NUCLEAR LAW Bulletin

number 18

Contents

Nuclear Energy Agency

Organisation for Economic Co-operation and Development

The Organisation for Economic Co-operation and Development (OECD) was set up under a Convention signed in Paris on 14th December, 1960, which provides that the 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,
— to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The Members of OECD are Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States

The OECD Nuclear Energy Agency (NEA) was established on 20th April 1972, replacing OECD's European Nuclear Energy Agency (ENEA) on the adhesion of Japan as a full Member

NEA now groups all the European Member countries of OECD and Australia, Canada, Japan, and the United States The Commission of the European Communities takes part in the work of the Agency

The objectives of NEA remain substantially those of ENEA, namely the orderly development of the uses of nuclear energy for peaceful purposes This is achieved by

— *assessing the future role of nuclear energy as a contributor to economic progress, and encouraging co-operation between governments towards its optimum development,*
— *encouraging harmonisation of governments' regulatory policies and practices in the nuclear field, with particular reference to health and safety, radioactive waste management and nuclear third party liability and insurance,*
— *forecasts of uranium resources, production and demand*
— *operation of common services and encouragement of co-operation in the field of nuclear energy information,*
— *sponsorship of research and development undertakings jointly organised and operated by OECD countries*

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

LEGAL NOTICE

The Organisation for Economic Co-operation and Development assumes no liability concerning information published in this Bulletin

N O T E

It has been decided to alter slightly the publication dates of the Nuclear Law Bulletin starting from this issue. Until now, the Bulletin was published in April and in November. Experience has shown that these dates did not fit in with NEA's programme of work, and mainly with national parliamentary sessions which adopt the most significant texts. It has therefore seemed advisable as of now to bring out the two issues of the Nuclear Law Bulletin respectively in June and December.

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AUSTRALIA	-	Office of External Relations, Australian Atomic Energy Commission
AUSTRIA	-	Dr. STEINWENDER, Director at the Federal Chancellery
BELGIUM	-	Mr. STALLAERT, Social Security Administration, Ministry of Employment and Labour
	-	Mr. DE SMEDT, Legal Counsellor, Ministry of Economic Affairs
BRAZIL	-	Mr. AYRTON SA PINTO DE PAIVA, Legal Adviser, Comissao Nacional de Energia Nuclear
CANADA	-	Mr. MacISAAC, Legal Adviser, Atomic Energy Control Board
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	-	Mr. ØHLENSCHLAEGER, Chief of Division, National Health Service
FINLAND	-	Mr. AHO, Managing Director of the Federation of Finnish Insurance Companies
	-	Mr. PAAERMAA, Legal Adviser, Ministry of Trade and Industry
FRANCE	-	Mr. VERGNE, Legal Adviser of the Atomic Energy Commission
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	-	Mr. SHIMOYAMA, Deputy Manager of Financial and Purchasing Department, Japan Atomic Power Company
MEXICO	-	Mr. ORTIZ-MONASTERIO, Legal Adviser, National Nuclear Energy Commission
NETHERLANDS	-	Mr. VAN GALEN LAST, Head of the Bureau of Atomic Affairs, Ministry of Foreign Affairs
	-	Mr. CORNELIS, Chief, Directorate of Nuclear Energy and Radiation Protection, Ministry of Public Health and Environmental Hygiene
NEW ZEALAND	-	Mr. O'LEARY, Executive Secretary of the Atomic Energy Committee
NORWAY	-	Mr. SKARPNES, Head of Division, Department of Legislation, Ministry of Justice
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	-	Mr. ECKERED, Deputy Director, Swedish Nuclear Power Inspectorate
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UNITED KINGDOM	-	Mr. COLEMAN, Assistant Treasury Solicitor, Treasury Solicitor's Department, Department of Energy
	-	Mr. RITCHIE, Deputy Legal Adviser of the Atomic Energy Authority of the United Kingdom
UNITED STATES	-	Mr. BRUSH, Office of the General Counsel, Energy Research and Development Administration
	-	Mr. STAENBERG, Nuclear Regulatory Commission
ZAIRE	-	Mr. MALU WA KALENGA, Commissioner for Nuclear Science
IAEA	-	Mr. HA VINH PHUONG, Legal Division, International Atomic Energy Agency
EURATOM	-	Mr. PRELLE, Ispra Joint Research Centre, Commission of the European Communities
WHO	-	Mr. DE MOERLOOSE, Head of the Health Legislation Unit, World Health Organisation

LEGISLATIVE AND REGULATORY ACTIVITIES

• *Australia*

TRANSPORT OF RADIOACTIVE MATERIALS

Navigation (Cargo-Hazards Prevention) Regulations

The provisions in the Navigation (Cargo-Hazards Prevention) Regulations published in Statutory Rules 1968, No. 23 were amended by Statutory Rules 1973, No. 122 (Commonwealth Gazette of 28th June 1973) The amendments to these Regulations, which were made under the Navigation Act 1912-1972, concern in particular the safety measures to be taken when there is accidental spillage of radioactive substances or radiation from radioactive substances during the handling of such substances in a port.

• *Austria*

THIRD PARTY LIABILITY

Amendment of the 1964 Act on Nuclear Third Party Liability

The Federal Act of 29th April 1964 on Liability for Nuclear Damage - Atomic Liability Act - (Federal Gazette 1964, No. 117) was amended by Section XXXIII of the Federal Act of 25th February 1976 Amending Amounts and Limits of the Civil Law (Wertgrenzennovelle 1976, Federal Gazette 1976, No. 91); the latter Act entered into force on 1st April 1976.

The Atomic Liability Act establishes maximum amounts of liability of operators of nuclear installations and carriers of nuclear substances (Section 15), as well as of holders of radioisotopes (Section 29).

With respect to operators of nuclear installations and carriers, this amount is fixed at 500 million Austrian Schillings (AS) of which up to AS 375 million are to be used for damage to persons and up to AS 125 million for damage to property. In the case of installations for nuclear fusion and particle accelerators, these sums are reduced to AS 3 million, 2.4 million and 600,000 respectively. Compensation for death and personal injury, which was originally limited to AS 600,000 per person, has now been raised to AS 1.2 million.

As regards the holder of radioisotopes, the maximum amount of his liability depends on the radioactivity and radiotoxicity of the radioisotopes and on whether they are in open or sealed form. With respect to death or injury of more than one person, there are six groups of radioisotopes with different maximum amounts which have all been increased by the Act referred to above, and which range now from AS 1.2 million to AS 18 million instead of from AS 600,000 to 12 million. The maximum amount with respect to death or injury of any single person was raised from AS 600,000 to AS 1.2 million and with respect to property damage in general from AS 600,000 to AS 900,000.

The penal provisions (Section 44) were equally amended. The fine provided for the operation of a nuclear installation, the holding or handling of nuclear fuel or radionuclides without having provided and maintained the required financial security was raised from AS 120,000 to AS 180,000 in the case of nuclear installations and nuclear fuel, and from AS 30,000 to AS 45,000 in the case of radionuclides.

• *Belgium*

ORGANISATION AND STRUCTURE

Royal Order of 6th May 1975 concerning the Atomic Energy Commission

The Royal Order published in the Official Gazette of 14th September 1976, attaches to the Energy Administration of the Ministry of Economic Affairs the services responsible for the duties covering the work of the Atomic Energy Commission, which comes under the authority of this Ministry. Section 2 of the Royal Order of 25th March 1971 on the Atomic Energy Commission is repealed (see Nuclear Law Bulletin No. 8).

• *Canada*

THIRD PARTY LIABILITY

Entry into force of the 1970 Act respecting civil liability for nuclear damage

The Act Respecting Civil Liability for Nuclear Damage (Nuclear Liability Act), which was enacted on 19th June 1970, was brought into force on 11th October 1976 by a proclamation of the Governor in Council pursuant to Section 35. The text of the Act was published as a Supplement to Nuclear Law Bulletin No. 6.

Pursuant to Section 34, the Canadian nuclear operator is not liable for any injury or damage suffered outside Canada and caused by an incident originating from his nuclear installation. However, where the Governor

in Council (the Government) is of the opinion that satisfactory arrangements exist in a foreign country for compensation of nuclear damage suffered in Canada, he may declare such country to be a reciprocating country and make any rules necessary to implement arrangements between such country and Canada.

The Governor has made Rules Implementing Arrangements between Canada and the United States (Canada-United States Nuclear Liability Rules), effective on 11th October 1976. Under the Rules, every Canadian operator is liable for injury or damage occasioned in the United States and resulting from a nuclear incident occurring in Canada (Section 2). Any court in Canada having jurisidction in the place where the nuclear installation is situated from which the nuclear incident originated, has equally jurisdiction over actions relating to injury and damage suffered in the United States and caused by such incident in Canada (Section 3).

The Minister of Energy, Mines and Resources issued, on 1st October 1976, a Ministerial Designation of Approved Insurers and a Ministerial Approval of Terms and Conditions of Insurance. These measures were taken pursuant to Section 15 of the Act which requires the operator of a nuclear installation to maintain, with an approved insurer, an insurance against the liability imposed on him by the Act. This insurance consists of a basic insurance for such period and amount as are prescribed by the Atomic Energy Control Board, with the approval of the Treasury Board, not exceeding 75 million Canadian dollars, and supplementary insurance for the same period and for an amount equal to the difference, if any, between the amount prescribed for the basic insurance and the ceiling of 75 million Canadian dollars.

On the same date, the Minister and the Nuclear Insurance Association of Canada concluded a reinsurance agreement. This agreement is provided under Section 16 of the Act which authorises the Minister, with the approval of the Treasury Board, to enter into an agreement in relation to the supplementary insurance with an approved insurer, reinsuring the risk assumed by that insurer.

It is further to be noted that Section 26 of the Act was repealed by subsequent legislation which abolished the Exchequer Court of Canada and replaced it by the Federal Court. Under Section 28 of the Federal Court Act, the Court of Appeal of the Federal Court now has jurisdiction to review decisions of Federal Boards or Commissions, which was previously vested in the Exchequer Court.

• *Denmark*

REGIME OF NUCLEAR INSTALLATIONS

Act of 4th May 1976 on Measures of Safety and Environmental Protection Relating to Nuclear Installations Etc

This Act was published on 12th May 1976 but is not yet in force, with the exception of Section 11 and the first sub-section of Section 12. The entry into force of the whole Act will be fixed by law.

The provisions presently in force in Denmark concerning the licensing and the construction of nuclear installations are contained in Act No. 170 of 16th May 1962 Concerning Nuclear Installations. The third party liability provisions of this Act were repealed by the Act No. 332 of 19th June 1974 on Compensation for Nuclear Damage (see Nuclear Law Bulletin No. 15). There are also relevant provisions in Regulation No. 278 of 27th June 1963 on Protective Measures Against Accidents in Nuclear Installations as amended by an Order dated 1st October 1974. The remaining provisions of Act No. 170 and Regulation No. 278 will cease to have effect with the entry into force of the new Act.

The new Act will apply to nuclear reactors and other installations depending on the use of nuclear fuel; installations for the mining, production, processing and storage of nuclear fuels and for the storage and processing of spent nuclear fuel and other radioactive products and waste; the carriage of nuclear fuel and radioactive products. However, the Act will not apply to enterprises which produce, import, process or store isotopes to be used for industrial, commercial, agricultural, medical or scientific purposes and to radioactive products consisting of radioisotopes to be used for such purposes (Sections 1 and 15). These activities will continue to be covered by the 1953 Radioactive Substances Act and the Orders issued thereunder (see Nuclear Law Bulletin No. 17). Furthermore, the Electricity Supply Act remains unaffected, so that an electricity production licence must be obtained for electricity generating nuclear power plants.

The siting, construction and operation of nuclear installations and the transport of nuclear substances will be subject to a licence granted in accordance with the Act. Such licence shall not be granted if found to be dangerous from the point of view of safety or other vital public interests. If a licence is granted, the competent authorities must ensure the greatest possible safety measures (Section 2).

The licence for the siting of a nuclear reactor or of an installation for the storage and processing of irradiated nuclear fuel and radioactive waste shall be granted by the Minister for the Environment, after consultation with the Minister of Trade. The licence may not be granted until after the Parliament has given its consent. Before the Minister for the Environment submits his report to the Parliament, the regional and local councils and committees concerned must be heard. The Minister for the Environment, in collaboration with these bodies, must hold a public hearing on any application for a site licence of a nuclear reactor (Section 3 and sub-section 7 of Section 14). In addition, the Environment Directorate and the National Health Service must give their advice.

The construction and operating licence for the above-mentioned installations, as well as the site and construction licence for other installations is granted by the Minister for the Environment, after prior consultation of the competent Parliament Commission (sub-section 2 of Section 3).

The Environment Directorate and the National Health Service will examine all questions related to nuclear safety connected with applications submitted and will give their advice to the Minister for the Environment (Section 4). These two bodies are jointly in charge of supervising all safety aspects.

For every nuclear reactor, a special safety council will be established. It will consist of the representatives of the personnel of the installation and its management, the Labour Inspectorate, the Environment Directorate, local authorities and elected representatives

of the population (Section 8). This council, on request or on its own initiative, may give its advice to the management of the installation and to the authorities competent for its safety.

The Minister for the Environment may lay down regulations for the inspection of nuclear installations provided for by international agreements (e.g. safeguards agreements with the IAEA).

Permission for the presence and use in Danish territory of nuclear propelled means of transport, including navigation of nuclear ships in Danish territorial waters and their access to Danish ports, will be granted by the Minister for the Environment, after consultation with the competent Parliament Commission (Section 10).

The Environment Directorate will be in charge of studying questions related to nuclear safety and to establish collaboration with other national and international authorities competent in this field. It may also request the help of the Risø Research Centre and other national and international institutions (Section 11 which has already entered into force).

The Nuclear Installations Inspectorate is an insitution under the Environment Directorate and assists the latter in the fulfilment of its tasks under the Act (sub-section 1 of Section 12 which is also in force).

The Minister for the Environment is responsible for the granting of approvals, licences and exemptions which are necessary for the siting and operation of a nuclear reactor and are laid down in a number of other Acts dealing with land use planning and environmental protection (Section 10)

Further provisions deal with penalties and fines (Sections 16 and 17). The Act will not apply to the Faroe Islands and Greenland; it may be made applicable to Greenland by Royal Decree (Section 19).

• *Finland*

THIRD PARTY LIABILITY

Order made in implementation of the Nuclear Liability Act

Order No. 487 of 21st June 1972 was made in implementation of the Act of 8th June 1972 on Nuclear Liability. The purpose of this Order is to implement in Finland, the exclusion of certain small quantities of nuclear substances in course of transport from the liability of the nuclear operator in accordance with the corresponding Decision of the NEA Steering Committee concerning the Paris Convention. This Decision is based on the low hazard entailed by such substances. Furthermore, the Order stipulates that the Minister of Commerce and Industry is the competent authority to decide, under the Act of 1972, that the carrier shall be liable for nuclear damage in place of the nuclear operator.

A new revision of the Nuclear Liability Act is being planned in the perspective of accession by Finland to the Brussels Supplementary Convention.

• *France*

ORGANISATION AND STRUCTURE

Order of 2nd November 1976 setting up an Institute for Protection and Nuclear Safety

The Institute was set up within the Commissariat à l'Energie Atomique (CEA) by Order of the Minister of Industry and Research (Official Gazette of 4th November 1976). Its main purpose, in accordance with the Government's general policy on nuclear safety and general co-ordinating measures adopted by the Interministerial Committee on Nuclear Safety is to undertake studies, research and work on protection and nuclear safety as directed by the ministerial departments and organisations concerned.

At administrative and operational level, creation of this new Institute merges the protection department and the nuclear safety department in the CEA. The Institute is headed by a Director appointed by the CEA's Delegate Administrator-General and by a Programme Committee chaired by the High Commissioner for Atomic Energy. In addition to its Chairman, the Committee includes the Delegate-General for Energy or his representative, the Head of the Central Service for the Safety of Nuclear Installations or his representative, a representative of the Minister of the Interior, a representative of the Minister of Defense, a representative of the Minister of the Quality of Life, a representative of the Minister of Labour, a representative of the Minister of Health and eight members appointed by the Minister of Industry and Research, three of whom are designated on proposal by the Delegate Administrator-General.

Decree of 24th May 1975 on dues for large nuclear installations

Decree No. 76-480 was published in the Official Gazette of the French Republic on 4th June 1976; it lays down measures for fixing and collecting the dues required for large nuclear installations. These dues are fixed by the Minister of Industry and Research for each operator on the basis of information supplied by the Head of the Central Service for the Safety of Nuclear Installations. The sums thus collected are used in particular to reimburse the expenses incurred for the safety analyses made by the Commissariat à l'Energie Atomique and for the inspections prescribed for installations.

REGIME OF NUCLEAR INSTALLATIONS

Technical Orders of 1976 on radioactive effluents discharges from nuclear installations

A series of seven technical Orders by the competent Ministers (mainly the Minister of Health, the Minister of Industry and Research and the Minister of the Quality of Life) lay down the procedures, conditions and limits applicable to gaseous and liquid radioactive effluent discharges from nuclear installations. These Orders of 10th August were published on 12th September 1976 in the Official Gazette of the French

Republic and were made in implementation of the Decree of 6th November 1974 on gaseous radioactive effluent discharges from nuclear nuclear installations (Section 14) and the Decree of 31st December 1974 on liquid radioactive effluent discharges from nuclear installations (Section 16) /see Nuclear Law Bulletin No. 15/. Apart from the general rules applicable for setting limits and methods for effluent discharges, these Orders specify the measures for environmental monitoring and for control by the Central Service for Protection against Ionizing Radiations. Certain of these Orders contain the general rules which apply to liquid or gaseous effluent discharges from all nuclear installations, while others lay down the rules proper to light water nuclear power plants. Other types of reactors such as fast breeders are not yet governed by regulations in this respect. These Orders are the following:

Gaseous effluents

- Interministerial Order of 10th August 1976 on the conditions required for carrying out the preliminary study prior to the application for a licence for the discharge of gaseous radioactive effluents from nuclear installations.

- Interministerial Order of 10th August 1976 on the discharge of gaseous radioactive effluents from nuclear installations and on the conditions of the public enquiry provided under Section 15 of Decree No. 74-945 of 6th November 1974. It should be noted that there is no similar Order for liquid effluents because the procedure regarding the public enquiry for this type of effluent is already laid down in Decree No. 73-218 of 23rd February 1973.

- Interministerial Order of 10th August 1976 on the general rules applicable for setting limits and methods for the discharge of gaseous radioactive effluents from nuclear installations, for selecting measures for their environmental monitoring and for their control by the Central Service for Protection against Ionizing Radiations.

- Interministerial Order of 10th August 1976 on the rules proper to light water nuclear power plants applicable to the limits andmethods for the discharge of their gaseous radioactive effluents, to the measures for their environmental monitoring and to the control by the Central Service for Protection against Ionizing Radiations made in application of Section 14 of Decree No. 74-945 of 6th November 1974.

Liquid effluents

- Interministerial Order of 10th August 1976 on the conditions required for carrying out the preliminary study prior to the application for a licence for the discharge of liquid radioactive effluents from nuclear installations.

- Interministerial Order of 10th August 1976 on the general rules applicable for setting limits and methods for the discharge of liquid radioactive effluents from nuclear installations, for selecting measures for their environmental monitoring and for their control by the Central Service for Protection against Ionizing Radiations, made in application of Section 16 of Decree No. 74-1181 of 31st December 1974

- Interministerial Order of 10th August 1976 on the rules proper to light water nuclear power plants applicable to the limits and methods for the discharge of their liquid radioactive effluents, to the measures for their environmental monitoring and to the control by the Central Service for Protection against Ionizing Radiations.

Public enquiry procedure prior to official recognition of nuclear power plants as being in the public interest

The Minister of Industry and Research published (Official Gazette of 24th September 1976) a Circular dated 24th August 1976 on the organisation of the prior enquiry procedure for official recognition of conventional thermal power plants and nuclear power plants as being in the public interest.

This procedure for granting public interest status to thermal power plants is applied systematically to all new large installations, in particular, to those belonging to Electricité de France, even where it is not compulsory for land expropriation purposes. This practice is systematically applied in particular to nuclear power plants, in addition to the special licensing regime needed for their establishment.

Publication of this Circular meets the emerging requirement to submit the siting of nuclear installations to a procedure of consultation and communication of detailed information at the central, as well as at the level of the regional authorities, in order to preserve the interests which the local administrations concerned are responsible for and also to encourage complete, in-depth information of the public. This Circular supplements, in respect of nuclear installations, the provisions organising the conduct of the public enquiry in the Decree of 6th June 1959, amended by a Decree of 14th May 1976. During the stage prior to the enquiry proper, the application for official recognition of a project as being in the public interest must contain the following: a document on the architectural aspect of the planned installation, an environmental impact study, the main provisions on nuclear safety and radiation protection.

This Circular repeals and supersedes the Ministerial Circular of 29th October 1959.

ENVIRONMENTAL PROTECTION

French legislation on classified installations

I. Relevant enactments

Act No. 76-662 of 19th July 1976 on Installations Classified for the purposes of Environmental Protection* repeals the Act of 19th December 1971 on dangerous, noxious or insanitary establishments.

It also repeals:

- the Decree-law of 1st April 1939 instituting an emergency procedure for the examination of applications for the construction of oil and gas storage facilities;

* Published in the Official Gazette of the French Republic dated 20th July 1976.

- any provisions which apply to installations covered by the new Act and which are inconsistent with it.

The effect of this provision is that measures enacted under the earlier system remain in force insofar as they are not in contradiction with the 1976 Act.

Such is the case, in particular, for Decree No. 64-303 of 1st April 1964 on dangerous, noxious or insanitary establishments, and the Circular of 23rd March 1973 on inspection of classified establishments and on the industrial environment, as well as for the many specific circulars and instructions*.

The same applies to Prefectoral orders laying down general or specific regulations.

This maintenance of the earlier provisions is confirmed by the concluding section of the Act of 19th July 1976, which states that in all provisions containing a reference to the Act of 1917 there shall be substituted a reference to the new Act.

None of the many implementing Decrees provided for in the Act of 19th July 1976 has so far been published.

II. Scope

Installations of all kinds, operated or owned by any person, whether natural or legal, public or private, are covered by the provisions of the Act of 19th July 1976 if they may involve "dangers or disadvantages for the amenities of the neighbourhood, for public health, safety or hygiene, for agriculture, for the protection of nature and the environment, or for the preservation of sites or monuments".

The objectives of the new environmental protection regime are thus extremely varied and the Act potentially covers all "installations", whether existing or future, whenever there is any risk of a disamenity or danger.

The very broad term "installation", which is not defined in the Act, includes any construction or development carried out with a view to a particular use.

However, a distinction must be made between the potential ambit of the Act and its practical scope. Section 2 provides that a nomenclature of classified installations shall be laid down by Decree made in the Council of State. Only those installations which appear in the nomenclature will be subject to the provisions of the Act of 19th July 1976. The nomenclature has not yet been published.

Nevertheless, the nomenclature does not place an absolute limit on the scope of protective measures. Where an installation not included in the nomenclature involves grave dangers or disadvantages, the Prefect has power to require the operator to put an end to these, under pain of administrative penalties provided for in the Act.

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* Published in Official Gazette Booklet No. 1001-III.

III. Rules applicable to classified installations

General provisions

Two systems are provided for:

1. Installations involving serious dangers or disadvantages require a licence from the Prefect: this cannot be granted unless the dangers or disadvantages which the installation involves can be prevented by measures specified in the licensing Order.

   A prior public enquiry must be held on the impact of the project: the municipal councils concerned and the Health Council for the Département give their opinions.

   Granting the licence may be made conditional, among other things, on the installations being located at a distance from "residential accommodation, buildings normally occupied by third parties, establishments to which the public has access, watercourses, public communications, water catchment areas or areas zoned as residential by planning documents which are binding on third parties".

   The conditions deemed indispensable for installation and operation are laid down in the licensing Order and, where appropriate, in supplementary Orders.

   For some categories of installation, technical rules having general effect may be prescribed by Ministerial Order.

2. Installations which do not involve serious dangers or disadvantages are merely subject to a system of declaration. However, they must comply with the general regulations laid down by the Prefect for the purpose of protecting, within his Département, those interests which are safeguarded by law.

   The application for a licence or the declaration, whichever is appropriate, must be submitted to the Prefect at the same time as the application for a building permit. The operator must make a fresh application or declaration in the event of any transfer, extension, conversion or change of manufacturing processes which involves dangers or disadvantages.

   Finally, the elimination of a whole category of installations may be ordered by Decree made in the Council of State if it appears that legal measures cannot get rid of the dangers or disadvantages which such installations involve.

Financial provisions

Industrial and commercial establishments and public undertakings of an industrial or commercial nature are required to pay a charge which is collected on the occasion of every licence or declaration.

"Moreover, an annual fee is collected from such of the said establishments as by reason of the nature or the extent of their activities expose the environment to special risks and, in consequence, require

detailed and periodical supervision." A Decree made in the Council of State will lay down the list of establishments subject to this latter provision.

Role of the Higher Council for Classified Installations

The Minister responsible for classified installations (at present the Minister for the Quality of Life) is assisted by a Higher Council for Classified Installations, the membership of which is still as laid down in a Decree of 21st May 1952. It consists of twelve permanent members (senior officials and specialists in questions concerning classified establishments or health), and assistant members who are specially convened in the light of the nature of the matters appearing on the agenda for each meeting.

The Higher Council for Classified Installations must be consulted regarding all major implementing measures under the Act of 19th July 1976, and in particular the various Decrees for which it makes provision.

Inspection of classified installations

The organisation of inspection is not changed by the Act of 19th July 1976.

The inspectorate is organised at the level of each Département. The inspectors, in accordance with Section 28 of the Decree of 1st April 1964, have the duty of supervising the application of the Act and, for this purpose, have a right of entry at all times into the establishments subject to their supervision, in order to observe and record such matters as they deem necessary. They are empowered to make formal reports recording all infringements of the Act or of the provisions implementing it.

Penalties

Two types of penalty are provided:

(a) criminal penalties

The severity of these is graduated according to the seriousness of the infringement. The maximum penalty is a FF 500,000 fine and six months imprisonment; penalties may be imposed for:

- operating an installation without the necessary licence;
- operating an installation contrary to the provisions of a decision requiring its closure or the suspension of operations;
- hindering persons responsible for inspecting or making an expert report on installations in the exercise of their duties.

Court decisions may set a deadline for operators to comply with the relevant regulations, prohibit the use of installations until work has been carried out, and even order such work to be carried out officially, at the expense of the person committing the infringement.

(b) administrative penalties

Should an operator, after his non-compliance with a regulation has been duly recorded and he has been given formal notice to comply therewith by the Prefect, fail to comply with this requirement a number of administrative measures may be taken:

- either implementation of the regulations by the authorities at the expense of the operator, or deposit by the operator of an amount sufficient to cover the cost of the work to be carried out,

- or suspension of operation of the installation.

Where an installation is operated without the requisite declaration or licence, the Prefect, when giving formal notice to the operator to rectify this situation, may suspend operation of the installation and, if such rectification does not occur, order the closure of the installation or any of the measures set out above.

In all cases where suspension is ordered by the Prefect, the operator is required to continue paying his workforce.

Appeals

There is a right of appeal to the administrative courts against decisions taken under the Act.

The time limit for appeals is two months for applicants or operators; the limit is four years (extended for two further years, where applicable, after the installation comes into operation) for third parties and local authorities.

Installations belonging to services and bodies connected with the State

For installations belonging to services and bodies connected with the State, which will be entered in a list established by Decree, the powers conferred on the Prefect under the general system devolve either on the Minister responsible for classified establishments or on the Minister responsible for defence.

In addition, the Act leaves the procedures of enquiry and licensing and the conditions of supervision and control which apply to these installations to be determined by Decrees made in the Council of State.

For other State services, local authorities and public establishments of an administrative nature, Decrees made in the Council of State will determine the conditions under which criminal and administrative penalties may be applied, and state who are the persons answerable under criminal law.

Transitional provisions

The new Act comes into force on 1st January 1977.

No special problems arise in connection with its application to new installations.

For existing installations, four special provisions facilitate the transition from the old to new regime:

(a) when an Order is made pursuant to the Act of 19th July 1976 laying down technical rules, it will specify the time limits within which, and the conditions under which, these rules apply to existing installations;

(b) establishments which had duly obtained, under the system in force pursuant to the Act of 1917, the elimination or relaxation of certain provisions continue to enjoy the benefit of such derogations unless these are terminated by Order of the Prefect, who may, however, allow a period of grace;

(c) installations requiring to be declared pursuant to the new Act but which had been duly licensed before its entry into force are exempted from the declaration requirement and the two provisions set out above apply to them;

(d) installations which are subject to the provisions of the Act of 19th July 1976 but were not caught by the Act of 1917 can continue to operate without licence or declaration, however, before a date to be laid down by Decree, and which cannot in any event be later than 1st January 1979, the operator must make himself known to the Prefect, who may impose such measures as may be appropriate to safeguard the interests protected by the new Act.

No provision is made for other cases. It would seem likely that no declaration will be required for installations which were duly declared under the earlier regime, and are still subject to the system of declaration; similarly, it would appear that no new licence will be required for those installations which are already duly licensed. On the other hand, an application for a licence will no doubt have to be made for those installations, if any, which will henceforth be subject to the system of licensing whereas until now a mere declaration was sufficient in their case.

IV. Innovations as compared with the Act of 1917

Without setting out an exhaustive list of differences between the 1976 and 1917 Acts, mention may be made of the most important among them

1. The 1917 Act was an Act "on dangerous, noxious or insanitary establishments". These words to not appear in the new Act, which relates to installations which may involve dangers or disadvantages. This does not make any significant difference in regard to the concept of what is dangerous, insanitary or noxious. the aim is to restrict or eliminate the same types of environmental nuisances or hazards of all kinds. The greatest terminological innovation is to be found elsewhere it consists in the use of the word "installation" instead of establishment. There may be several installations in a single establishment. Accordingly, the new legislation will make possible more detailed and thorough control.

2. The scope of the legislation has been extended. The 1917 Act applied to "workshops, factories, stores, yards and all industrial and commercial establishments". It thus excluded those establishments which are not industrial or commercial

by nature, such as those employed in the public service. In particular, research establishments were excluded from the application of the 1917 Act. This will no longer be the case. Henceforth, all types of installation without exception will be capable of inclusion in the environmental protection rules.

3. Formerly, there were three classes of establishment.

   - the first category consisted of establishments which had to be located at a distance from human dwellings and required a licence;

   - the second category consisted of establishments which it was not strictly necessary to locate at a distance from dwellings, but whose operation was subject to certain protective measures· these establishments also required a licence;

   - the third category was subject to general regulations.

   Now, there are only two categories of installation: it is as if the first two categories have been merged and the system of declaration kept for the third. However, there is no certainty that the list of installations requiring a licence under the Act of 1976 will coincide with the list of establishments in the first and second categories. Only the implementing decrees will show this.

   It may also be noted that the 1976 Act does not establish an absolutely inescapable connection between the system of licensing and the requirement of location away from the dwellings. This is no doubt explained by the way technology has evolved, since not only are measures of protection from or limitation of environmental nuisances nowadays capable of greater efficiency, but also it is seen to be increasingly essential to control the disadvantages or dangers which may become apparent both in the neighbourhood of the installation and even at a great distance from it.

4 In the main, the objectives of the new Act are the same as those of the Act of 1917. The "interests" protected, to use the wording of the 1976 Act, have however, been broadened· henceforth the protection of nature and the environment, as well as the preservation of sites and monuments are included in the objectives to be covered by protective measures.

5. The principle of a nomenclature has been retained. The application of preventive measures is still conditional on inclusion of the type of installation concerned in the list. However, as can be seen, this principle is now made less rigid by the power given to the Prefect to impose requirements on installations which are not included in the nomenclature.

6. The possibility of eliminating by decree a specific type of installation did not exist under the 1917 Act.

7. The criminal penalties have been made heavier and the administrative penalties have been spelled out, as well as the possibilities of appeal to the administrative courts.

V. Nuclear installations

As was the case under the previous regime it is to be foreseen that large nuclear installations, which have their own regulations and are defined in the Decree of 11th December 1963, will not appear in the nomenclature and thus will remain outside the application of the legislation on classified installations.

However, some nuclear installations are not large nuclear installations. A number of these were listed in the nomenclature of classified establishments drawn up under the Act of 1917 and published in Official Gazette Booklet No. 1001 - II:

Heading No. 385 ter - Radioactive substances (preparation, fabrication, conversion and conditioning).

This heading covers installations processing radioisotopes whose activity lies within the following limits:

- Group I radioisotopes: from 0.1 to 10 millicuries;
- Group II radioisotopes: from 1 to 100 millicuries,
- Group III radioisotopes: from 10 millicuries to 1 curie

Heading No. 385 quater - Radioactive substances (use, deposting and storage) contained in sealed sources.

This heading covers sources lying within the following limits

- Group I radioisotopes: from 10 millicuries to 1 curie,
- Group I radioisotopes in special form fulfilling the the conditions laid down in the Order by the Ministry of Industry of 13th November 1967 and the Annex thereto: from 10 millicuries to 10 curies;
- Group II radioisotopes: from 0.1 to 10 curies;
- Group II radioisotopes in special form (defined as above): from 0.1 to 100 curies;
- Group III radioisotopes: from 1 to 100 curies;
- Group III radioisotopes in special form: from 1 to 1,000 curies.

Heading No. 385 quinquies - Radioactive substances contained in unsealed sources:

- Group I radioisotopes: from 0.1 to 10 millicuries;
- Group II radioisotopes: from 1 to 100 millicuries;
- Group III radioisotopes: from 10 millicuries to 1 curie.

All the installations specified above are subject to general or special regulations. Reference must be made to the Official Gazette Booklet. Until those regulations have been replaced they remain in force, since they are not repealed by the new Act.

However, it is not yet known whether nuclear installations appearing in the nomenclature will require declaration or licensing.

To sum up, there are three categories of nuclear installations

1. Those which are not subject either to the regulations on classified installations or to the regulations on large nuclear installations, either because the types of installation concerned are not covered by either of these sets of regulations, or because they are below all the radioactivity thresholds.

2. Those which are subject to the regulations on classified installations

3. Those which are subject to the regulations on large nuclear installations.

   - nuclear reactors;

   - particle accelerators of certain types;

   - plants for preparation, fabrication or conversion of radioactive substances;

   - installations for storage, depositing, or use of radioactive substances.

The Decree of 11th December 1963, as amended, states that plants and installations of the third and fourth types mentioned above shall be deemed large nuclear installations only insofar as they exceed the activity or quantity thresholds defined in two Orders respectively dated 6th December 1966 and 25th January 1967.

All equipment lying within the perimeter of a large nuclear installation is deemed to be part of the latter. Nevertheless it can occur that classified installations, whether nuclear or not, lie within such a perimeter. In such event, Section 6 bis of the Decree of 11th December 1963 provides that "establishments falling within the ambit of the Act of 19th December 1917" which are located within the perimeter of a large nuclear installation shall be subject to the regulations set out in the same Section "by way of derogation from the provisions of a regulatory nature contained in the Act and its implementing measures". It follows from Section 6 bis that there is no derogation from those provisions which are not of a regulatory nature. Moreover, in accordance with the concluding Section of the Act of 19th July 1976, a reference to the new Act must be substituted for the reference to the 1917 Act.

Consequently, subject to the derogations introduced by Section 6 bis, the Act of 19th July 1976 applies to installations other than the large nuclear installations which are located within the perimeter of the latter, provided of course that such installations fall within the scope of the Act.

The derogations provided for such installations in Section 6 bis are as follows:

- the Minister responsible for industry and research is substituted for the Prefect or Prefects for the purposes of all administrative acts;

- applications for licences do not give rise to a separate enquiry from that concerning the large nuclear installation, and the licence is given in the decree licensing the large nuclear installation;

- it is for the Minister responsible for industry and research to give the operator notice of all technical requirements, after taking the opinion of the Inspector of large nuclear installations.

There is thus a merger of the procedures applicable to classified installations and large nuclear installations.

All the other provisions of the Act of 1976 or its implementing measures, even if they are of a regulatory nature, apply to installations located within the perimeter of a large nuclear installation.

Act of 10th July 1976 on the protection of nature

The Bill of Act No. 76-629 has been reported in Nuclear Law Bulletin No. 17. The Act was published in the Official Gazette of 13th July 1976

• *F.R. of Germany*

RADIATION PROTECTION

Radiation Protection Ordinance of 13th October 1976

The Ordinance on Protection Against Damage caused by Ionizing Radiation (Radiation Protection Ordinance*) of the Federal Government and the Federal Minister of the Interior was published in the Federal Gazette of 20th October 1976 (BGBl. I, p. 2905). The legislative authority for this Ordinance is to be found in Sections 10 to 12 and 54 of the Atomic Energy Act. It will enter into force on 1st April 1977; on the same date, the First and Second Radiation Protection Ordinances will cease to have effect.

The new Radiation Protection Ordinance covers the areas of the present First Ordinance on Protection Against Radiation Hazards (First Radiation Protection Ordinance) of 24th July 1960 (BGBl. I, p. 430) in the version published on 15th July 1965 (BGBl. I, p. 1654), and the present Ordinance on Protection Against Radiation Hazards in Schools (Second Radiation Protection Ordinance) of 18th July 1964 (BGBl. I, p. 500) in the version published on 12th August 1965 (BGBl. I, p. 759).

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* Verordnung über den Schutz vor Schäden durch ionisierende Strahlen (Strahlenschutzverordnung).

It covers further all installations for the production of ionizing radiation (e.g. particle accelerators) except those which are covered by the X-Ray Ordinance of 1st March 1973 (BGBl. I, p. 173).

The Ordinance will therefore cover (Section 1)

- the handling of radioactive substances (extraction, production, storage, treatment, processing or any other use or disposal), transactions in radioactive substances (acquisition or transfer to others), the carriage and import or export of radioactive substances, as well as the prospecting for, extraction and refining of radioactive minerals;

- the custody of nuclear fuel according to Section 5 of the Atomic Energy Act, the storage of nuclear fuel according to Section 6 of the Act, the construction, operation or other possession of an installation pursuant to Section 7 of the Act, the treatment, processing or other use of nuclear fuel according to Section 9 of the Act;

- the construction and operation of installations for the production of ionizing radiation (Section 11, sub-section 1, no. 2 of the Atomic Energy Act) with a particle or photon end-point energy of at least 5 kiloelectron-volts, including the operation of X-Ray installations in connection with the teaching in schools.

Detailed radiation protection provisions are laid down in five main parts comprising 86 Sections and 14 Annexes.

Part 1 (Sections 1 and 2) defines the scope of application and refers to the definitions which are contained in Annex I.

The second Part (Sections 3 to 27) contains the surveillance and licensing provisions and comprises six Chapters which deal respectively with the handling of radioactive substances, their transport, import and export, the construction and operation of installations for the production of ionizing radiation, employees and other persons working under supervision, and the permit concerning the design of equipment (type licensing).

The granting of a licence for the handling of radioactive substances and for their carriage will be subject to the condition that adequate protection is ensured against disturbance and interference by third persons (Sections 6 and 10).

As pointed out above, the construction and operation of installations for the production of ionizing radiation (particle accelerators, plasma installations) are now covered by the Radiation Protection Ordinance. The operation of all accelerators and plasma installations requires a notification or a licence, and the construction of such installations in the upper energy range requires a licence (Sections 15 to 20).

Anyone who employs personnel for work in a nuclear installation not operated by himself will in future require a licence, if such personnel are exposed to radiation [Section 20(a)]. The licensee has to ensure that such persons possess a "radiation passport" (Section 62 and Annex III), in which all exposures are listed. These measures are intended to ensure that persons who employ maintenance and repair personnel on a supra-regional basis must obtain a licence and secure the radiological surveillance of their personnel.

The third Part of the Ordinance, which is the most substantive one (Sections 28 to 80) lays down the requirements for protection against radiation hazards. Section 28(1) establishes the guiding principle that any person carrying out or planning any activity covered by the Ordinance shall avoid any unnecessary exposure or contamination of persons, property or the environment and keep any unavoidable exposure or contamination as low as possible, even below the limits fixed by the Ordinance, taking into account scientific knowledge and technology and all circumstances of the individual case. Notwithstanding this general provision, when safety measures are planned against incidents in nuclear power plants, the maximum dose to be taken into account is limited to 5 rem for individual members of the public in the vicinity. This limit corresponds to the permissible annual dose for occupationally exposed persons of category "A" and may be based only on the most serious incidents under the most adverse conditions. A list of incidents to be taken into account in the design of nuclear power plants will be established in a directive of the Federal Minister of the Interior. Further novel provisions in this first Chapter of Part 3 concern measures to be taken in case of incidents which are significant from the safety standpoint, the preparation of fire prevention measures and preparatory measures to be taken for the reduction of damage in case of incidents and accidents (Sections 36 to 38). These provisions will require all enterprises of the nuclear fuel cycle and the users of radioactive substances to devise methods for direct assistance in case of emergencies.

An extensive provision (Section 41) deals with the application of radioactive substances to human beings in medical research

Chapter 2 of the third Part concerns the protection of the population and the environment against the dangers of ionizing radiation. The presently applicable radiation dose limits for members of the public will be considerably reduced by the new concept contained in Section 45 which governs the release of radioactive effluents into the environment from normal operation of nuclear installations. Under the new provision, the annual dose limits for members of the public are set at 30 millirems for whole body exposure and 90 millirems for the exposure of the thyroid Radiation doses within these limits shall be calculated by taking into account all effluent releases within a given site and shall be based on the most unfavourable conditions of intake of radioactive substances through all relevant exposure pathways. A radioecological Ordinance will fix uniform methods of calculation.

More stringent provisions concerning the disposal of radioactive wastes are intended to ensure that such waste cannot be diluted or dispersed in such a way as to get below exemption limits. This will prevent application of exemption limits for the purpose of disposing of radioactive wastes or facilitating their disposal and thus circumvent their transfer to licensed waste disposal installations (Section 47). These provisions are complementary to the new Sections 9a to 9c of the revised Atomic Energy Act.

Chapters 3 to 8 of the third Part deal respectively with occupational exposure, radiation protection areas (which are classified into barrier areas, controlled areas, and restricted areas), physical radiation protection control, medical surveillance, measuring apparatus and further protective measures.

The fourth Part of the Ordinance (Section 81) establishes statutory offences in conjunction with Section 46, sub-section 1, no. 3 of the Atomic Energy Act.

The fifth Part (Sections 82 to 86) deals with transitional and final provisions. Section 82 lays down the conditions under which activities governed by the First and Second Radiation Protection Ordinances may be continued under the new Ordinance.

The Annexes contain the definitions of terms used in the Ordinance, a list of radioactive substances the handling and storage of which are not subject to a licence but must be notified to the competent authority, a list of activities not subject to a licence or notification, exemption limits and derived limits of annual intake by inhalation and ingestion and of activity concentration in air, specimens of import and export notifications of radioactive substances, limits for protective measures in case of surface contamination of workplaces and objects, radiation dose limits for occupationally exposed persons, specimens of medical certificates and of the "radiation passport" of occupationally exposed persons, requirements for the design permit, and the method for calculating dose equivalent from the absorbed dose.

REGIME OF NUCLEAR INSTALLATIONS

Revised Atomic Energy Act of 31st October 1976

The Federal Minister of the Interior has published the revised version of the Atomic Energy Act in the Federal Gazette (Bundesgesetzblatt, BGBl.) 1976, Part I, page 3053 (Bekanntmachung der Neufassung des Gesetzes über die friedliche Verwendung der Kernenergie und den Schutz gegen ihre Gefahren).

The Revised Act takes account of all amendments up to 31st October 1976, and, in particular, the Third and Fourth Acts Amending the Atomic Energy Act of 15th July 1975 (BGBl. I, page 721) and 30th August 1976 (BGBl. I, page 2573).

The draft text of the Revised Act published as a Supplement to Nuclear Law Bulletin No. 15 did not take account of the Fourth Amending Act, the draft of which was described in Nuclear Law Bulletin No. 17. The Supplement to the present Bulletin updates the Supplement to Nuclear Law Bulletin No. 15 and brings it into line with the official revised text.

THIRD PARTY LIABILITY

Ordinance concerning Financial Security pursuant to the Atomic Energy Act

Pursuant to Section 13(1) of the Atomic Energy Act, the licensing authority shall determine the type, terms and amounts of financial security to be provided by the licensee to cover his third party liability to pay compensation for damage. The basic requirements concerning the financial security are contained in Section 13(2) of the Act. Up to now, these provisions are implemented by the Financial Security Ordinance of 22nd February 1962, as amended.

As pointed out in Nuclear Law Bulletin Nos 16 and 17, the Federal Republic of Germany has ratified the Paris Convention and the Brussels Supplementary Convention and amended the Atomic Energy Act accordingly.

The Federal Government, with the consent of the Federal Council (Bundesrat), has therefore revised the Financial Security Ordinance as well. It is expected to be published and enter into force before the end of this year The Ordinance of 22nd February 1912 will then be repealed. The text of the new Ordinance is reproduced in the Supplement to this Bulletin

The Ordinance is divided into three Parts. The first Part (Sections 1 to 6) deals with the types and the extent of the financial security, as well as with procedural questions. The second Part (Sections 7 to 19) contains provisions concerning the amount of financial security with respect to different activities. It introduces the terms "coverage" and "standard coverage" and fixes respective amounts either generally or specifically. In particular, it takes account of the new Section 31 of the Atomic Energy Act which increases the maximum amount of the operator's liability to DM 1,000 million, of which up to DM 500 million must be covered by financial security. The standard coverage for reactors starting from a minimum of DM 5 million, is established on a linear basis of DM 1 million per MWth with the consequence that all reactors with a maximum thermal capacity of 496 megawatts and above must be covered by the maximum amount of DM 500 million. In case of handling and transport, the coverage is determined according to the licensed type, mass, activity or characteristics of the radioactive substances in conformity with two technical Annexes. The same applies for nuclear installations for the production, treatment or processing of nuclear fuel. The licensing authority may increase or reduce the coverage where the standard coverage is inappropriate to the individual case. It may further reduce the coverage to one half for nuclear ships and installations for the treatment and processing of nuclear fuel. The third Part contains the usual final provisions dealing with entry into force etc.

• *Italy*

REGIME OF RADIOACTIVE MATERIALS

Decree of 6th May 1976 on the regime for importation of goods

The purpose of this Ministerial Decree (Official Gazette of the Italian Republic of 16th June 1976) is to collect in one text the regulations governing the importation of goods in Italy as well as to establish which goods require a ministerial licence for such importation Annex I to the Decree makes an inventory of the goods subject to a ministerial licence. These goods include, inter alia, radioactive isotopes, equipment emitting ionizing radiations, packages, with lead shielding for protection against radiation, used for the transport of radioactive materials, trucks for such transport, high and low frequency generators, radiation measurement instruments as well as particle accelerators.

• *Republic of Korea*

REGIME OF RADIOACTIVE MATERIALS

Nuclear installations licensing system

The Regulations concerning Handling of Nuclear Fissionable Materials and Source Materials and the Related Facilities thereto of 22nd January 1971 (Presidential Decree No. 5494) amended on 25th May 1973 by Presidential Decree No. 6709 were made under the Atomic Energy Law of 11th March 1958 (analysed in Nuclear Law Bulletin No. 6).

The purpose of the Regulations is to lay down a licensing system for facilities for refining, fabricating and reprocessing nuclear fissionable materials. Applications for a licence to operate such facilities must be made to the Minister of Science and Technology. They must contain the following particulars: the name of the applicant, the site of the facility, its construction schedule, structure and equipment, the quantity and intended use of the materials, the disposal method for the materials etc. Facilities handling fissionable materials whose activity does not exceed the values given in a Table in the Regulations do not require a licence. Furthermore, agencies within the Ministry of Science and Technology are exempted from the licensing system.

A licence is granted to the applicant when it is ascertained that the technical expertise and financial means required to operate the facility are provided, and that the safety standards laid down by Order of the Prime Minister have been complied with. Also, before the facility is commissioned, it must be inspected and approved as having satisfied the standards laid down by Order of the Prime Minister. Inspectors appointed by the Minister of Science and Technology may have access to the facility at any time to ensure that safety conditions are being complied with. Finally, the licensee may be required to make regular reports to the Minister of Science and Technology, giving an inventory of the fissionable materials in the facility, their activity, the safety measures taken in connection with the hazards of ionizing radiation and any technical trouble having occurred during operations. Any alteration to the licensed facility must obtain the prior approval of the Minister of Science and Technology.

THIRD PARTY LIABILITY

Present status of third party liability legislation

The Nuclear Damage Compensation Law No. 2094 of 24th January 1969 which is the basic Act on nuclear third party liability in Korea (see Nuclear Law Bulletin No. 7) was amended by Act No. 2765 of 7th April 1975.

The amendments cover, inter alia, the case of the transport of fissionable materials where it is now clearly stipulated that the consignor operator is liable for damage, unless otherwise provided for by contract. It should be noted furthermore that the amended Law raises the maximum amount of compensation from 1.5 billion won to 3 billion won (from $3 million to $6 million) per nuclear installation or nuclear-powered

ship. The amount of financial security which is set by Presidential Decree according to each case, may under no circumstances exceed this limit. Finally, the Government must notify immediately any significant nuclear damage to the National Assembly, as well as any measures it has taken in accordance with this Law.

The Enforcement Decree for Nuclear Damage Compensation (Presidential Decree No. 5396) of 3rd December 1970, amended by Presidential Decree No. 7756 of 22nd August 1975 was made in implementation of the Nuclear Damage Compensation Law. The Decree provides, in particular, a classification of nuclear installations and the relevant amount of compensation in decreasing order of importance according to the risk they represent, i.e. for a reactor with a thermal output of more than 10,000 kW the amount of compensation is 3 billion won, while at the other end of the scale, for a reactor with a thermal output of less than one kW such compensation is 10 million won.

As mentioned above, the amount of financial security must be established by Presidential Decree and, to this effect, the Decree lays down the conditions to be complied with when the operator applies for approval of the establishment of the liability insurance amount. These conditions include, inter alia, in addition to the particulars on the applicant, the type of reactor operation, a sketch of the plant, its site, estimated date of start-up and close-down of the reactor, and in the case of processing activities, the use, type and quantity of fissionable materials involved The operator must also indicate the amount of insurance he intends to take out. Where the operator lays down a deposit in the form of securities or sums of money, in order to recover such deposit, he must file an application with the Minister of Science and Technology, giving the reasons for his request, together with a document ascertaining that other compensation measures, comparable to the deposit, have been taken or that operation of the reactor concerned has been discontinued.

The Nuclear Damage Compensation Law as amended provides for State intervention to guarantee that the loss incurred by the operator when paying compensation will be reconstituted in cases where the amount of the insurance contract he has taken out is insufficient to cover the damage caused. To this effect, the operator must conclude an indemnity agreement with the State.

Accordingly, Law No. 2764 on the Nuclear Damage Compensation Indemnity Agreement of 7th April 1975, implemented by the Enforcement Decree of 22nd August 1975 (Presidential Decree No. 7755) lays down the conditions of the indemnity agreement, namely, its amount, the premium to be paid to the State by the operator, the type of loss to be compensated by the Government under the indemnity agreement, its duration etc. Decree No.7755 specifies in turn the operations and damage covered by the Nuclear Damage Compensation Indemnity Agreement Law, the rate of compensation, the periodicity for payment of the compensation premium etc. The operator must, when concluding an indemnity agreement for a reactor, provide a report to the Minister of Science and Technology giving his name and address, the purpose and use of the reactor, its location and structure, the expected date of start-up and decommissioning, the type and quantity of fuels to be used as well as the proposed disposal measures for the used fuel. Similar relevant information is required regarding indemnity agreements on processing activities, radioactive waste management, and transport of fissionable materials.

• *Netherlands*

THIRD PARTY LIABILITY

Bill approving the Paris Convention and the Brussels Supplementary Convention and Draft Act on Liability for Damage Caused by Nuclear Incidents

The Netherlands Parliament is presently considering the two above-mentioned Bills. The Bill approving the Paris Convention and the Brussels Supplementary Convention will enable the Netherlands to ratify these Conventions and their respective Additional Protocols, of which this country is already a Signatory. It is to be noted that Section 5 of the Bill makes use of the option provided by Article 2(b) of the Brussels Supplementary Convention to declare that individuals having their habitual residence in the Netherlands are assimilated to Dutch nationals.

The Draft Act on Liability for Damage Caused by Nuclear Incidents will embody the rules necessary for implementing the two Conventions, which will be directly applicable as national law after having been approved by Parliament and ratified by the Government. With the entry into force of this Act, the Act of 27th October 1965 Containing Provisions Relating to Legal Liability in the Field of Nuclear Energy will cease to have effect. The latter Act contains provisional regulations based on the Paris Convention and the Brussels Supplementary Convention.

After approval by Parliament, the new Act will be published as a Supplement to the Nuclear Law Bulletin.

• *Nigeria*

ORGANISATION AND STRUCTURE

Nigeria Atomic Energy Commission Decree 1976

Decree No. 46 of 24th August 1976 (Supplement to Official Gazette No. 44, Vol. 63 of 2nd September 1976 - Part A) by the Federal Military Government establishes the Nigeria Atomic Energy Commission and entrusts it with responsibility for the development of atomic energy and all matters relating to its peaceful uses.

The Commission's wide powers cover, inter alia, all prospecting and mining activities, construction and operation of nuclear electricity generating installations, production, use of and research in atomic energy, including the treatment, transport, trade in and disposal of radioactive substances, as well as education and training in the nuclear field. It also advises the Federal Military Government on questions relating to atomic energy.

The Head of the Federal Military Government is the Commission's supervisory authority. The Supreme Military Council appoints the members of the Commission which consists of a Chairman and five to eight other

members. Members who are not public officers are appointed for a period not exceeding three years and may be reappointed.

Under the Decree, the Head of the Military Government may make regulations to secure the safe operation of any nuclear installation operated by the Commission, to ensure the safe carriage of nuclear fuel, radioactive products or waste, and to control radioactive waste disposal He may also regulate the maintenance of an efficient system for detecting and recording emissions of ionizing radiations on premises on which there are nuclear installations or in the course of carriage to or from such premises.

• *South Africa*

REGIME OF NUCLEAR INSTALLATIONS

Nuclear Installations (Licensing and Security) Amendment Act, 1976

The Nuclear Installations (Licensing and Security) Act No 43 of 1963, as amended by Act No. 39 of 1965 and Act No. 89 of 1967, hereafter the principal Act (see Nuclear Law Bulletin No. 15) sets out the licensing and financial security arrangements required of all persons engaged in the operation of certain nuclear installations. In addition, the Nuclear Installations (Licensing and Security) Amendment Act No. 38 of 1974, previously discussed in Nuclear Law Bulletin No. 17, provides for the application of special regulatory procedures to nuclear vessels seeking permission to enter territorial waters. The latest amendment, the Nuclear Installations (Licensing and Security) Amendment Act No 91 of 1976 (Amendment Act No. 91), effected 18th June 1976, is intended as a comprehensive amendment to the principal Act, but does not, in effect, alter any of its basic principles.

Licensing regime

In general, only those persons authorised by licence of the Atomic Energy Board (the Board), may use a site for the purposes of operating nuclear installations.

In cases other than that of nuclear reactors or installations designed for the production or use of nuclear energy, a nuclear installation site may be operated without a licence if the Board makes a written declaration that the risk of nuclear damage associated with the activities of that particular installation can, under no circumstances, exceed "the limits consistent with health and safety". This declaration may be withdrawn by the Board at any time.

Under the principal Act, nuclear site licences are subject to whatever conditions may be prescribed by the Board at the time of granting of the licence or at any time thereafter. Amendment Act No. 91 authorises the Minister of Mines (the "Minister"), in consultation with the Minister of Finance, to impose licensing fees which he may determine against any licensee or any person applying for a site licence.

Financial security and State intervention

Site licences may only be granted to persons who have given financial security to the satisfaction of the Minister who is responsible for establishing the amount and the manner of the financial security required of each licensee. This amount may be increased or reduced by the Minister at any time during the validity of the licence. Although the principal Act limits the maximum amount of financial security provided by any one licensee to 10 million rand, the Minister may require additional security, irrespective of whether or not the licensee has already given the maximum amount of security, if compensation for damage, resulting from a nuclear accident for which the licensee is liable, is or will be claimed against him. Such additional security is intended to provide coverage for any nuclear accidents which may subsequently occur and for which the licensee may also be liable. The fines for contravention or non-compliance with the licensing or financial security provisions have been increased from 1,000 to 2,000 rand by Amendment Act No. 91

It is noted that neither the principal Act nor Amendment Act No. 91 sets any statutory limitations on the amount of liability which may be incurred as the result of a nuclear accident. However, the principal Act does provide that where the aggregate amount of compensation claims for nuclear damage exceed or are likely to exceed the amount of financial security given by the licensee, such licensee must immediately so report to the Minister. Upon receipt of such a Notice the Minister may present his report to Parliament including a recommendation that moneys for the rendering of financial assistance be appropriated in the amount "by which such claims exceed or are likely to exceed the security so available". Failure to report to the Minister may subject the licensee to a maximum fine of 4,000 rand.

Liability of licensee

Any person so licensed is absolutely and solely liable for nuclear damage caused by a nuclear accident occurring at the licensed site or during transportation to or from the licensed site. Under the principal Act, however, the licensee was not liable for any nuclear damage to the extent that such damage was attributable to vis major. Amendment Act No. 91 has deleted this exoneration from liability entirely. In this respect, Amendment Act No. 91 differs from the Paris or Vienna Conventions which exempt the operator from liability for damage caused by a nuclear incident due to an act of armed conflict, hostilities, civil war or insurrection and exceptional natural disaster. However, the principal Act exonerates the operator from liability to compensate victims of a nuclear accident who have deliberately caused, or deliberately contributed to, the nuclear damage, in addition to giving such operators a right of recourse against such persons.

Limitation of actions

Amendment Act No. 91 extends the statutory period for the extinction of rights of compensation from ten to thirty years. This period of extinction applies to all nuclear damage without regard to whether or not the nuclear accident is caused by nuclear material which has been stolen, lost jettisoned or abandoned, a distinction which is to be found in both the Paris and Vienna Conventions.

However, Amendment Act No. 91 introduces two new provisions applicable to persons entitled to compensation who knew or should have known of the identity of the licensee concerned and of the facts which gave rise to compensation rights. No such action can be commenced after the expira-

tion of two or thirty years, whichever occurs first, after the date on which he so becomes aware, or could have become aware. The running period of the time prescription is suspended during any negotiations conducted between a person entitled to compensation and a licensee.

Regulatory duties of the Board

The principal Act charges the Board with the duty of investigating the circumstances connected with the occurrence of a nuclear incident. Amendment Act No. 91 deletes the term nuclear incident and replaces it by nuclear accident, which now includes not only occurrences which in fact cause nuclear damage, but also those occurrences which are likely to cause nuclear damage. This definition provides a mechanism for the investigating and reporting of all nuclear accidents by inspectors appointed by the Board. Since the results of any investigation may, for the purposes of proof of claims in later compensation proceedings, be admitted into evidence, it is important to record as soon as possible all significant data, especially in cases where the nuclear damage resulting from an occurrence may not be immediately ascertainable. Based upon the report completed by the inspectors, the Board shall then "define the period during which and the area within which, in its opinion, the risk of nuclear damage connected with the accident was, is or will be such that the limits consistent with health and safety were, are or will be exceeded".

In addition to the appointment of inspectors for the above specified duties, the Board may authorise inspectors to enter upon the premises of any licensed site or any site awaiting licensing, or any site where nuclear hazard material is kept and to conduct any investigations or tests necessary to assure that the provisions of the principal Act are complied with. To this end, licensees or persons applying for licences may be required, under Amendment Act No. 91, to pay any inspection fees determined by the Minister.

• *Spain*

TRANSPORT OF RADIOACTIVE MATERIALS

Regulations on the transport of dangerous goods by road

Following revision of the International Agreement on the Transport of Dangerous Goods by Road (ADR), the Spanish Government enacted, by Decree No. 1754/1976 on 6th February 1976, Regulations on the transport of dangerous goods by road. Publication of these Regulations began in the Official Gazette of 26th July 1976 and continued in the following issues up to the Official Gazette of 9th August 1976 inclusive The Regulations contain, inter alia, provisions on the transport of radioactive materials.

• *Switzerland*

RADIATION PROTECTION

Radiation Protection Ordinance of 30th June 1976

The Ordinance on Radiation Protection of 30th June 1976 by the Federal Council came into force on 1st August 1976 and repeals the Ordinance on Radiation Protection of 19th April 1963.

The 1963 Ordinance was based on the recommendations made in 1958 and 1959 by the International Commission on Radiological Protection (ICRP) which have since been revised on several occasions. The new Ordinance has been adapted in the light of these amendments and of present scientific knowledge and contains several basic changes as compared with the previous Ordinance. It should be noted however that the most important basic radiation protection standard, the maximum permissible dose limit for occupationally exposed persons, has remained unchanged.

Henceforth, persons under 16 may not engage in work involving exposure to radiation and furthermore, the provisions lay down maximum permissible dose limits for occupationally exposed women of child bearing age. The 1963 Ordinance distinguished between three categories of exposed persons: those who were regularly exposed to radiation in the course of their work, those who were occasionally exposed and finally, those living or frequently staying in the vicinity of nuclear installations. Now, in accordance with the ICRP recommendations, the two first categories are subject to the same provisions, and the third category is included in the general public to ensure that such persons, as opposed to occupationally exposed persons, are not submitted to higher doses than the general public. The new Ordinance also limits gaseous or liquid effluent releases to ensure that any person, anywhere, does not receive a radiation dose reaching one-tenth of the maximum permissible value for the population. Such limits are set according to the installation and are included in the instructions in the licensing procedure. Also, the Federal Department of the Interior, in agreement with the Federal Commission on Radiation Protection, issues instructions aimed at better protecting patients submitted to radiation for medical purposes. Finally, the classification of radionuclides has been completely changed. There are now nine instead of four classes of radionuclides, thus enabling more detailed regulation of the use of radioactive substances.

Under the Ordinance, the competent radiation protection authorities are the Federal Department of the Interior and its Federal Service of Public Health, while the Federal Department of Transport, Communications and Energy is the body competent for radiation control in nuclear installations and more generally for radiation measurement instruments. The Swiss National Accident Insurance Office is the responsible authority in cases involving sickness and accident insurance.

The Ordinance on Radiation Protection lays down a licensing regime for the production, manufacture, use, storage, transport, export and import of radioactive substances, as well as for apparatus and equipment containing such substances, and in general for any activity likely to represent a hazard due to ionizing radiation. This licensing regime does not apply to nuclear installations requiring a licence under the Federal Act of 23rd December 1959 on the peaceful uses of atomic energy and on protection against radiation.

The Federal Service of Public Health is the licensing authority A licence is required for all applications to persons involving ionizing radiations and radioactive substances, and for all uses of radioactive substances in drugs, clothing, foodstuffs and current articles, as well as for equipment for agricultural purposes. Any activity involving radioactive substances whose activity exceeds by one hundred certain exemption limits provided by Appendix 4 of the Ordinance also require a licence The licensing procedure is laid down in detail as are the conditions to be met for acquiring a licence. Furthermore, licensees are required to notify to the Federal Service of Public Health any possession of radioactive substances or equipment emitting ionizing radiation which do not require a licence, as well as any changes having occurred which have a bearing on their licences. Finally, persons manufacturing or trading in radioactive substances or equipment containing the same must keep records and submit each year to the Federal Service of Public Health a report giving information on the radionuclides and equipment they deal with, as well as the names and addresses at home and abroad of the consignors and consignees of such materials.

The technical provisions specify that any unnecessary exposure to radiation must be avoided, and if it is inevitable, care must be taken to ensure that the doses are kept as low as possible. They also lay down the maximum permissible doses for occupationally exposed persons, for parts of the body and for the whole, the accumulated maximum permissible yearly dose being 5 rem. Accumulated doses to individual members of the public must not exceed one-tenth of the maximum permissible dose for occupationally exposed persons. The latter must undergo regular medical checks, they must also be monitored by an establishment approved by the Federal Service of Public Health, to determine the accumulated dose received The Federal Service of Public Health, in consultation with the Swiss National Accident Insurance Office establishes a personal record card for all occupationally exposed persons containing the particulars on their type of work, the accumulated doses received, dates of medical checks etc. The establishment in charge of monitoring must notify the Federal Service of Public Health each year of the accumulated dose received by occupationally exposed persons. The Federal Service of Public Health, in consultation with other controlling bodies, in turn determines the data to be notified and publishes the results.

As regards environmental protection measures, the Ordinance prescribes that the radioactivity of the air, precipitations, water and soil must be regularly monitored by the Federal Commission for the monitoring of radioactivity.

Special accident prevention instructions and an emergency plan are laid down in detail. All radiation emitting equipment must be adequately shielded to ensure that at all times the maximum permissible dose is not exceeded. In addition, the Ordinance contains provisions concerning the safe operation from the viewpoint of health protection of all radiation emitting equipment for medical or other purposes.

Controlled areas, i.e. areas where persons in the course of their regular work receive an accumulated equivalent dose higher than 0 5 rem per year, must be delineated and marked as such.

Detailed instructions are given as to the handling, storage and transport of sealed and unsealed radioactive sources, and the construction of and working methods in laboratories, which are classified into types A, B and C according to the activity of the unsealed radioactive sources used therein. As regards radioactive wastes, it is provided that all gases and aerosols must be released to the environment through filters

or towers; records must be kept of such releases. Liquid wastes must, insofar as possible, be solidified. Solidified wastes must be stored on premises approved by the competent controlling body, namely the Federal Department of the Interior. These provisions do not apply to wastes from electricity generating plants or irradiated fuel reprocessing plants.

Appeals may be made against all decisions by the Federal Service of Public Health, the Office of Energy Economy and the Swiss National Accident Insurance Fund before the Federal Department of the Interior, the Federal Department of Transport, Communications and Energy, and the Federal Office of Social Insurance respectively. The general provisions of the Federal administrative courts apply in respect of the appeals procedure. Also, the penal sanctions provided under the 1959 Act on the peaceful uses of atomic energy and protection against radiation apply in respect of the Ordinance.

Finally, a series of appendices are attached to the Ordinance. They cover, inter alia, definitions, classification of radionuclides according to their radiotoxicity, permissible activity limits and related tables, as well as a model for panels indicating radiation areas.

• *United Kingdom*

ORGANISATION AND STRUCTURE

The Atomic Energy Authority (Special Constables) Act 1976

This Act, which came into force on 10th June 1976, extends the powers of the UKAEA's Special Constables (i.e. Police) so that they may be better able to safeguard fissile materials in nuclear installations and during transport.

Under Section 1 of the UKAEA's Special Constables are deemed to be Crown servants for the purposes of the Firearms Act 1968, putting them in the same position as the ordinary civil police and in particular enabling them, when acting as constables, to possess firearms without the need to obtain a Firearms Certificate (i.e. an authorisation to possess a firearm).

Section 2 extends the kind of property in relation to which the UKAEA's Special Constables may exercise their powers when they are outside the premises within which they were appointed to act. Their powers were confined to UKAEA and Crown property but they are now extended to the property of certain Companies which handle fissile materials (e.g. British Nuclear Fuels Limited and Urenco Limited) and also the property which, although not owned by such Companies, is in their custody or has been unlawfully removed from it.

Section 3 extends the geographical limits within which the UKAEA's Special Constables may exercise their powers, so that their powers may now be exercised wherever they may go in order to safeguard fissile materials or to pursue persons believed to have removed or attempted to remove such materials unlawfully.

Section 4 contains definitions and clarifies the effect on the UKAEA's Special Constables of the Metropolitan Police Act 1860. It also confines the extent of the Act to Great Britain (i.e. not including Northern Ireland)

• *United States*

NUCLEAR THIRD PARTY LIABILITY

Implementation of legislation amending the Price-Anderson Act

As already indicated in Nuclear Law Bulletin No. 17, Section 170(b) of the amended Price-Anderson Act provides for the phasing out of government indemnity and an increase in the limit of liability. This is to be achieved by an "industry retrospective rating plan" which provides for deferred (retrospective) premiums which are charged if a nuclear incident exceeds or appears likely to exceed the maximum amount of financial protection available under private third party liability insurance (at present $125 million). Section 170(b) authorises and directs the Nuclear Regulatory Commission (NRC) to implement this new legislation and in particular:

- to establish the retrospective premium at an amount between $2 million and $5 million per facility;
- to establish a maximum amount which the aggregate retrospective premiums charged for each facility within one calendar year may not exceed;
- to establish amounts less than the standard premium for individual facilities taking into account such factors as the facility's size, location and other factors pertaining to the hazard;
- to establish requirements necessary to assure that following a nuclear incident deferred premiums will be paid as called for;
- to provide reinsurance or otherwise guarantee the payment of retrospective premiums in the event that such premiums are not paid.

Section 170(f), as amended, authorises the NRC to reduce, in reasonable relation to increases in financial protection required above a level of $60 million, the annual indemnity fee of $30 per thermal megawatt capacity imposed on each reactor licensee.

After soliciting comments from interested persons, the NRC has published (Federal Register, Volume 41, No. 183 of 20th September 1976) proposed rules for the amendment of 10 Code of Federal Regulations, Part 140 (10 CFR 140) which are intended to implement legislation amending the Price-Anderson Act.

As regards the implementation of Section 170(b), the NRC proposes the following rules:

(a) The retrospective premium is set at $5 million, the maximum level permitted by Section 170(b) (10 CFR, paragraph 140.7). This proposal complies with the desire expressed by the Joint Committee on Atomic Energy of the United States Congress to phase out government indemnity as soon as is reasonably feasible. As pointed out in Nuclear Law Bulletin No. 14, such phasing out would depend on the rate at which large power reactors are licensed, the maximum amount of financial protection through private third party liability insurance and the amount of the retrospective premium. The NRC considered comments estimating that the amount of financial protection available from private sources will increase from the present $125 million $225 million in 1985 and that 174 large power reactors will be licensed to operate by then. In that event, a retrospective premium of $2 million would phase out government indemnity by 1985. The Commission decided, nevertheless, that the setting of the premium at a maximum of $5 million would best ensure the phasing out of government indemnity by 1985, even if such estimates should later prove to be inaccurate. On the other hand, if these forecasts turned out to be correct, government indemnity would be terminated in the early 1980s. In arriving at this decision, the NRC took into account the conclusions of a consultant that a $5 million retrospective premium will not present an undue financial burden on utilities regardless of their size.

(b) The Commission proposes to limit the aggregate amount of deferred premiums per facility to $10 million for any one calendar year (i.e. in case of more than one incident requiring an assessment of such premium). Although the probability of more than one incident of such magnitude in any one calendar year is believed to be quite remote, this limit is intended to ensure the availability of funds to satisfy claims arising from a nuclear incident in a given year, as well as from earlier incidents which may be raised up to 20 years after (delayed damages).

(c) The NRC does not propose to make use of the legislation authorised to establish amounts less than the standard retrospective premium for individual facilities. The NRC concluded in particular that reduced premiums reflecting the location and the size of a nuclear reactor would not increase protection provided to the public and would only result in a greater financial burden on licensees operating reactors with a larger capacity and sited closer to metropolitan areas The retrospective premium is meant not only to cover the reactor in question, but also all reactors regardless of their site or size

(d) A new paragraph 140.21 establishes several alternative methods by which licensees may guarantee their financial ability to pay deferred premiums.

(e) In order to provide reinsurance or otherwise guarantee the payment of retrospective premiums in the event that the resources of the nuclear liability insurance pools are not sufficient to absorb defaults in payment or other guarantees fail, the NRC proposes to modify present indemnity agreements. The new or amended indemnity agreements concluded by the NRC with its licensees would provide for the Commission's right

to pay those premiums on behalf of the licensee and to recover them from him. Furthermore, provisions would be included creating a lien in the amount paid by the NRC in favour of the US on the licensee's property. If the Commission determines, on the basis of financial statements submitted by the licensee, that the licensee is able to reimburse the Commission, he will be given notice to make such reimbursement within 120 days. If he fails to do so, the NRC will suspend his licence for 30 days and may terminate the licence in case of non-payment after this period (10 CFR, paragraphs 140.20, 140.92, 140.93).

Pursuant to Section 170(f), the NRC proposes a new five-tier schedule of indemnity fees to be paid by reactor licensees (10 CFR, paragraph 140.7). These annual fees range between $6 and $30 per megawatt of thermal capacity authorised in the licence. The higher the financial protection required (and consequently the lower the indemnity provided by NRC), the lesser the fee. The minimum fee is $100 per year for any nuclear reactor.

The NRC has considered further amendments to its rules on financial protection requirements and indemnity agreements which are not directly related to the recent amendments to the Price-Anderson Act.

(a) The question of whether commercial fuel reprocessing plants should be required to maintain the maximum level of liability insurance available from private sources was answered in the negative. The only commercial fuel reprocessing plant presently licensed to operate (but which is not yet operating) is provisionally required to have financial protection in the amount of $20 million. The NRC decided to maintain this status quo in view of the limited operating experience of reprocessing plants. Public protection will therefore continue to be provided through $20 million in financial protection and $500 million in indemnity for the one (non-operating) commercial reprocessing plant.

(b) On the other hand, the NRC intends to use its discretionary authority to require persons licensed to possess plutonium in the amount of 5 kg or more and persons licensed to process plutonium in the amount of 1 kg or more for use in plutonium processing and fuel fabrication plants, to maintain financial protection in the amount $125 million and to extend indemnity coverage to such licensees (10 CFR, paragraphs 140.13a and 140.107). However, the Commission has concluded that the situation of such licensees does not warrant their inclusion in the retrospective premium assessment plan at this time. The indemnity fee for such licensees is set at $5,000 per year (10 CFR, paragraph 140.7).

(c) Under the present Price-Anderson system, no separate insurance contracts or indemnity agreements are concluded in order to cover liability arising from the transport of nuclear materials Carriers are presently covered under the "omnibus" provisions of the Price-Anderson Act, i.e. their liability for incidents occurring during carriage to or from all existing indemnified facilities is covered under the respective indemnity agreements with the operators. The Commission does not intend to change this situation.

Although the retrospective premium and certain other proposed changes must be established by 31st December 1976, the NRC proposes that these changes be made effective at 1st August 1977, so as to afford the NRC, the insurance pools and the licensees a reasonable opportunity to implement these changes

CASE LAW AND ADMINISTRATIVE DECISIONS

ADMINISTRATIVE DECISIONS

• *Netherlands*

ORGANISATION AND STRUCTURE

Netherlands Energy Research Foundation

As from 1st August 1976, the name of Stichting Reactor Centrum Nederland (RCN) has been changed to Stichting Energieonderzoek Centrum Nederland (ECN), i.e. the Netherlands Energy Research Foundation.

This change of title, decided by the Board is related to the Government's resolution to broaden the aims of the Foundation (previously restricted to research on the release of nuclear energy) to those of a research institute concerned with the whole field of energy supply.

The Reactor Centrum Nederland was set up in 1955 as a Foundation with participation by the Government, electricity producing and distributing companies represented by the Research and Testing in Electrotechnical Materials Company (KEMA), industrial companies and the Foundation for Fundamental Research into Matter (FOM), which represent the universities and science.

The Reactor Centrum Nederland is a Signatory to the OECD Halden Reactor Agreement.

INTERNATIONAL ORGANISATIONS AND AGREEMENTS

INTERNATIONAL ORGANISATIONS

• *The OECD Nuclear Energy Agency*

PARTICIPATION BY THE UNITED STATES OF AMERICA IN NEA

The United States decided to participate in the OECD Nuclear Energy Agency as a full Member with effect from 1st October 1976, having been an associate country since the Agency's creation.

On 12th October 1976, the Council took note of the decision of the United States to take part in the Agency's work as a full member. To give effect to that decision, the Council decided that the NEA Statute would apply to the United States as from 1st October 1976 and that it would be amended to delete the two references to the previous status of the United States as an associate Member. Accordingly Article 12(b) of the Statute was deleted and Article 12(a) renumbered as Article 12, and Article 20(a) was amended to read "Participating countries shall be countries the Governments of which participate in the present Decision".

It should be recalled that the Agency was originally established as the "European Nuclear Energy Agency" by a Decision of the OEEC Council of 20th December 1957. This Decision was approved by a Decision of the OECD Council on 30th September 1961. This same Decision which was subsequently amended twice (in particular to change the name of the Agency to "OECD Nuclear Energy Agency") is generally referred to as the Statute of the Agency. Twenty-three out of twenty-four Member countries of OECD are now Members of NEA.

• *Euratom*

SUPPORT OF PROJECTS CONCERNING URANIUM PROSPECTING PROGRAMMES WITHIN THE TERRITORIES OF THE MEMBER STATES

On 23rd July 1976, the Commission of the European Communities adopted Regulation No. 2014/76 on the support of projects concerning uranium prospecting programmes within the territories of Member States. The purpose is to provide financial participation in the identification of new sources which could contribute in ensuring the Community's supply of uranium. Projects submitted for consideration and approval by the Commission must be presented by a Member State or by a national or legal person established in a Member State. The Regulation came into force following its publication in the Official Journal of the European Communities on 15th August 1976.

COUNCIL DIRECTIVE OF 1ST JUNE 1976 LAYING DOWN THE REVISED BASIC STANDARDS FOR THE HEALTH PROTECTION OF THE GENERAL PUBLIC AND WORKERS AGAINST THE DANGERS OF IONIZING RADIATION

This Directive (Official Journal of the European Communities of 12th July 1976), established by the Commission of the European Communities, revises the Euratom Radiation Protection Standards originally published on 2nd February 1959 and subsequently amended on 5th March 1962 and 27th October 1966.

It is recalled that, under the Euratom Treaty, the Commission is given extensive powers in the radiation protection field. The legal principles underlying these powers are clearly defined, as are the purposes, which are to provide Member States with a harmonised radiation protection policy by establishing uniform safety standards for the health protection of workers and the population. The Directive, which does not concern individual citizens or given installations, is addressed to Member States. National authorities must lay down within two years legislative, regulatory and administrative provisions in compliance with the standards and rules contained therein.

The basic standards embody a collection of rules and principles inspired by the recommendations of the International Commission on Radiological Protection (ICRP) and their scope extends to all peaceful uses of nuclear energy, including the production, processing, handling, storage, transport, disposal, etc., of the radioactive substances

The new Directive, although it does not alter the basic principles laid down in 1959, updates and strengthens the original standards, in the light of new scientific knowledge, of experience gained by Member States through practical application of the standards and of information obtained from studies conducted by the Commission under its programme of research in biology-health protection.

Thus, it introduces new methods which should result in improved medical surveillance of workers in nuclear installations and control of radioactivity. The maximum permissible dose limits for exposed workers and for the general public remain the same: 5 rem and 0.5 rem per year respectively. However, the previous distinction between occupationally exposed workers and those occasionally exposed is now eliminated; any worker likely to receive in the course of his work, a radiation dose

above 0.5 rem is considered as occupationally exposed and those unlikely to exceed that limit are not considered as such. To facilitate health monitoring of these workers, they are divided into two categories: category A includes those likely to receive a radiation dose higher than 3/10 of the maximum permissible limits while category B comprises workers unlikely to receive such a dose. The concept of an exposed worker is thus simplified and, as mentioned above, does away with the terms occupationally, occasionally, directly or indirectly engaged in work involving radiation.

Radiation protection of category A workers includes systematic individual dosimetric control and medical surveillance. The latter includes a pre-employment medical examination, general medical surveillance and periodic check-ups at least once a year to ensure that they are still physically fitted to their work. Supervision of category B workers is limited to collective dosimetry control and to the rules of industrial medicine. Also, for the first time, radiation dose limits are laid down for students and apprentices.

As regards protection of the population, the Directive, according to ICRP recommendations, introduces the concept of critical groups of the population as a basis for surveillance of the population. Critical groups mean groups including persons whose exposure is reasonably homogeneous and representative of the most exposed individuals of the population. This concept is particularly useful in view of the present development of nuclear energy and when forecasts on radiation doses to the population may be a limiting factor regarding this development.

Finally, the Directive contains other provisions on the duties of Member States concerning in particular:

- the organisation of inspection services to supervise examinations and monitoring;
- free dissemination of information on radiation doses to workers;
- training of specialists to be entrusted with surveillance of installations, workers and the population;
- methods of surveillance and action in case of incidents.

AGREEMENTS

• *Canada-Finland*

CO-OPERATION AGREEMENT

On 5th March 1976, Canada and Finland concluded an Agreement on the exchange of nuclear materials, equipment, installations and scientific information. This Agreement came into force on 15th August 1976. In Finland, the Agreement was confirmed by an Act published on 24th June 1976 (No. 643/76) and was followed by an Implementing Decree on 29th July 1976 (No. 644/76).

• *France*

NUCLEAR CO-OPERATION AGREEMENTS AND SAFEGUARDS

A co-operation Agreement between France and Iraq on peaceful uses of nuclear energy was signed in Baghdad on 18th November 1975. This Agreement which was published in the Official Gazette of the French Republic on 18th June 1976 (Decree No. 76-524 of 14th June 1976) provides for the development between both countries of industrial and scientific co-operation in the nuclear field; it includes an Annex giving the definition of the terms required for such implementation. It should be noted that each Party undertakes that materials, equipment and installations supplied in the context of the Agreement will not be used for military purposes and will be submitted to IAEA Safeguards. This obligation will continue to be valid even if this Agreement is terminated.

Furthermore, following the Agreement concluded on 17th March 1976 between France and Pakistan for the construction in the latter country of an irradiated fuel reprocessing plant and for the supply of nuclear materials, equipment and installations, an Agreement was signed on 18th March 1976 in Vienna between the IAEA, France and Pakistan on the application of IAEA Safeguards to the materials and installations transferred so as to guarantee that they will not be used for military purposes (published in the Official Gazette of the French Republic on 8th July 1976 - Decree No. 76-601 of 2nd July 1976). The provisions of this Agreement had been approved beforehand by the IAEA Board of Governors. As Pakistan is not a Party to the Non-Proliferation Treaty, the IAEA Safeguards will be exercised in accordance with the system known as INFCIRC/66/Rev. 2 (see Nuclear Law Bulletin No. 17 - IAEA).

• *France - USSR*

PREVENTION OF ACCIDENTAL OR UNAUTHORISED USE OF NUCLEAR WEAPONS

The Ministers of Foreign Affairs of France and of the USSR reached Agreement by an exchange of letters on 16th July 1976 on the prevention of accidental or unauthorised use of nuclear weapons. This Agreement, which came into force on the same date, provides in particular that both Parties undertake to promote technical improvements to avoid such an occurrence, and to inform each other immediately of any accidental occurrence or incident which might result in the explosion of one of their nuclear weapons, likely to be interpreted as giving rise to possibly damaging consequences for the other Party. The necessary explanations will be given via a direct line of communication between the Elysée and the Kremlin.

A similar Agreement was already concluded between the United States and the USSR on 22nd June 1973 (see Nuclear Law Bulletin No. 12).

• *United States - USSR*

TREATY ON UNDERGROUND NUCLEAR EXPLOSIONS FOR PEACEFUL PURPOSES

This Treaty was signed simultaneously in Washington and in Moscow on 28th May 1976. The Governments of the Signatory countries asked the Director General of IAEA to communicate it to all the Member States of the Agency (INFCIRC/240). Its purpose is to implement Article III of the Treaty between the United States and the USSR on the Limitation of Underground Nuclear Weapon Tests; this Article provides for the conclusion as soon as possible of an Agreement on peaceful underground nuclear explosions (see Nuclear Law Bulletin No. 14).

The present Treaty regulates all peaceful underground nuclear explosions as from 31st March 1976. The text of the Treaty is reproduced in the "Texts" Chapter of this issue of the Bulletin. The Treaty is supplemented by a Protocol concerning the procedure to be followed by the Contracting Parties when conducting peaceful nuclear explosions, but in view of its essentially technical nature, it is not reproduced in the Bulletin.

• *IEA*

RESEARCH AND DEVELOPMENT AGREEMENTS IN THE NUCLEAR FIELD

On 20th May 1976, two Implementing Agreements on nuclear research and development were signed within the framework of the International Energy Agency (IEA).

Under the terms of the Implementing Agreement on the Technical Exchange of Information in the Field of Reactor Safety Research and Development, the Governments or designated public organisations of thirteen IEA Member countries* will undertake the fullest possible exchange of information on national research and development programmes destined to further ensure the safety of nuclear power reactors for peaceful purposes. The implementation of the agreement will both formalise and supplement similar exchanges which have been proceeding within the framework of the Committee on the Safety of Nuclear Installations of the OECD Nuclear Energy Agency. This expansion of co-operation will be reflected particularly in the NEA's Nuclear Safety Research Index and the accompanying Reference Library.

According to the Implementing Agreement for a Co-operative Research and Development Program Leading to Construction of an Intense Neutron Source, agencies and public organisations of five IEA countries** will not only exchange information, but will also second scientists and engineers to work at the Los Alamos Scientific Laboratory over the next four years, to conduct joint experimental and theoretical studies to further the design and construction of the intense neutron source. The construction of the Intense Neutron Source (INS) is intended to simulate in part the conditions which materials would be expected to undergo in a fusion power reactor and will thus make a considerable contribution to the engineering development of this almost limitless source of energy. Upon completion of the design work, the INS will then be constructed as part of the ongoing programme of the United States Energy Research and Development Administration (ERDA). Thereafter, it is envisaged that a proportion of its operating time will be devoted to an international collaborative experimental programme.

The International Energy Agency was set up, as an autonomous body within the framework of OECD, by the Agreement on an International Energy Program which was signed in Paris on 18th November 1974 by sixteen OECD Member countries.***

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* Austria, Belgium, Canada, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom and the United States.

** Canada, Japan, Sweden, Switzerland and the United States.

*** Austria, Belgium, Canada, Denmark, Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland Turkey, United Kingdom and the United States. Greece acceded to the IEA with effect from 25th September 1976. Norway participates under the terms of an Agreement dated 7th February 1975. The Commission of the European Communities takes part also in the work of the Agency.

The International Energy Program encompasses: (1) an allocation scheme in times of emergency, including emergency reserve and demand restraint obligations; (2) an extensive information system on the international oil market, (3) consultation with oil companies; (4) long-term co-operation on energy; and (5) relations with producer countries and with other consumer countries.

As regards long-term co-operation on energy, Article 42 in Chapter VII of the Agreement provides, inter alia, for energy research and development, including as a matter of priority co-operative programmes on radioactive waste management, controlled thermal nuclear fusion and nuclear safety. On 28th July 1975, the IEA Governing Board adopted the Guiding Principles for Co-operation in the Field of Energy Research and Development. These Principles call upon countries participating in the IEA, in fulfilment of Chapter VII of the IEA Agreement, to "encourage and implement exchanges of information among all Participating Countries regarding national programmes, public and private, on energy R and D and energy-related technologies" and "to identify and promote programmes and projects in which two or more Participating Countries can join for their mutual benefit or for the general benefit". In order to further certain programmes and projects, the participants (i.e. governments, designated national agencies, public organisations, private corporations or other entities) may conclude Implementing Agreements, the basic features of which are outlined in the Guiding Principles.

The IEA Governing Board has further adopted General Guidelines Concerning Information and Intellectual Property in Implementing Agreements, which form an Annex to the Guiding Principles.

Both the Guiding Principles on Research and Development and the Guidelines on Intellectual Property form part of the Long-Term Co-operation Programme adopted by the IEA Governing Board on 30th January 1976.

• *IMCO*

CONVENTION ON THE PREVENTION OF MARINE POLLUTION FROM THE DUMPING OF WASTES AND OTHER MATTER

The first Consultative Meeting of the Contracting Parties to the London Convention was held at IMCO Headquarters in September 1976 (see Nuclear Law Bulletin No. 17 - Agreements).

The Agenda for the meeting included, in particular, consideration of the IAEA Report: "the Definition required by Annex I, paragraph 6 to the Convention and the Recommendations required by Annex II, paragraph D". The Consultative meeting took note of this report and of the IAEA's intentions to continue its efforts to improve its recommendations in this field, in the light of comments made during the meeting. The Consultative Meeting also asked the IMCO Secretariat, in co-operation with IAEA and OECD, to study, for its second Meeting, the question of notification and prior consultation procedures concerning the sea dumping of radioactive wastes.

The present state of ratifications and accessions to the Convention is the following:

Afghanistan
Byelorussian SSR
Canada
Cuba
Denmark
Dominican Republic
German Democratic Republic
Guatemala
Haiti
Hungary
Iceland
Jordan
Kenya
Mexico
New Zealand
Nigeria
Norway
Panama
Philippines
Spain
Sweden
Tunisia
Ukranian SSR
United Arab Emirates
United Kingdom
United States of America
Union of Soviet Socialist Republics
Yugoslavia
Zaire

• *International Conventions*

CONVENTION FOR THE PROTECTION OF THE MEDITERRANEAN SEA AGAINST POLLUTION

This Convention was opened for signature in Barcelona on 16th February 1976, then in Madrid from 17th February 1976 to 16th February 1977 to all the States having participated in the Conference of the Coastal States of the Mediterranean region for the Protection of the Mediterranean Sea. The Convention is also open for signature to the European Economic Community and any similar regional economic grouping, one of whose members at least is a coastal State of the Mediterranean area. The Convention is supplemented by two Protocols: the first concerns the prevention of pollution in the Mediterranean Sea by dumping from ships and aircraft, and the second concerns co-operation in combating pollution of the Mediterranean Sea by oil and other harmful substances in case of emergency.

The first Protocol provides for the dumping in the Mediterranean sea area of wastes and other matter listed in its Annex I is prohibited (Article 4) This Annex refers to high, medium, and low-level radioactive wastes and other matter as defined by the International Atomic Energy Agency

Furthermore, the dumping in the Mediterranean Sea area of wastes and other matter listed in Annex II to the same Protocol is subject in each case to the prior delivery of a specific permit by the competent national authorities (Article 5). Annex II refers to radioactive wastes or matter which will not be included in Annex I. As regards the delivery of dumping permits for this matter, the Contracting Parties will have to take account of the recommendations of the competent international body in this field, which is the International Atomic Energy Agency.

• *United States-USSR*

TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON UNDERGROUND NUCLEAR EXPLOSIONS FOR PEACEFUL PURPOSES

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Proceeding from a desire to implement Article III of the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests, which calls for the earliest possible conclusion of an agreement on underground nuclear explosions for peaceful purposes,

Reaffirming their adherence to the objectives and principles of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, the Treaty on Non-Proliferation of Nuclear Weapons, and the Treaty on the Limitation of Underground Nuclear Weapon Tests, and their determination to observe strictly the provisions of these international agreements,

Desiring to assure that underground nuclear explosions for peaceful purposes shall not be used for purposes related to nuclear weapons,

Desiring that utilization of nuclear energy be directed only toward peaceful purposes,

Desiring to develop appropriately cooperation in the field of underground nuclear explosions for peaceful purposes,

Have agreed as follows ·

Article I

1. The Parties enter into this Treaty to satisfy the obligations in Article III of the Treaty on the Limitation of Underground Nuclear Weapon Tests, and assume additional obligations in accordance with the provisions of this Treaty.

2. This Treaty shall govern all underground nuclear explosions for peaceful purposes conducted by the Parties after March 31, 1976.

Article II

For the purposes of this Treaty :

(a) "explosion" means any individual or group underground nuclear explosion for peaceful purposes ;

(b) "explosive" means any device, mechanism or system for producing an individual explosion ;

(c) "group explosion" means two or more individual explosions for which the time interval between successive individual explosions does not exceed five seconds and for which the emplacement points of all explosives can be interconnected by straight line segments, each of which joins two emplacement points and each of which does not exceed 40 kilometers.

Article III

1. Each Party, subject to the obligations assumed under this Treaty and other international agreements, reserves the right to

(a) carry out explosions at any place under its jurisdiction or control outside the geographical boundaries of test sites specified under the provisions of the Treaty on the Limitation of Underground Nuclear Weapon Tests ; and

(b) carry out, participate or assist in carrying out explosions in the territory of another State at the request of such other State.

2. Each Party undertakes to prohibit, to prevent and not to carry out at any place under its jurisdiction or control, and further undertakes not to carry out, participate or assist in carrying out anywhere

(a) any individual explosion having a yield exceeding 150 kilotons ;

(b) any group explosion :

(1) having an aggregate yield exceeding 150 kilotons except in ways that will permit identification of each individual explosion and determination of the yield of each individual explosion in the group in accordance with the provisions of Article IV of and the Protocol to this Treaty ;

(2) having an aggregate yield exceeding one and one-half megatons ;

(c) any explosion which does not carry out a peaceful application ;

(d) any explosion except in compliance with the provisions of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, the Treaty on the Non-Proliferation of Nuclear Weapons, and other international agreements entered into by that Party.

3. The question of carrying out any individual explosion having a yield exceeding the yield specified in paragraph 2(a) of this Article will be considered by the Parties at an appropriate time to be agreed.

Article IV

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall

(a) use national technical means of verification at its disposal in a manner consistent with generally recognized principles of international law , and

(b) provide to the other Party information and access to sites of explosions and furnish assistance in accordance with the provisions set forth in the Protocol to this Treaty.

2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1(a) of this Article, or with the implementation of the provisions of paragraph 1(b) of this Article.

Article V

1. To promote the objectives and implementation of the provisions of this Treaty, the Parties shall establish promptly a Joint Consultative Commission within the framework of which they will

(a) consult with each other, make inquiries and furnish information in response to such inquiries, to assure confidence in compliance with the obligations assumed ;

(b) consider questions concerning compliance with the obligations assumed and related situations which may be considered ambiguous ;

(c) consider questions involving unintended interference with the means for assuring compliance with the provisions of this Treaty ;

(d) consider changes in technology or other new circumstances which have a bearing on the provisions of this Treaty ; and

(e) consider possible amendments to provisions governing underground nuclear explosions for peaceful purposes.

2. The Parties through consultation shall establish, and may amend as appropriate, Regulations for the Joint Consultative Commission governing procedures, composition and other relevant matters.

Article VI

1. The Parties will develop cooperation on the basis of mutual benefit, equality, and reciprocity in various areas related to carrying out underground nuclear explosions for peaceful purposes.

2. The Joint Consultative Commission will facilitate this cooperation by considering specific areas and forms of cooperation which shall be determined by agreement between the Parties in accordance with their constitutional procedures.

3. The Parties will appropriately inform the International Atomic Energy Agency of results of their cooperation in the field of underground nuclear explosions for peaceful purposes.

Article VII

1. Each Party shall continue to promote the development of the international agreement or agreements and procedures provided for in Article V of the Treaty on the Non-Proliferation of Nuclear Weapons, and shall provide appropriate assistance to the International Atomic Energy Agency in this regard.

2. Each Party undertakes not to carry out, participate or assist in the carrying out of any explosion in the territory of another State unless that State agrees to the implementation in its territory of the international observation and procedures contemplated by Article V of the Treaty on the Non-Proliferation of Nuclear Weapons and the provisions of Article IV of and the Protocol to this Treaty, including the provision by that State of the assistance necessary for such implementation and of the privileges and immunities specified in the Protocol.

Article VIII

1. This Treaty shall remain in force for a period of five years, and it shall be extended for successive five-year periods unless either Party notifies the other of its termination no later than six months prior to its expiration. Before the expiration of this period the Parties may, as necessary, hold consultations to consider the situation relevant to the substance of this Treaty. However, under no circumstances shall either Party be entitled to terminate this Treaty while the Treaty on the Limitation of Underground Nuclear Weapon Tests remains in force.

2. Termination of the Treaty on the Limitation of Underground Nuclear Weapon Tests shall entitle either Party to withdraw from this Treaty at any time.

3. Each Party may propose amendments to this Treaty. Amendments shall enter into force on the day of the exchange of instruments of ratification of such amendments.

Article IX

1. This Treaty including the Protocol which forms an integral part hereof, shall be subject to ratification in accordance with the constitutional procedures of each Party. This Treaty shall enter into force on the day of the exchange of instruments of ratification which exchange shall take place simultaneously with the exchange of instruments of ratification of the Treaty on the Limitation of Underground Nuclear Weapon Tests.

2. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

Done at Washington and Moscow, on May 28, 1976, in duplicate, in the English and Russian languages, both texts being equally authentic.

STUDIES AND ARTICLES

ARTICLES

INTERNATIONAL SAFEGUARDS*

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I. Historical background

The term safeguards, as used herein, refers to a system of international measures designed to detect diversion of nuclear material to unauthorised uses. Although safeguards are closely connected with the physical protection of nuclear material, the two concepts are dealt with separately.

For as long as there has been international exchange of information on atomic technology and one State has provided another with nuclear material and equipment, there have been demands for some kind of assurance that such supplies would be used as mutually agreed upon. The most important and obvious aspect of this assurance is contained in the concept of international nuclear safeguards.

The concept had been under discussion almost from the moment it became obvious that the secrets of nuclear technology and the materials required could not remain the monopoly of a single nation. Indeed, as early as November 1945, the term "safeguards" was for the first time used in the "Three Nation Agreed Declaration" on international atomic energy policy by the President of the United States and the Prime Ministers of Canada and the United Kingdom. This reflected their consent to release basic scientific information for peaceful purposes; specialised information regarding practical applications of nuclear energy, however, would not be imparted before it was possible to devise effective, reciprocal and enforceable safeguards acceptable to all States. The resolution of

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* This article is based on the text of a lecture presented at the IAEA Interregional Training Course organised respectively in Karlsruhe and Argonne (September - December 1976). The ideas expressed and the facts given in this article are under the sole responsibility of the authors.

the United Nations General Assembly, which in 1945 established the United Nations Atomic Energy Commission (UNAEC), incorporated part of that Declaration in calling, inter alia, "for effective safeguards by way of inspection and other means .....". Thus, from the beginning of the atomic era, safeguards designed to ensure that nuclear activities should not further military purposes were deemed to be an essential component of international co-operation in this field.

The first full-fledged proposal for a safeguards system was set forth in the so-called Acheson/Lilienthal Report, prepared jointly by a committee headed by the then Under-Secretary of State of the USA, Dean Acheson, and a board of consultants headed by the Chairman of the Tennessee Valley Authority, David Lilienthal. The report was intended to serve as basis for the US participation in the discussions on the UNAEC; among its main conclusions, it stated that safeguards could be effective only if combined with international control. The report provided the basis for a proposal presented to the United Nations by the US representative, Mr Bernard Baruch, and which was later known as the "Baruch Plan". It foresaw the creation of an international atomic development authority, under the aegis of the United Nations, which would be vested with managerial control or ownership of all potentially dangerous atomic energy activities and would, in effect, have an international monopoly with respect to nuclear development on a world-wide basis.

Both the Acheson/Lilienthal Report and the Baruch Plan use the concept of "safeguards" as being more than mere verification ("inspection and other means"); to be effective, they would also require adequate physical control. Both documents, as well as the above-mentioned UN resolution, reflected the conviction that safeguards are needed to prevent the proliferation of the military use of atomic energy. Although these documents contain an element of disarmament - the UN resolution establishing the UNAEC speaks of the "elimination from national armaments of atomic weapons" - such international safeguards were obviously not seen primarily as a disarmament measure but were, in the first place, intended as an assurance against nuclear armament by those States which did not yet have the capability of manufacturing atomic weapons. Thus, long before the concept of "proliferation" was formulated, non-proliferation was contemplated as a corollary of the inevitable, if obviously not in some ways desirable, spread of nuclear know-how and capability. In other words, the primary objective was to strive for peaceful development without military proliferation.

The Baruch Plan and a number of counterproposals were the subject of long and heated debates, first in the UNAEC and, subsequently, in the Security Council and the General Assembly of the United Nations. In 1949 the USSR detonated its first nuclear device and in 1952 the United Kingdom did the same. Meanwhile, the USA had amassed a considerable stockpile of nuclear material for military purposes. Obviously, the ambitious scheme of establishing an international authority that would control all nuclear materials was no longer viable. Thus died the first attempt at non-proliferation through international ownership and control. In further attempts the disarmament aspect was fading but the non-proliferation concept was kept alive, particularly in the US thinking. It was thus given new impetus in the proposals made by President Eisenhower to the United Nations General Assembly in December 1953. These proposals, known as the "Atoms for Peace Plan", were based on the idea that the peaceful uses of atomic energy could be furthered by the transfer of nuclear material from military to civilian uses. An international atomic energy agency would be created, through which all international co-operation in nuclear matters would be channelled. This agency would have at its disposal stocks of nuclear material to be allocated for peaceful undertakings. Such an international

"pool" of nuclear material would absorb quantities hitherto earmarked for military purposes and would thus constitute a step towards nuclear weapons limitation. The plan did not mention international safeguards, but the first sketches for the Statute of the proposed international agency foreseen in it already contained the agency's right to carry out safeguards and to verify the material allocated to any State. Thus, the non-proliferation element was brought back into the picture, although nowhere in as near a sweeping manner as envisaged in the Baruch Plan. Whereas this plan was to have created a world-wide atomic monopoly, at the time of its launching it was evident that a number of States other than those that had detonated explosive devices had already ventured into atomic research and development It was thus to be expected that even if the International Atomic Energy Agency were to become the main supplier of nuclear materials and the main promoter of atomic development, and were to extend accordingly its safeguards over a large proportion of the world's peaceful nuclear activities, some of such activities might already have escaped the international safeguards network, and even then such safeguards would lack the elements of control and monopolistic ownership visualised in the Baruch Plan.

II. The IAEA and its safeguards functions

After a series of negotiations that lasted almost two years, the Statute of the International Atomic Energy Agency (IAEA) was opened for signature in October 1956 and entered into force on 29th July 1957. Its safeguards provisions had been the subject of the most sensitive part of the negotiations and were the result of compromises reached after long and arduous deliberations. The basic provision is to be found in Article II, which requires the Agency to "ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose". Being a member of the Agency does not entail automatic application of safeguards on the territory of the Member State concerned. Article III.A 5 specifically authorises the Agency to establish and administer safeguards in three categories of cases:

(a) In connection with assistance provided by it or at its request or under its supervision or control;

(b) At the request of the parties to any bilateral or multilateral arrangement; and

(c) At the request of a State, to any nuclear activity of that State.

With respect to projects set up with the Agency's assistance (the so-called "Agency projects"), Article XI.F.4 provides that any such projects for research on, or development or practical application of, atomic energy must include undertakings by the State involved, laid down in a legal instrument, that the assistance provided shall not be used in such a way as to further any military purpose and that the project shall be subject to safeguards.

In the area of bilateral arrangements between States in the nuclear field, most co-operation agreements initially provided for safeguards to be administered by the supplier State itself. In the early 1960s the parties to such bilateral agreements began to turn to the Agency for the conclusion of agreements by which the application of safeguards was transferred to the Agency. Today, most of the nuclear co-operation agreements between States (for instance, in connection with the sale of nuclear facilities by one State to another) provide for immediate submission to

to Agency safeguards. The legal instrument concluded between the Agency and the States concerned is a trilateral agreement, usually referred to as a "safeguards transfer agreement".

A State may request the Agency to apply safeguards to any of that State's activities in the field of atomic energy or to all of its nuclear activities. In this case, it will have to conclude a unilateral submission safeguards agreement with the Agency.

There are two multilateral treaties which require that the parties thereto accept Agency safeguards unilaterally; the Treaty for the Prohibition of Nuclear Weapons in Latin America of 1967 (the "Tlatelolco Treaty") which provides for the application of safeguards to all nuclear activities of the States concerned, and the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which entered into force on 5th March 1970 and under which each non-nuclear-weapon State undertakes to accept Agency safeguards on all its peaceful nuclear activities

Though the Statute enables the Agency to accept safeguards responsibilities in various cases, it can only do so in accordance with legal arrangements entered into with the State or States concerned. The Statute merely provides the basis for establishing the Agency's safeguards, it was not meant to be more than a framework for further development. Thus the rules to be applied had to be specified in the agreements concluded between the States concerned and the Agency. However, in order to avoid drawing up specific safeguards procedures for each case, it was necessary to work out a set of procedures for uniform application in connection with all safeguards agreements.

The first "Draft Regulations for the Application of Safeguards" were considered by the Board of Governors of the Agency in 1959. They formed the basis for the discussions of a special working group whose efforts, early in 1961, resulted in the Agency's first safeguards document, "The Agency's Safeguards System (1961)". This document only covered reactors with less than 100 megawatts thermal output, i.e. research and prototype reactors. Its provisions were incorporated in a number of agreements but it was soon realised that their scope would have to be extended to reactors of over 100 MW(th). This extension was adopted in 1964 and, at the same time, the Board appointed a new working group to review the safeguards system as had already been envisaged when the first system was drawn up.

At the time the initial safeguards system was being developed, the subject of safeguards was highly controversial and the discussions on their elaboration often tense. Over the years, however, the attitudes of a number of Member States which had not previously been in favour of the Agency's safeguards activities had changed, and the first review of the system focused on the establishment of technical procedures necessary to obtain effective safeguards. In January 1965, as a result of a total of 32 meetings, the working group's proposals were submitted to the Board. After consideration by the IAEA General Conference at its IXth regular session, the revised safeguards system was approved by the Board of Governors in September 1965.

Following its adoption, the revised safeguards system was incorporated into the safeguards agreements subsequently concluded between the Agency and Member States. Most of such agreements concluded earlier, whenever they came up for extension, were also amended to take account of the revised system. The system was extended in 1966 with additional provisions for reprocessing plants and in 1968 with further additional provisions for safeguarding nuclear material in conversion and fabrication plants. In

1967 the Board of Governors also considered the possibility of extending the safeguards system to isotope separation (enrichment) facilities but this extension has not so far been undertaken.

The Agency's Safeguards System of 1965, as provisionally extended in 1966 and 1968* (or the "INFCIRC/66/Rev.2 System", as it has become known), still forms the basis for the greater portion of the Agency's safeguards activities, laid down in (reactor) project agreements, trilateral (transfer) agreements and unilateral submission agreements.

III. The NPT and safeguards connected therewith

The Treaty on the Non-Proliferation of Nuclear Weapons was opened for signature on 1st July 1968. Article I of the Treaty bans the transfer to any recipient whatsoever of nuclear weapons or other explosive devices, assistance to non-nuclear-weapon States to manufacture, acquire or control such weapons or devices is also prohibited. Article II forbids non-nuclear-weapon States party to the Treaty to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices. Pursuant to Article III, each non-nuclear-weapon State undertakes to accept Agency safeguards on all its peaceful nuclear activities. Furthermore, all parties to the Treaty undertake not to provide any non-nuclear-weapon State with source or special fissionable material or equipment designed for use at any stage in the nuclear fuel cycle for peaceful purposes unless IAEA safeguards are applied to the items in question.

It may be recalled that under NPT nuclear-weapon States are those States having performed a nuclear explosion before 1st January 1967, namely China, France, the Union of Soviet Socialist Republics, the United Kingdom and the United States of America.

Immediately after the opening for signature of NPT, the Director General of the IAEA, in preparation for the Agency's role under the Treaty, convened a group of consultants to advise him on the manner in which the Agency should apply safeguards in relation to a country's entire range of peaceful uses of nuclear energy, with a view to ensuring that such safeguards would be effective, economical and widely acceptable Experts from Canada, Denmark, Hungary, the USSR, the UK and the USA met for various periods between October 1968 and August 1969. Several expert panels were also called to advise on specific aspects of the Agency's future work, notably on the information required for applying safeguards and on systems analysis of the nuclear fuel cycle.

The NPT entered into force on 5th March 1970 and, on 11th March the Director General advised Member States of the preparatory work done as well as that under way in the Secretariat bearing on the manner in which the Agency could fulfill its responsibilities under the Treaty. In April 1970 the Board of Governors, on the basis of a draft resolution submitted by Italy, the United Kingdom and the United States, established a committee, on which any Member State of the Agency could be represented, to advise it as a matter of urgency on the Agency's safeguards responsibilities in relation to NPT and, in particular, on the content of the agreements which non-nuclear-weapon States party to NPT are required to conclude with the Agency under Article III thereof. All Member States of the Agency were also invited to communicate their views on the implications of NPT for the Agency's activities in relation to safeguards, and the Director General was asked to circulate these views together with his own views. The Safeguards Committee, with the present Secretary General of the United

* A quick reference to the development of the Agency's Safeguards System from its inception is given in Annex I.

Nations, Dr Kurt Waldheim, as its chairman, first convened on 12th June 1970 and completed its work on 10th March 1971, after 82 meetings. Delegations from 47 Member States participated in the Committee's work*. Its report consisted of recommendations for the contents of safeguards agreements, including a first part relating to the basic legal, financial and administrative obligations of the State concerned and the Agency, and a second part setting out in detail the technical safeguards procedures to be followed In fact, the Committee's report provided a complete safeguards system for the application of safeguards by the Agency within the purview of NPT. On 20th April 1971 the Board of Governors authorised the Director General to use this material (reproduced in document INFCIRC/153 and often called the "Blue Book") as the basis for negotiating agreements required by Article III of NPT. It has ever since formed the substance of every safeguards agreement concluded pursuant to NPT.

Some figures may illustrate the relative importance of international safeguards applied within, as compared with those arising from outside, the scope of NPT. At mid-year 1976 the situation with respect to NPT was as follows

Non-nuclear-weapon States Party to NPT	97
Non-nuclear-weapon States signatories but not party to NPT	14
Non-nuclear-weapon States that had concluded the required safeguards agreements	56
NPT safeguards agreements in force	44

Of the 44 NPT safeguards agreements in force, 23 were with States having significant nuclear activities. In addition, the safeguards agreement with the European Atomic Energy Community (EURATOM) and its non-nuclear-weapon States party to NPT (Belgium, Denmark, the Federal Republic of Germany, Ireland, Italy, Luxembourg and the Netherlands) was signed in April 1973 and that with Japan approved by the IAEA Board of Governors in February 1975.

At the end of 1975, 40 safeguards agreements outside NPT were in force in 20 States, providing for the application of safeguards pursuant to the Agency's Safeguards System and consisting of 11 project agreements, 21 safeguards transfer agreements and 8 unilateral submission agreements. Whereas the safeguards applied within the scope of NPT covered about 120 nuclear facilities and other accounting areas, the non-NPT safeguards were being applied to over 200 such installations. Of the 515 inspections made during 1975 in 39 States, only 216 had been made in connection with NPT. As soon as safeguards operations start in the highly industrialised Member States of EURATOM and in Japan, the proportion between NPT and non-NPT safeguards will change in favour of the former. Nonetheless, it may reasonably be expected that a high proportion of the IAEA safeguards activities will continue to be carried out under agreements concluded outside NPT, i.e. pursuant to the Agency's Safeguards System.

Among the chief distinctions between the Agency's Safeguards System and the NPT system (INFCIRC/153) one might mention the following:

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* A list of the States represented at the Safeguards Committee 1970 is provided in Annex II

1. (a) NPT safeguards automatically cover all peaceful nuclear activities of the States party to the Treaty.

   (b) The Agency's Safeguards System is applied pursuant to project agreements, trilateral agreements and unilateral submission agreements. Such agreements specify the items to be covered by safeguards such as specific facilities, certain supplies of nuclear material, etc.

2. (a) The NPT prohibits the use of nuclear energy to manufacture, acquire or control nuclear weapons or other nuclear explosive devices. There is, however, no prohibition of, and hence no safeguards applied to, non-explosive military applications such as nuclear propulsion of submarines or warships.

   (b) Under the Agency's Safeguards System, States undertake that none of the items covered by specific agreements should be used for the manufacture of any nuclear weapon or to further any other military purpose or for the manufacture of any other nuclear explosive device.

3. (a) The NPT system provides a precise technical objective, namely the timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons or other nuclear explosive devices in non-nuclear-weapon States party to the Treaty.

   (b) The Agency's Safeguards System only calls for compliance with Article II of the IAEA Statute, according to which assistance provided by or through the Agency shall not be used to further any military purpose.

4. (a) The NPT system is designed to take advantage of the fact that all nuclear material in all peaceful activities is under safeguards in a State, so that there are no unsafeguarded areas in the national peaceful nuclear programme. As a result, the main inspection effort may be concentrated where it is most needed and can be most effective.

   (b) The Agency's Safeguards System is primarily facility oriented. It permits, and implies the desirability of, a considerable higher inspection effort to be applied at each individual facility.

5. (a) Under NPT safeguards agreements the State must establish a system of accounting for and control of the nuclear material subject to safeguards. The IAEA verifies the findings of the national system, and the scope of its activities will depend in part on the quality of that system.

   (b) Under the Agency's Safeguards System there is no such provision - although the State is required to maintain records with respect to facilities where safeguards are applied, and to submit reports in regard to such facilities and to safeguarded nuclear material outside facilities.

IV. The NPT Review Conference of 1975

The NPT provides that five years after its entry into force a conference of Parties to the Treaty should be held to review the operation of the Treaty "with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realised" (Article VIII.3).

The Review Conference was held in Geneva in May 1975. It expressed strong support for effective IAEA safeguards and paid special attention to export policies, standard and universal application of the Agency's safeguards, improvement of methods and techniques and safeguards instruments, and the physical protection of nuclear material against forcible seizure.

Of particular interest to the Agency's safeguards activities were the discussions on the implementation of Article III of NPT. The discussions showed a striking consensus on the need for and the usefulness of safeguards, and the fact that the implementation of safeguards by the Agency respects the sovereign rights of States and does not hamper economic, scientific and technological developments. The Conference stressed the importance of establishing national systems of accounting for and control of nuclear material.

In relation to a recommendation by the Conference concerning standard application of the Agency's safeguards, it may be said that every attempt is being made by the Agency to ensure such standardisation by the use of model subsidiary arrangements and standard technical approaches. However, safeguards agreements concluded pursuant to the Agency's Safeguards System, i.e. with States not party to NPT, tend to differ considerably, depending on the requirements of the States concerned, for instance in regard to the items to which safeguards are to be applied.

The Conference further recommended that safeguards agreements should be of adequate duration and, among other things, that they should contain appropriate provisions for the continuance of the application of safeguards on re-export.

In an attempt to introduce a greater measure of standardisation with respect to the duration and termination of safeguards agreements to be concluded under the Agency's Safeguard System, the Board of Governors in February 1974 decided that the duration of such agreements should be related to the period of actual use of the items covered by safeguards under the agreement, and that the provisions for terminating the agreement should be formulated in such a way that the rights and obligations of the parties continue to apply in connection with supplied nuclear material and with special fissionable material produced, processed or used in connection with supplied nuclear material, equipment, facilities or non-nuclear material, until such time as the Agency has terminated the application of safeguards thereto. This concept has been incorporated in all safeguards agreements entered into subsequent to the Board's decision.

In 1974-1975 a number of States notified the Director General of the IAEA, inter alia, that when making exports of source or special fissionable material and of certain categories of equipment and material in the nuclear field to non-nuclear-weapon States not party to NPT they would require, as a prerequisite, that these items would not be re-exported to a non-nuclear-weapon State not party to NPT unless arrangements for Agency safeguards were made by the State receiving such re-exports. In this connection, it is to be noted that the export of nuclear materials covered by safeguards pursuant to the Agency's Safeguards System is subject to the condition that no safeguarded nuclear material is to be transferred outside

the jurisdiction of the State in which it is being safeguarded unless arrangements have been made by the Agency to safeguard the material in the State into which it is proposed to be transferred. Safeguards agreements concluded pursuant to that System also provide that the same condition applies to transfers of equipment, facilities or other items subject to safeguards under those agreements. These concepts have been included in recent agreements.

In accordance with their commitments under Article III.2 of NPT, a group of States originally participating in the work of a committee called the "Zanger Committee" (after its chairman) and now known as the "209 Group" (after Agency document INFCIRC/209 in which the statements by these countries and others supporting their policy regarding the export of nuclear material and certain categories of equipment and other material have been reproduced) formally undertook not to effectuate exports to non-nuclear-weapon States not party to NPT unless satisfactory assurances had been given that the exported items will not be re-exported to another non-nuclear-weapon State not party to NPT without acceptance of Agency safeguards by the State receiving such re-export. Equipment or non-nuclear material especially designed or prepared for the processing, use or production of special fissionable material as specified in a "trigger list" would likewise be supplied only if the material used in or by means of such equipment or non-nuclear material is to be under IAEA safeguards*

The Conference launched an appeal that common export requirements relating to safeguards be strengthened further, in particular by the extension of the application of safeguards to all peaceful nuclear activities in the importing States not party to NPT.

In this connection, a novel addition to the network of measures aimed at tightening safeguards was proposed in a draft resolution submitted by Finland at the Conference: States party to NPT would undertake to consider importing nuclear material and equipment only from other States party to NPT or which have otherwise shown that they acted in their supply policy as if they were party thereto. It was, however, recognised that such an approach might be difficult to adopt universally in view of the legal and other difficulties involved in the implementation of the proposal After much negotiation it was not incorporated in the Final Declaration of the Conference but it is mentioned here as an illustration of the attempts made to strengthen the international safeguards regime - attempts which may be held as stemming from a generally accepted view that this regime is beneficial to the world community and needs universal acceptance.

V. Nuclear export and safeguards

A basic conflict is apparent in international transactions in the field of nuclear energy: that is the conflict between commercial interests and the increasing wish that the supply of nuclear equipment and material and the transfer of technology should not lead to the proliferation of military nuclear capability. Obviously, industrial States have a commercial interest in the export of their nuclear products but, at the same time, they want to make sure that such export would not pave the way for potential nuclear threats. No country would easily accept to put itself in a disadvantageous position towards foreign competitors by restraining its exports

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* Communications to this effect have been so far received by the IAEA from the following 18 States: Australia, Austria, Canada, Czechoslovakia, Denmark, Finland, German Democratic Republic, Federal Republic of Germany, Hungary, Ireland, Luxembourg, Netherlands, Norway, Poland, Sweden, USSR, UK and USA.

unilaterally or setting such stringent conditions as might prompt its potential customers to seek suppliers elsewhere. Officials of the main nuclear supplier countries (Canada, France, Federal Republic of Germany, USSR, UK and USA) have therefore been meeting informally for some time in London to discuss a common approach to export policy that would reduce the risk of nuclear proliferation without jeopardising the export position of any of them. Since the initial meetings in 1975 the group has been expanded to include eight other countries: Belgium, Czechoslovakia, German Democratic Republic, Italy, Japan, Netherlands, Poland and Sweden.

As reported in the press, the group has in principle agreed to require that nuclear material and equipment they would export should be submitted to IAEA safeguards against military and any other nuclear explosive purpose, and that supplied items including technological information regarding a series of enumerated processes should not be re-exported without being subject to safeguards. There seems to be also an understanding that any facility deriving, within a specified period, from the transfer of technological information should be submitted to safeguards as well. Recipient States would be required to protect their nuclear facilities and material from sabotage and terrorism in the light of the IAEA recommendations for physical protection*. Furthermore, a list of sensitive export items appears to have been drawn up which must in any case be made subject to IAEA safeguards.

These endeavours have already had a bearing on the Agency's safeguards work and some of the approaches outlined above are reflected in recent safeguards agreements, such as the one concluded between the IAEA, Brazil and the Federal Republic of Germany on 26th February 1976**.

There is a concern about the spread, even under IAEA safeguards, of reprocessing and enrichment capacity and about stockpiling of safegarded plutonium and enriched fuel. A solution may be found in the establishment of regional centres where some of the main activities involved in the nuclear fuel cycle could be carried out under strict international control - and this is being studied by the IAEA. Other avenues should also be concurrently explored, such as through the implementation of Article XII.5 of the IAEA Statute, which has never been applied and which gives the Agency the right:

> "To approve the means to be used for the chemical processing of irradiated materials solely to ensure that this chemical processing will not lend itself to diversion of materials for military purposes and will comply with applicable health and safety standards; to require that special fissionable materials recovered or produced as a by-product be used for peaceful purposes under continuing Agency safeguards for research or in reactors, existing or under construction, specified by the member or members concerned; and to require deposit with the Agency of any excess of any special fissionable materials recovered or produced as a by-product over what is needed for the above-stated uses in order to prevent stockpiling of these materials, provided that thereafter at the request of the member or members concerned special fissionable materials so deposited with the Agency shall be returned promptly to the member or members concerned for use under the same provisions as stated above."

Study of this matter is now under way.

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* Reproduced in IAEA document INFCIRC/225, February 1976.

** Reproduced in IAEA document INFCIRC/237.

VI. Concluding remarks

Growing attention is being paid to, and serious attempts are being made through concerted approaches for, strengthening the international safeguards regime. These endeavours may reduce the safeguards effort, on the one hand, by allowing it to be concentrated on a smaller number of facilities and, on the other hand, prompt the widening of the safeguards system by ensuring that safeguards are applied wherever they are needed. Some criticism of safeguards recently expressed should in fact have been directed at the incompleteness of the existing safeguards regime rather than at the inadequacy of the safeguards measures themselves. Nevertheless, technically safeguards is an extremely difficult discipline and as more complicated plants come under safeguards they require more effort and technical expertise. Much development work needs to be done so that safeguards techniques will keep pace with technological developments and the expansion of nuclear activities.

First priority must be given to ensuring the universal application of IAEA safeguards. In this connection, the main trend appears to be the extension of their application to the entire range of facilities in the nuclear fuel cycle in an increasing number of States. In the very near future, by far the greater part of all nuclear activities in the non-nuclear-weapon States will be under IAEA safeguards. Part of these safeguards will flow directly from the undertaking entered into by States party to NPT to accept safeguards on all their peaceful nuclear activities

Moreover, it now appears to be the established policy of most present and potential suppliers of items in the field of nuclear energy to require the application of IAEA safeguards in connection with such items, including those that are produced or constructed on the basis or by the use of technological information provided by them. As a result, it is to be expected that IAEA safeguards will have to be applied in connection with virtually all international supplies of nuclear material, equipment, facilities and know-how.

This means that safeguards have become and will remain a fact to cope with in nuclear transactions and that their further development must continue along with the uses of nuclear energy.

A N N E X I

THE AGENCY'S SAFEGUARDS SYSTEM (1965, AS PROVISIONALLY EXTENDED IN 1966 AND 1968)

The development of the system from 1961 onwards has been as follows:

System		Set forth in document
Nature	Name	
The first system	The Agency's Safeguards System (1961)	INFCIRC/26
The 1961 system as extended to cover large reactor facilities	The Agency's Safeguards System (1961, as Extended in 1964)	INFCIRC/26 and Add. 1
The revised system	The Agency's Safeguards System (1965)	INFCIRC/66
The revised system with additional provisions for reprocessing plants	The Agency's Safeguards System (1965, as Provisionally Extended in 1966)	INFCIRC/66/Rev.1
The revised system with further additional provisions for safeguarded nuclear material in conversion plants and fabrication plants	The Agency's Safeguards System (1965, as Provisionally Extended in 1966 and 1968)	INFCIRC/66/Rev.2

ANNEX II

STATES REPRESENTED AT THE SAFEGUARDS COMMITTEE 1970

Argentina
Australia
Austria
Belgium
Brazil
Bulgaria
Canada
Chile
Czechoslovak Socialist Republic
Denmark
Ecuador
Finland
France
Germany, Federal Republic of
Ghana
Greece
Hungary
India
Indonesia
Iran
Ireland
Italy
Japan
Korea, Republic of
Mexico
Netherlands
Norway
Pakistan
Peru
Philippines
Poland
Portugal
Romania
South Africa
Spain
Sweden
Switzerland
Thailand
Turkey
Union of Soviet Socialist Republics
United Arab Republic
United Kingdom of Great Britain and Northern Ireland
United States of America
Uruguay
Venezuela
Viet-Nam
Yugoslavia

BIBLIOGRAPHY

• *Denmark*

Nordic Working Group on Reactor Safety Recommendations, Risø, Denmark, 1975, 153 pages

In July 1970, the four Nordic countries, Denmark, Finland, Norway and Sweden signed an agreement on collaboration in the field of nuclear reactor safety. This agreement provided the basis for setting up the Nordic Working Group on Reactor Safety (NARS) whose terms of reference are to prepare recommendations on the contents of safety assessment documents for nuclear power plants as well as on other safety requirements. Until now, the Group's work has only covered water cooled reactors. The recommendations of the Group, which is made up of two representatives from each participating country, will serve as a basis for national authorities in establishing their regulations and practices. This publication contains the text in English of a series of five recommendations adopted by the Group in June 1975 after consultation with the interested parties. These recommendations concern the guidelines for the preparation of safety assessment documents for light water nuclear power plants (Publication 1), consequences diagram on the relationship between cause and effect (a graphical method for description and analysis of event sequences after failures in complex process systems - Publication 2), general safety criteria for the design of nuclear power plants with light water reactors (Publication 3), an internal emergency plan for nuclear power plants (Publication 4) and finally, guidelines on construction site emergency precautions.

• *France*

Protection of workers against the hazards of ionizing radiation, Official Gazette of the French Republic, 1976, 163 pages

This publication by the Official Gazette of the French Republic (State National Press) is a compilation of the decrees and orders on the protection of workers against the hazards of ionizing radiation in force on 15th May 1976. The texts are reproduced in full.

• *F.R. of Germany*

Kernenergierecht Niederlande, niederländisch/deutsche Textsammlung, Schriftenreihre des Bundesministeriums des Innern, Band 5, Verlag W. Kohlhammer, Stuttgart, Berlin, Köln, Mainz, 1976, 669 pages

Between 1959 and 1969, the federal ministers competent for nuclear energy in the Federal Republic of Germany have published a series entitled "Kernenergierecht" (nuclear law) containing the texts of national legislation in the field of nuclear energy, in the original language(s) and in German, of the following countries: United Kingdom (Vol. 1), Canada (Vol. 2), Belgium (Vol. 3), Federal Republic of Germany (Vols 4 and 10), France (Vols 5 and 6), Switzerland (Vols 7 and 9), Sweden (Vol. 8), United States (Vols 11 and 12), Italy (Vols 13 and 14). The Nuclear Law Section of the Institute for Public International Law of the University of Göttingen was responsible for the compilation, translation and editing

This series is now being continued as part of the publications of the Federal Ministry of the Interior which also cover other subjects The present Volume No. 5, edited by Werner Bischof of the Institute for Public Internationa Law of the University of Gottingen, contains the national legislation of the Kingdom of the Netherlands in the field of peaceful uses of nuclear energy, in force as of 1st October 1975 The provisions are grouped under the following headings:

I. Basic nuclear law and organisation

II. Liability

III. Nuclear installations, nuclear ships, fissionable materials and ores

IV. Radiation protection

V. Transport

VI. Import and export

VII. International agreements.

Seventeen years have passed between the publication of the first volume of the old series in 1959 and that of the volume under review Their difference in size amply illustrates the progress of the peaceful uses of nuclear energy and the growing need to legislate in this field At the same time, the objective of such a publication has changed, as the Federal Minister for the Interior points out in his foreword: While formerly the reproduction and translation of foreign nuclear legislation was principally motivated by a desire to further develop their own legislation, nowadays the knowledge of legal systems of other, in particular, neighbouring countries is essential for a fruitful collaboration across the borders. The ever increasing international co-operation in the nuclear field chiefly within the European Communities, the construction of nuclear installations close to borders demand detailed knowledge of the applicable legislation of other States.

In the light of these objectives, it is to be hoped that the volumes published in the preceding series will soon be updated and further countries will follow. The excellent first volume of the new series has set a promising and at the same time demanding pattern.

Viertes Deutsches Atomrechts-Symposium - Referate und Diskussionsberichte - Herausgegeben vom Institut für Völkerrecht der Universität Göttingen und dem Bundesministerium des Innern (Fourth German Symposium on Nuclear Law - Papers and Discussions - Published by the Institute for Public International Law of the University of Göttingen and the Federal Ministry of the Interior), Carl Heymanns Verlag, Köln, 1976, 395 pages

The German symposia on nuclear law continue to be an attractive forum for the discussion of current and future problems of German and international nuclear law. The Fourth Symposium, held in Gottingen on 26th - 28th May 1975, was entirely devoted to the draft of the new Radiation Protection Ordinance which has meanwhile been published and will enter into force on 1st April 1977. Twenty-seven papers in four sessions dealt with the bases of the revision of the Radiation Protection Ordinance, the legal problems of the draft and questions of legal policy. A number of proposals were made to modify and amend the draft.

As regards international aspects, Werner Bischof of the Institute of Public International Law of the University of Gottingen presented a paper on the international legal bases of the draft, and Wolfgang Ost described international provisions concerning the transport of radioactive substances; the annex to his paper contains a table of States applying international transport law

Other interesting papers were devoted to the question of whether it is permissible under German law to apply radiopharmaceuticals to persons in the course of experiments and research. Manfred Hinz and Volkmar Götz discussed the fundamental problem of whether the State has the right, in view of the constitutional guarantee of the right to life and physical inviolability, to establish radiation dose limits and if so, whether this can be done by an ordinance rather than by a formal law.

Gottinger Atomrechtskatalog, Part B, Volume 27, Institut für Volkerrecht der Universität Göttingen, Gottingen, 1976, 395 pages

As already announced in Nuclear Law Bulletin No 17, the Institute for Public International Law of the University of Gottingen has now published Volume 27 of the Atomic Law Catalogue which comes under Part B (bibliography and sources) and completes Volume 26 which covered generalities and special subjects in Chapters I and II.

Chapter III of Volume 27 deals with comparative law, harmonisation of law and private international law. Chapter IV is devoted to public international law and international law and international co-operation. It covers general treatises, special questions of public international law, international governmental organisations of a world-wide and regional character, international non-governmental organisations and bilateral and multilateral treaties in the field of nuclear law.

• *Italy*

Atti dell' Incontro di Diritto Nucleare, CISDEN, Rome, 1976, 111 pages

The Italian Centre for Nuclear Law Studies (Centro Italiano di Studi di Diritto dell'Energia Nucleare - CISDEN) has just published the proceedings of the colloquium on nuclear law which it organised on 24th November 1975. This publication reproduces the papers presented to the colloquium, as well as the deliberations of the Fifth General Assembly of the CISDEN which had been convened on this occasion. Every year the CISDEN organises a meeting devoted to the legal aspects of nuclear power in Italy and abroad. In addition to the proceedings of these colloquia, the CISDEN also publishes regularly an information bulletin.

• *Spain*

Isabel Tocino Biscarolasaga, Aspectos Legales del Riesgo y Daño Nuclear de las Centrales Nucleares, Junta de Energia Nuclear, Madrid, 1976, 581 pages

This important work which deals in depth with the legal aspects of risk and nuclear damage in nuclear power plants is based on a thesis for a doctorate prepared by the author under the guidance of Professor De Los Santos Lasurtegui. It makes a very interesting contribution to the systematic study of nuclear law, and, in particular, of prevention of hazards and compensation of nuclear damage; it should provide a precious tool for legal specialists, as well as for persons with a professional interest in nuclear power. The book is divided into the following Parts:

- Part I - Preliminary Clarifications (the legal language and concepts in the regulation of nuclear power; nuclear power as seen from the legal angle ....).
- Part II - Nuclear Risk and its Prevention (legal aspects and mechanisms, hazard prevention on site, in the installation, during operation).
- Part III - Nuclear Damage and the Legal Instruments for its Compensation (nuclear third party liability and financial security mechanism for compensation).

This book includes an Appendix reproducing the main Spanish legal and regulatory texts in the field of nuclear power.

• *Sweden*

Spent Nuclear Fuel and Radioactive Waste, Industridepartementet, Stockholm 1976, 94 pages

This publication is the English version of a report (1976 32) by a Committee on Radioactive Waste set up in April 1973 by the Swedish Government to study the problems raised by the management of radioactive wastes produced by nuclear power plants. This report, which was submitted on 19th May 1976, gives a broad picture of the present situation in Sweden and abroad. Its general conclusion is that today's techniques provide satisfactory possibilities for the management of spent fuel and high, medium and low-level radioactive wastes, adding that in the meantime, important efforts are needed in Sweden to settle satisfactorily the problem of the tail end of the fuel cycle. The Commission has also indicated in its report the legislative and regulatory amendments required if the government acts on its conclusions.

• *NEA*

Fourth Activity Report of the OECD Nuclear Energy Agency, OECD 1976, 89 pages

This report covers the activities of the Agency during 1975. It is divided into the following headings: Nuclear Power, Present and Future; Regulatory Aspects; Technical Development; Nuclear Science. The Report also contains technical annexes on the activities of the NEA joint undertakings. A chapter on nuclear law is included under "Regulatory Aspects". This chapter deals more particularly with the developments having occurred regarding nuclear third party liability conventions, as well as with the Secretariat's activities in the legal information field. The NEA Annual Report is distributed free on request.

• *IATA*

Nineteenth edition of the IATA Restricted Articles Regulations, 1976, Geneval, 281 pages

The International Air Transport Association (IATA) has published the 19th Edition of its Restricted Articles Regulations for air transport, which came into force on 1st September 1976. Part II of the Regulations covers the transport by air of radioactive materials. This Edition introduces in Part IIA an alternative set of Regulations in this respect,

based on the 1973 Revised Edition of the International Atomic Energy Agency (IAEA) Regulations for the Safe Transport of Radioactive Materials, which have been adopted by a number of countries Part IIB reproduces the Regulations previously published as Part II, which are based on the 1967 Edition of the IAEA Regulations for the Safe Transport of Radioactive Materials. These are still applied in several countries.

• *IAEA*

International Conventions on Civil Liability for Nuclear Damage, Legal Series No. 4, Revised 1976 Edition, IAEA, Vienna 1976, 261 pages

The Agency's Legal Series No. 4 was first published in 1966 and contained the texts (in English, French, Russian and Spanish) of the four international conventions on civil liability for nuclear damage and their ancillary documents which had been adopted by then: the Vienna Convention, the Paris Convention, the Brussels Supplementary Convention and the Convention on the Liability of Operators of Nuclear Ships

The 1976 Revised Edition contains, in addition to these Conventions, the following instruments:

- Final Act and Resolutions of the International Conference on Civil Liability for Nuclear Damage, held in Vienna from 29th April to 19th May 1963;

- Final Act of the International Legal Conference on Maritime Carriage of Nuclear Substances, held in Brussels from 29th November to 2nd December 1971; and

- Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material, adopted at Brussels on 17th December 1971.

The texts reproduced are all official with the exception of the Russian text of the Paris Convention and the Brussels Supplementary Convention and the Russian and Spanish texts of the Decision of the Steering Committee of the OECD Nuclear Energy Agency of 26th November 1964 on the exclusion of small quantities of nuclear substances from the application of the Paris Convention, which are translations by the Secretariat of the International Atomic Energy Agency.

Some other publications of NEA

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Radiation Dose Measurements (Their purpose, interpretation and required accuracy in radiological protection)	Proceedings of the Stockholm Symposium, June 1967 597 pages (crown 4to) 64s., $ 11, F 44, FS 44, DM 36.50
Application of On-Line Computers to Nuclear Reactors	Proceedings of the Sandefjord Seminar, September 1968 900 pages (crown 4to) £ 7.5s., $ 20, F 85, FS 78, DM 70
Third Party Liability and Insurance in the Field of Maritime Carriage of Nuclear Substances	Proceedings of the Monaco Symposium, October 1968 529 pages (crown 8vo) £ 2.12s., $ 7.50, F 34, FS 28.50, DM 22.50
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Magnetohydrodynamic Electrical Power Generation	Proceedings of the Fifth International Conference, Munich, April 1971 499 pages (crown 4to) £ 4.88, $ 14, F 65, FS 50, DM 43
Marine Radioecology	Proceedings of the Hamburg Seminar, September 1971 213 pages (crown 8vo) £ 1.50, $ 4.50, F 20, FS 15,60, DM 13.60
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Power from Radioisotopes	Proceedings of the Second International Symposium, Madrid, 29th May-1st June 1972 986 pages (crown 4to) £ 9, $ 24, F 110, FS 83.50, DM 68.80
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Basic Approach for Safety Analysis and Control of Products Containing Radionuclides and Available to the General Public	June 1970 31 pages (crown 8vo) 11s., $ 1.50, F 7, FS 6, DM 4.90
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Guidelines for Sea Disposal Packages of Radioactive Waste	November 1974 32 pages (crown 8vo) Free on request
Estimated Population Exposure from Nuclear Power Production and Other Radiation Sources	January 1976 48 pages (crown 8vo) £ 1.60, $ 3.50, F 14

LEGAL PUBLICATIONS

Convention on Third Party Liability in the Field of Nuclear Energy	July 1960, incorporating provisions of Additional Protocol of January 1964 73 pages (crown 4to) Free on request
Nuclear Legislation, Analytical Study · "Nuclear Third Party Liability"	1967 78 pages (crown 8vo) (it is planned to publish a revised version of this study in February 1977)
Nuclear Legislation, Analytical Study : "Organisation and General Regime Governing Nuclear Activities"	1969 230 pages (crown 8vo) £ 2, $ 6, F 24, FS 24, DM 20

Nuclear Legislation, Analytical Study · "Regulations Governing Nuclear Installation and Radiation Protection"	1972 492 pages (crown 8vo) £ 3.70, $ 11, F 45, FS 34.60, DM 29.80
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NUCLEAR LAW Bulletin

SUPPLEMENT TO No 18

FEDERAL REPUBLIC OF GERMANY

December 1976

N O T E

The draft text of the Revised Atomic Energy Act which was published as a Supplement to Nuclear Law Bulletin No. 15 took account of all amendments up to 1st October 1975. Thereafter, the Act was further amended by an Act of 19th December 1975 and by the Fourth Act Amending the Atomic Energy Act of 30th August 1976. The Federal Minister of the Interior has now published the Revised Atomic Energy Act which incorporates these amendments as well. The first part of this Supplement is intended to update the abovementioned draft text and to bring it into line with the official text of the Revised Atomic Energy Act. All new and amended Sections, unofficially translated by the Secretariat of the OECD Nuclear Energy Agency, are reproduced in full; the changes in relation to the text published in the Supplement to Nuclear Law Bulletin No. 15 are printed in italics. The footnotes refer to notes by the Secretariat.

C O R R I G E N D U M

The text published in the Supplement to Nuclear Law Bulletin No. 15 should be corrected as follows:

1. Section 31

   The words "50 million units of account" in the last sentence of sub-section 1 should be replaced by the words "15 million units of account".

2. The reference to repealed Sections preceding Section 45 should read: "Sections 41 to 44 - Repealed".

3. Annex 1

   No. 4 of sub-section 1 should be set out as follows:

   "4. 'Radioactive products or waste': Any radioactive material produced in or made radioactive by exposure to the radiation incidental to the process of producing or utilising nuclear fuel, but does not include

   (a) nuclear fuel

   (b) radioisotopes outside a nuclear installation which are used or intended to be used for any industrial, commercial, agricultural, medical or scientific purpose;".

FEDERAL REPUBLIC OF GERMANY

REVISED ACT ON THE PEACEFUL USES OF ATOMIC ENERGY AND PROTECTION AGAINST ITS HAZARDS

(ATOMIC ENERGY ACT)

of 31st October 1976

(Bundesgesetzblatt I, p. 3053)

CHAPTER I

GENERAL

.....

Section 2 - Definitions

(1) "Radioactive substances" within the meaning of this Act mean:

1. special fissionable material (nuclear fuel) in the form of

   (a) plutonium 239 and plutonium 241;

   (b) uranium 233;

   (c) uranium enriched in the isotopes 235 or 233;

   (d) any substance containing one or more of the aforesaid substances;

   (e) uranium and substances containing uranium of the natural isotopic mixture of such purity as to enable a continuous self-sustaining chain reaction to be maintained in a suitable installation (reactor).

The term "uranium enriched in the isotopes 235 or 233" means uranium containing the isotopes 235 or 233 or both in such

quantity that the ratio of the sum of these two isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 occurring in nature.

2. Substances which, without being nuclear fuel, emit ionizing radiation spontaneously (other radioactive substances).

(2) Such radioactive wastes that are not to be transferred to installations pursuant to sub-section 3 of Section 9a and for which, because of their low activity, no special disposal has been required, ordered or licensed pursuant to the second sentence of sub-section 2 of Section 9a for the purpose of protecting life, health and property from the hazards of nuclear energy and from the harmful effects of ionizing radiation, shall not be considered as radioactive substances within the meaning of this Act .

(3) For the application of the provisions on liability and financial security, the terms "nuclear incident", "nuclear installation", "operator of a nuclear installation", "nuclear substances" and "units of account" shall have the meaning given to them in Annex 1 of this Act.

(4) "Paris Convention" means the Convention of 29th July 1960 on Third Party Liability in the Field of Nuclear Energy *in the version published on 5th February 1976* /1/ (Bundesgesetzblatt /2/ II, p.p. 310, 311).

(5) "Brussels Supplementary Convention" means the Convention of 31st January 1963 Supplementary to the Paris Convention *in the version published on 5th February 1976* /1/ (BGBl. II, p.p. 310, 318).

.....

Section 5 - Custody, possession and surrender of nuclear fuel

(1) Nuclear fuel shall be kept in Government custody. Such precautions as are necessary in the light of existing scientific knowledge and technology shall be taken to prevent damage resulting from such keeping in custody, and the necessary protection shall be provided against disturbance or other interference by third persons.

(2) No person shall be permitted to have nuclear fuel in his immediate possession outside Government custody, unless he

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/1/ These versions incorporate the provisions of the respective Additional Protocols signed on 28th January 1964.

/2/ Bundesgesetzblatt (BGBl.): Federal Gazette.

1. stores nuclear fuel by virtue of a licence granted under Section 6,

2. treats, processes or otherwise uses nuclear fuel in an installation licensed under Section 7 or by virtue of a licence granted under Section 9,

3. is entitled to carry nuclear fuel by virtue of Section 4.

(3) Any person who is in immediate possession of nuclear fuel, without being authorised under sub-section 2, shall surrender it to the custodial authority without delay.

(4) The obligation to surrender nuclear fuel shall cease to apply if the fuel is transferred to a carrier licensed under Section 4,

1. for the purpose of export licensed under Section 3, or

2. for the purpose of delivery to a consignee licensed under no. 1 or 2 of sub-section 2.

(5) Nuclear fuel in Government custody under sub-section 1, or in licensed storage under Section 6 shall be delivered only if

1. the consignee is authorised to have nuclear fuel in his possession under no. 1 or 2 of sub-section 2,

2. nuclear fuel is to be carried, for the purpose of export, under a licence pursuant to Section 4.

(6) Sub-sections 1 to 5 shall not apply to nuclear fuel contained in radioactive wastes.

.....

Section 7 - Licences for installations

(1) Any person who constructs, operates or otherwise holds a stationary installation for the production, treatment, processing or fission of nuclear fuel, or for the reprocessing of irradiated nuclear fuel, or who materially alters such installation, or its operation, shall require a licence.

(2) A licence may be granted only if

1. there are no known facts giving rise to any doubts as to the reliability of the applicant and of the persons responsible for the construction and management of the installation and the control of its operation and such latter persons possess the requisite competence,

2. it is ensured that the persons who are otherwise engaged in the operation of the installation possess the necessary knowledge concerning the safe operation of the installation, the possible hazards and the safety measures to be applied,

3. every necessary precaution has been taken in the light of existing scientific knowledge and technology to prevent damage resulting from construction and operation of the installation,

4. the necessary financial security has been provided to cover all legal liability to pay compensation for damage,

5. all necessary protection is provided against disturbance or other interference by third persons,

6. the choice of the site of the installation, in particular with respect to non-contamination of water, air and soil, is not contrary to overriding public interests.

(3) *The decommissioning of an installation within the meaning of sub-section 1, as well as the safe enclosure of a finally decommissioned installation or the dismantling of the installation or parts thereof, are subject to a licence. Sub-section 2 shall apply accordingly. A licence under the first sentence shall not be required to the extent that the measures planned have been subject to a licence under sub-section 1 hereof or an order under sub-section 3 of Section 19.*

(4) All authorities of the Bund /1/, the Länder /1/, the communities and other regional authorities whose jurisdiction is involved, shall take part in the licensing procedure. In case of a difference of opinion between the licensing authority and any federal authority concerned, the licensing authority shall obtain instructions from the Federal Minister competent for nuclear safety and radiation protection. In all other respects, the licensing procedure shall be governed by statutory ordinance in accordance with the principles laid down in Section 8, sub-sections 1 to 4 and 6 to 8 of Section 10, and Section 18 of the Federal Act on Protection Against Nuisances of 15th March 1974 (BGBl. I, page 721) /2/.

(5) Sub-sections 1, *2 and 4* shall apply analogously to non-stationary installations. However, the statutory ordinance referred to in the third sentence of sub-section 4 may provide that the project shall not be publicly announced and the documents shall not be laid open for public inspection and that in such case objections shall not be heard orally.

(6) Section 14 of the Federal Act on the Protection Against Nuisances shall apply analogously if other premises are affected by a licensed installation.

/1/ "Bund": The Federal State. "Länder" (singular "Land"): States forming the Federal Republic of Germany.

/2/ Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge (Bundes-Immissionsschutzgesetz).

Section 7a - Provisional decision

/The reference to sub-sections 3 and 4 of Section 7 is replaced by a reference to sub-sections 4 and 5 in sub-section (2) of this Section./

Section 7b - *Interventions by third parties in case of a partial licence and provisional decision*

To the extent that a decision rendered in a procedure covering a partial licence or a provisional decision pursuant to Section 7 or Section 7a has become final, third parties shall be precluded, in any further licensing procedure, from intervening on the basis of facts which had already been presented or which such parties could have presented in view of the document or the decision laid open for public inspection.

Section 8 - Relation to the Federal Act on Protection Against Nuisances and the Trading and Industrial Code /1/

/Sub-sections 1(a) and 2 of this Section are renumbered 2 and 3 respectively.

.....

Section 9a - Utilisation of radioactive residues and disposal of radioactive wastes

(1) Any person who constructs, operates, holds, materially modifies, decommissions or disposes of installations in which nuclear fuel is handled, or who handles radioactive substances outside such installations, or who operates installations for the production of ionizing radiations, has to ensure that residual radioactive substances as well as radioactive parts of plant and equipment which are removed or dismantled

1. are utilised without harmful effects in accordance with the purposes laid down in nos 2 to 4 of Section 1, or

2. are disposed of as radioactive wastes in an orderly manner to the extent that the foregoing, in the light of existing scientific knowledge and technology, is not possible, economically not feasible or inconsistent with the purposes laid down in nos 2 to 4 of Section 1.

(2) Any person who holds radioactive substances shall transfer them to an installation pursuant to sub-section 3. This shall not apply if it is otherwise provided by an ordinance issued hereunder, or has been ordered or licensed by virtue of this Act or such an ordinance.

/1/ Gewerbeordnung .

(3) The Länder shall establish collecting agencies /1/ for the interim storage of radioactive wastes originating in their territories; the Bund shall establish installations for the safekeeping and final storage of radioactive wastes. The Bund and the Länder may, for the purpose of fulfilling their obligations, avail themselves of the services of third persons.

Section 9b - Land use planning procedure

(1) The construction and operation of the federal installations referred to in sub-section 3 of Section 9a, as well as any material modification of such installations or of their operation are subject to land use planning .

(2) In order to achieve the purpose laid down in Section 1, the land use planning decree may be made subject to restrictions and conditions. Insofar as it is necessary to achieve the purposes laid down in nos 2 to 4 in Section 1, conditions may be imposed subsequently.

(3) The land use planning decree may be granted only if the requirements specified in nos 1 to 3, 5 and 6 of sub-section 2 of Section 7 have been met. It shall be denied if

1. it is to be expected that the construction or operation of the planned installation will impair the common welfare, and such impairment cannot be prevented by restrictions and conditions, or

2. other provisions of public law are contrary to the construction or operation of the installation.

(4) If the rights of another person are adversely affected as a consequence of such land use planning decree, and it is not possible to prevent or compensate such effects by restrictions and conditions, such other person shall be compensated in money for the material damage caused by such effects.

(5) Sections 21 to 29 of the Waste Disposal Act /2/ shall apply to the land use planning procedure with the following modifications:

1. The publication of the project and of the date of the hearing, the public inspection of the plan, the filing of interventions, the conduct of the hearing and the service of the decisions shall be made in accordance with the ordinance issued pursuant to the third sentence of sub-section 4 of Section 7.

/1/ Landessammelstellen.

/2/ Abfallbeseitigungsgesetz.

2. *Prior to rendering a decision the right to which has been reserved, the publication and public inspection of documents subsequently submitted may be dispensed with if such publication and public inspection does not reveal further circumstances which may be relevant to the interests of third persons.*

3. *The land use planning shall not extend to the admissibility of the project under the legal provisions relating to mining and deep storage. This question shall be decided by the authority competent in this respect.*

Section 9c

The construction and operation of the collecting agencies of the Länder referred to in sub-section 3 of Section 9a, as well as any material modification of such installations or of their operation, are subject to a licence by the competent authority under Section 9 of this Act or Section 3 of the Radiation Protection Ordinance.

.....

Section 11 - Enabling provisions (licences, notifications, general permits)

(1) Unless special provision for nuclear fuel and installations within the meaning of Section 7 has been made under this Act, it may be provided by statutory ordinance with a view to achieving the purposes specified in Section 1

1. that prospecting for or handling of radioactive substances (extraction, production, storage, treatment, processing or any other use or disposal), transactions in radioactive substances (acquisition, or delivery to others), the carriage and import or export of such substances shall require a licence or notification,

2. that the construction or operation of an installation for the production of ionizing radiation shall require a licence or notification,

3. that a general permit may be issued for installations, apparatus and equipment containing radioactive substances or producing ionizing radiation after their design and construction have been examined by an authority to be specified in such statutory ordinance, which shall also specify the notifications to be made by the operators of such installation, apparatus and equipment,

4. *that components of plant and equipment which are significant from the standpoint of safety technology, and which are to be manufactured before a licence is applied for or granted, may be built into installations pursuant to sub-section 1 of Section 7 only if the importance of prior manufacture can be justified and it has been proven by tests that the materials used, the design, construction and manufacture*

meet the requirements laid down in no.3 of sub-section 2 of Section 7; which authority shall be competent for the test procedure; what documents have to be submitted and which legal effects shall be accorded to such permit for prior manufacture,

5. *that radioactive substances shall not be used in certain ways or for certain purposes to the extent that such prohibition is required for the protection of life and health of the population against the hazards of radioactive substances or for the enforcement of decisions by international organisations of which the Federal Republic of Germany is a member.*

(2) The statutory ordinance may make the granting of licences and general permits subject to personal and objective requirements within the purposes of this Act, and may regulate the procedure for such licences and general permits.

Section 12 - Enabling provisions (safety measures)

(1) To achieve the purposes specified in Section 1, the following may be provided by statutory ordinance

1. the precautionary and control measures to be taken for the protection of individuals and of the general public in regard to the handling of and transactions in radioactive substances, the construction, operation and possession of installations as specified in Section 7 and no.2 of sub-section 1 of Section 11, the handling of and transactions in installations, apparatus and equipment as specified in no.3 of sub-section 1 of Section 11,

2. the precautions to be taken in order to ensure that specified radiation doses and concentrations of radioactive substances in air and water are not exceeded,

3. that no person shall be employed in areas exposed to radiation hazards unless he produces a certificate issued by a specially authorised medical practitioner, and that if any objections be raised to such employment for reasons of health, the supervisory authority shall decide after consulting medical experts,

4. that persons who stay or have been staying in areas exposed to radiation hazards shall be under obligation, the extent to be specified, to have the radiation doses at their bodies measured, to undergo medical examination and,insofar as the protection of other individuals or the general public so requires, to undergo medical treatment, such examination or treatment being applied by specially authorised medical practitioners,

5. that, as to be specified, records shall be kept and reports submitted on the production, extraction, acquisition, possession, delivery and location of radioactive substances, as well as on the measurement of doses and dose rates of ionizing radiation,

6. *that, the manner and extent to be specified, the operator of an installation in which radioactive substances are, or are to be, handled, is required to inform the supervisory authority whether changes have occurred in relation to the statements and documents concerning his application for a licence or in relation to the licence itself,*

7. *that deviations from the designated operation which are significant from the standpoint of safety technology, in particular accidents and other harmful occurrences in the course of handling radioactive substances, of constructing and operating installations in which radioactive substances are handled, as well as of handling installations, equipment and apparatus specified in no.3 of sub-section 1 of Section 11, are to be notified to the supervisory authority; and under what conditions and in which manner the experience thus gained, except individual data concerning personal and factual circumstances, may be published by agencies to be determined in such ordinance for the purpose of improving the safety measures,*

8. *which radioactive substances are to be transferred to the collecting agencies of the Länder and the federal installations pursuant to Section 9a and that, considering the extent of the danger connected therewith, another method of interim storage or further exceptions from the obligation to transfer are permissible or may be ordered or licensed under certain conditions,*

9. *how the transfer shall be carried out; which requirements shall be met for the radioactive wastes at the time of transfer; how the radioactive wastes shall be safely kept and stored in the collecting agencies of the Länder and the federal installations; under what conditions and in which manner radioactive wastes shall be delivered from the collecting agencies of the Länder to the federal installations, and how the installations under sub-section 3 of Section 9a are to be supervised,*

10. the manner in which radioactive substances and installations within the meaning of Section 7 and no.2 of sub-section 1 of Section 11, shall be protected against disturbance or other interference by third persons,

11. *which requirements are to be established as regards the training, the professional knowledge and competence and the reliability and impartiality of the experts referred to in Section 20, and which conditions have to be met by organisations which may be called as experts pursuant to Section 20 concerning their technical equipment and the co-operation between members working in different fields,*

12. *which requirements are to be established regarding the requisite competence of persons responsible for the construction of installations under Section 7 and the management and control of their operation, as well as regarding the necessary knowledge of persons otherwise engaged in the operation of installations under Section 7; which certificates shall be submitted concerning such requirements and in which manner the licensing and supervisory authorities competent under Section 24 shall examine the existence of the requisite competence or necessary knowledge,*

13. that the supervisory authority may issue directions for the implementation of any provisions made under nos *1 to 10*.

Nos 1 *and 7* of the first sentence shall apply analogously to the carriage of radioactive substances to the extent that the purposes stated in Section 1 nos 1, 3 and 4 are to be achieved *and regulations on financial security are concerned*.

(2) The fundamental right to physical inviolability (first sentence of Section (2) of Article 2 of the Basic Law /17) shall be restricted under the terms of no.4 of sub-section 1.

.....

Section 21 - Costs

(1) Costs (fees and expenses) shall be charged for licences under Sections 4, 6, 7 and 9, for the provisional decision under Section 7a and for Government custody of nuclear fuel (sub-section 1 of Section 5).

(2) The following fees shall be charged:

1. for the licence to construct and operate an installation within the meaning of Section 7, 1.5 per thousand of the costs of the construction;

2. for any other licence under Section 7 or a provisional decision under Section 7a, DM 100 to 20,000;

3. for licences under Sections 4, 6 and 9, as well as for licences implementing statutory ordinances issued under Sections 10 to 12 of this Act, DM 10 to 10,000;

4. for Government custody of nuclear fuel, 0.2 per thousand of the value of the nuclear fuel for each begun month of custody; in the case of irradiated nuclear fuel, 0.2 per thousand up to 10 per thousand of the value which the nuclear fuel had before irradiation.

If the construction costs of the installation exceed DM 10 million, the fees under no.1 above shall be reduced to one fifth for the amount exceeding DM 10 million and to one tenth for the amount exceeding DM 100 million.

(3) For the use of installations under sub-section 3 of Section 9a, costs (fees and expenses), or an equivalent compensation, shall be levied from the persons under obligation to transfer, in accordance with an ordinance pursuant to sub-section 6. The fees shall be fixed such as to cover the costs. Advance payments on such costs may be required from persons who are granted a licence for the handling of nuclear substances pursuant to Sections 7 or 9 or the provisions of an ordinance issued hereunder, if at the moment of granting the licence it is to be expected that the obligation to transfer will arise.

/17 Grundgesetz (Constitution of the Federal Republic of Germany).

In fixing the costs or compensation which are charged in case of transfer to a collecting agency of a Land, those expenses shall be added that will arise on the occasion of the subsequent delivery to federal installations. The collecting agencies of the Länder shall levy this part of the costs and pay it over to the Bund .

(4) In case of Government supervision those expenses shall be reimbursed which are due to the consultation of experts pursuant to Section 20 or to extraordinary measures taken by the supervisory authority if the person concerned has caused such measures to be taken.

(5) Expert's fees shall be reimbursed if limited to amounts constituting appropriate consideration for the expert's activity, taking into account his requisite expert knowledge and any particular complexity of his opinion.

(6) Details shall be determined by statutory ordinance in accordance with the principles of the Act on Administrative Costs /1/ of 23rd June 1970 (BGBl. I, page 821). Such statutory ordinance may provide that certain expenditures shall not be considered as construction costs of the installation (no.1 of sub-section 2).

(7) To the extent that the authorities of the Länder carry out statutory ordinances issued under Sections 10 to 12 of this Act, the regulations concerning costs of the Länder shall apply, subject to sub-sections *4 and 5*.

(8) Expenditures for safety measures and medical examinations carried out pursuant to this Act or a statutory ordinance issued thereunder, shall be borne by the person requiring a licence *or notification* under this Act or a statutory ordinance issued thereunder for the activity which makes such safety measure or medical examination necessary.

C H A P T E R III

PUBLIC AUTHORITIES

Section 22 - Competence for import and export licences, import and export control

(1) The Federal Office for Trade and Industry /2/ shall decide on applications for licences under Section 3, and on *the withdrawal or* revocation of licences already issued. The same shall apply where statutory ordinances under Section 11 provide for import and export licences.

/1/ Verwaltungskostengesetz.

/2/ Bundesamt für gewerbliche Wirtschaft.

(2) The Federal Minister of Finance /17, or the customs authorities designated by him, and in the free port of Hamburg the Free Port Authority of the Free and Hanseatic City of Hamburg /27, shall be responsible for import and export control.

(3) Insofar as the Federal Office for Trade and Industry makes any decisions by virtue of sub-section 1, it shall be bound by the technical instructions issued by the Federal Minister competent for nuclear safety and radiation protection, notwithstanding its subordination to the Federal Minister of Economics /37 and his powers to issue instructions based on other legal provisions.

Section 23 - *Competence of the Federal Institute of Physics and Technology* /47

(1) The Federal Institute of Physics and Technology shall be competent for

1. the government custody of nuclear fuel,

2. the construction and operation of federal installations for the safekeeping and final storage of radioactive wastes,

3. the licensing of carriage of nuclear fuel and large sources,

4. the licensing of the storage of nuclear fuel outside government custody, to the extent that such storage is not preliminary to or does not form part of an activity requiring a licence pursuant to Sections 7 or 9, and

5. the withdrawal or revocation of licences pursuant to nos 3 and 4 above.

In carrying out these functions, the Institute shall act in accordance with the technical instructions of the Federal Minister competent for nuclear safety and radiation protection who, in cases falling under no.2 above, shall act in agreement with the Federal Minister competent for nuclear technology, insofar as questions are involved which relate to research and technology in the field of safekeeping and final storage of radioactive wastes.

(2) Large sources within the meaning of no.3 of sub-section 1 shall mean radioactive substances whose activity per consignment or package exceeds the values set forth in marginal 2450(5) of Annex A to the European Agreement of 30th September 1957 concerning the International Carriage of Dangerous Goods by Road - ADR - (BGBl. 1969 II, page 1491).

/17 Bundesminister der Finanzen.

/27 Freihafenamt der Freien und Hansestadt Hamburg.

/37 Bundesminister für Wirtschaft.

/47 Physikalisch-Technische Bundesanstalt.

Section 24 - Competence of the authorities of the Länder

(1) All other administrative functions under Chapter II and any statutory ordinances made thereunder shall be discharged by the Länder on behalf of the Bund. Control of any carriage of radioactive substances by rail and by ship which is effected by the German Federal Railways shall, however, be exercised by such bodies of the German Federal Railways as have been designated by the Federal Minister of Transport /1/.

(2) The supreme authorities of the Länder designated by their governments shall be competent for the granting, withdrawal and revocation of licences under Sections 7, 7a and 9, *as well as for the land use planning pursuant to Section 9b and the cancellation of the land use planning decree.* These authorities shall exercise control over installations coming under Section 7, and over the use of nuclear fuel outside such installations. In particular cases, they may delegate their functions to subordinate authorities. Any complaints against their orders shall be decided upon by the supreme Länder authorities. Insofar as provisions other than those laid down in this Act confer supervisory powers on any other authorities, their competence shall not be affected.

(3) In matters related to the service of the Federal Armed Forces /2/, the Federal Minister of Defence /3/, or the office designated by him, shall discharge the functions referred to in sub-sections 1 and 2, in agreement with the Federal Minister competent for nuclear safety and radiation protection.

C H A P T E R IV

LIABILITY

.....

Section 25a - Liability for nuclear ships

(1) The provisions of this Chapter shall apply to the liability of an operator of a nuclear ship with the following modifications:

/1/ Bundesminister für Verkehr.

/2/ Bundeswehr.

/3/ Bundesminister für Verteidigung.

1. *The provisions of the Paris Convention shall be replaced by the corresponding provisions of the Brussels Convention on the Liability of Operators of Nuclear Ships (BGBl. 1975 II, page 977). The latter shall apply as domestic law to the Federal Republic of Germany irrespective of its binding force under international law, unless such application is conditional upon reciprocity effected by its entry into force.*

2. If the damage is suffered in another State, the first sentence of sub-section 1 of Section 31 shall be applicable as regards the amount exceeding the maximum amount of liability under the Brussels Convention on the Liability of Operators of Nuclear Ships, only to the extent that the legislation of that State provides, at the time of the nuclear incident, for a third party liability regime for operators of nuclear ships which is applicable in relation to the Federal Republic of Germany and is equivalent as to its nature, extent and amount. The second and third sentences of sub-section 1 of Section 31, Section 36 and sub-section 1 of Section 38 and Section 40 shall not be applied.

3. Section 34 shall apply only to nuclear ships authorised to sail under the flag of the Federal Republic of Germany. If, within the realm of this Act, a nuclear ship is built or equipped with a reactor for another State, or persons of another State, Section 34 shall apply until the nuclear ship is registered in the other State or acquires the right to sail under the flag of another State. 75 per cent of the indemnification pursuant to Section 34 shall be borne by the Bund and the remainder by the Land competent for the licensing of the nuclear ship under Section 7.

4. In the case of nuclear ships which are not entitled to sail under the flag of the Federal Republic, this Chapter shall apply only if the nuclear damage caused by the nuclear ship has been suffered within the realm of this Act.

5. The courts of the State under whose flag the nuclear ship is entitled to sail shall have jurisdiction over actions for compensation; in the case referred to in no.4, the court of the place within the realm of this Act where the nuclear damage was suffered shall equally have jurisdiction.

(2) To the extent that international agreements on the liability for nuclear ships contain mandatory provisions derogating from this Act, such provisions shall take precedence over the provisions of this Act.

Section 26 - Liability in other cases

(1) Where, in cases other than those specified by the Paris Convention in conjunction with sub-sections 1 to 5 of Section 25, loss of life, personal injury, or deterioration of health was caused to any person or damage was caused to property through the effects of any nuclear fission process or radiation from radioactive substances or the effects originating from an accelerator, the holder of the substances affected by the

nuclear fission, of the radioactive substances or of the accelerator shall be liable to pay compensation for damage in accordance with Sections 27 to 30, sub-section 2 of Section 31, sub-sections 1, 4 and 5 of Section 32 and Section 33. There shall be no liability to pay compensation if the damage was caused by an event which the holder and such persons as are acting for him in connection with such possession could not avoid, even by taking every reasonable precaution, and which is due neither to a defective condition of the safety devices nor to any failure in their performance.

(2) Sub-section 1 shall apply correspondingly where damage of the nature specified in sub-section 1 was caused by the effects of nuclear fusion.

(3) Any person who has lost possession of the substances, without having transferred them to a person entitled to such possession in accordance with this Act or any statutory ordinance made thereunder, shall be liable as if he were the holder.

(4) The provisions of sub-sections 1 to 3 shall not apply

1. where the radioactive substances or the accelerators have been applied to the injured person by a physician or a dentist, or under the supervision of a physician or a dentist, in the course of medical treatment, and the substances and accelerators used and the necessary measuring apparatus have complied with the current state of science and technology and the damage is not due to the fact that such substances, accelerators or measuring apparatus have not been sufficiently maintained,

2. where a legal relationship exists between the holder and the injured person under which the latter has accepted the risk associated with the substances.

(5) The second sentence of sub-section 1 and no.2 of sub-section 4 shall not cover the application of radioactive substances to human beings in the course of medical research. If the holder of the radioactive substances denies the causal connection between the application of the radioactive substances and the damage suffered, he shall have the burden of proof that under existing scientific knowledge and technology there is no sufficient probability of such a causal connection.

(6) Whoever carries substances on behalf of a third party shall not be liable to pay compensation under the provisions of sub-sections 1 to 3. As long as the consignee has not taken charge of the substances, the consignor shall remain liable under the aforementioned provisions, regardless of whether or not he is the holder of such substances.

(7) Within the scope of application of the first sentence of sub-section 1, no legal provisions shall be affected pursuant to which the holder referred to in sub-section 1 and any person regarded as

the holder under sub-section 3, are liable to a greater extent than under the provisions of this Act or pursuant to which another person is liable for the damage.

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C H A P T E R V

PENALTIES AND FINES

.....

Section 45 - Punishable handling of nuclear fuel and ionizing radiation

(1) Any person who, without such licence as is required under this Act

1. imports, exports or otherwise conveys nuclear fuel into or out of the realm of this Act,

2. carries nuclear fuel,

3. stores nuclear fuel outside Government custody,

4. constructs, operates or otherwise holds an installation for the production, *treatment, processing* or fission of nuclear fuel, or for the reprocessing of irradiated nuclear fuel, or materially alters the installation or its operation,

5. treats, processes or otherwise uses nuclear fuel outside an installation for the production, *treatment, processing* or fission of nuclear fuel, or for the reprocessing of irradiated nuclear fuel, or who materially deviates from the procedure laid down in a licence issued under sub-section 1 of Section 9 for the treatment, processing or other use or who materially alters the installation or its location as specified in the licence,

shall be liable to imprisonment for a term of up to five years or a fine.

(2) The same penalties shall be incurred by any person who

1. fails to surrender nuclear fuel without delay, in contravention of sub-sections 3 and 4 of Section 5,

2. delivers nuclear fuel to unauthorised persons, in contravention of sub-section 5 of Section 5, *or*

3. *fails to transfer radioactive wastes, in contravention of sub-section 2 of Section 9a in conjunction with a statutory ordinance pursuant to no.8, first sentence of sub-section 1 of Section 12.*

(3) Any person who, by an act specified in sub-section 1 or 2, knowingly endangers, through nuclear fission or ionizing radiation, the life or health of another person, or property of considerable value belonging to another person, shall be liable to imprisonment for a term running between three months and five years.

(4) Any person who, through negligence, commits one of the acts specified in sub-sections 1 and 2 shall be liable to imprisonment for a term not exceeding two years or a fine.

Section 46 - Statutory offences

(1) Any person shall be guilty of a statutory offence who wilfully or negligently

1. carries nuclear substances without having procured the financial security required under sentences 1 or 2 of sub-section 1 of Section 4b,

2. contravenes a determination under sub-section 1 of Section 13, an enforceable condition imposed under the *second* and third sentences of sub-section 1 of Section 17 or an enforceable order under sub-section 3 of Section 19,

3. contravenes a statutory ordinance issued under sub-section 1 of Section 11 or *nos 1 to 7 and 9 to 12 of* sub-section 1 of Section 12, or an enforceable order under a statutory ordinance issued pursuant to no *13* of sub-section 1 of Section 12, provided that such statutory ordinance refers to this Section with respect to a defined act,

4. does not carry the licence contrary to the first sentence of sub-section 5 of Section 4, or does not carry the certificate referred to in the second sentence of sub-section 5 of Section 4, or does not produce on request such licence or certificate contrary to the third sentence of sub-section 5 of Section 4.

(2) The statutory offence shall be punishable with a fine of up to DM one hundred thousand in the cases given in nos 1, 2 and 3 of sub-section 1 and up to DM one thousand in the case given in no.4 of sub-section 1.

(3) Administrative authority within the meaning of no.1 of sub-section 1 of Section 36 of the Act on Statutory Offences /1/ shall be the Federal Office for Trade and Industry as concerns the failure to obtain a licence or to notify in the case of

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/1/ Gesetz über Ordnungswidrigkeiten.

import or export of other radioactive substances pursuant to no. 1 of sub-section 1 of Section 11 or to comply with a condition imposed in connection therewith pursuant to sentences 2 and 3 of sub-section 1 of Section 17.

.....

Section 48 - Violation of obligations concerning production and supply

(1) Any person who knowingly produces or supplies defective installations for the production, *treatment, processing* or fission of nuclear fuel, or for the reprocessing of irradiated nuclear fuel, or who produces or supplies defective objects intended for the construction or operation of such installation, and thereby knowingly endangers the life or health of another person, or property of considerable value belonging to another person, such danger being connected with the effects of a nuclear fission process or radiation from a radioactive substance, shall be liable to imprisonment for a term of not less than six months and up to five years.

(2) The attempt shall be punishable.

(3) In particularly grave cases the penalty shall be imprisonment for a term of one to ten years.

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Section 54 - Issue of statutory ordinances

In sub-section 1, the reference to sub-section 5 of Section 21 is replaced by a reference to sub-section 6 of Section 21.

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A N N E X 2

EXEMPTION LIMITS FOR LIABILITY AND FINANCIAL SECURITY

Sub-section 3 of Section 4, sub-section 2 of Section 4b and sub-section 6 of Section 25 shall apply to nuclear fuel or nuclear substances, the activity or quantity of which

(1) in a single consignment or package; or

(2) within a single installation or an independent subsidiary thereof or, in the case of a person who does not carry out a business, at the place where the applicant carries out his activities

do not exceed by a factor of 10^5 the exemption limit and which in the case of enriched uranium do not contain more than 350 grammes of uranium 235. Exemption limit shall mean the activity or quantity for the handling of which a licence or notification is not required under this Act or a statutory ordinance issued thereunder.

FEDERAL REPUBLIC OF GERMANY

ORDINANCE CONCERNING THE FINANCIAL SECURITY PURSUANT TO THE ATOMIC ENERGY ACT

(NUCLEAR FINANCIAL SECURITY ORDINANCE)

By virtue of Section 13(3) and Section 54(1) and (2) of the Atomic Energy Act in the version published on 31st October 1976 (BGBl. I, p. 3053) the Federal Government, with the approval of the Federal Council, hereby orders as follows:

PART I

GENERAL PROVISIONS

Section 1 - Types of financial security

Financial security for installations and activities involving nuclear liability under international agreements or under the Atomic Energy Act, may be provided by

1. third party liability insurance, or
2. indemnity or guarantee by a third person.

The public authority may allow a combination of financial security measures of the same or of different types, provided that the effectiveness and clarit of the security is not thereby adversely affected.

Section 2 - Third party liability insurance

(1) Financial security may be provided in the form of third party liability insurance only where it is taken out with

1. an insurer licensed to carry on business within the realm of the Atomic Energy Act, or

2. an insurer licensed to carry out business outside the realm of the Atomic Energy Act, in case of international carriage (Section 4a of the Atomic Energy Act), provided that an insurer licensed to carry on business within the realm of the Atomic Energy Act or an association of such insurers undertake jointly to assume the obligations of a third party liability insurer.

(2) To the extent that the Bund and the Länder are under an obligation to indemnify the person required to provide financial security against claims for damages, or to guarantee the payment of such claims made against him, the insurance contract shall contain a clause in favour of the Federal Republic of Germany and the Land concerned, imposing a duty on the insurer to inform the public authority without delay of any alteration to the contract, any event causing damage, any claim for compensation for damage, and any payment of compensation, as soon as such circumstances come to the knowledge of the insurer.

Section 3 - Indemnity or guarantee

(1) Financial security may be provided in the form of indemnity or guarantee by a third person only when it is ensured that such third person will be in a position, as long as it is to be expected that he may be resorted to, to fulfil his obligations under the financial security arrangements.

(2) An indemnity or guarantee by a third person whose principal place of residence or principal place of business is situated outside the realm of the Atomic Energy Act shall only be accepted where such third person either has sufficient assets within the realm of the Atomic Energy Act to cover his obligations during their duration, or where it is ensured that any decision of a court situated within the realm of the Atomic Energy Act concerning his obligations is enforceable, by virtue of an international agreement, in the State where assets of such person are situated. Indemnity or guarantee by another State shall be accepted only where such State submits to the jurisdiction of the Federal Republic of Germany or otherwise guarantees that it will fulfil its obligation.

(3) Section 2(2) shall apply accordingly.

Section 4 - Extent of the financial security

(1) In the case of a nuclear installation the financial security shall cover the legal liability of the operator to pay compensation for damage as defined in Section 13(5) of the Atomic Energy Act, arising

1. as a result of a nuclear incident, and

2. as a result of ionizing radiation emitted by a source of radiation within the meaning of the second sentence of Section 25(1) of the Atomic Energy Act.

(2) In the case of activities or installations in respect of which liability may arise under Section 26 of the Atomic Energy Act, the financial security shall cover any legal liability to pay compensation for damage, as defined in Section 13(5) of the Act, which arises in connection with the activity or installation subject to a licence, as a result of effects of the kind mentioned in the first sentence of Section 26(1) and in Section 26(2) of the Act, and which is incurred by

1. the person required to provide financial security,

2. persons engaged to carry out operations by the person required to provide financial security,

3. in the case of carriage, also by persons who are or were involved in such carriage together with the person required to provide financial security or who are carrying out or have carried out authorised works or services in connection with the carriage or who are or were engaged to effect an operation for the purposes of such carriage.

(3) The financial security shall cover events causing damage which occur or have effects outside the realm of the Atomic Energy Act and for which the person required to provide financial security is liable under international agreements or by virtue of liability provisions operative outside the realm of the Atomic Energy Act of the kind specified in Section 13(5) of the Act.

(4) Financial security, up to the specified amount, shall not be allocated or used in respect of obligations other than those specified in sub-sections (1) to (3) above.

(5) The public authority may allow exceptions to sub-sections (1) to (3) above, provided that

1. they are justified, having regard to the type of financial security, and

2. the interests of all those who have suffered damage, and, in cases involving indemnification against liability to pay compensation for damage under Section 34 of the Atomic Energy Act, the interests of those liable to provide indemnification, are not thereby unreasonably prejudiced.

(6) The financial security to be provided by the operator of a nuclear installation need not cover his liability to pay compensation for damage arising from the handling or carriage of radioactive substances outside the nuclear installation.

(7) Sub-section (1) and sub-sections (3) to (6) shall apply correspondingly to the operator of a nuclear ship.

Section 5 - Proof of financial security; information and notification

(1) The provisions of financial security shall not notified to the public authority in an appropriate manner.

(2) The public authority shall inform the insurer or the third person having provided an indemnity or guarantee of the granting, withdrawal or revocation of a licence.

(3) A person wishing to make a claim covered by the financial security shall be entitled to request from the public authority the name and address of the insurer or third person having undertaken to indemnify or guarantee.

(4) The authority competent to receive notification of the non-existence or termination of the insurance contract or contract of indemnity or guarantee (Section 14 of the Atomic Energy Act in conjunction with Section 158c, sub-section (2) of the Insurance Contracts Act) shall be the licensing authority, or, where no licence is required, the public authority otherwise competent.

Section 6 - Conditions

When the financial security is being determined, the person under obligation to provide the security shall be required:

1. to alter the financial security only with the prior consent of the public authority;

2. to inform the public authority without delay of any alteration to the financial security not attributable to any act of his and, where the matter involves liability to pay compensation for damage covered by the financial security or by the indemnity under Section 34 of the Atomic Energy Act, of any event causing damage, any claim for compensation and any payment of compensation, as soon as such circumstances come to his knowledge;

3. to satisfy the public authority at its request that financial security exists in the amount and to the extent determined and that the conditions under which it was possible to provide financial security other than by third party liability insurance, continue to prevail, and

4. to make good the coverage, to the extent that it is not available in full for every event causing damage, where a reduction of more than 20% or, if such reduction amounts to at least DM 1 million, of more than 10%, has arisen or is to be expected due to the occurrence of one or more events causing damage.

P A R T II

COVERAGE

Section 7 - Coverage and standard coverage

The amount of financial security (coverage) shall be determined on the basis of a coverage for the normal case (standard coverage), unless the coverage is directly determined in this Part of the Ordinance.

Section 8 - Handling and carriage

(1) Except as otherwise stated in this Part of the Ordinance, the standard coverage shall be determined

1. in accordance with Annex 1 as regards the handling of nuclear fuel,

2. in accordance with Annex 2 as regards the handling of other radioactive substances,

as applicable in each case having regard to the licensed type, mass, activity or characteristics of the radioactive substances.

(2) Where the handling of other radioactive substances is directed towards their application in human medecine, or their handling involves their getting into air, water, soil or vegetation, without it being possible to prevent their further dispersion, the standard coverage shall be twice the figure given in Annex 2.

(3) Where radioactive wastes are handled at a collecting agency of a Land or other installation licensed for the disposal of radioactive wastes, the standard coverage shall be DM 10 million. Where radioactive wastes originating in an installation referred to in Section 7 of the Atomic Energy Act are handled in such other installation licensed for the disposal of radioactive wastes, the standard coverage shall be DM 100 million.

(4) Sub-section 1 shall apply accordingly to the carriage of radioactive substances; in the case of the carriage of other radioactive substances reference shall be made to the figures contained in column 2 of Annex 2. The coverage shall not exceed DM 50 million.

Section 9 - Reactors

(1) For a reactor with a maximum capacity of 1 megawatt the standard coverage shall be DM 5 million; this figure shall be increased by DM 1 million for each additional megawatt up to a maximum of DM 500 million.

The standard coverage shall nevertheless be determined in accordance with Annex 1 if the calculation according to that Annex, having regard to the licensed type and mass of the nuclear fuel, results in a higher figure than the calculation of the standard coverage in accordance with the first sentence of this sub-section. Maximum capacity is deemed to be the thermal capacity under continuous operating conditions at which the reactor is permitted to be operated under the licence.

(2) The standard coverage under sub-section 1 includes the standard coverage for installations for the storage of nuclear fuel or radioactive products and waste which are intended for the use of the installation itself or originate from the reactor and are temporarily stored pending further use or disposal, provided that such installations form a single nuclear installation as defined in Annex 1, sub-section 1, No. 2, last part of the sentence to the Atomic Energy Act.

Section 10 - Ship reactors

The standard coverage in the case of reactors used to propel ships shall be DM 1 million per megawatt of maximum capacity, subject to a limit of DM 400 million. The second and third sentences of Section 9(1) shall apply accordingly.

Section 11 - Other nuclear installations

(1) In the case of installations for the production, treatment or processing of nuclear fuel, the standard coverage shall be determined on the basis of the type and mass of the nuclear fuel which the installation is licensed to handle, in accordance with Annex 1. In the case of installations for the fabrication of fuel elements and for uranium enrichment the maximum coverage, having regard to Sections 16 and 17, shall not exceed DM 200 million.

(2) In the case of installations for the reprocessing of irradiated nuclear fuel the standard coverage for installations with a licensed annual reprocessing capacity shall be as follows:

1. up to 50 tonnes DM 100 million:

2. over 50 tonnes DM 300 million:

3. over 500 tonnes DM 500 million.

(3) Section 9(2) shall apply accordingly.

Section 12 - Decommissioning of installations

Where an installation within the meaning of Section 7 of the Atomic Energy Act is decommissioned or otherwise stops operations, the standard coverage shall be determined in accordance with column 3 of Annex 2 on the basis of the residual activity within the installation, provided that the instal-

lation contains only radioactive and contaminated items of plant and equipment and radioactive substances for monitoring purposes. Where, due to the special circumstances of the case, the level of activity cannot be established or where this would entail unreasonable expense, the public authority may reduce the coverage to 5 per cent of the coverage last determined before the installation was decommissioned or otherwise stopped operations.

Section 13 - Installations for the production of ionizing radiations

(1) In the case of installations for the production of ionizing radiations, the construction and operation of which require a licence, the standard coverage shall be DM 50 million.

(2) Where only the operation of such an installation requires a licence, the standard coverage shall be

1. DM 10 million where the installation is used for medical purposes,

2. DM 3 million where more than 10^8 neutrons are produced per second or where the final energy of accelerated electrons exceeds 10 MeV or where the final energy accelerated ions exceeds 1 MeV per nucleon,

3. DM 1 million in all other cases.

Section 14 - Carriage and storage of irradiated nuclear fuel

In the case of carriage and storage of irradiated nuclear fuel the standard coverage calculated on the basis of the licensed mass of the nuclear fuel in accordance with Annex 1 and the standard coverage calculated on the basis of the total licensed activity in accordance with Annex 2 shall be determined separately and aggregated to give a single figure for the standard coverage. The exemption limit under Annex 2 for the purpose of calculating the total activity is 0.1 microcurie.

Section 15 - Application of radioactive substances to human beings in medical research

Where radioactive substances are applied to human beings in medical research the coverage for every person to whom such radioactive substances are applied shall be DM 1 million.

Section 16 - Determination of the coverage in individual cases

(1) Where the standard coverage is inappropriate to the circumstances of the individual case, the public authority may increase the coverage, subject to the maximum limits under Section 13(2) No. 1 of the Atomic Energy Act, to twice the standard coverage or may reduce it to one third of the standard coverage.

(2) In determining the coverage appropriate to the circumstances of the individual case special consideration shall be given to:

1. whether and to what extent the possibility exists or is to be excluded that persons other than the person required to provide financial security and his employees may suffer loss of life or bodily injury or damage to health or property;

2. the level of safety provided by protective measures and safety equipment;

3. whether and to what extent the possibility exists or is to be excluded, having regard to meteorological and hydrological conditions, that radioactive substances may be dispersed, particularly in the form of gases, aerosols or liquids;

4. the duration of the hazard, having particular regard to the half-life of the radioactive substances;

5. whether due to the type, mass or characteristics of the radioactive substances the possibility of damage due to nuclear incidents resulting from nuclear fission processes can be excluded even under the most unfavourable circumstances;

6. whether and to what extent there exists an especially high or low level of danger in the event of carriage, having regard to the means and route of transport employed, the packaging and the characteristics of the radioactive substances.

Section 17 - Reduction of the coverage in particular cases

The coverage required under this Part of the Ordinance for nuclear ships and for installations for the treatment or processing of nuclear fuel may be reduced to one half, provided that the objective stated in Section 1(1) of the Atomic Energy Act, having due regard also to the interests of those required to furnish indemnity or guarantee under the Act or by virtue of international agreements, calls for the provision of financial security to be made possible or facilitated by such measures. Such reduced coverage shall fall short of the maximum amount of insurance cover which can be obtained under reasonable conditions on the insurance market (Section 13(2), No. 1 of the Act) only where this serves to promote a project of particular significance for research, development or use of nuclear energy.

Section 18 - Coverage in case of multiple handling

(1) Where the person required to provide financial security handles several substances or several batches of a substance under one or more licences, the relevant coverage shall be separately determined for every activity requiring the provision of financial security.

(2) An overall coverage shall nevertheless be determined where the multiple handling takes place outside a nuclear installation and is so closely related as to place and time that the several substances or batches must be considered equally as dangerous as a single substance, the activity or mass of which would be equivalent to the total activity or total mass of the substances or batches.

(3) In the case of sealed and unsealed other radioactive substances, the overall coverage shall be calculated on the basis of the total activity, expressed in multiples of the activity exemption limits. Where substances are handled which belong to both the groups mentioned in the first sentence of this sub-section, the coverage determined separately for each group shall be aggregated. However, the total coverage to be determined shall not exceed that which would result if all the substances were unsealed other radioactive substances.

(4) As regards carriage sub-sections (1) to (3) shall apply accordingly.

Section 19 - Rounding off the coverage

(1) The coverage shall be determined to the nearest DM 100,000.

(2) Where the provisions concerning coverage result in an intermediate amount of less than DM 50,000, the figure shall be rounded down, otherwise it shall be rounded up.

P A R T III

FINAL PROVISIONS

Section 20 - Transitional provision

Where the financial security determined for an activity licensed before the entry into force of this Ordinance does not meet the requirements set out herein, the financial security shall be re-determined at the next review pursuant to the second sentence of Section 13(1) of the Atomic Energy Act, but in any event, in the case of installations referred to in Section 7 of the Act, within six months, and in other cases within one year of the entry into force of this Ordinance.

Section 21 - Berlin clause

This Ordinance shall also apply to the Land Berlin in accordance with Section 14 of the Third Transition Act of 4th January 1952 (BGBl. I, page 1) and the second sentence of Section 58 of the Atomic Energy Act.

Section 22 - Entry into force

This Ordinance shall come into force on the first day of the calendar month following publication. The Financial Security Ordinance in the version published on 10th November 1970 (BGBl. I, page 1523) shall cease to have effect as from the same day.

A N N E X 1

Standard coverage for nuclear fuels in millions of DM

1	2	3	4	5	6
Mass of nuclear fuel+	Plutonium	Uranium 235	Uranium enriched to more than 20% in the isotope 235	Uranium enriched to 20% or less in the isotope 235	Natural uranium being nuclear fuel
Up to 10g	1.0	0.5	-	-	For any mass in excess of the exemption limits 1. up to 10 tonnes: 1.0 for every tonne or part thereof 2. from 10 to 100 tonnes: 0.25 per additional tonne or part thereof 3. over 100 tonnes: 0.025 per additional tonne or part thereof up to a maximum of 100, and 50 in the case of carriage.
Over 10g to 100g	2.0	1.0	-	-	
Over 100g to 200 g	3.0	2.0	-	-	
Over 200g to 1kg	10.01	10.0	5.0	1.0	
Over 1kg to 100 kg for every additional kg or part of a kg	1.0	1.0	0.3	0.1	
From 100 to 1,000kg for every further 10kg or part of 10kg	2.0	2.0	0.6	0.3	
Over 1,000kg for every further 100kg or part of 100kg	10.0	10.0	1.5	0.3	

+ In calculating the mass of nuclear fuel only the mass of plutonium 239, plutonium 241, uranium 233 and uranium 235 shall be taken into account. For the calculating of the mass of natural uranium being nuclear fuel, the total mass of the uranium is to be taken into account.

A N N E X 2

Standard coverage in case of other radioactive substances
in millions of DM

1	2	3
Activities in multiples of the exemption limits under Annex IV, Table IV.1 of the Radiation Protection Ordinance+	sealed radioactive substances	unsealed radioactive substances
from 10^5 times to 10^6 times	0.1	0.5 to 1
from 10^6 times to 10^7 times	0.1 to 0.5	1 to 2
from 10^7 times to 10^8 times	0.5 to 1	2 to 4
from 10^8 times to 10^9 times	1 to 2	4 to 8
from 10^9 times to 10^{10} times	2 to 4	8 to 12
from 10^{10} times to 10^{11} times	4 to 8	12 to 16
from 10^{11} times to 10^{12} times	8 to 12	16 to 20
from 10^{12} times to 10^{13} times	12 to 16	above 10^{12} times:
from 10^{13} times to 10^{14} times	16 to 20	20 to 30
from 10^{14} times to 10^{15} times	20 to 24	
above 10^{15} times	24 to 28	

+ The standard coverage in case of natural uranium which is not nuclear fuel and in case of depleted uranium is determined according to column 6 of Annex 1.