at any other time at the request of either Such consultations may take the form of an exchange of correspondence

3. Each Party shall, upon request, inform the other Party in writing of the conclusions of the most recent report by the International Atomic Energy Agency on its verification activities in the territory of that Party, relevant to the nuclear material subject to this Agreement

Article XI

Any dispute arising out of the interpretation or application of this Agreement which is not settled by negotiation or as may otherwise be agreed between the Parties shall, on the request of either Party, be submitted to an arbitral tribunal which shall be composed of three arbitrators Each Party shall designate one arbitrator and the two arbitrators so designated shall elect a third, not a national of either Party, who shall be the Chairman If within thirty (30) days of the request for arbitration either Party has not designated an arbitrator, the other Party to the dispute may request the President of the International Court of Justice to appoint an arbitrator for the Party which has not designated an arbitrator If within thirty (30) days of the designation or appointment of arbitrators for both the Parties the third arbitrator has not been elected, either Party may request the President of the International Court of Justice to appoint the third arbitrator. All decisions shall be made by majority vote of all the members of the arbitral tribunal The arbitral procedure shall be fixed by the tribunal The decisions of the tribunal shall be binding on both Parties and shall be implemented by them The remuneration of the arbitrators shall be determined

on the same basis as that for ad hoc judges of the International Court of Justice

Article XII

1 For the purpose of the entry into force of this Agreement, the Parties will inform each other by an exchange of notes that their respective constitutional and legal requirements have been completed This Agreement shall enter into force on the date of the exchange of notes or, in the event that the exchange of notes does not take place on the same day, on the date of the last note.

2 Notwithstanding paragraph 2 of the Exchange of Letters of 1st December 1971, between the Government of Canada and the Government of the Confederation of Switzerland to Renew the Agreement of 6th March 1958, to Provide for Co-operation in the Peaceful Uses of Atomic Energy, that Agreement shall terminate on the date the present Agreement enters into force Co-operation in progress under the Agreement of 6th March 1958, shall continue in accordance with the terms of the present Agreement

3 This Agreement may be amended at any time with the written consent of the Parties Any amendments to this Agreement shall enter into force in accordance with the provisions of paragraph 1 of this Article

4 This Agreement shall remain in force for a period of thirty (30) years, and thereafter until six (6) months after notice of termination has been given by either Party to the other unless such notice has been given six (6) months prior to the expiry of the said period of thirty (30) years

5 Notwithstanding termination of this Agreement, the obligations contained in Article III, paragraph 5 and in Articles IV, V, VI, VII, VIII, IX, X and XI of this Agreement shall remain in force until otherwise agreed by the Parties

ANNEX A

Nuclear Material, Material, Equipment and Technology Subject to the Agreement

i) Nuclear material, material and technology transferred between the Parties, directly or through third countries;

ii) Material and nuclear material that is produced or processed on the basis, or by the use, of any equipment subject to this Agreement;

iii) Nuclear material that is produced or processed on the basis, or by the use, of any nuclear material or material subject to this Agreement,

iv) Equipment transferred between the Parties, directly or through third countries, and which has been notified by the supplying Party and acknowledged by the recipient Party, prior to transfer, as being subject to the Agreement Said notification and acknowledgement may be provided by the appropriate governmental authorities;

v) Equipment which the recipient Party, or the supplying Party after consultation with the recipient Party, has designated as being designed, constructed or operated on the basis, or by the use, of the technology referred to in (i) above, or technical data derived from equipment referred to in (iv) above Without restricting the generality of the foregoing, equipment that satisfies all three of the following criteria·

a) that is of the same type as equipment referred to in (iv) above (i.e its design, construction or operating processes are based on essentially the same or similar physical or chemical processes as agreed in writing by the Parties prior to the transfer of the equipment referred to in (iv) above;

b) that is so designated by the recipient Party or the supplier Party after consultation with the recipient Party, and

c) the first operation of which commences at a location within the jurisdiction of the recipient Party within 20 years of the date of the first operation of the equipment referred to in sub-paragraph (a).

ANNEX B

Equipment

1 Nuclear reactors capable of operation so as to maintain a controlled self-sustaining fission chain reaction, excluding zero energy reactors, the latter being defined as reactors with a designed maximum rate of production of plutonium not exceeding 100 grams per year

A "nuclear reactor" basically includes the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain, or come in direct contact with, or control the primary coolant of the reactor core

It is not intended to exclude reactors which could reasonably be capable of modification to produce significantly more than 100 grams of plutonium per year. Reactors designed for sustained operation at significant power levels, regardless of their capacity for plutonium production, are not considered as "zero energy reactors".

2 Reactor pressure vessels metal vessels, as complete units or as major shop-fabricated parts therefor, which are especially designed or prepared to contain the core of a nuclear reactor as defined in paragraph 1 above and are capable of withstanding the operating pressure of the primary coolant

A top plate for a reactor pressure vessel is a major shop-fabricated part of a pressure vessel.

3 Reactor internals support columns and plates for the core and other vessel internals, control rod guide tubes, thermal shields, baffles, core grid plates, diffuser plates, etc

4. Reactor fuel charging and discharging machines manipulative equipment especially designed or prepared for inserting or removing fuel in a nuclear reactor as defined in paragraph 1 above capable of on-load operation or employing technically sophisticated positioning or alignment features to allow complex off-load fuelling operations such as those in which direct viewing of or access to the fuel is not normally available

5 Reactor control rods rods especially designed or prepared for the control of the reaction rate in a nuclear reactor as defined in paragraph 1 above

This item includes, in addition to the neutron absorbing part, the support or suspension structures therefor if supplied separately

6. Reactor pressure tubes: tubes which are especially designed or prepared to contain fuel elements and the primary coolant in a reactor as defined in paragraph 1 above at an operating pressure in excess of 50 atmospheres

7 Zirconium tubes· zirconium metal and alloys in the form of tubes or assemblies of tubes and in quantities exceeding 500 kg per year, especially designed or prepared for use in a reactor as defined in paragraph 1 above, and in which the relationship of hafnium to zirconium is less than 1·500 parts by weight.

8 Primary coolant pumps. pumps especially designed or prepared for circulating the primary coolant for nuclear reactors as defined in paragraph 1 above

9 Plants for the reprocessing of irradiated fuel elements, and equipment especially designed or prepared therefor

A "plant for the reprocessing of irradiated fuel elements" includes the equipment and components which normally come in direct contact with and directly control the irradiated fuel and the major nuclear material and

fission product processing streams In the present state of technology, only two items of equipment are considered to fall within the meaning of the phrase "and equipment especially designed or prepared therefor" These items are

a) irradiated fuel element chopping machines remotely operated equipment especially designed or prepared for use in a reprocessing plant as identified above and intended to cut, chop or shear irradiated nuclear fuel assemblies, bundles or rods, and

b) critically safe tanks (e g small diameter, annular or slab tanks) especially designed or prepared for use in a reprocessing plant as identified above, intended for dissolution of irradiated nuclear fuel and which are capable of withstanding hot, highly corrosive liquid, and which can be remotely loaded and maintained

10 Plants for the fabrication of fuel elements·

A "plant for the fabrication of fuel elements" includes the equipment

a) which normally comes into direct contact with, or directly processes, or controls, the production flow of nuclear material, or

b) which seals the nuclear material within the cladding, and

c) the whole set of items for the foregoing operations, as well as individual items intended for any of the foregoing operations, and for other fuel fabrication operations, such as checking the integrity of the cladding or the seal, and the finish treatment to the sealed fuel

11 Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium·

"Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium" includes each of the major items of equipment especially designed or prepared for the separation process Such items include.

- gaseous diffusion barriers;
- gaseous diffuser housings,
- gas centrifuge assemblies, corrosion-resistant to UF_6
- jet nozzle separation units
- vortex separation units
- large UF_6 corrosion-resistant axial or centrifugal compressors
- special compressor seals for such compressors.

12 Plants for the production of heavy water·

A "plant for the production of heavy water" includes the plant and equipment specially designed for the enrichment of deuterium or its compounds, as well as any significant fraction of the items essential to the operation of the plant.

13 Any major components or components of items 1 to 12 above

ANNEX C

Material

1 Deuterium and heavy water· deuterium and any deuterium compound in which the ratio of deuterium to hydrogen exceeds 1·5000 for use in a nuclear reactor, as defined in paragraph 1 of Annex B, in quantities exceeding 200 kg of deuterium atoms in any period of 12 months

2 Nuclear grade graphite. graphite having a purity level better than 5 parts per million boron equivalent and with a density greater than 1 50 grams per cubic centimetre in quantities exceeding 30 metric tons in any period of 12 months

ANNEX D

Article XX of the Statute of the International Atomic Energy Agency

Definitions

As used in this Statute

1 The term "special fissionable material" means plutonium-239; uranium-233, uranium enriched in the isotopes 235 or 233, any material containing one or more of the foregoing, and such other fissionable material as the Board of Governors shall from time to time determine but the term "special fissionable material" does not include source material

2 The term "uranium enriched in the isotopes 235 or 233" means uranium containing the isotopes 235 or 233 or both in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 occurring in nature

3 The term "source material" means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235, thorium, any of the foregoing in the form of metal, alloy, chemical compound, or concentrate, any other material containing one or more of the foregoing in such concentration as the Board of Governors shall from time to time determine

ANNEX B

Agreed Levels of Physical Protection

The agreed levels of physical protection to be ensured by the appropriate governmental authorities in the use, storage and transportation of the materials of the attached table shall as a minimum include protection characteristics as follows:

Category III

Use and Storage within an area to which access is controlled

Transportation under special precautions including prior arrangement between sender, recipient and carrier, and prior agreement between States in case of international transport specifying time, place and procedures for transferring transport responsibility

Category II

Use and Storage within a protected area to which access is controlled, i e an area under constant surveillance by guards or electronic devices, surrounded by a physical barrier with a limited number of points of entry under appropriate control, or any area with an equivalent level of physical protection

Transportation under special precautions including prior arrangement between sender, recipient and carrier, and prior arrangement between States in case of international transport specifying time, place and procedures for transferring transport responsibility

Category I

Materials in this Category shall be protected with highly reliable systems against unauthorised use as follows·

Use and Storage within a highly protected area, i e. a protected area as defined for Category II above, to which, in addition, access is restricted to persons whose trustworthiness has been determined and under surveillance by guards who are in close communication with appropriate response forces Specific measures taken in this context should have as their objective the detection and prevention of any assault, unauthorised access or unauthorised removal of material

Transportation under special precautions as identified above for transportation of Category II and III materials and, in addition, under constant surveillance of escorts and under conditions which assure close communication with appropriate response forces

TABLE CATEGORISATION OF NUCLEAR MATERIAL

	Material	Form	Category I	Category II	Category III
1	Plutonium[a]	Unirradiated[b]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less[c]
2	Uranium-235	Unirradiated[b]			
		- Uranium enriched to 20% 235U or more	5 kg or more	Less than 5 kg but more than 1 kg	1 kg or less[c]
		- Uranium enriched to 10% 235U but less than 20%	-	10 kg or more	Less than 10 kg[c]
		- Uranium enriched above natural, but less than 10% 235U[d]	-	-	10 kg or more
3	Uranium-233	Unirradiated[b]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less[c]
4	Irradiated fuel			Depleted or natural uranium, thorium or low enriched fuel (less than 10% fissile content)[e]	

a All plutonium except that with isotopic concentration exceeding 80% in plutonium-238

b Material not irradiated in a reactor or material irradiated in a reactor but with a radiation level equal to or less than 100 rads/hour at one meter unshielded

c Less than a radiologically significant quantity should be exempted

d Natural uranium depleted uranium and thorium and quantities of uranium enriched to less than 10% not falling in Category III should be protected in accordance with prudent management practice

e Other fuel which by virtue of its original fissile material content is classified as Category I or II before irradiation may be reduced one category level when the radiation level from the fuel exceeds 100 rads/hour at one meter unshielded

COUNCIL REGULATION (EURATOM) No. 2218/89
of 18th July 1989
amending Regulation (EURATOM) No. 3954/87 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency
[Published in the Official Journal of the European Communities No. L 211 of 22nd July 1989]

. .. .

Article 2

Article 7 of Regulation (EURATOM) No 3954/87 is hereby replaced by the following

"Article 7

Rules for applying this Regulation, a list of minor foodstuffs together with the maximum levels to be applied thereto, and the maximum levels for feedingstuffs shall be adopted in accordance with the procedure laid down in Article 30 of Regulation (EEC) No. 804/68, which shall apply by analogy To this end an ad hoc Committee shall be set up "

....

ANNEX

MAXIMUM PERMITTED LEVELS FOR FOODSTUFFS AND FEEDINGSTUFFS (Bq/kg)

	Foodstuffs[1]				Feeding stuffs[2]
	Baby foods[3]	Dairy Produce[4]	Other foodstuffs except minor foodstuffs[5]	Liquid food-stuffs[6]	
Isotopes of strontium, notably Sr-90	75	125	750	125	
Isotopes of iodine, notably I-131	150	500	2 000	500	
Alpha-emitting isotopes of plutonium and transplutonium elements, notably Pu-239, Am-241	1	20	80	20	
All other nuclides of half-life greater than 10 days, notably Cs-134, Cs-137[7]	400	1 000	1 250	1 000	

1. The level applicable to concentrated or dried products is calculated on the basis of the reconstituted product as ready for consumption Member States may make recommendations concerning the diluting conditions in order to ensure that the maximum permitted levels laid down in this Regulation are observed

2. Maximum permitted levels for feedingstuffs will be defined in accordance with Article 7, since such levels are intended to contribute to the observance of the permitted maximum levels for foodstuffs, do not alone guarantee such observance in all circumstances and do not lessen the requirement for monitoring levels in animal products for human consumption

3. Baby foods are defined as those foodstuffs intended for the feeding of infants during the first four to six months of life, which meet, in themselves, the nutritional requirements of this category of person and are put up for retail sale in packages which are clearly identified and labelled "food preparation for infants"

4 Dairy produce is defined as those products falling within the following CN codes including, where appropriate, any adjustments which might be made to them later· 0401, 0402 (except 0402 29 11)

5. Minor foodstuffs and the corresponding levels to be applied to them will be defined in accordance with Article 7

6 Liquid foodstuffs as defined in the heading 2009 and in chapter 22 of the combined nomenclature. Values are calculated taking into account consumption of tap-water and the same values should be applied to drinking water supplies at the discretion of competent authorities in Member States

7. Carbon 14, tritium and potassium 40 are not included in this group.

COUNCIL REGULATION (EEC) No. 2219/89
of 18th July 1989
on the special conditions for exporting foodstuffs and feedingstuffs following a nuclear accident or any other case of radiological emergency
[Published in OJ No. L 211 of 22nd July 1989]

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 113 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Whereas the Commission must be informed of any nuclear accident or unusually high levels of radioactivity, in accordance with Council Decision 87/600/EURATOM of 14th December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency or pursuant to the Convention of the International Atomic Energy Agency (IAEA) of 26th September 1986 on the Early Notification of a Nuclear Accident,

Whereas the Council adopted Regulation (EURATOM) No. 3954/87 of 22nd December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency, as last amended by Regulation (EURATOM) No 2218/89;

Whereas the maximum permitted levels fixed by the above-mentioned Regulation take due account of the most recent international scientific opinion and reflect the need to avoid any discrepancies in international regulations;

Whereas the resolution of the Council and the representatives of the Governments of the Member States meeting within the Council of 22nd December

1987, adopted at the same time as Regulation (EURATOM) No 3954/87, provides for the adoption of specific rules governing the export of foodstuffs,

Whereas after a nuclear accident or in any other case of radiological emergency it is not acceptable to allow products with contamination levels in excess of the maximum permitted levels relating to products for consumption in the Community to be exported to third countries; whereas in such special circumstances it is difficult in practical terms to treat products differently depending on their final destination;

Whereas the provisions concerning exports should also relate to feedingstuffs since these products are covered by Regulation (EURATOM) No 3954/87 for reasons of public health,

Whereas it is therefore appropriate to define specific conditions for exporting foodstuffs and feedingstuffs after a nuclear accident oi any other case of radiological emergency and to apply to such products the maximum permitted levels of radioactive contamination laid down in Regulation (EURATOM) No. 3954/87,

HAS ADOPTED THIS REGULATION

Article 1

1. This Regulation lays down the conditions for exporting foodstuffs and feedingstuffs after a nuclear accident or any other radiological situation likely to lead to significant radioactive contamination of foodstuffs and feedingstuffs.

2 For the purposes of this Regulation "foodstuffs" means products which are intended for human consumption either immediately or after processing, and "feedingstuffs" means products which are intended only for animal nutrition

Article 2

Foodstuffs and feedingstuffs in which the level of radioactive contamination exceeds the relevant maximum permitted levels laid down in Articles 2 and 3 of Regulation (EURATOM) No 3954/87 may not be exported

Article 3

The Member States shall carry out checks to ensure that the maximum permitted levels referred to in Article 2 are observed.

Article 4

Each Member State shall communicate to the Commission the fullest information on the application of this Regulation, and in particular on any

cases where the maximum permitted levels have been exceeded. The Commission shall forward this information to the other Member States.

Article 5

The rules of application for this Regulation shall be laid down by the Commission in accordance with the procedure defined in Article 7 of Regulation (EURATOM) No 3954/87. To this end an ad hoc Committee shall be set up

Article 6

This Regulation shall enter into force on the third day following that of its publication in the Official Journal of the European Communities.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

COMMISSION REGULATION (EURATOM) No. 944/89 of 12th April 1989 laying down maximum permitted levels of radioactive contamination in minor foodstuffs following a nuclear accident or any other case of radiological emergency

[Published in OJ No. L 101 of 13th April 1989]

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Atomic Energy Community,

Having regard to Council Regulation (EURATOM) No 3954/87 of 22nd December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency, and in particular Article 7 thereof,

Whereas, in accordance with Regulation (EURATOM) No 3954/87, the Commission shall adopt a list of minor foodstuffs, together with the maximum levels of radioactive contamination to be applied thereto;

Whereas, the group of experts appointed by the Scientific and Technical Committee pursuant to Article 31 of the EURATOM Treaty has been consulted,

Whereas the foodstuffs to be considered are those of minor dietary importance which make only a marginal contribution to food consumption by the population,

Whereas foodstuffs for inclusion in the list of minor foodstuffs must be identified by means of their combined nomenclature code number and description set out in Commission Regulation (EEC) No 3174/88 of 21st September 1988 amending Annex 1 to Council Regulation (EEC) No 2658/87 on the tariff and statistical nomenclature and on the Common Customs Tariff,

Whereas the ad hoc Committee, instituted by Council Regulation (EURATOM) No. 3954/87 has not delivered an opinion within the time limit set by its chairman,

HAS ADOPTED THIS REGULATION:

Article 1

The list of minor foodstuffs established pursuant to Article 7 of Regulation (EURATOM) No. 3954/87 is set out in the Annex*.

Article 2

For the minor foodstuffs given in the Annex, the maximum permitted levels to be applied are 10 times those applicable to "other foodstuffs except minor foodstuffs" fixed in the Annex of Regulations (EURATOM) No 3954/87 or pursuant to Regulations adopted on the basis of Article 3 of that Regulation

Article 3

This Regulation shall enter into force on the third day following its publication in the Official Journal of the European Communities

This Regulation shall be binding in its entirety and directly applicable in all Member States.

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* Note by the Secretariat: The Annex is not reproduced. Instead some examples of minor foodstuffs are given as an illustration: garlic, truffles, pepper, cloves, cocoa beans, yeasts, fats and oils of fish or marine mammals, etc

BIBLIOGRAPHY AND CURRENT EVENTS

BIBLIOGRAPHY

• *Brazil*

Urânio enriquecido - o combustível do século, Guilhermina Lavos Coimbra, published by the author, Sindicato Nacional dos Editores de Livros, Rio de Janeiro, 1988, 380 pages

This book, entitled "Enriched Uranium - Fuel of the Century" is based on a thesis for a doctorate, its author being a professor of law at the Candido Mendes Faculty in Rio de Janeiro It deals with the Brazilian nuclear programme and in particular with the national uranium resources It covers a wide variety of subjects in the nuclear and the legal sector, with particular attention given to interamerican co-operation and nuclear development in Brazil

In the context of non-proliferation, the 1967 Treaty on the Prohibition of Nuclear Weapons in Latin America (Tlatelolco Treaty) is examined, and in another regional framework the powers and responsibilities of EURATOM are discussed, as well as the 1973 Verification Agreement concluded with the IAEA; the author also reviews the United States Nuclear Non-Proliferation Act of 1978 and the resulting controls.

Other sections of the book are devoted to the field of law ranging from public international law and nuclear law to constitutional law and international nuclear contracts

Finally, the author examines Brazilian nuclear policy and its situation vis-a-vis oil and uranium and proposes the legal instruments which can be used to protect and develop the uranium sector.

The Appendices contain, in particular, reports on the various Congresses organised by the International Nuclear Law Association (INLA)

• Netherlands

International Liability of States for Nuclear Damage, by Tadeusz Gadkowski, Adam Mickiewich, University Press, Poznan, published by Eburon, PO Box 2867, Delft, the Netherlands, 1989, 150 pages

The author, a Polish Professor of Law, explains that the main goal of this publication is to present international State liability for nuclear damage as an institution of international law with a definite and specific structure, stemming on the one hand from the specific nature of the institution of international liability and on the other from the specific character of nuclear damage His approach is to demonstrate when international State liability for nuclear damage can be formulated within the existing general rules on international State liability and when it requires new and specific legal regulations

With respect to existing rules, the author examines the doctrines of State responsibility and the international liability of States for injurious consequences arising out of acts not prohibited by international law, looking at both Conventions and customary international law. He then proposes prerequisites for a State to be liable under international law for nuclear damage, examining in particular the nature of the damage necessary for such liability to arise and the question of causality. The nature of the liability itself - whether it is fault-based - and the consequences of such liability - the payment of damages - are then addressed.

In addition, the author considers the relationship between international and civil liability for nuclear damage on the basis of international law and the national laws of selected States

The author concludes by calling for the drafting of a Convention to define international State liability for nuclear damage and the harmonization and extension of international rules concerning civil liability for nuclear damage.

• Yugoslavia

Varstvo okolja pred ionizirajocimi sevanji, Zbirka zveznih predpisov Jugoslavije, by M. Trampuz, published by Zavod SR Slovenije za varstvo pri delu, Ljubljana, 1989, 464 pages

This book is entitled Environmental Protection from Ionizing Radiations, A compilation of Federal Regulations of Yugoslavia It was published by the Institution for Occupational Safety of the SR of Slovenia,

Ljubljana It is the first of its type and scope to be published in Yugoslavia It is written in the Slovene language and contains updated legal texts and comments by the author on the whole field of Yugoslav nuclear law, with an emphasis on radiation protection The book contains only federal texts, including extracts of the Constitution of the SFR of Yugoslavia, Federal Acts, Federal Regulations, standards, technical norms, agreements and other legal acts of the Federal authorities A list of multilateral and bilateral international agreements, which Yugoslavia has ratified, together with the data on their publication, is added.

In the introduction, the author explains the basic fields and principles of nuclear law The most important international organisations and their recommendations on radiation protection are shortly described Special emphasis is given to the two most important Yugoslav acts in the nuclear field the 1984 Act on Radiation Protection and the Safe Use of Nuclear Energy and the 1978 Act on Liability for Nuclear Damage. The author makes comments and has also included an English translation of their updated texts.

• IAEA

Emergency Notification and Assistance Technical Operating Manual (ENATOM), IAEA, VIENNA, 1989

This Manual is designed to facilitate the practical implementation of those Articles of the 1986 Conventions on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident, which are operational in nature. Further, it is designed to contain in one volume practical information related to invoking either or both Conventions when required (an article concerning the Conventions is included in this issue of the Nuclear Law Bulletin; the texts of the Conventions have been published in the Supplement to Nuclear Law Bulletin No. 38).

The Manual contains the texts of the Conventions along with practical operational suggestions. It also contains the following: information and guidance on communicating with the IAEA, relevant international organisations and Member States, a description of the IAEA's role and capability in "brokering" or co-ordinating assistance, information concerning experts, equipment, materials and resources which could be made available by Member States and relevant international organisations, information on the IAEA's Nuclear Accident/Radiological Emergency Assistance Plan and Emergency Response System; and information on points of contact and competent authorities as required by the Conventions.

This publication is made available to the Member States of the IAEA.

CURRENT EVENTS

• INLA

Nuclear Inter Jura '89

The Ninth Congress of the International Nuclear Law Association (INLA) was held in Tokyo from 25th to 28th October 1989 at the invitation of its President, Professor Tanikawa. The Congress was also sponsored by the Japan Energy Law Institute

Approximately 200 participants from more than twenty countries attended the Congress. The OECD Nuclear Energy Agency and the Commission of the European Communities were also represented. This biennial meeting of the Association gives specialists in nuclear law the opportunity to examine new trends in this field of law and to exchange their views. The programme of the Tokyo Congress included reports by the different working groups active within INLA These reports covered nuclear third party liability and insurance, protection of the public and workers against ionizing radiation, radioactive waste management, national and international aspects of nuclear trade regulation and finally, decommissioning of nuclear installations. Other reports reviewed national experience in nuclear legislation These papers will be published by the Congress organisers.

The Association's General Assembly traditionally convened at the close of the Congress, elected the members of the Board of Management for 1990-1991 Mr. Donald Grazebrook (United Kingdom) is the new President of the Association and will organise the next Congress.

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NUCLEAR ENERGY AGENCY

S U P P L E M E N T T O No. 44

FINLAND

NUCLEAR LIABILITY ACT OF 8TH JUNE 1972 AS AMENDED BY THE ACT OF 15TH SEPTEMBER 1989

December 1989

• Finland •

Nuclear Liability Act of 8th June 1972 as amended by the Act of 15th September 1989*

GENERAL PROVISIONS

Section 1

For the purposes of this Act:

a) "Nuclear fuel" means fissionable material consisting of uranium or plutonium metal, alloy or chemical compound and such other fissionable material as the Government shall determine;

b) "Radioactive products" means any radioactive material other than nuclear fuel, and radioactive waste, if the material or waste has been produced in the process of producing or utilising nuclear fuel or has become radioactive by exposure to radiation incidental to such production or utilisation;

c) "Nuclear substances" means nuclear fuel other than natural uranium or depleted uranium, and radioactive products other than radioisotopes which are used or prepared to be used for any industrial, commercial, agricultural, medical, scientific or educational purpose;

d) "Nuclear reactor" means any structure containing nuclear fuel in such an arrangement that a self-sustaining chain process can occur therein without an additional source of neutrons;

e) "Nuclear installation" means any nuclear reactor other than one with which a ship or any means of transport is equipped for use as a source of power;

any factory for the production or processing of nuclear substances;

any factory for the separation of isotopes of nuclear fuel;

any factory for the reprocessing of irradiated nuclear fuel;

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* Unofficial translation by the Finnish authorities. All previous amendments to the Act are incorporated.

any facility where nuclear substances are stored with the exception of any facility intended exclusively for storage incidental to the carriage of such substances;

any such other installation containing nuclear fuel or radioactive products as the Government shall determine;

f) "Installation State", in relation to a nuclear installation, means the Contracting State within the territory of which that installation is situated or, if it is not situated within the territory of any State, the Contracting State by which the nuclear installation is operated or which has authorised its operation;

g) "Operator" means, in relation to a nuclear installation situated in Finland, the person operating or in charge of the installation, whether authorised thereto or not, and, in relation to a nuclear installation outside Finland, the person recognised under the law of the Installation State as the operator of that installation;

h) "Nuclear damage" means:

1) any damage caused by the radioactive properties of nuclear fuel or radioactive products or a combination of radioactive properties with toxic, explosive or other hazardous properties of such fuel or products;

2) any damage caused by ionizing radiation emitted from any source of radiation inside a nuclear installation other than nuclear fuel or radioactive products;

i) "Nuclear incident" means any occurrence or series of occurrences having the same origin which causes nuclear damage;

j) "Paris Convention" means the Convention on Third Party Liability in the Field of Nuclear Energy, signed in Paris on 29th July 1960 and amended by the Additional Protocol signed in Paris on 28th January 1964 or the said Convention as amended by the above-mentioned Protocol and the Amendment Protocol signed in Paris on 16th November 1982;

k) "Supplementary Convention" means the Convention Supplementary to the Paris Convention, signed in Brussels on 31st January 1963 and amended by the Additional Protocol signed in Paris on 28th January 1964, and the Amendment Protocol signed in Paris on 16th November 1982;

l) "Contracting State" means any State Party to the Paris Convention;

m) "Special Drawing Rights" means the Special Drawing Rights used by the International Monetary Fund.

In determining the compensation, the Special Drawing Rights are converted into Finnish currency at the exchange rate that was quoted on the date of the nuclear incident, unless the States that are Party to the

Supplementary Convention have, in cases referred to in Sections 30 to 32, agreed to use some other date in the conversion for an individual nuclear incident. In converting the Special Drawing Rights into Finnish currency, the value of the Finnish mark shall be determined using the calculation methods that the International Monetary Fund applied in its own operations and transactions on the date referred to above.

Section 2

The Government may prescribe that any nuclear installation, nuclear fuel or radioactive products shall be excluded from the application of this Act, if the small extent of the risks involved so warrants.

Section 3

The Government or an authority appointed by the Government may determine that two or more installations operated by one and the same operator and located at the same site in Finland shall, for the purposes of this Act, be deemed to be one single installation either as such or together with the same operator's other premises which are located at the same site and in which radioactive material is held.

Section 4

The regulations of this Act, with the exception of paragraph 3 of Section 15 and paragraph 1 of Section 15a, do not apply to nuclear damage resulting from nuclear incidents occurring in the territory of a non-Contracting State.

Where liability lies with an operator of a nuclear installation situated in Finland, this Act applies to nuclear damage suffered in the territory of a non-Contracting State only if the nuclear incident occurred in Finland. Where liability lies with an operator of a nuclear installation situated outside Finland, the territorial extent of the liability is governed by the law of the Installation State.

It may be determined by a Decree that compensation for nuclear damage suffered in the territory of a non-Contracting State shall be payable under this Act only to the extent that compensation for nuclear damage suffered in Finland would be payable under the law of that State. Such Decree shall not, however, affect liability arising under any such international agreement as referred to in Section 15a, paragraph 2, by which Finland is bound.

Provisions regarding the right in certain cases of a person who has paid compensation for nuclear damage to bring, notwithstanding the provisions of this Section, an action of recourse against an operator of a nuclear installation are laid down in Section 16.

Section 5

By Statutory Order, with due regard to Finland's obligations under the Paris Convention, it may be determined that, by reciprocity, a non-Contracting State shall for the purposes of this Act be deemed to be a Contracting State.

COMPENSATION

Section 6

The operator of a nuclear installation shall be liable to pay compensation for nuclear damage caused by a nuclear incident in his installation. However, except if otherwise stipulated by the express terms of a contract in writing, the operator shall not be liable in respect of a nuclear incident involving no nuclear fuels or radioactive products other than such nuclear substances as have been stored incidentally in the installation during the carriage referred to in Sections 7 and 8, and the liability for nuclear damage thereby caused shall lie pursuant to Section 9 with the operator in charge of the carriage of the nuclear substances.

Section 7

The operator of a nuclear installation shall be liable to pay compensation for nuclear damage caused by a nuclear incident occurring in the course of carriage of nuclear substances from a nuclear installation situated in Finland or in the territory of another Contracting State, except if otherwise provided in paragraphs 2 and 3 of this Section.

In the case of carriage of nuclear substances to a nuclear installation situated in Finland or in the territory of another Contracting State the liability for damage caused by a nuclear incident occurring in the course of the carriage shall lie with the consignee operator as from the time which has been fixed by a written contract between him and the consignor. In the absence of such contract the liability shall be transferred to the consignee when the nuclear substances are taken in charge by him.

In the case of carriage of nuclear substances to a nuclear reactor with which a ship or any other means of transport is equipped and which is intended to be used therein as a source of power, the consignor operator shall cease to be liable when the nuclear substances have been taken in charge by the person duly authorised to operate or be in charge of that reactor.

Section 8

Where nuclear substances are sent from a non-Contracting State to a nuclear installation situated in Finland or in the territory of another Contracting State with the written consent of the operator of that installation, the latter shall be liable for nuclear damage caused by any

nuclear incident occurring in the course of the carriage, except if otherwise provided in paragraph 2 of this Section.

In the case of carriage of nuclear substances from a nuclear reactor with which a ship or any other means of transport is equipped and which is intended to be used therein as a source of power, to a nuclear installation situated in Finland or in the territory of another Contracting State, the operator of that installation shall be liable from the time when he takes charge of the nuclear substances.

Liability for nuclear damage caused by a nuclear incident occurring in Finland in the course of carriage of nuclear substances, other than carriage from or to a nuclear installation situated in Finland or in the territory of another Contracting State, shall lie with the person authorised to perform the carriage. The provisions of this Act relating to an operator of a nuclear installation situated in Finland shall in such case apply to the person thus authorised.

Section 9

The provisions of Section 7 and 8 of this Act on liability for nuclear damage caused by a nuclear incident in the course of carriage of nuclear substances shall apply also in respect of nuclear incidents occurring while the substances are stored incidentally to their carriage, except where the substances have been stored in a nuclear installation and the operator of that installation is liable pursuant to such contract as referred to in Section 6.

Section 10

Where nuclear damage in cases other than those governed by Sections 6-9 of this Act has been caused by nuclear substances which came from a nuclear installation situated in Finland or in the territory of another Contracting State or, prior to the nuclear incident, had been in the course of such carriage as referred to in Section 8 of this Act, the operator who had the substances in his possession at the time of the incident shall be liable for such damage. If at the time of the incident no operator had the nuclear substances in his possession, liability shall lie with the operator who last had the substances in his possession.

Irrespective of what is said in paragraph 1, an operator who is bound to be liable for nuclear damage by written contract, shall be liable for such damage. However, if prior to the nuclear incident the nuclear substances had been in the course of carriage and no operator had taken charge of the substances after the carriage was interrupted, liability shall lie with the operator who at the time when the carriage ended was liable pursuant to Section 7 or 8 of this Act for nuclear damage caused by a nuclear incident occurring in the course of the carriage.

Section 11

On request of a carrier performing such carriage as referred to in

Section 7 or 8 the Government, or an authority appointed by the Government, may determine that the carrier shall be liable, in place of the operator of a nuclear installation situated in Finland, for nuclear damage caused by a nuclear incident occurring in the course of or in connection with the carriage. Such decision may be taken only if the operator concerned has consented thereto and the carrier has demonstrated that insurance has been taken out pursuant to Sections 23-27 or that other financial security has been furnished pursuant to Section 28, paragraph 2. Where such decision has been taken, any provision of this Act relating to the operator concerned shall apply to the carrier instead of the operator in respect of nuclear incidents occurring in the course of or in connection with the carriage.

Where a similar decision has been taken according to the law of another Contracting State in respect of nuclear damage for which an operator of a nuclear installation situated in that State would be liable, such decision shall, under this Act, have the same effect as a decision pursuant to paragraph 1 of this Section.

Section 12

The operator of a nuclear installation shall be liable to pay compensation due under this Act even if there has been no fault or negligence on his part.

However, the operator of a nuclear installation situated in Finland shall not be liable under this Act for nuclear damage caused by a nuclear incident directly due to an act of war, armed conflict, civil war or insurrection or caused by a grave natural disaster of an exceptional character. The law of the Installation State shall in such case be applicable to the operator of a nuclear installation situated in the territory of another Contracting State.

In cases referred to in paragraph 2 of this Section, liability under rules of the law of torts other than those laid down in this Act shall arise only to the extent provided for in Section 15 paragraph 2.

Section 13

The operator of a nuclear installation shall not be liable under this Act for damage to the nuclear installation itself or to another nuclear installation, completed or under construction, on the same site or to any property which, at the time of the nuclear incident, was on the site of the installations referred to above and was used or intended to be used in connection with such installations.

Where the operator of a nuclear installation situated in the territory of another Contracting State is liable for damage caused by a nuclear incident occurring in the course of carriage of nuclear substances, the question whether compensation shall be awarded for damage to the means of transport shall be governed by the law of the Installation State.

In cases referred to in the preceding paragraphs of this Section liability under rules of the law of torts other than those laid down in this Act shall arise only to the extent provided for in Section 15 paragraph 2.

Section 14

Except as otherwise provided in this Act, compensation payable under the Act shall be fixed in accordance with the general rules of the law of torts.

Where the person suffering damage has contributed thereto the compensation may be reduced reasonably where such person has acted or omitted to act with intent to cause damage or where there has been gross negligence on his part.

Section 15

Claims for compensation of nuclear damage covered by the provisions of this Act relating to compensation for such damage or by the corresponding legislation of another Contracting State may not be brought against any person other than the operator or the person providing insurance covering the liability of the operator, except as otherwise provided in Section 15a or Section 17, paragraph 2.

Claims for compensation of nuclear damage for which the operator, pursuant to Section 12 or 13 of this Act or the corresponding provisions of the law of another Contracting State, is not liable can only be brought against an individual who has caused the damage by an act or omission done with intent to cause damage. The operator shall, however, be liable in accordance with the general rules of the law of torts for such damage to a means of transport as referred to in Section 13 paragraph 2.

In the event of nuclear damage which is outside the scope of the compensation provisions of this Act or the corresponding provisions in the legislation of another Contracting State, no claim for compensation shall be brought in Finland if the nuclear damage has been caused by a nuclear incident that has occurred during the carriage of nuclear substances on a ship or otherwise by the operation of the ship, and if the operator of a nuclear installation is liable for the damage according to the legislation of a State that is Party to the Convention on Civil Liability for Nuclear Damage, signed in Vienna on 21st May 1963, or according to the legislation on liability for nuclear damage that is applied in some other foreign State, provided the legislation is in all respects as favourable to injured parties as the Paris Convention or the Vienna Convention referred to above. If in these cases the operator of a nuclear installation is liable for the nuclear damage, the provisions laid down in this Act on the liability of an individual for nuclear damage caused with intent are applied, as well as the provisions laid down in this Act on the liability of an individual for nuclear damage referred to in Section 12 and Section 13, paragraph 1 and for damage caused to the means of transport. These provisions are applied even when the operator of the installation is not liable for the damage by virtue of an applicable special

provision in the Vienna Convention or a corresponding law issued by a foreign State, as referred to in this paragraph.

Provisions on compensation out of public funds are laid down in Sections 29-36.

Section 15a

The provisions of Section 15 shall not be applied insofar as they conflict with the obligations of any international agreements binding on Finland.

As regards liability for nuclear damage caused by a nuclear incident occurring in the course of carriage of nuclear substances or nuclear damage otherwise arising in connection with the operation of a ship or any other means of transport, the provisions of paragraphs 1 and 2 of Section 15 shall not affect the application of the Air Transport Act (387/86). It may be determined by a Decree that the provisions of this paragraph shall also apply to other provisions in the law of a Contracting State which are equivalent to the provisions of a Convention that has been in force or open for signature, ratification or accession on 29th July 1960.

Section 16

Any person who has been held liable to pay compensation for nuclear damage under the Air Transport Act or under the law of any foreign State or under a Convention or provision referred to in Section 15a, paragraph 2, shall acquire by subrogation the rights of the person suffering the damage against the operator liable for the damage under this Act. Where the compensation paid relates to damage covered by a decision taken under Section 4, paragraph 3 of this Act, the person liable shall have a right of recourse against the operator, who would have been liable for the damage if no such decision had been taken.

Any person who has his principal place of business in Finland or in the territory of another Contracting State or who is the servant of such person and who has been held liable to pay compensation for nuclear damage for which the person suffering damage, by virtue of the provisions of Section 4, has no right to compensation under this Act shall, subject to the application, mutatis mutandis, of the provisions of the first sentence of paragraph 1 of this Section, have a right of recourse against the operator who, but for the provisions of Section 4, would have been liable for the damage; provided, however, that in the case of nuclear damage caused by a nuclear incident occurring in the course of carriage of nuclear substances to a non-Contracting State, the operator of the nuclear installation from which the nuclear substances were sent shall incur no liability after the substances have been unloaded from the means of transport by which they have arrived in a non-Contracting State, and in case of nuclear damage caused by a nuclear incident occurring in the course of carriage of nuclear substances from a non-Contracting State the operator of that installation shall incur no liability until the nuclear substances have been loaded on the means of

transport by which they are to be carried from the territory of a non-Contracting State.

A person who is himself liable for nuclear damage pursuant to Section 21 of this Act shall have no right of subrogation or recourse under this Section.

Section 17

Where a person has simultaneously suffered nuclear damage for which he is entitled to compensation under this Act and other damage, the provisions of this Act regarding liability for nuclear damage shall apply equally to such other damage if and to the extent that such damage is not reasonably separable from the nuclear damage.

The provisions of paragraph 1 shall not, however, limit or otherwise affect the liability of a person other than the operator liable under this Act as regards damage caused by an emission of ionizing radiation not covered by this Act.

Section 18

The liability under this Act of an operator of a nuclear installation situated in Finland shall not exceed 100 million Special Drawing Rights in respect of nuclear damage caused by any one nuclear incident. The Government may, taking account of the size or character of a nuclear installation, of the extent of a carriage or of any other circumstances, fix a lower amount, which shall, however, in no event be less than five million Special Drawing Rights. In case of a nuclear incident occurring in the course of carriage of nuclear substances the liability of the operator under this Act for damage other than damage to the means of transport shall in no case be limited to an amount less than five million Special Drawing Rights.

The amounts referred to in paragraph 1 of this Section shall not include any interest or costs awarded by a court.

Section 19

Where nuclear damage gives rise to the liability of two or more operators, they shall be jointly and severally liable to pay compensation; provided that the liability of each operator shall be limited to the amount established with respect to him pursuant to Section 18 paragraph 1. However, where the damage has arisen in the course of carriage of more than one consignment of nuclear substances carried on one and the same means of transport or while more than one consignment have been stored in one and the same nuclear installation incidentally to their carriage the aggregate liability of the operators shall not exceed the highest amount established with respect to any of them.

The apportionment of the aggregate liability as between the operators liable shall be determined with due regard to the extent to which the damage

caused is attributable to each of the nuclear installations involved as well as to any other relevant circumstances.

Section 20

If the maximum amount of liability applicable pursuant to Section 18 paragraph 1 or Section 19 paragraph 1 is not sufficient to satisfy in full the claims of those who are entitled to compensation, their compensation and any interest accruing thereto shall be reduced proportionally.

If, following a nuclear incident, there are reasons to believe that a reduction pursuant to paragraph 1 of this Section will prove necessary the Ministry for Social Affairs and Public Health may decide that until further notice the compensation payable shall be reduced to a fixed percentage.

Section 21

In respect of any sum that the operator of a nuclear installation has been held liable to pay as compensation under this Act or under the corresponding legislation of another Contracting State, the operator shall have a right of recourse against any individual who has caused the damage by an act or omission done with intent to cause damage or against any person who has assumed liability for the damage under the express terms of a contract in writing with the operator. Except as otherwise provided in Section 17 paragraph 2 and in Section 19 paragraph 2 the operator of a nuclear installation shall in no other case have a right of recourse against any person in respect of any sum he may have paid as compensation under this Act or under the corresponding legislation of another Contracting State.

Section 22

The right to bring an action for compensation for nuclear damage under Sections 6-10 or 16 of this Act against the operator of a nuclear installation or against the person providing insurance to cover such liability shall be extinguished if a claim for compensation has not been made against the operator within three years from the date at which the person suffering damage had knowledge or by observing due diligence ought reasonably to have known both of the fact that he has suffered damage entitling him to compensation under this Act and of the operator liable or, in cases referred to in Section 16, paragraphs 1 and 2, from the date at which the claim for compensation was made against him.

The right to compensation for nuclear damage shall be extinguished if an action is not brought against the operator or his insurer within ten years from the date of the nuclear incident. In the case of nuclear damage caused by a nuclear incident involving nuclear substances which had been stolen, lost or abandoned and had not yet been recovered, no action for compensation may, however, be brought later than twenty years after the date of the theft, loss or abandonment.

In cases where it is necessary in order to comply with the provisions of the Paris Convention, the Government may determine that a person suffering damage shall, on conditions to be prescribed by the Government, retain his right to compensation, notwithstanding that he has not brought an action before a Finnish Court within the period specified in this Section.

Provisions regarding compensation out of public funds in certain cases where the operator has ceased to be liable are laid down in Section 33.

INSURANCE

Section 23

The operator of a nuclear installation situated in Finland is required to take out and maintain insurance to cover his liability for nuclear damage under this Act or the corresponding legislation of another Contracting State up to the amount specified in Section 18. The insurance shall be approved by the Ministry for Social Affairs and Public Health.

Insurance may be taken out either:

a) to cover the liability for each nuclear incident that may occur; or

b) to cover at any time the nuclear installation by an agreed amount as laid down in Section 24.

Liability for damage arising in the course of carriage of nuclear substances may be covered by a separate insurance.

Section 24

In cases referred to in Section 23 paragraph 2(a) the insurance amount shall be not less than the amount of liability established with respect to the operator pursuant to Section 18 paragraph 1. In cases referred to in Section 23 paragraph 2(b), the insurance amount shall exceed the aforementioned maximum amount of liability by not less than one-fifth. The amount covered by the insurance policy shall not include any interest or costs awarded by a court.

Where insurance has been taken out in accordance with Section 23 paragraph 2(b) and an insurance contingency occurs which itself or together with one or more earlier contingencies is deemed likely to entail a reduction of the insurance amount below the amount of liability established with respect to the operator, the operator shall without delay take out such supplementary insurance as will bring the insurance amount up to an amount exceeding the said amount of liability by not less than one-fifth.

Section 25

The insurance shall be of such character, that any person entitled to compensation for nuclear damage has a right to bring an action for such compensation directly against the insurer. Except if otherwise provided in the insurance policy, the operator shall thereby be insured against any liability for nuclear damage under this Act or the corresponding legislation of another Contracting State.

Section 26

If the insurance policy is cancelled or otherwise ceases to be valid, the insurer shall nevertheless, in relation to any person suffering damage, continue to be liable to pay compensation in respect of nuclear damage caused by a nuclear incident occurring within two months from the date at which the Ministry of Trade and Industry has been notified in writing of the time of expiry of the policy. Where the insurance policy covers liability for nuclear damage caused by a nuclear incident occurring in the course of carriage of nuclear substances and such carriage has started before the expiry of the said period, the insurer shall, however, in no case cease to be liable for such damage until the carriage has come to an end.

The provisions of paragraph 1 of this Section shall not apply with respect to nuclear incidents occurring after the day on which a new insurance contract has come into force.

Except as provided in paragraphs 1 and 2 of this Section, the insurer may in no case invoke as a defence against a claim for compensation any circumstances due to a person other than the person suffering the damage.

Section 27

The provisions of Sections 25 and 26 shall apply where an action for compensation of nuclear damage under this Act may be brought in Finland and notwithstanding that the law of a foreign State may be applicable to the relationship between the insurer and the operator liable or that the nuclear installation involved is situated outside Finland.

Section 28

The State shall be exempted from the obligation under this Act to take out insurance.

The Government may relieve an operator from the obligation to take out insurance, provided that the operator furnishes adequate financial security to cover his obligations under this Act and under the corresponding legislation of any other Contracting State and shows that he has taken satisfactory measures to ensure the settlement of any claims for compensation.

The provisions of this Act relating to insurance shall apply, mutatis mutandis, to such other financial security as referred to in the preceding

paragraph of this Section or the corresponding provisions of the legislation of another Contracting State.

COMPENSATION OUT OF PUBLIC FUNDS

Section 29

If a person who is entitled under this Act or the corresponding legislation of another Contracting State to obtain compensation for nuclear damage from the operator of a nuclear installation situated in Finland shows that he has been unable to recover the compensation due from the operator's insurer, compensation shall be paid by the State.

The total compensation payable under the preceding paragraph of this Section shall not exceed the maximum amount of liability established with respect to the operator pursuant to Section 18 paragraph 1.

Section 30

Where liability for nuclear damage lies with the operator of a nuclear installation, used for peaceful purposes and situated in Finland or in the territory of another State Party to the Supplementary Convention and appearing at the time of the nuclear incident on the list referred to in Article 13 of the Supplementary Convention, and jurisdiction over actions for compensation lies with Finnish courts in accordance with the provisions of Section 37 of this Act, and the amount of liability established pursuant to Sections 18 and 19 is insufficient to satisfy the claims for compensation due, or the compensation payable has, by virtue of a decision taken under Section 20 paragraph 2, been reduced to a fixed percentage of the full amount due, compensation out of public funds shall be afforded for nuclear damage suffered:

a) in Finland or in the territory of another State Party to the Supplementary Convention; or

b) on or over the high seas on board a ship or aircraft registered in Finland or in the territory of another State Party to the Supplementary Convention; or

c) in any other case on or over the high seas by a State Party to the Supplementary Convention or by a national of such State; provided, however, that compensation shall be payable for damage to a ship or an aircraft only if such ship or aircraft was at the time of the nuclear incident registered in the territory of a State Party to the Supplementary Convention.

By application of the provisions of paragraph 1 of this Section the term "national of a State Party to the Supplementary Convention" shall include this State itself or a part of it, any company, whether under public or private law, association or other society, foundation or other similar body, whether corporate or not, established in the territory of such State. Any

person who, or group of persons which, under the law of a State Party to the Supplementary Convention is considered to have his habitual residence in that State and in respect of his right to compensation under the Supplementary Convention is under that law assimilated to the nationals of that State shall under this Act be considered to be a national of a State Party to the Supplementary Convention.

Section 31

Compensation out of public funds pursuant to Section 30 shall be fixed in accordance with the principles laid down in Section 12, paragraph 1, Sections 13 and 14 and Section 18 paragraph 2.

The provisions of Section 16 paragraphs 1 and 3 regarding rights of recourse against an operator shall apply, mutatis mutandis, to rights of recourse against the State in respect of any sum paid as compensation for nuclear damage and for which compensation is payable out of public funds under Section 30.

Section 32

The total amount of compensation for nuclear damage, caused by a nuclear incident payable pursuant to Sections 6 to 22, 30 and 31 by one or more operators and the State, and payable pursuant to any such agreement as referred to in Article 15 of the Supplementary Convention, shall not exceed 300 million Special Drawing Rights. The amount shall not include any interest or costs awarded by a court.

If the amount available for compensation out of public funds pursuant to Sections 30 and 31 is not sufficient to satisfy in full the claims for compensation due, the amounts of compensation and any interest accruing thereto shall be reduced proportionally. The provisions of Section 20, paragraph 2 shall apply, mutatis mutandis.

Section 33

If a nuclear incident in respect of which liability lies with the operator of a nuclear installation situated in Finland has caused nuclear damage by way of personal injury in Finland, which has not come to light until after the rights of compensation against the operator have been extinguished pursuant to Section 22 paragraph 2 or the corresponding provisions of the legislation of another Contracting State but within thirty years after the date of the incident, compensation for such damage shall be paid by the State. The State shall also be liable to pay compensation for nuclear damage which has come to light before the rights of compensation have been so extinguished if the person suffering the damage has failed to bring an action against the operator or to take other appropriate measures to preserve his rights within the periods applicable but has had reasonable excuses for not bringing such action or taking such measures.

If compensation has been reduced pursuant to Section 20 paragraph 1 and, whenever applicable, Section 32 paragraph 2 or the corresponding provisions of the legislation of another Contracting State, the compensation payable out of public funds under the present Section shall be reduced accordingly. In other respects, the liability to pay compensation shall be determined as if the operator had been liable for the damage. The right to bring an action for compensation shall be extinguished if a claim for compensation has not been made with the Ministry for Social Affairs and Public Health within the period specified in Section 22 paragraph 1.

The Government may decide that compensation shall, on conditions to be prescribed by the Government, be payable under the present Section in respect of nuclear damage which has occurred outside Finland, but for which an operator of an installation situated in Finland is liable.

Section 34

Should the amount laid down in Section 18 paragraph 1, Section 19 paragraph 1, or in the corresponding provision of the law of another Contracting State not suffice to satisfy in full the claims for compensation for damage suffered in the Finnish territory and, according to Section 30 or otherwise according to the Supplementary Convention, the amount is not payable out of public funds, compensation shall be paid out of public funds according to criteria confirmed, subject to the consent of Parliament, by the State Council. Such compensation can be paid in the cases provided for in this Section also as a supplement to compensation payable in pursuance of Section 33 for damage occurring in the territory of Finland, if such compensation has been reduced pursuant to Section 33 paragraph 2.

Compensation in accordance with this Section shall also be paid for damage occurring in Finland in the event that compensation for such damage pursuant to Section 20 paragraph 2 has been reduced to a fixed percentage, and compensation is not payable out of public funds in accordance with the Supplementary Convention.

Section 35

Compensation pursuant to Sections 29 or 30 shall not be payable for nuclear damage caused by such nuclear incidents as referred to in Section 12 paragraph 2.

Section 36

In respect of any sums paid out of public funds pursuant to Section 29 the State shall have a right of recourse only against the operator, his insurer and any person against whom the operator has a right of recourse under Section 21.

In respect of any sums paid out of public funds pursuant to Sections 30 or 34 the State shall acquire by subrogation the right to obtain compensation from the operator that the person suffering the damage may have. With regard

to any other sums paid out by the State pursuant to Sections 30-32 or otherwise paid out in accordance with the provisions of the Supplementary Convention in respect of a nuclear incident giving rise under the law of another Contracting State to the liability of the operator of a nuclear installation situated in Finland, the State shall have a right of recourse only against an individual who has caused the damage by an act or omission done with intent to cause damage. The same provisions shall apply, mutatis mutandis, in respect of compensation paid out by the State pursuant to Section 33.

COMPETENT COURTS AND ENFORCEMENT

Section 37

Actions for compensation due under Sections 6-10 or 16 against the operator of a nuclear installation or against his insurer shall be brought before the Finnish courts, if

a) the nuclear incident has occurred wholly or partly in Finland; or

b) the nuclear installation involved is situated in Finland and either the nuclear incident has occurred wholly outside the territory of any Contracting State or the place of the nuclear incident cannot be determined with certainty.

Whenever required in order to comply with the provisions of Article 13(c)(ii) of the Paris Convention the Government may restrict the jurisdictional competent conferred upon Finnish courts under paragraph 1 of this Section.

Section 38

Jurisdiction over actions for compensation in respect of nuclear damage brought before Finnish courts pursuant to Section 37 and over actions for compensation against the State pursuant to Sections 29, 30, 33 or 34 of this Act shall lie with the general court of first instance of the jurisdictional area within which the nuclear incident occurred. Where competence would thus lie with two or more courts, the action may be brought before either of them.

Should there be no competent court under paragraph 1 of this Section, the action shall be brought before the City Court of Helsinki.

Section 39

Where in accordance with the provisions of the Paris Convention jurisdiction over actions for compensation for nuclear damage lies with the courts of another Contracting State, any judgment entered by such court in such action shall, as soon as the judgment has become enforceable under the law of that State, on request be enforceable also in Finland, without the

merits of the claim being subject to any further proceedings. This provision shall, however, not entail any obligation to enforce a judgment to the extent that the applicable maximum amount of liability of the operator would thereby be exceeded.

An application for enforcement shall be made before the Helsinki Court of Appeal. The application shall have attached to it:

a) the original judgment or a copy thereof certified by the competent public authority;

b) a declaration issued by the competent public authority of the State where the judgment was entered that the judgment relates to compensation due under the Paris Convention and that it is enforceable in that State; and

c) if the relevant documents are in a language other than Finnish or Swedish, an officially certified translation into Finnish or Swedish shall be attached to the document.

The documents mentioned in paragraph 2(a) and (b) shall contain a certificate concerning the due competence of the person having signed the documents. Such certificate shall be issued by a Finnish Embassy or Consul or by the Minister of Justice of the State concerned.

No application for enforcement shall be granted unless the defendant has had an opportunity to submit his comments on the application.

Where the application is granted, the judgment shall be enforceable in the same manner as a judgment entered by a Finnish court, unless the Supreme Court has decided otherwise upon an appeal.

MISCELLANEOUS PROVISIONS

Section 40

Where nuclear substances are sent from a nuclear installation situated in Finland to a consignee outside Finland or to such installation from a consignor outside Finland and under such circumstances that the operator of the said installation is liable pursuant to Sections 7 or 8 for nuclear damage arising in the course of the carriage, the operator shall provide the carrier with a certificate issued by the insurer or the person who has guaranteed the financial security provided in Section 28 paragraph 2 and stating the name and address of the operator, the nuclear substances and the carriage in respect of which the insurance applies as well as the amount, type and duration of the insurance. The certificate shall include a statement by the Ministry of Trade and Industry, or by the authority appointed by this Ministry that the operator named therein is an operator of a nuclear installation within the meaning of the Paris Convention. The person by whom the certificate is issued shall be responsible for the correctness of the certificate as regards the name and address of the operator and the amount, type and duration of the insurance.

The form of certificate to be issued under paragraph 1 of this Section shall be established by the Ministry of Trade and Industry.

Section 41

Any person who fails to fulfil his obligations under this Act to take out and maintain insurance or to furnish financial security as laid down in Section 28 paragraph 2 shall be liable to fines or to imprisonment not exceeding six months.

Section 42

Provisions for the enforcement and application of this Act may be enacted by Statutory Order.

Section 43

This Act shall become applicable as determined by Statutory Order upon the existence of the conditions precedent for the bringing into force of the Paris Convention, and with regard to Sections 30-32 of this Act, also for the bringing into force of the Supplementary Convention*.

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* The Brussels Supplementary Convention entered into force on 4th December 1974. However, the 1982 Protocol amending that Convention, which has a bearing on Section 1, paragraph 1(m) and paragraph 2 and Section 32, paragraph 1, is not yet in force. (Ed.)