

NUCLEAR
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December 1984

Nuclear Energy Agency
Organisation for Economic Co-operation and Development

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

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

The Signatories of the Convention on the OECD are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries acceded subsequently to this Convention (the dates are those on which the instruments of accession were deposited) Japan (28th April, 1964), Finland (28th January, 1969), Australia (7th June, 1971) and New Zealand (29th May, 1973)

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

The OECD Nuclear Energy Agency (NEA) was established on 20th April, 1972, replacing OECD's European Nuclear Energy Agency (ENEA) on the accession 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 primary objectives of NEA are to promote co-operation between its Member governments on the safety and regulatory aspects of nuclear development and on assessing the future role of nuclear energy as a contributor to economic progress

This is achieved by

- *encouraging harmonisation of governments' regulatory policies and practices in the nuclear field, with particular reference to the safety of nuclear installations, protection of man against ionising radiation and preservation of the environment, radioactive waste management, and nuclear third party liability and insurance,*
- *keeping under review the technical and economic characteristics of nuclear power growth and of the nuclear fuel cycle, and assessing demand and supply for the different phases of the nuclear fuel cycle and the potential future contribution of nuclear power to overall energy demand,*
- *developing exchanges of scientific and technical information on nuclear energy particularly through participation in common services*
- *setting up international research and development programmes and undertakings jointly organised and operated by OECD countries.*

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

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LEGISLATIVE AND REGULATORY ACTIVITIES

• *Argentina*

NUCLEAR LEGISLATION

1983 Decree creating an Advisory Committee on Nuclear Affairs

Decree 159 of 13th December 1983 establishes an Advisory Committee on Nuclear Affairs whose purpose is to propose legislation to Congress regarding the objectives of Argentina's nuclear policy and the mechanisms for carrying it out. The Committee is also charged with the task of preparing a proposal for the reorganisation of the Argentine National Commission for Atomic Energy.

The Committee, headed by the Minister of External Relations and Culture, was to have presented its conclusions to the Argentine President within two months following its creation.

• *Australia*

RADIATION PROTECTION

1980 Radiation Safety (Qualifications) Regulations as amended in 1984

These Regulations, promulgated pursuant to the provisions of the Radiation Safety Act, 1975-1979, were published in the Government Gazette (No. 39) of 6th June 1980. Under the Regulations, persons engaged in activities such as industrial radiography, veterinary therapy, installation or repair of X-ray apparatus or any equipment incorporating radioactive substances are required to pass a radiation safety examination or to possess an approved qualification in radiation. The Regulations authorise the National Health and Medical Research Council to exempt persons from compliance

with these requirements or, conversely, to impose such requirements on persons other than those designated above. A list of subjects that is to comprise the syllabus of the examination is also provided.

An amendment to the above Regulations, Radiation Safety (Qualifications) Amendment Regulations (1984), published in the Government Gazette of 19th April 1984, establishes the fees to be paid for the examination.

Mines Safety Control (Radiation Protection) Regulations (1981) (Northern Territory of Australia)

The above Regulations (Regulations 1981, No. 30) were promulgated on 25th September 1981 pursuant to the Mines Safety Control Act and were notified in the Northern Territory Government Gazette on 28th September 1981. The provisions of the Regulations are intended to prevent or limit the radiation risk to persons involved in the mining or milling of radioactive ores.

The Regulations set forth duties and responsibilities of owners, managers and employees of those mines to which the provisions of the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (1980) apply. The duties established by the Regulations are identical with those set forth in the above-mentioned Code for such persons. The Regulations, however, also add a penalty provision providing that a person who contravenes or fails to comply with the Regulations shall be subject to a fine not exceeding 500 Australian dollars.

The Code itself is set forth as Schedule I of the Regulations. In addition to outlining the duties of mine operators, managers and employees, the Code also establishes radiation standards and exposure limits for employees and members of the public, requires health surveillance of employees in the form of medical examinations and provides for the management of radioactive wastes.

Health (Radiation Safety) Act 1983 (Victoria)

The above Act (No. 9889), enacted on 17th May 1983 by the Legislative Council and Legislative Assembly of the State of Victoria, amends the Health Act 1958 and the Nuclear Activities (Prohibitions) Act 1983. The purpose of the Act is to regulate the keeping and use of radioactive substances and radiation apparatus and to provide for protection against the harmful effects of radiation. This purpose is accomplished primarily through the addition of a new Section to the Health Act 1958. The Section, entitled "Radiation Safety", establishes guidelines for the registration and licensing of certain radiation apparatus and sealed radioactive sources. The new Section also authorises the Governor in Council to make regulations in specified areas, including, inter alia, inspection of premises, medical examinations, record-keeping, transport and disposal of radioactive substances and, generally, safeguarding the health of the public and employees.

The Act also sets up a Radiation Advisory Committee and a Radiographers and Radiation Technologists Registration Board of Victoria and provides for

their membership and terms of reference. In particular, the duties of the Radiation Advisory Committee include advising the competent Minister or Health Commission on such matters as promotion of radiation safety procedures, criteria for licensing and registration, practices concerning certain radioactive substances and use of radiations, periodic safety assessments of apparatus and sources, and any other matters referred to it by the Minister.

Additionally, the Act amends the Nuclear Activities (Prohibitions) Act 1983 in respect of certain licensing provisions.

Health (Radiation Safety) Regulations 1984 (Victoria)

The above Regulations (Statutory Rules 1984, No. 191) were promulgated on 8th May 1984 pursuant to the Health Act 1958, as amended by the Health (Radiation Safety) Act 1983 (see above). The Regulations repeal the Irradiating Apparatus and Radioactive Substances Regulations 1959.

The provisions of the Regulations generally are designed to safeguard the public, patients and employees of registered premises from the harmful effects of radiation. This purpose is accomplished through detailed regulations and supplementary schedules which concern, inter alia

- licensing of specified operators, registration and safety testing of certain radiation apparatus and sealed radioactive sources, standards for adequate facilities and general safety precautions, including labelling and provision of instructions to employees, that are to be implemented by owners of registered sources and apparatus, licensees of unsealed radioactive sources and persons responsible for radioactive substances;
- medical examinations for employees and research personnel, radiation protection limits for workers and members of the public, use of personal monitoring devices and control of patient radiation dosages,
- disposal of radioactive waste, particularly with regard to discharge of material into sewage systems or through stacks, pipes or similar conduits;
- transportation of radioactive waste, with particular regard to the storage and packaging of such materials and actions to be taken in the event of vehicular or package damage. Compliance with specified international regulations also is required.

In addition, the Regulations also establish enforcement procedures, such as inspection and seizure, and penalties for non-compliance. Exemptions for certain devices are also granted with authority given to the Health Commission to declare exemptions of any other apparatus or source which it considers to be without significant radiation hazard.

Detailed schedules are included which supplement the Regulations and which primarily concern licensing and registration requirements.

On 10th July 1984, minor changes were made to the above Regulations by means of the Health (Radiation Safety) (Amendment) Regulations 1984, No. 236

Code of Practice on Radiation Protection in the Mining and Processing of Mineral Sands (1982) (Western Australia)

The above Code for Western Australia, which has been in force since 1st September 1982, has as its purpose the prevention, limitation or minimisation of radiation exposure to persons engaged in all stages of the mineral sands mining and processing operations. To this end, the Code establishes radiation safety practices for the mineral sands industry in Western Australia.

The Code prescribes, not only for operators and managers of mines and processing plants but for their employees as well, certain duties designed to ensure that exposure is kept as low as reasonably practicable. Basic radiation standards and exposure limits for employees and for members of the public are set forth and derived limits are established as an aid in conducting a radiation protection programme. The Code further requires that two types of monitoring be carried out. positional monitoring to measure radiation levels or contamination at specific positions in the mine or plant and personal monitoring to determine the exposure of individuals to ionizing radiation. Health surveillance, in the form of medical examinations for radiation workers, also is required. The examinations are based on the need to determine an individual's fitness to undertake the work and not on possible exposure to radiation, it being emphasised that the purpose of the Code is to minimise exposure.

The Code also provides for the management of wastes, again with a view to keeping contaminant concentrations and dose rates within specified levels. Finally, provision is made for the rehabilitation of those sites in which mining or processing operations have ceased by restoring the areas to designated average radiation levels.

Radiation Safety (General) Regulations 1983 (Western Australia)

These Regulations came into effect six months after their publication in the Government Gazette (No. 12) of 21st February 1983. The primary provisions of the Regulations, which are intended to ensure radiation safety for the public and for radiation workers, are divided into the following four categories.

1. General precautions and requirements relating to radiation safety

The Regulations under this category outline actions to be taken in the event excessive radiation doses are received by individuals or excessive concentrations of radioactive substances are released. They lay down the radiation safety precautions to be taken by both radiation safety officers and the person in whose name premises, apparatus or products are registered. Provision is also made for personal monitoring of radiation workers.

2. Radioactive substances

These Regulations concern safety precautions to be taken with regard to designated radioactive substances. They impose restrictions on the activities of licensees and certain others with regard to radioactive substances and

establish conditions that may be imposed on the registration of premises. The person in whose name premises are registered is charged with further responsibilities regarding the manufacture, use and storage of radioactive substances. These responsibilities concern, inter alia, the labelling and storage of radioactive substances and recordkeeping and reporting practices. The Regulations further govern the release and disposal of radioactive substances and the actions to be taken in the event of employee contamination. Also, licensees are generally forbidden to deal with radioactive substances in such a way as to expose employees to airborne radioactive material exceeding specified levels.

3. Irradiating apparatus

The Regulations under this category include conditions that may be imposed on the registration of irradiating apparatus or premises on which such apparatus is operated. Exemptions from licensing requirements are established as well as restrictions on the use of certain irradiating apparatus.

4. Electronic products

This category concerns regulations specifically addressing microwave ovens and lasers.

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In addition to these four broad categories, the Regulations provide detailed schedules that include dose equivalent limits and maximum permissible exposure levels, registration and licensing forms, exemption and maximum concentration tables, requirements for the operation of irradiating apparatus and for premises on which such apparatus is used, and conditions imposed on registration of irradiating apparatus.

The Regulations also repeal the Radioactive Substances Regulations 1958, as amended.

REGIME OF RADIOACTIVE MATERIALS

Radioactive Ores and Concentrates (Packaging and Transport) Regulations (1980)
(Northern Territory of Australia)

Regulations 1980, No. 30, were issued on 21st July 1980 pursuant to the provisions of the Radioactive Ores and Concentrates (Packaging and Transport) Act and published in the Northern Territory Government Gazette of 1st August 1980. The primary purpose of the Regulations is to lay down specific record-keeping practices for persons licensed to transport and store radioactive material.

Additionally, applications made under the Act for transport or storage licences are to be made in accordance with forms provided in the Regulations.

Similarly, forms are prescribed for the licences which are issued and for the reports that certain licensees are required to make on the conduct of their work in accordance with the licence.

TRANSPORT OF RADIOACTIVE MATERIALS

Radiation Safety (Transport of Radioactive Substances) Regulations (1982)

The above Regulations, which came into operation three months after their publication in the Government Gazette (No. 103) of 24th December 1982, essentially require carriers and consignors of radioactive substances to comply with certain provisions of the 1973 International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Materials as specified in Schedule I of the Regulations.

The Regulations further forbid interference with the contents of consignments, with labels and markings and with documents relating to consignments and also amend the Radioactive Substances Regulations of 1958 by repealing several of its regulations and schedules. Finally, the transport of radioactive substances in Western Australia, as well as the storage, packing and stowing of such substances for transport, is to be accomplished in accordance with the 1982 Code of Practice for the Safe Transport of Radioactive Substances and the IAEA Regulations.

• *Belgium*

ORGANISATION AND STRUCTURE

1984 Royal Order amending the 1979 Royal Order setting up and organising an Interministerial Commission for Nuclear Safety and State Security in the Nuclear Field

This Royal Order of 14th February 1984 was published in the Moniteur belge on 22nd May 1984. The new Order amends the Royal Order of 15th October 1979 (see Nuclear Law Bulletin No. 24) by providing that the Ministerial Committee for the Brussels Region as well as the Flemish Executive and the Walloon Regional Executive respectively may, if they wish, each designate a delegate in an advisory capacity to the meetings of the Commission.

1984 Royal Order amending the 1963 Royal Order concerning radiation protection

The Royal Order of 12th March 1984 (published in the Moniteur belge on 18th April 1984) amends once again the Royal Order of 23rd February 1963 laying down the General Regulations for Protection of the Population and Workers against the Hazards of Ionizing Radiation (see Nuclear Law Bulletin Nos. 1, 7 and 23).

The new Order modifies and extends the composition of the Special Commission to include regional executives. The Commission, set up by the 1963 Order, is responsible for examining from a technical viewpoint applications for the licensing of nuclear installations (Class I establishments)

RADIATION PROTECTION

1984 Ministerial Order on applications for licences for unsealed radioisotopes used in human or veterinary medicine

This Order of 13th April 1984 by the Secretary of State for Public Health and the Environment entered into force on 8th June 1984, when it was published in the Moniteur belge.

The Order specifies the conditions for applications for licences for the import, manufacture, preparation, putting up for sale or sale of unsealed radioisotopes used in human or veterinary medicine, in accordance with the 1963 Royal Order laying down General Regulations for Protection of the Population and Workers against the Hazards of Ionizing Radiation.

The applications must give the name of the product as well as the name and address of the manufacturer. When the product has been made in Belgium, the application must include information on the manufacturing method, the radiation protection measures, the number of persons involved in the manufacture and their qualifications. The name of the approved physician for the medical control of the staff must also be provided, together with the name of the expert or the body responsible for physical control. A copy of the licence (nuclide classification) issued under the above-mentioned General Regulations must also be appended to the application.

When the product has been manufactured outside Belgium, the application must provide proof that the product is marketed with the agreement of the competent authority of the country concerned. Information must also be given on the isotope, its activity, half-life etc., as well as on the product's period of validity, its packaging and use.

Finally, the application for a licence must justify the analytical and/or medical interest in using the product.

• *Canada*

REGIME OF RADIOACTIVE MATERIALS

Uranium Mines (Ontario) Occupational Health and Safety Regulations of 1984

The above Regulations (SOR/84-435, 7th June 1984) were published in the Canada Gazette, Part II, 27th June 1984 and came into force on 1st July 1984. They were made under the Atomic Energy Control Act and their purpose is to establish uniformity in the laws governing occupational health and safety in mines, including uranium mines, in the Province of Ontario.

As a result, in uranium mines in Ontario, the general health and safety of employees is governed by the laws of the Province of Ontario and administered by the provincial officials responsible for those laws. The radiological health and safety of such employees continues however to be the responsibility of the Atomic Energy Control Board pursuant to the Atomic Energy Control Regulations, it is further specified that in the event of any inconsistency between the new Regulations and the Atomic Energy Control Regulations, the latter shall prevail.

The Regulations resulted in a consequential amendment being made to the Schedule to the Canada Occupational Health and Safety Regulations for Uranium and Thorium Mines.

• *Chile*

NUCLEAR LEGISLATION

Nuclear Safety Act, 1984

As a result of the advisory services provided in 1981-1982 to the Chilean Nuclear Energy Commission by the International Atomic Energy Agency (IAEA) under its Technical Co-operation Programme (see Nuclear Law Bulletin Nos. 31 and 33), the Nuclear Safety Act was promulgated on 16th April 1984, on the occasion of the twentieth anniversary of the establishment of the Commission. It was published as Act No. 18302 in the Official Gazette of 2nd May 1984.

The fundamental purpose of the Act is to regulate the peaceful applications and uses of nuclear energy in the country. This is put into effect by a set of principles and provisions aimed at ensuring the protection of health, life, property and the environment from possible harmful effects

arising from the uses of nuclear energy. These provisions establish a system of indemnification for damage which may be caused by such uses, prevent the misappropriation and illegal use of nuclear facilities or materials and, finally, are designed to ensure compliance with relevant international agreements and conventions to which Chile is a Party. The Act contains six parts, which are outlined briefly below.

Part I, in addition to laying down the purpose of the Act as already described, relates to the regulatory authority, which is the body responsible for ensuring that nuclear activities in the country are carried out safely, in accordance with the legal provisions in force and in compliance with general international standards laid down in the form of regulations by the IAEA, of which Chile is a Member. The Chilean Nuclear Energy Commission is designated as the regulatory authority.

Part II provides a set of definitions essential for understanding certain terms used in the Act and for international contractual relationships

Part III relates to nuclear safety and lays down the requirements pursuant to which the regulatory body is to exercise control over nuclear installations, through licences for siting, construction, commissioning, operation and decommissioning of such installations. It further sets forth the requirements to be fulfilled by the operating personnel of nuclear facilities.

Part III also deals with subsequent control, i.e. when a licensed facility is in operation. For this, a system of effective inspections is provided for, whereby authorised staff of the regulatory body will be empowered to carry out control and enforcement activities.

Part IV refers to non-compliance with the applicable provisions and standards concerning nuclear safety and radiation protection, and provides for administrative sanctions that the regulatory authority may impose and the procedure for appealing against them. These sanctions range from a fine to permanent revocation of a facility's permit. In this connection, certain criminal offences involving nuclear safety may be the object of stricter sanctions or penalties in view of the hazards associated with such offences

Part V regulates civil liability for damage as a result of a nuclear accident, and is based on the principle of the objective liability of the operator of a nuclear installation. The provisions of the Vienna Convention are closely followed in this respect. The operator's maximum liability has been set at the equivalent to 75 million US dollars for each nuclear accident, this compensation amount is indexed to the variations of the Special Drawing Rights of the International Monetary Fund as obtaining between the date of promulgation of the Act and that of a nuclear accident. The operator's liability is to be covered by insurance or other types of financial security as may be approved by the regulatory authority.

Finally, Part VI relates to radioactive installations for which being mostly of a medical nature, the licensing and control responsibilities have been entrusted to the Ministry of Public Health, the Health Code has accordingly been amended.

The promulgation of the Nuclear Safety Act and of the Act amending the Health Code will entail a series of implementing regulations which are under consideration in the following areas. licensing of nuclear installations, radiation protection, transport of radioactive materials, physical protection of nuclear materials, financial security for nuclear damage, uranium and thorium mining. In addition to these regulations, a series of technical standards for nuclear safety are under preparation to regulate successive stages in the licensing of nuclear installations.

• *France*

ORGANISATION AND STRUCTURE

1984 Decree on the National Institute for Nuclear and Particle Physics

Decree No. 84-667 of 17th July 1984 (published in the French Official Gazette of 21st July 1984) repeals Decree No. 71-279 which had set up the National Institute for Nuclear and Particle Physics under the National Centre for Scientific Research (CNRS). The new Decree gives the Institute a different statute. It will no longer have a distinct legal personality and now becomes a department within the CNRS. The Institute carries out its work in agencies placed under the supervisory authority of the Minister for National Education and the Minister for Research respectively, with the exception of activities involving the Atomic Energy Commission (CEA).

A Management Council and an Scientific Council will be set up for the Institute.

RADIATION PROTECTION

1984 Decree revising and supplementing the tables of occupational diseases annexed to a 1946 Decree

Decree No. 84-472 of 22nd June 1984 (published in the Official Gazette of 25th and 26th June 1984) amends and replaces a series of tables of occupational diseases annexed to Decree No. 46-2959 of 31st December 1946.

The amended tables include only one which concerns nuclear activities, namely table no. 6 which was already amended in 1963 and has now been given a new title. The original title "diseases created by X-rays or radioactive substances" is replaced by "diseases created by ionizing radiation". No amendments have been made, however, to the list indicating the main activities likely to give rise to the diseases described in table no. 6.

Other modifications concern the diseases and time-period for taking certain of them in charge to take account of the evolution of knowledge. The time-period corresponds to the period during which the disease must be noted medically.

In addition, as regards haematological diseases, a distinction is made between diseases following acute irradiation and those following chronic irradiation.

REGIME OF NUCLEAR INSTALLATIONS

1984 Order and Circular on design quality, construction and operation of large nuclear installations

The Order of 10th August 1984 (published in the Official Gazette of 22nd September 1984) contains provisions with regard to operators of large nuclear installations. They must ensure that the quality of the structures, equipment and operating conditions are commensurate with the importance of their functions from the viewpoint of the safety of the installation concerned. Operators must also exercise control over all suppliers of equipment and services as they are answerable to the Central Service for the Safety of Nuclear Installations for quality assurance.

The Order prescribes the general principles to be applied for organising quality control. A programmed quality assurance system must be put in place and entered in a file. Such assurance must also cover studies on activities related to the safety of large nuclear installations. Operators have been given a year as from publication of the Order, that is until 23rd September 1985, to submit a quality assurance file.

Transitional measures are also laid down for installations being constructed or already in operation; this also applies to works to be undertaken within one year. Operators of these installations may ask the Minister responsible for Industrial Development to extend the time allowed for backfitting.

The purpose of the Circular of 10th August 1984 is to further explain the instructions in the Order and provides an commentary. The Order applies to installations operated in France but these provisions may be applied, on request by the industrialists concerned, to activities connected with the construction design of a nuclear installation in another country.

ENVIRONMENTAL PROTECTION

1984 Circular on installations classified for purposes of environmental protection

The Circular of 23rd July 1984 issued by the Minister of the Environment (published in the Official Gazette of 25th August 1984) analyses the consequences of the Directive of the Commission of the European Communities of 15th July 1980 on installations classified for purposes of environmental protection. The Community Directive fixes the three basic principles for protection of the environment, the public and workers: justification, optimisation and limitation. Legislation on classified installations will be based on these three principles when preparing general regulations and standards applicable to activities involving ionizing radiation.

This Circular insists on a fully documented public enquiry procedure and the need to use the best technology available for prevention and protection by means of a twofold approach: a 0.005 sievert exposure limit on the one hand, and a limitation of radiation emissions and radioactive effluent releases at the source.

The list of classified installations and the classification of radionuclides have not been amended for the time being, pending publication of a new decree.

An Annex to the Circular lists the technical measures required to prevent disamenities due to ionizing radiation.

FOOD IRRADIATION

1984 Order on trade in garlic, onions and shallots treated by ionizing radiation

The Order of 21st June 1984 (published in the Official Gazette of 6th July 1984) sets the licensing conditions for possession with a view to the sale and putting on sale of onion, garlic and shallot bulbs whose germination has been inhibited by exposure to cobalt 60 or caesium 137 gamma radiation or to accelerated electron beams with an energy below or equal to 10 million electron-volts.

The Order regulates the labelling and storage conditions of this produce.

• *Federal Republic of Germany*

THIRD PARTY LIABILITY

Proposed amendments to the Atomic Energy Act (1984)

Bill adapting the Act to the 1982 Protocols to the Paris Convention and the Brussels Supplementary Convention

This autumn, the Government of the Federal Republic of Germany submitted to the Upper House of Parliament draft legislation that would modify the Atomic Energy Act of 23rd December 1959, as amended (see Supplements to Nuclear Law Bulletin Nos. 15 and 18). The purpose of the proposed legislation is to adapt the Atomic Energy Act to the new rules set forth in the 1982 Protocols amending the Paris Convention and the Brussels Supplementary Convention respectively, which are currently awaiting ratification.

The proposed amendments will not alter the basic content of the national nuclear liability law. Currently, provisions of the Atomic Energy Act address areas that the Paris Convention left to national legislation. Thus at present, the Act holds operators liable for damage to the means of transport and for damage caused by any radioactive source within the nuclear installation. Because the Protocol now brings such cases within the liability system of the Paris Convention, these special national provisions were no longer considered necessary and, accordingly, have been deleted.

The Protocols also replace the unit of account used in the Conventions by the International Monetary Fund's Special Drawing Right (SDR). The bill reflects this change by adopting the SDR and amending the relevant provisions. Similarly, the Atomic Energy Act's definitions of nuclear incident, nuclear installation and radioactive products or waste are amended to bring about consistency with the Paris Protocol. In this regard, the Atomic Energy Act's definition of nuclear installation is extended to provide that two or more nuclear installations of the same operator on the same site, together with other installations on the same site in which radioactive material is held may be treated as a single nuclear installation.

With regard to the Protocol to the Brussels Supplementary Convention, the proposed amendments would raise the liability limits for damage occurring outside the Federal Republic of Germany. Thus, in accordance with limits set by the Protocol, the liability of the operator of a nuclear installation is limited to 300 million SDRs with regard to those countries that have adopted the Protocol. With regard to those countries for which only the Brussels Supplementary Convention is in force, the liability limit remains at 120 million SDRs, the maximum limit currently in force under that Convention. If the damage is suffered in any other State, the maximum amount of liability remains unchanged at 15 million SDRs.

Bill introducing unlimited liability in the Act (1984)

Several members of Parliament submitted a bill (Bundestags-Drucksache 10/2200) dated 24th October 1984 to Parliament proposing unlimited liability for the operator of a nuclear installation. More detailed information on this bill and its consideration by Parliament will be given in subsequent issues of the Nuclear Law Bulletin.

● *Italy*

RADIATION PROTECTION

1984 Circular on radiation protection of patients in radiology and nuclear medicine

The above Circular (No. 62) was issued by the Ministry of Health on 2nd August 1984. It is based on the Directive of the Council of the European Communities of 3rd September 1984 laying down basic measures for the radiation protection of persons undergoing medical examination or treatment (see Chapter on "International Organisations" in this issue of the Nuclear Law Bulletin).

While the Directive provides that Member States must comply with its provisions before 1st January 1986, the Circular was in fact issued in anticipation of the obligation to implement the Directive.

The Circular lays down general directives to be followed in the practice of radiology and nuclear medicine and provides illustrations of the main technical related aspects.

● *Japan*

NUCLEAR LEGISLATION

Review of atomic energy legislation (1984)

The Japan Atomic Energy Commission has set up a Committee which is entrusted with making a comprehensive review of the body of laws governing nuclear activities in Japan.

The Committee's mandate is to conduct a study over a period of one year to assess the legislative and regulatory requirements in the framework of developing nuclear programmes.

Nuclear activities in Japan are largely governed by the 1957 Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Regulation Law) and the 1957 Law concerning Prevention of Radiation Hazards due to Radioisotopes etc. (Prevention Law), made under the 1955 Atomic Energy Basic Law, an outline act for the peaceful development of nuclear activities.

These Laws were amended on a number of occasions (see Nuclear Law Bulletin Nos. 22 to 25) to keep abreast of technological developments in the nuclear field. In this review, particular attention will be paid to the regulation of uranium enrichment services.

Establishment of a Committee for regulating the safety of radioactive waste disposal (1984)

The Japan Nuclear Safety Commission has set up a Special Committee responsible for studying safety regulations for land disposal of radioactive waste.

The Committee's terms of reference include consideration of the safety regulations which should apply to this type of disposal, safety assessment and enforcement standards as well as planning and assessment of safety research.

The Committee's work will be focused on safety regulations for land disposal of low-level radioactive waste and the rational treatment and disposal of very low level waste.

• *Luxembourg*

RADIATION PROTECTION

1983 Act concerning the medical use of ionizing radiations

This Act, which entered into effect on 10th August 1983 (Mémorial No. 69 of 31st August 1983), provides that the use of ionizing radiations for diagnostic and therapeutic purposes shall be subject to conditions relating to the training of physicians and to standards for apparatus.

In particular, the practice of general radiodiagnosis and radiotherapy is limited to medical specialists having received appropriate training. The use of unsealed radioactive sources on persons is restricted to physicians who have undergone specialised training in nuclear medicine and who have been approved by the Minister of Health. The conditions for such training will be laid down in Grand-Ducal regulations.

The Act further requires prior authorisation by the Minister of Health for the utilisation of apparatus and installations used for radiodiagnosis, radiotherapy or nuclear medicine. The possession and utilisation of such apparatus and installations are also governed by specific regulations.

Finally, the Act provides penal sanctions of imprisonment or fines for all infractions.

● *Malaysia*

NUCLEAR LEGISLATION

Atomic Energy Licensing Act, 1984

Following approval by Parliament of "an Act to provide for the regulation and control of atomic energy, for the establishment of standards on liability for nuclear damage and for matters connected therewith or related thereto", Act No. 304 - called the Atomic Energy Licensing Act 1984 - was published in the Official Gazette of 28th June 1984. It has been elaborated with the advice and assistance of the IAEA, it regulates the licensing and control of all activities involving radioactive materials, irradiating equipment or nuclear installations.

Part I contains the necessary interpretation provisions; most of the terms defined have been taken from the Vienna Convention on Civil Liability for Nuclear Damage.

Part II provides for the establishment of the Atomic Energy Licensing Board, consisting of a Chairman and four other members, one of whom is to be a representative from the Ministry of Public Health. In addition to advising the Government on nuclear matters, the Board is the nuclear regulatory authority.

Part III deals with control and licensing activities and conditions for licences. The Board is vested with licensing responsibilities over all activities covered by the Act; however, when such activities are for medical purposes, individual licences are issued by the Director General of Health under the authority of the Board. The activities of prospecting for and mining of radioactive materials are governed by the relevant laws relating to mining, but any discovery of radioactive ores in the course of such activities

are to be reported to the Board which may prescribe such requirements as necessary for the purposes of the Act.

Parts IV, V and VI relate respectively to the cancellation, suspension or renewal of licences, health and safety requirements for protection of workers and all other persons from ionizing radiation, and the disposal of radioactive waste for which prior authorisation is required and in relation to which the opinion of the Director General of Environmental Quality may have to be sought.

Part VII sets out the conditions and procedure for appeals against decisions made under the Act, and Part VIII provides for the rights of inspection and powers of seizure and arrest in cases of offences and forfeiture.

Part IX on liability for nuclear damage closely follows the principles and provisions of the Vienna Convention. The maximum liability of the operator of a nuclear installation is fixed at 50 million ringgit per nuclear accident, at current rates of exchange, this amount is equivalent to about 22 million US dollars.

Finally, Part X contains general provisions which enable the Atomic Energy Licensing Board to delegate its powers and duties as may be necessary or convenient for the discharge of its responsibilities, it further vests the power to make regulations for the purposes of the Act in the competent Minister and repeals the Radioactive Substances Act of 1968.

In this connection, it may be noted that a Nuclear Energy Unit has been set up in the Prime Minister's Office to be responsible for matters covered by the Act, and the Head of that department is ex officio Executive Secretary to the Atomic Energy Licensing Board pursuant to the Act.

• *Netherlands*

THIRD PARTY LIABILITY

1984 General Administrative Order to increase the liability amount set by the 1979 Act on nuclear liability

The amount of 100 million guilders established, under Section 3(1) of the Act of 17th March 1979 on third party liability for damage caused by nuclear incidents (see Supplement to Nuclear Law Bulletin No. 24), as the maximum amount of liability of an operator of a nuclear installation situated in the Netherlands, has been increased by General Administrative Order. As from 1st September 1984 this maximum amount is set at 200 million guilders.

This increase was deemed necessary in view of the effects of inflation on the limit of liability and the available possibilities of obtaining insurance cover.

• Portugal

RADIATION PROTECTION

1984 Decree regulating safety and radiological protection in mines and related ore treatment and uranium recovery

This Decree (No. 78/84) of 5th September 1984 was published in the Portuguese Official Gazette of 9th October 1984. It was issued in pursuance of Decree-Law No. 426/83 of 7th December 1983 which provides that safety and radiological protection regulations shall be made for activities involving the mining of uranium and related treatment of uranium.

This Decree lays down definitions of technical radiation protection terms (e.g. effective dose-limit, derived limits). It sets out the requirements for permissible concentrations and internal and external dose-limits for workers (and members of the public). Provision is made for regular medical examinations for workers and periodic technical controls of radiation levels and ventilation. Also, access to controlled areas (where workers may be exposed to radiation in excess of three-tenths of the annual dose limit) is restricted to authorised persons.

The Decree sets up a Radiological Protection Service responsible for ensuring that the provisions of the Decree are observed. This Service must include as a minimum a specialist in radiation protection and safety, a doctor and a specialist in ventilation (who may also be the radiation protection specialist). They must have the personnel and equipment required to discharge their duties.

In addition, the obligations of those responsible for overseeing the work and obligations of the workers are specified with a view to reducing radiation hazards. Those responsible must ensure, inter alia, that all exposures to radiation shall remain as low as reasonably achievable, and in no case exceed the limits laid down in the Decree. They must keep the competent authorities informed on possible radiation risks and the measures planned or implemented to eliminate or limit such risks. In addition, they must transmit each year to the authorities records of the exposures of workers to radiation.

Workers for their part must comply with the hygiene and safety rules laid down and use the devices and dosimeters provided for their protection and control. They must keep such safety equipment in good working condition and immediately inform the appropriate authority of any malfunction likely to create a hazard. Finally, provision is made for emergency measures.

The provisions of the Decree are based on the 1982 revised version of the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores, which takes into account the recommendations of the International Commission on Radiological Protection (ICRP) and was issued jointly by the International Atomic Energy Agency (IAEA), the International Labour Office (ILO) and the World Health Organisation (WHO) (see Nuclear Law Bulletin No. 30).

The Decree will be revised according to new recommendations on radiological protection issued by the competent international organisations and bodies.

• *Spain*

ORGANISATION AND STRUCTURE

1984 Decree authorising the establishment of a National Enterprise for Radioactive Waste

The National Enterprise for Radioactive Waste (Empresa Nacional de Residuos Radioactivos - ENRESA), the creation of which was authorised by Royal Decree No. 1522 of 4th July 1984 (published in the Official Journal of 22nd August 1984) will be charged with overall responsibility for the management of radioactive waste. This Enterprise, which was constituted on 22nd November 1984 as a Spanish company ("Sociedad Anonima") with capital to be furnished by the Junta de Energia Nuclear and the National Institute for Industry, will be particularly responsible for the following.

- the treatment and conditioning of radioactive waste,
- the location, construction and operation of storage facilities (both temporary and permanent) for low, medium and high-level radioactive waste;
- the carrying out of all activities associated with the final shutdown of nuclear installations;
- the establishing of procedures for the collecting, transfer and transport of these wastes;
- the final treatment of wastes resulting from the extraction and manufacture of ore concentrates;
- the carrying out of the technical and economic/financial studies necessary to determine the various costs associated with the management of radioactive waste.

In case of a nuclear emergency, the ENRESA will act as a support for civil protection services.

Each year, the ENRESA is to report to the Ministry of Industry and Energy on the actions it has taken to meet its responsibilities and will also submit a general plan for radioactive waste which would include a review and cost analysis of technical solutions.

A governmental delegation is to be set up within ENRESA to control both the technical and economic/financial activities and projects of the Enterprise in the field of radioactive waste. This delegation will be responsible to the Minister of Industry and Energy.

ENRESA will also be charged with the drawing up of a permanent inventory of all radioactive waste storage facilities. This inventory will be maintained even after closure of the installation.

• *Switzerland*

NUCLEAR LEGISLATION

Rejection of public initiatives (1984)

By rejecting on 23rd September 1984 the public initiatives "for a future without atomic power plants" and "for an energy supply which is safe, economic and respectful of the environment" the Swiss people and the Cantons decided in favour of continuing to use nuclear power in Switzerland (see Nuclear Law Bulletin Nos. 29 and 31).

The first initiative was rejected by 55 per cent against and 45 per cent for, while the second initiative was rejected by 54.2 per cent as opposed to 45.8 per cent of the votes in favour. Out of the 26 Cantons, 19 rejected both initiatives with the 7 others accepting them. The participation rate was 41.1 per cent.

One point worthy of note is that the result of this vote in favour of nuclear energy was more clear-cut than the vote on the "atomic" initiative in 1979 (see Nuclear Law Bulletin Nos. 19, 20 and 23). Participation by the Swiss electorate had been 49 per cent at the time and the initiative was rejected by 51.2 per cent against and 48.8 per cent in favour.

Henceforth, there are no reasons for discontinuing the procedure begun for the establishment of the Kaiseraugst nuclear power plant. The Higher House of Parliament will have to take a decision on the general licence the Federal Council delivered to the promoters of the projected plant, which has already been approved by the Lower House.

• *United States*

NUCLEAR LEGISLATION

Proposed DOE Regulations to prohibit unauthorised dissemination of certain information (1984)

The Department of Energy (DOE) proposed regulations on 3rd August 1984 to prohibit the unauthorised dissemination by US Government employees, contractors, sub-contractors, and any other person of certain information, identified as Unclassified Controlled Nuclear Information (UCNI). This information is limited to certain unclassified but sensitive government information which concerns atomic energy defence programmes. These regulations are proposed in response to requirements set forth in Section 148 of the Atomic Energy Act of 1954, as amended (42 USC 2168). They describe how government information is to be determined to be UCNI, establish minimum protection standards for UCNI, specify who may have access to UCNI, and establish procedures for the imposition of penalties for violation of the regulations. The regulations are a revision of previously proposed regulations published in the Federal Register on 1st April 1983 (48 FR 13988). DOE is presently considering public comments on the proposed rules.

REGIME OF NUCLEAR INSTALLATIONS

Legislative proposals for licensing reform (1984)

Two bills were introduced in the US Senate and House of Representatives in March and April 1983, respectively, entitled the "Nuclear Licensing and Regulatory Reform Act of 1983". Two legislative proposals were introduced - one sponsored by the US Nuclear Regulatory Commission (NRC) (see Nuclear Law Bulletin No. 31) and another sponsored by the US Department of Energy (DOE).

The DOE-sponsored bill is similar to that of the NRC, but includes a section on backfitting requirements. It would require the NRC to establish procedures for centralised review by the Commission of all backfitting requirements proposed by the NRC Staff. A "backfitting requirement" would be defined as an addition, deletion, or modification to those aspects of the engineering, construction, or operation of a nuclear facility which had already received a permit, licence, or approval. Criteria to be used in reviewing and approving backfitting requirements would include consideration of safety, security, and cost factors. A proposed backfitting requirement would have to substantially enhance the public health and safety or the common defence and security and would have to be justified when considered over the remaining life of the facility.

The proposals were referred to the appropriate Senate and House Committees, and hearings were held. As the 98th Congress did not act on the proposals, they will have to be reintroduced in the next legislative session.

REGIME OF RADIOACTIVE MATERIALS

1984 Amendment to procedures established pursuant to the Nuclear Non-Proliferation Act of 1978

On 16th May 1984 the US Department of State, Department of Energy, and Department of Commerce published amendments to procedures established pursuant to the Nuclear Non-Proliferation Act of 1978. The procedures were originally published on 7th June 1978. The amendments add a new part, entitled "Approvals Under Section 109b(3) of the Atomic Energy Act", establishing component retransfer approval procedures. They also eliminate the requirement for a Department of Energy retransfer approval under Section 131 of the Atomic Energy Act in most cases where a Nuclear Regulatory Commission export licence has already authorised the retransfer. Possible duplicative reviews of the same export transaction are eliminated by generally authorising certain transactions if the same transaction is authorised by a different export procedure involving the same agencies. Finally, minor modifications are made to the procedures under Section 309(c) of the Nuclear Non-Proliferation Act, as required by enactment of the Export Administration Act of 1979.

CASE LAW

• Japan

COURT DECISION ON THE FUKUSHIMA II NUCLEAR POWER STATION JUSTIFYING REACTOR SAFETY REVIEW (1984)*

As regards No. 1 unit of the Fukushima-II nuclear power station of the Tokyo Electric Power Company (BWR, 1,100 MW) which has been in operation since 1982, the Fukushima District Court handed down its judgment on 23rd July 1984, rejecting the appeal of the plaintiff. The judgment was made in a suit against the Prime Minister (Minister of MITI after the amendment of the Law) requesting nullification of the permission for installation of the reactor, which had been filed by residents living near the plant.

The judgment approved the qualification of the residents necessary for making a suit (Plaintiff Competency) and indicated in the general judgment that "although the decision should be made by the administrative authority on whether the reactor installation can be permitted or not, the judgment range is narrow and somewhat restricted viewed from the significance of a reactor disaster. The administrative authority is responsible for proving whether the judgment on safety has been made reasonably or not." The court decision stated further that "administration's judgment on the safety of the reactor is considerably justifiable based on reasonable grounds."

This is the second nuclear power station hearing in Japan, the first being the suit on the Ikata nuclear power station (Unit 1, PWR 566 MW) of the Shikoku Electric Power Company (see Nuclear Law Bulletin No 22). What the legality of the permission to install a nuclear reactor means is that it will have considerable influence upon forthcoming suits concerning nuclear power stations that include the Tokai nuclear power station unit 2 of the Japan Atomic Power Company (BWR, 1,100 MW), unit 2 of the Ikata nuclear power station of Shikoku Electric Power Company (PWR, 566 MW) and Kashiwazaki-Kariwa-1 of the Tokyo Electric Power Company (BWR 1,100 MW - now under construction). The Fukushima nuclear power station suit was launched in January 1975 by some 400 residents that included teachers of primary, junior and senior high schools in the neighbouring 15 cities and towns. Six scientists testified for both sides, plaintiff and defendant, and court officials inspected the plant for the first time, entering the site while the plant was in operation. Features of the Fukushima nuclear power station suit

*This note is adapted from "Atoms in Japan", August 1984, by kind permission of the Editor.

are that after the suit was raised, an accident that the administrative agencies have been insisting "could never occur" actually did occur in March 1979 at the Three Mile Island nuclear power station in the United States, in the Ikata suit, the plaintiff argued from the viewpoint of a total ban. In the case of the Fukushima suit, however, the plaintiff recognised the necessity for nuclear energy R & D, but insisted that the safety of the nuclear power plant had not yet been fully established.

Summary of the Judgment

1. The Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors protects personal interests such as the life and health of the residents in the surrounding areas and, therefore, it was determined that the plaintiffs possessed the necessary qualifications.
2. The subjects of the safety review are limited to those matters relating to the safety of nuclear reactor facilities themselves.
3. The Prime Minister's permission for the installation of unit 1 of the Fukushima-II nuclear power station is a discretionary disposition, but there are some restrictions in exercising that right in view of the significant nuclear disaster.
4. Permission for the installation was carried through legally by due course of examinations by the Atomic Energy Commission (Nuclear Safety Commission after the amendment of the Law) and so forth.
5. For technical capability, safety during regular plant operation and accident protection measures, the government judgment that all meet the requirements of the law is considered justifiable.

Permission for the construction plan is judged legal in substance.

6. The determining factor of the TMI nuclear accident was a human error, and this cannot overturn the rationality involved in this review.

Controversial question of the Fukushima nuclear power station suit

The major controversial questions around the permission of the installation of the Fukushima nuclear power station are:

- whether the plaintiff - the residents around the nuclear power plant - can be considered qualified for instituting a suit or not,
- whether the permission for construction of the nuclear reactor is a discretionary disposition of the administrative agencies or not,
- whether the safety review of the Fukushima nuclear power station is legally correct or not,
- reactor safety - assessment of the TMI accident.

For each question, the views of both the plaintiff and the defendant are outlined below together with extracts from the discussion.

Plaintiff competency

Residents insist that "residents in the surrounding area are receiving serious effects upon their lives and health by radioactive materials discharged or released from the nuclear reactor, and if an accident should occur, they would suffer irrecoverable damage. Since residents in the surrounding area are protected by the nuclear-related laws such as the Nuclear Reactor Regulation Law, we the plaintiff have the right to institute the legal proceedings."

On the contrary, the government insisted that "the Nuclear Reactor Regulation Law is not one that protects immediately the personal interests of the surrounding residents. And the alleged damage by the plaintiff could occur when the reactor is put into operation. It is therefore merely an abstract feeling of unease at the stage of permission for the installation of a nuclear reactor. The plaintiff has no privilege for taking any legal step "

The decision states that "where the safety of nuclear reactor facilities is not secured, there is a risk of significant danger affecting the lives and bodies of surrounding residents. As the Nuclear Reactor Regulation Law can be interpreted to protect personal interests of the surrounding residents, the inhabitants involved in the suit are judged to possess the qualifications necessary as the plaintiff."

Discretionary powers of the administrative agency

Residents: "In rendering judgment on reactor safety to permit reactor construction, the administrative agency does not have discretionary powers."

"The court, therefore, should examine whether the safety review has actually been done legally, and set aside the disposition if any illegality exists."

Government: "Permission for the nuclear reactor construction requires both high political and special technical judgment, and should be left to the administrative agency's discretion. The court examines if there is any deviation from or abuse of the discretion in the disposition, and can reverse the disposition only when any such is found."

Judgment. "Permission for the nuclear reactor construction is a discretionary disposition on the basis of a comprehensive judgment standing on a highly political and special technical position. However, taking into consideration the significance of the disaster from a nuclear reactor and related facilities, the discretionary range is considered not extensive, and is restricted in exercising the right."

Reactor safety review

Residents. "The safety review should be done covering the total system of nuclear power generation, ranging from reactor construction, power generation, to reprocessing of spent nuclear fuels. But practically in the case of the Fukushima nuclear power station, it is limited to reactor

engineering safety. In addition, the review criteria are insufficient both on legal grounds and in substance, therefore the safety review of the Fukushima nuclear power station is considered illegal."

Government. "The subject of the safety review is a matter directly relating to the safety of nuclear reactor facilities, and limited to the basic design or basic design principle of the facilities. The safety criteria are considered sufficient and the safety review is judged lawful."

Judgment: "The safety review covers the matter relating to the safety of nuclear reactor facilities themselves, and is limited to the basic design or basic design principle alone. The insistence of the plaintiff that the safety review is illegal because of insufficiency of substantial or legal grounds cannot be adopted either".

Reactor safety - TMI accident assessment

Residents: "The reactor engineering safety, including the adequacy of the emergency core cooling system (ECCS) is questionable. Radiation exposure to the surrounding residents during regular plant operation as well as disasters in accidents are being underestimated and cannot be reliable enough."

"The government view insisting that nuclear power generation is safe because no accident can occur has lost its grounds and is no longer acceptable due to the recent accident at the TMI nuclear power plant in the United States. Insufficiencies in the multi-safety-protecting-system and the existing safety evaluation methods have been revealed."

Government: "Safety of the reactor engineering such as the adequacy of the ECCS is assured. Radiation exposure to the public during regular plant operation is less than the permissible dose and the disaster evaluation methods are appropriate."

"The main factor of the TMI nuclear accident is a human error and does not relate to the basic design or basic design principle of the nuclear reactor facilities. In addition, it is nonsense to apply the accident that occurred in a pressurized water type reactor (PER) to the boiling water type reactor (BWR) (Fukushima nuclear power station)."

Judgment: "The judgment on the safety review is that reactor safety can be assured because safety protecting systems such as the ECCS are designed to work effectively even in accidents. The judgment on radiation exposure to the public during regular plant operation and the disaster evaluation methods is also justifiable."

"The determining factor that led the TMI nuclear accident to be a serious one is believed to be human error. Nevertheless, in the background there could be insufficiencies in designing and in operation control. However, these are not matters relating to the basic design principle for nuclear reactor facilities, and are not capable of overturning the rationality in the safety review for the Fukushima nuclear power station."

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Electric utilities welcomed the decision in the Fukushima nuclear power station suit, saying that it is indeed a favourable conclusion that the government's contention has been accepted in view not only of the promotion of the electric power industry but also that of the nation's energy policy, and as regards the judgment itself, they accept it "as a matter of course."

The electric power industry holds that the "safety argument of nuclear power plants had been settled" by the Ikata nuclear power station suit of the Shikoku Electric Company in 1978, which was decided in favour of the government. The electric utilities believe that the best policy for getting people's support for nuclear power generation is to accumulate experience in safe operation of the plant, and have now decided to devote themselves to making [every and] all efforts to achieve this.

• *United States*

US COURT OF APPEALS REVERSES LOWER COURT GRANTING OF SUMMARY JUDGMENT ON FEDERAL PREEMPTION GROUNDS (1983)

Landowners near the Rocky Flats nuclear weapons facility brought suit against the United States, Dow Chemical Company, and Rockwell International Corporation, alleging that their property had been contaminated with radioactive material discharged from the facility. They sought both compensatory and punitive damages. The district court granted defendants' motion for summary judgment on Federal preemption grounds. The Court of Appeals reversed on 23rd March 1983, holding that the manufacture of nuclear weapons by the federal government, through contractors, did not result in the preemption of private civil actions for damages incurred or injuries suffered (*McKay v. United States*). Accordingly, the case was remanded to the district court for trial of the plaintiff's claims for compensatory damages. In the light of the Supreme Court's decision in the *Silkwood* case (see Nuclear Law Bulletin No. 33), the district court will hear the plaintiff's claims for punitive damages as well.

DISTRICT COURT UPHOLDS DOC DENIAL OF EXPORT LICENCES AND DOE DENIAL OF AUTHORISATION FOR EXPORT OF RADIATION SHIELDING WINDOWS (1984)

In *Nuclear Pacific, Inc. v. US Department of Commerce, Department of Energy, et al.*, the US District Court in Seattle, Washington by Orders dated 30th August 1984 and 26th September 1984, upheld the Department of Commerce's (DOC) denial of export licences and the Department of

Energy's (DOE) denial of specific authorisation under 10 CFR Part 810 for the export of radiation shielding windows to unsafeguarded nuclear facilities in India.

Nuclear Pacific challenged the validity of the Department of Commerce's export control regulations and an assigned commodity control list designation under those regulations for the company's radiation shielding windows. The company argued that the Commerce Department's assigned commodity control number, which required issuance of a validated licence for export, was arbitrary and capricious because similar commodities did not come under a number which required issuance of a validated licence.

In its complaint against DOE, Nuclear Pacific argued that DOE had no jurisdiction over the export of radiation shielding windows under the Atomic Energy Act, Section 57b, and that DOE's jurisdiction under Section 57b as implemented through 10 CFR Part 810 was limited to the transfer of technology and did not reach commodities or components.

In upholding the denial of the export, the Court found that the Department of Commerce's regulations (15 CFR §378.3 and ECCN 436B) were valid, and that the licence requirement for the proposed export was neither arbitrary nor capricious.

In ruling on the assertion of jurisdiction by DOE, the Court found that DOE's jurisdiction under Section 57b of the Atomic Energy Act (which is implemented by 10 CFR Part 810), was not restricted to the transfer of technology as argued by plaintiff. It further held that DOE's exercise of jurisdiction and its decision withholding authorisation for the shipment were rational, and were not arbitrary and capricious.

INTERNATIONAL ORGANISATIONS AND AGREEMENTS

INTERNATIONAL ORGANISATIONS

• *The OECD Nuclear Energy Agency*

SYMPOSIUM ON NUCLEAR THIRD PARTY LIABILITY AND INSURANCE

On 10th-14th September, approximately 250 nuclear law and insurance specialists representing 40 countries and diverse international organisations gathered in Munich to attend a Symposium, jointly organised by the OECD Nuclear Energy Agency (NEA) and the International Atomic Energy Agency (IAEA), on Nuclear Third Party Liability and Insurance: Status and Prospects.

The basic principles of the nuclear liability regime, its practical application over the last 20 years, and whether the regime adequately responds to present demands or future needs was the central theme of the discussions

The following comments are not intended as a complete summary of all the issues raised by either the written reports or the discussions which took place in the course of the Symposium but merely indicative of those problems which seemed of most concern to participants and which will have an impact on the future work of the NEA in this field.

In the aftermath of the revision exercise which culminated in the 1982 Protocols to amend the Paris Convention and the Brussels Supplementary Convention, the organisers of the Symposium thought it an opportune moment to review specific aspects of the liability regime embodied in the nuclear Conventions particularly in light of certain legislative developments which have introduced or are contemplating introducing the unlimited liability of the nuclear operator.

Questions relating to the functioning of the regime, such as the evolution of the concept of damage to be compensated in case of a nuclear accident and the equitable distribution of compensation amounts were re-examined in view of recent national legislation effectively extending the scope of this concept.

The Symposium also looked ahead to the problems arising from the application of the principles of the third party liability regime to activities at the back-end of the nuclear fuel cycle - in particular decommissioning of nuclear installations and the disposal of radioactive waste.

Increasing liability amounts

Since the conclusion of the revision exercise and the increase of the compensation amounts as provided for by the Brussels Supplementary Convention, the question of a corresponding increase in the maximum liability amount of the nuclear operator as laid down in the Paris Convention has once again begun to receive wide attention. The Symposium provided an opportunity to re-examine this issue in the light of some significant changes in national policy which diverge from the principle of limited liability.

Originally, the limitation of the nuclear operator's liability was viewed as a necessary counterbalance to the imposition of absolute liability. Since the Paris Convention required that this liability be covered by corresponding financial security, the liability amounts had to take account of the constraints of available insurance as well as the relatively early stage of development of the nuclear industry itself. Some of the speakers at Munich suggested that the evolution of the nuclear industry and the increased capacity of the insurance market to underwrite larger risks permit a lesser degree of protection to the industry which was originally considered necessary to its development. Other international conventions which regulate hazardous activities and which do not limit the otherwise exclusive liability of the responsible party were singled out as examples.

On the other hand, the question whether or not unlimited liability actually results in improved protection of the public was raised as a legitimate concern. It was argued that use of the term unlimited liability may create a false impression in the public mind that compensation for damage suffered as a result of a nuclear incident will be unlimited, which would be clearly impossible since in any case, an individual operator will be liable only to the extent of his property and his insurance coverage.

The Symposium participants reviewed national third party liability laws which have introduced unlimited liability (Switzerland) or which are considering doing so (Federal Republic of Germany). The draft legislation now before Parliament in the Federal Republic of Germany provides for unlimited liability with the total amount of cover (both private and state) limited to one billion deutschmarks. This is also the case for the Swiss legislation which requires financial coverage by the operator up to 300 million Swiss francs and state indemnification up to one billion Swiss francs.

The discussion at the Symposium revealed the need for the Contracting Parties to the Paris Convention to determine whether and to what extent the derogation from the principle of limited liability can be accommodated by the regime. In this regard, the introduction of unlimited liability by some

Contracting Parties to the Paris Convention without sufficient consultation with other Parties could endanger the international harmonization of liability and compensation amounts already underway.

Equitable distribution of compensation and the concept of nuclear damage

Limited liability and compensation amounts involve the problem of how to provide for the equitable distribution of these limited funds. The putting in place of a distribution system before the need for it actually arises was advocated by some as the only way to ensure that provisions are made for an equitable settlement as between personal and property claims as well as between early and late claims.

The interest of establishing such a distribution system was illustrated by the discussions concerning the concept of nuclear damage as applied to such areas as the cost of measures taken to prevent or minimize damage in the event of a nuclear incident, and whether these costs are the responsibility of the nuclear operator. As Article 11 of the Paris Convention reserves to national legislation the right to define the nature, the form and the extent of indemnification funds, Participants noted divergencies in national laws on this point. It was pointed out that only the Swiss legislation clearly extends the scope of this concept to cover these costs.

This situation is complicated further if in fact the costs incurred for the evacuation or preventive measures taken in response to the threat of an incident successfully prevented or averted cannot then be read as being strictly covered by the nuclear Conventions. A decision therefore to amend the Convention to include such costs would not be without considerable financial implications.

Another aspect of the problem of extending the concept of damage and which is of great economic significance is the question of the compensation of certain disabilities likely to be caused by ionizing radiations. In particular, Symposium participants noted with concern recent cases of victims having been compensated for damages due to radiation exposure, even though exposure levels have been far below the maximum doses permitted by national or international regulations. It is the absence of scientifically established degrees of probability linking exposure to these low levels with certain kinds of damage which create problems of the credibility of these judicial decisions. However, this "benefit of the doubt" accorded the victim may lead to a false appreciation on the part of the public as to the real risks involved in these cases.

Activities relating to the back-end of the fuel cycle

The application of the special legal regime of the Conventions to the decommissioning of nuclear installations and radioactive waste disposal activities present conceptual and concrete difficulties with respect to third party liability.

With the expected increase in the number of decommissioned nuclear facilities, the problem becomes one of defining a standard or criteria to determine when a nuclear installation within the scope of application of the Conventions ceases to be a nuclear installation for the purposes of the third party liability regime. This is particularly true since the Conventions

associate the concept of nuclear installation with the presence of nuclear fuel or radioactive products or waste. Once these substances are no longer on the site, the nature of the installation and thus the potential danger it represents is necessarily altered. Although the risk to parties off-site diminishes as the installation goes through the progressive stages of decommissioning, risk to workers on-site remains. The Paris Convention as modified by the 1982 Protocol provides in Article 7(b) for the possibility of correlating, in some degree, the financial guarantee to the actual risk involved.

The area of radioactive waste disposal also poses similar problems resulting from the long-term, or indefinite period, hazard which certain of these materials represent. As the nuclear operator is responsible for the storage of radioactive waste, the question of long-term waste is even more problematic in cases where the operator is a private enterprise which in the meantime has ceased to exist. Under such circumstances, several proposals are being studied: responsibility may revert back to the State which must grant the licence for storage, the creation of a fund to which both the State and the nuclear operator contribute, the establishment of an appropriate body to manage the disposal of waste.

The disposal of wastes with no intention of retrieval, whether it be disposal in the sea or in deep geological formations, effectively means the termination of the active surveillance of this material and implies that this material is no longer considered high risk. Continued application of the regime of the Conventions would be highly problematical since it would require financial security to cover the operator's liability for an indeterminate period of time and would present almost insurmountable difficulties of proving the causal link between the damage and the occurrence which gave rise to it.

For both decommissioning and radioactive waste disposal activities the crucial question to be resolved is whether and to what point, the risks involved warrant the continued application of the regime per se. In this regard, Symposium participants noted the work currently in progress in the competent international organisations to resolve these issues.

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The Symposium provided an opportunity to examine certain questions on problems which have come to light as a result of the application of the liability and insurance regime of the nuclear Conventions. The NEA Secretariat is presently engaged in the preparation of the Proceedings of the Symposium which it intends to publish in early 1985.

• *International Atomic Energy Agency*

REVISION OF THE REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIALS (1984)

The IAEA Regulations for the Safe Transport of Radioactive Materials (Safety Series No. 6) were first published in 1961. A partially revised edition was published in 1965, and completely revised editions in 1967 and 1973. Following minor amendments, the current edition - the "1973 Revised Edition as Amended" - was published in 1979. These Regulations, which are applied in the Agency's own operations and in operations carried out with the Agency's assistance, have been adopted by all international organisations concerned with transport and by most Member States. Those which have not formally adopted the Regulations generally apply them to import and export shipments. The IAEA Regulations now form the regulatory basis for the international transport of all radioactive materials.

During the last comprehensive review of the Regulations, which resulted in the current edition of 1979, it was felt that such reviews should be carried out approximately every ten years in order to ensure that the Regulations keep pace with current technology and needs. The Standing Advisory Group on the Safe Transport of Radioactive Materials (SAGSTRAM) was established by the IAEA in 1978 to advise it on the transport programme and on the development and implementation of the Regulations. Recommendations concerning guidelines, procedures and a schedule for a further comprehensive review of the Regulations were made at the first meeting of SAGSTRAM, in October 1978. The review process was initiated early in 1979 and completed in 1984. Successive revised drafts were sent for comment to Member States and international organisations concerned with transport, while specific topics were examined by consultants and technical committees. During the period 1980-84, approximately 150 experts from 22 Member States and 12 international organisations attended meetings in connection with the review process. In February 1984, SAGSTRAM endorsed the final revised draft, and the Revised Regulations were approved by the IAEA Board of Governors on 20th September 1984.

The revised Regulations embody new general principles implementing the Basic Safety Standards for Radiation Protection, which are sponsored jointly by the IAEA, the World Health Organisation, the International Labour Organisation and the OECD/NEA (IAEA Safety Series No. 9, 1982 Edition). Emphasis is placed specifically on optimization of protection for particular sources of exposure and on individual dose limitation in connection with transport. Other significant changes relate to the new package integrity requirements for crush testing of certain types of lightweight package in order to improve their accident safety, and to deep-water immersion tests for certain types of irradiated-fuel flask in order to facilitate recovery in the event of their sinking during transport by sea.

The new format used in the revised Regulations will serve as a basis for future revisions and will facilitate the modification of relevant national

and international regulations. In approving the revised Regulations, which will be published by the IAEA in 1985, the Board of Governors recommended, in particular, that:

- all Member States which engage or expect to engage in the transport of radioactive materials adopt the revised Regulations or use them, as far as practicable, as a basis in the formulation of national regulations and in connected regulatory activities,
- all international organisations concerned with transport adopt the revised Regulations or use them, as far as practicable, as a basis in the formulation and implementation of relevant codes, standards, regulations or conventions; and
- the revised Regulations be adopted within a period of three to five years, i.e. not later than 1990, with a view to achieving worldwide harmonization of their application.

In this connection, it may be recalled that the IAEA published in 1973 a companion document to the 1973 Revised Edition of the Regulations, entitled "Advisory Material for the Application of the IAEA Transport Regulations" (Safety Series No. 37). An updated version was published as the Second Edition in 1982, and a third edition will be issued to reflect the 1985 Edition of the Regulations. The document in question provides information about the intent and implications of the technical requirements of the Regulations, and about methods and technology which may be employed to fulfil them, for the benefit of designers and manufacturers of packagings, consignors, carriers, competent authorities and others.

REGIONAL OVERVIEW COURSE ON NUCLEAR LAW AND SAFETY REGULATIONS

A Regional Overview Course on Nuclear Law and Safety Regulations for Latin American Countries was organised in Montevideo, Uruguay, from 15th to 19th October 1984 by the IAEA in co-operation with the National Atomic Energy Commission of Uruguay and the Faculty of Law and Social Sciences, University of Montevideo. The purpose of the course was to provide an overview of the major areas of nuclear legislation and regulation, with particular regard to the specific needs of developing countries in these areas. The course was intended for present and prospective staff of national atomic energy authorities and other governmental departments, public institutions and private organisations which may be involved in, or expected to be associated with, the framing and implementation of regulations for the control of peaceful applications of atomic energy.

The course was held in Spanish and attended by sixty-two participants from Uruguay and from eleven other Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Paraguay, Peru and Venezuela. Lecturers included specialists from Argentina, Brazil, Mexico and Spain, and members of the IAEA Secretariat, who dealt with the main components of nuclear legislation and safety regulation and practical ways of coping with the tasks required in preparatory works. Recent developments in

this area in some countries represented at the course were also the object of reports for the information of participants, most of whom were officials from national authorities on atomic energy.

• *Euratom*

1984 COUNCIL DIRECTIVE LAYING DOWN BASIC MEASURES FOR THE RADIATION PROTECTION OF PERSONS UNDERGOING MEDICAL EXAMINATION OR TREATMENT

On 3rd September 1984, the Council of the European Communities adopted a Directive (84/466/Euratom) laying down basic measures for radiation protection of persons undergoing medical examination or treatment (published in the Official Journal of the European Communities No. L265 of 5th October 1984). This Directive, which is based on Article 31 of the Euratom Treaty, provides that all medical exposures to radiation must be medically justified and kept as low as reasonably achievable: this level is already defined in Directive 80/836/Euratom laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation (see Nuclear Law Bulletin No. 26).

The measures to achieve this result are in essence the following.

- Member States must take all appropriate measures to ensure that any ionizing radiation used in medical procedures is effected under the responsibility of doctors or dental practitioners or other practitioners who are entitled to perform such medical procedures in accordance with the legislation of the State where they are established; they must also have acquired competence in radiography during their training and have received adequate training in the techniques used in medical and dental diagnostic radiology, in radiotherapy or in nuclear medicine;
- Member States must take such steps as they consider necessary to discourage the unnecessary proliferation of equipment for radiotherapy, radiodiagnosis and nuclear medicine.

1984 COUNCIL DIRECTIVE AMENDING THE 1980 DIRECTIVE LAYING DOWN BASIC SAFETY STANDARDS FOR HEALTH PROTECTION

The above-mentioned Directive 80/836/Euratom was amended by a Directive of the Council of the European Communities on 3rd September 1984 (published in the Official Journal of the European Communities No. L265 of

5th October 1984). This partial revision of Annex I (values of activities not to be exceeded for radionuclides) and Annex III (limits of annual intake by inhalation, and derived limits of concentration of radionuclides in the air inhaled for exposed workers, and limits of annual intake by inhalation and ingestion for members of the public) results from the development of scientific knowledge concerning radiation protection.

• *INLA*

NUCLEAR INTER JURA '85

The International Nuclear Law Association (INLA) will hold its Seventh Congress from 29th September to 2nd October 1985 in Constance on Lake Constance, Federal Republic of Germany, at the invitation of Dr. Norbert Pelzer, President of the Association. The general theme of the meeting will be the status, prospects and possibilities of international harmonization in the field of nuclear law. Within this broad scheme, Working Groups set up for the Congress will report on the following topics: licensing and decommissioning of nuclear installations; nuclear liability; nuclear exports and imports; and international standards on radiation protection. These reports will form the basis of the meeting's four sessions covering the respective topics. Guidelines have been established for the selection of papers to be presented to the Congress.

AGREEMENTS

• *Belgium-France*

1981 AGREEMENT ON MUTUAL ASSISTANCE IN THE EVENT OF CATASTROPHES AND SERIOUS ACCIDENTS

This Agreement of 21st April 1981 concluded by Belgium and France was approved in Belgium by an Act of 9th December 1983 (published in the *Moniteur belge* of 29th May 1984).

The Agreement lays down a comprehensive legal framework for mutual emergency assistance. It provides that rescue teams will be sent by the Parties in all cases of catastrophe and serious accidents, including nuclear incidents. The Agreement also contains provisions on administrative competences, on quick border crossings by the rescue teams as well as on their supervision. Finally, other provisions settle the question of the costs incurred by assistance, compensation of damage and exchange of information.

Similar Agreements were concluded between France and the Federal Republic of Germany (see Nuclear Law Bulletin Nos. 25 and 27) and Belgium and the Federal Republic of Germany (see Nuclear Law Bulletin Nos. 31 and 33).

• *France-Luxembourg*

1981 AGREEMENT ON EXCHANGE OF INFORMATION IN CASE OF RADIOLOGICAL EMERGENCIES

This Agreement was signed on 11th April 1983 by the French Government and the Government of the Grand-Duchy of Luxembourg and entered into force on 27th April 1984 (Decree No. 84-930 of 17th October 1984 published the Agreement in the French Official Gazette of 20th October 1984).

The Agreement provides for the setting up of an appropriate system for the Parties to be mutually informed without delay of any incident or accident occurring in either of their territories, likely to affect the territory of the other State, in particular, those which may occur in a nuclear power plant and which might have radiological consequences.

To this effect, the Agreement prescribes the establishment of mutual alarm centres where necessary in France and in Luxembourg which shall remain in liaison.

Information on emergency situations must be supplemented by available data on existing or planned measures to protect the population in the country concerned.

A number of similar Agreements have been concluded between certain European countries in recent years: the Federal Republic of Germany and Switzerland (see Nuclear Law Bulletin No. 22), France and Switzerland (see Nuclear Law Bulletin No. 25), the Federal Republic of Germany and France (see Nuclear Law Bulletin No. 28) and finally, France and the United Kingdom (see Nuclear Law Bulletin No. 33).

● *Federal Republic of Germany–People's Republic of China*

1984 AGREEMENT ON CO-OPERATION IN THE FIELD OF PEACEFUL USES OF NUCLEAR ENERGY

On 9th May 1984, the Government of the Federal Republic of Germany and the Government of the People's Republic of China signed an Agreement on Co-operation in the Field of Peaceful Uses of Nuclear Energy (Bundesgesetzblatt 1984 II p. 554).

The Agreement provides for a general legal framework for co-operation in the following fields:

- scientific research and technological development of nuclear energy;
- nuclear power technology;
- safety of nuclear installations and radiation protection;
- planning, erection and operation of nuclear power plants and research installations,
- other fields of common interest.

The content and scope of the Agreement as well as concrete measures of co-operation and financial questions will be the subject of "special agreements" to be prepared by a Joint Committee set up to this effect.

Such co-operation may - inter alia - be implemented by exchange of personnel, participation of scientists and engineers in projects of the other Party, mutual or unilateral advisory and other services; other types of co-operation which the Parties have agreed upon.

The Agreement explicitly states that such co-operation is designed to serve peaceful purposes exclusively. Nuclear material and equipment must be used in a way that excludes the production of nuclear explosives. Nuclear material, equipment and relevant information shall only be transmitted to other states if both Parties agree on the transfer, and provided that the material shall not lead to the production of a nuclear explosive, and provided that the receiving state has accepted the Safeguards of the International Atomic Energy Agency. The transfer from the receiving state to another state requires prior permission by both Contracting Parties.

Furthermore, the Parties are obliged to implement physical protection measures for nuclear materials in accordance with the requirements laid down in an Annex to the Agreement.

Other provisions of the Agreement deal with information exchange procedures and contain the usual instruments of international treaties, including a reservation of rights existing under other international treaties, in particular under the Treaties establishing the European Communities.

The Agreement entered into force on the day of its signature and will remain in force for fifteen years. It shall be tacitly renewed for five-year periods unless one year's notice of termination has been given by either Party.

• *Switzerland-Euratom*

CO-OPERATION AGREEMENT BETWEEN CEDRA AND EURATOM (1984)

One of the purposes of the National Corporation for the Disposal of Radioactive Waste (CEDRA) is to widen and consolidate its work through international co-operation. Exchange of information, joint discussion of current work and results as well as co-ordination of both parties' R and D programmes to avoid duplication of work, are the essential aims of such co-operation. In addition, the objectives of the Euratom programme and CEDRA's activities correspond to a great extent.

Therefore, to have access to the knowledge obtained by Euratom by an intensive exchange of information and experiments, both parties concluded a Co-operation Agreement on 21st June 1984, for an initial period of five years

At technical level, co-operation includes determination of the characteristics of radioactive waste and final storage in crystalline geological formations.

Such determination includes the characterisation of highly active waste, as well as the behaviour of glass matrixes and the determination of actinide content in conditioned radioactive waste.

As regards final storage, exchange of information and know-how is planned on the following subjects.

- analyses of crystalline geological formations;
- development and assessment of technical barriers for final repositories;
- assessment and preparation of model geological formations;
- radionuclide migration in crystalline rock and in clay,
- lining of final repositories;
- safety analyses.

Practical implementation of the Agreement includes:

- exchange of unpublished technical information, i.e. reports, experiment results, computer programs and notes;
- joint discussion of exchanged information;
- organisation of specialist meetings on specific topics;
- specialist visits in the other Party's laboratories and technical facilities;
- temporary secondment of personnel to the other Party's laboratories and technical facilities to co-operate in final R and D work; and
- co-ordination of joint R and D work.

Each Party will bear its own costs deriving from the programme.

MULTILATERAL AGREEMENTS

● *Italy*

RATIFICATION OF LONDON CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY THE DUMPING OF WASTES AND OTHER MATTER

Italy deposited its instrument of ratification of the London Convention on 30th April 1984 (see Nuclear Law Bulletin No. 32). Acceptance of amendments to the Convention concerning procedures for the settlement of disputes were included in the instrument ratifying the Convention.

● *Turkey*

RATIFICATION OF THE 1982 PROTOCOL TO AMEND THE PARIS CONVENTION (1984)

On 24th October 1984, the Parliament of Turkey passed an Act (No 3062) authorising ratification of the Protocol to amend the Paris Convention on Third Party Liability in the Field of Nuclear Energy. The Act was published in the Official Gazette of 2nd November 1984.

The Protocol was adopted on 16th November 1982 and has been ratified by Sweden and Portugal (see Nuclear Law Bulletin Nos. 31 and 33). In accordance with the the Paris Convention, the amending Protocol will enter into force upon ratification by two-thirds of the Contracting Parties.

RATIFICATION OF THE CONVENTION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL (1984)

An Act (No. 3070) authorising ratification of the Convention on the Physical Protection of Nuclear Material was passed by the Turkish Parliament on 1st November 1984. The Act was published in the Official Gazette of 10th November 1984.

The Convention, which was adopted on 3rd March 1980, has already been ratified by ten countries. In accordance with its provisions, twenty-one ratifications are required before the Convention will enter into force (see Nuclear Law Bulletin Nos 24 and 32)

• *The OECD Nuclear Energy Agency*

EXTENSION OF THE AGREEMENT ON THE OECD HALDEN PROJECT

The OECD Halden Boiling Water Reactor Project was originally set up in July 1958 to enable participants to carry out research and experiments on a boiling water reactor built by Norway. The Project has been extended numerous times since then with the most recent extension due to expire on 31st December 1984 (see Nuclear Law Bulletin No. 28).

Agreement has now been reached to extend the Project to 31st December 1987 and it is presently being circulated for signature among the Contracting Parties.

Parties which will take part in this extended Agreement include national authorities responsible for nuclear matters or research institutes from the following countries. Denmark, Finland, the Federal Republic of Germany (representing a group of German companies), Italy, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States. The new research and experimental programme to be carried out during the 1985-1987 period is contained in an Annex to the Agreement.

SPAIN ACCEDES TO THE OECD LOFT PROJECT

On 9th October 1984, the Management Board of the OECD LOFT (Loss of Fluid Test Facility) project (see Nuclear Law Bulletin No. 31) officially welcomed the Junta de Energia Nuclear and the Consejo de Seguridad Nuclear of Spain to join the already nine participating countries in this Agreement. These countries include. Austria, the Federal Republic of Germany, Finland, Italy, Japan, Sweden, Switzerland, the United Kingdom and the United States (represented by the Department of Energy and the Nuclear Regulatory Commission). The Electric Power Research Institute (United States) and Mitsubishi Heavy Industries Ltd. (Japan) participate as Associate Members.

LOFT is a 50 MW(th) nuclear reactor located at Idaho Falls, United States, which simulates a commercial pressurised water reactor and serves to perform tests used to assess the accuracy of complex thermal-hydraulic analysis computer codes. The Project will also serve to develop techniques for accident recovery.

A Protocol amending the 1983 Agreement provides for the accession of Spain and includes amendments concerning the association of other industrial partners with the Project. The Protocol is being prepared by the NEA for signature by the Contracting Parties.

AMENDMENT OF THE AGREEMENT ON PHASE II OF THE INTERNATIONAL STRIPA PROJECT

Phase II of the International Stripa Project came into force on 1st January 1983 (see Nuclear Law Bulletin No. 31) and included eight countries (Canada, Finland, France, Japan, Sweden, Switzerland, the United Kingdom and the United States) jointly participating in a programme of scientific investigations relevant to geological radioactive waste disposal

With the signature by all parties of an amending Protocol, this Agreement has now been formally modified to reflect the participation, with effect from 1st January 1983, of a new member, the Junta de Energia Nuclear of Spain.

• *International Atomic Energy Agency*

CONVENTION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL

At its twenty-eighth regular session in Vienna, the IAEA General Conference on 28th September 1984 adopted a Resolution noting that there are to date thirty-nine signatories and ten ratifications of the International Convention on the Physical Protection of Nuclear Material, and expressing the hope that the Convention will enter into force at the nearest possible date and that it will obtain the widest possible adherence. (The text of the Resolution GC(XXVIII)/RES/424 is reproduced in the "Texts" Chapter of this Bulletin).

Portugal signed the Convention at IAEA Headquarters in Vienna on 19th September 1984 (see Nuclear Law Bulletin No. 32 for status of signatures and ratifications).

VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE

By another Resolution GC(XXVIII)/RES/431 (the text of which is also reproduced in the "Texts" Chapter of this Bulletin), the IAEA General Conference, inter alia, noted with appreciation that, with the assistance of the IAEA, several Member States not yet parties to the Vienna Convention on Civil Liability for Nuclear Damage have adopted or are preparing legislation based on the principles and provisions of the Convention, and expressed the hope that more Member States will give consideration to adhering to the Convention. Morocco signed the Convention at the IAEA Headquarters on 30th November 1984 (see Nuclear Law Bulletin No. 26 for status of signatures and ratifications).

TEXTS

• *International Atomic Energy Agency*

INTERNATIONAL ATOMIC ENERGY AGENCY GENERAL CONFERENCE

THE INTERNATIONAL CONVENTION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL

Resolution adopted during the 266th plenary meeting on 28th September 1984 [GC(XXVIII)/RES/424]

The General Conference

- a) Recalling the resolutions adopted at its nineteenth, twenty-first and twenty-seventh regular sessions regarding the physical protection of nuclear materials*,
 - b) Recalling the adoption in October 1979 of the Convention on the Physical Protection of Nuclear Material, and
 - c) Noting that to date there are 39 signatories and 10 ratifications of the Convention,
1. Expresses its appreciation to the Director General for his report on the signature and ratification status of the Convention,
 2. Continues to express the hope that the Convention will enter into force at the earliest possible date and that it will obtain the widest possible adherence, and
 3. Requests the Director General to report to the General Conference at its next regular session on the signature and ratification status of the Convention.

*GC(XIX)/RES/328, GC(XXI)/RES/350 and GC(XXVII)/RES/415.

THE VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE

Resolution adopted during the 268th plenary meeting
on 28th September 1984 [GC(XXVIII)/RES/431]

The General Conference

- a) Recalling the adoption in May 1963, under the auspices of the International Atomic Energy Agency, of the Vienna Convention on Civil Liability for Nuclear Damage,
 - b) Noting that the Convention has been in force since November 1977 for a number of developing countries in Latin America, Europe, Africa and Asia,
 - c) Noting with appreciation that, with the assistance of the Agency, several Member States not yet parties to the Convention have adopted or are preparing legislation based on the principles and provisions of the Convention,
 - d) Considering that the Convention provides a worldwide framework for dealing with third party liability issues which might arise from certain peaceful uses of nuclear energy,
 - e) Considering that further acceptances of the Convention will contribute to the development of the peaceful uses of nuclear energy throughout the world, and
 - f) Noting that a number of Member States are parties to the Convention on Third Party Liability in the Field of Nuclear Energy (Paris Convention of 29th July 1960) and the Convention Supplementary to the Paris Convention of 29th July 1960 (Brussels Supplementary Convention of 31st January 1963),
1. Requests the Director General to continue the Agency's interest in the field of liability for nuclear damage,
 2. Expresses the hope that more Member States will give consideration to adhering to the Convention, and
 3. Further requests the Director General to report to the General Conference at its next regular session on further acceptances of the Convention.

STUDIES AND ARTICLES

ARTICLES

KEYNOTE ADDRESS TO THE SYMPOSIUM ON NUCLEAR THIRD PARTY
LIABILITY AND INSURANCE - STATUS AND PROSPECTS,
HELD IN MUNICH FROM 10TH-14TH SEPTEMBER 1984*

Professor R. Herzog
Vice-President of the Constitutional Court,
Federal Republic of Germany

I

A paper read by a German jurist would hardly be typical if it did not begin by contributing a few significant thoughts on scientific concepts. As I have learnt from my bibliographic research, it forms part of the current tradition in your circles to start with the concepts of "danger" and "risk". I gladly bow to this custom, since it possesses the decisive advantage of helping to clarify matters - and this is something one cannot confidently claim for all legal usage.

When asked to define danger and risk, a German jurist will tend to follow the familiar and well-trodden paths of German police law. This incorporates the concept of a concrete danger whose removal entitles (but does not force) the police to take the necessary steps. Such a danger is deemed present when there exists sufficient probability that laws have been broken. As my colleague Peter Marburger pointed out at the Bitburg Talks in 1981, this concept of danger must also remain valid under the law on technical safety. As he aptly observed, however, it still needs further specification. The main requirement lies in establishing a plausible relationship between the often

*based on a translation provided by the German authorities
For further details see under "OECD Nuclear Energy Agency" in this issue of the Nuclear Law Bulletin.

immense potential danger inherent in large technical installations and the generally infinitesimally low probability of damage ever occurring (As a former Minister of the Interior, I may add that the police naturally always face the necessity of establishing such correlations. However, the question is settled by the police within their own discretionary powers, and it thus does not arise in the legal sphere proper.)

Be that as it may, one must agree with Marburger when he declares. "The concept of danger within the general meaning of police law and law and order, in particular the law on technical safety, is thus shaped by the components 'probability of occurrence' and 'possible extent of damage', i e the elements which also constitute the concept of risk." But this takes us up to a crucial point. For if both the danger as well as the risk are shaped by the elements 'probability of occurrence' and 'possible extent of damage', there should still be a third characteristic by means of which one can finally distinguish between them

Marburger quite rightly sees the whole distinction as a quantitative matter and observes - with justification, in my opinion: "Danger is thus a condition whereby the probability of occurrence and the feared extent of the damage exceed the level of reasonable risk." In so doing, Marburger purposely introduces in the definition a component from which precise results are difficult to obtain, namely the reasonableness of risk. As he does not speak about the formulation of laws yet to be enacted, but only about the application of existing laws (i e. more or less inherent in the system), this proves perfectly adequate. Moreover, it is absolutely logical on Marburger's part when he draws the dividing line between a reasonable and an unreasonable level of risk along the border between legality and illegality. After all, it is up to the lawmakers - whoever they are - to stipulate what may or may not be expected of citizens.

Accordingly, Marburger sees a "risk" as a reasonable and therefore legally permissible level of endangerment, and "danger" as an excessive and therefore illegal level of endangerment. If I may revert to the terminology of police law, a risk would signify - in this context - the familiar concept of abstract danger whose existence permits the taking of action by enactment of legal provisions but which does not yet permit the police itself to take action

With regard to the questions scheduled for discussion at this Symposium, all these terminological explanations may strike you as being little more than preliminaries. At least, I imagine this to be the case. Your work starts with tackling the problem the other way round so to speak, i e the situation where damage has already occurred. The case of liability, whose coverage by those obliged to provide compensation and to insure the loss as well as by the State's assumption of a commitment lies at the real centre of your interest, presupposes that the damage has already been caused. It is completely without interest whether this damage was previously so probable as to warrant the designation of "danger" or whether it was less probable and therefore still classifiable purely as a risk (Furthermore, the risk covered for example by insurance by no means simply amounts to a risk in the sense of previous terminological discussions. This risk naturally includes the danger, too.)

In effect, the parallel with police law only becomes complete in this way. If "risk" within the meaning of our considerations so far corresponds to the abstract danger of police law whereby concrete official measures are not permissible without a special legal basis and if we have to compare "danger" within the meaning of our considerations with concrete danger, then we are really interested in the de facto damage, i.e. in the occurrence of damage. The terminological parallel, contained in police law, is a disturbance (which should not, of course, be confused with the disturbance in a nuclear power plant, sometimes euphemistically referred to as a malfunction).

If we wanted to characterise the legal difference between these three concepts in a very few words, we would have to say simply and concisely the danger must be prevented by stipulating preconditions for the authorisation of nuclear power plants and by monitoring their achievement. The risk must be borne. But compensation must be procured for the event giving rise to damage, at least in principle, and this requirement must possess validity irrespective of whether.

- the damage was preceded by a danger or only a risk,
- the lawmakers took the view that it was reasonable for citizens to live or not live with the possibility of damage, and thus simultaneously
- irrespective of whether the operator's conduct which finally led to the damage was legal or not.

Here again, there exists a fine parallel under German law. Where the State exacts a special sacrifice from the individual citizen - irrespective of the given sphere and the reasons for the decision - it bears the obligation under German law to render compensation. Nor does it possess the least significance in this context whether the State imposes this special sacrifice in conformity with the prevailing legal system or contrary to it. The first case is described as expropriation and the second as quasi-expropriating action. But at any rate, payment has to be made. The same holds true in our case.

II

An outsider who approaches this subject and turns his mind to the arguments usually deployed in this context cannot help but feel a certain degree of surprise.

For example, the following assertion is made in all seriousness it is not possible to thoroughly examine the question of unlimited liability (and thus also that of an unlimited obligation for the State), simply because liability for damage caused by nuclear power plants is absolute and must, by definition, remain limited in amount. One rubs one's eyes in astonishment on reading this, and it leads to the question as to where we really stand. Needless to say, it is true (apart from a single, though all the more significant, exception) that the present system of absolute liability does not entail claims for compensation in excess of a certain amount. But why is this so? Because the appropriate laws provide for this! If the laws provide otherwise, then the situation would be different. After all, the lawmakers can settle these matters as and how they want. Indeed, any limits which they

would have to observe do not derive from academic definitions - even if these have been drawn up in a ministry of justice with the assistance of a battalion of jurisprudence experts. At most, the limits might arise under the German Constitution, the Basic Law; however, this certainly does not contain any such barrier.

I would now like to add a second point which I have noticed as a keen reader of the relevant legal literature - and it is my sincere hope that you will not find the comparisons I am about to make in any way cynical: either in favour of or against nuclear power.

If we visualise the very worst possible scenario in the operation of nuclear power plants, then accidents comparable with the greatest disasters in the history of mankind are no doubt conceivable. I am, of course, well aware that the possible extent of the damage only represents one factor in the calculation of the given risks necessary in these circumstances. Moreover, it relates to such an infinitesimal probability of occurrence that for a layman like myself it is impossible to translate such a scenario into reality. Nonetheless, it came as a surprise to me to find that the legal comparisons offered in illustration of this issue are taken exclusively from the field of liability under civil law - in particular that of absolute liability. Naturally, such contingencies as those governed by the law of road traffic, air traffic and conventional power plants fuelled by oil, coal or water can also occur in terms of magnitude at nuclear power plants. However, the extreme case which I now wish to invoke in my argument refers to completely different magnitudes. And I trust you will decry when I argue that such an extreme case is only really comparable with disasters such as a gigantic flood, mass unemployment caused by the collapse of entire branches of the economy; diseases of modern civilization; or perhaps even the Second World War.

You will no doubt retort that none of these disasters are governed by liability provisions applicable by analogy to the problem under discussion. And, admittedly, nobody has ever thought of blaming the damage caused by the Second World War on an official dereliction of duty by a Brunswick civil servant called Adolf Hitler and then handling it pursuant to Article 839 of the German Civil Code. Nonetheless, this damage has been dealt with totally - and this is also true for damage caused by the diseases of modern civilization, mass unemployment and natural disasters, it is very interesting to see how this was dealt with and how it is being dealt with now, even if the problem is tackled in most cases after the event.

Let me now say a few words about this point.

Let us begin with natural disasters. By law, the State bears no liability or obligation to adopt measures. By law, anyone who has not taken out insurance against the disaster will get nothing. However, I recall the time when I was a member of a German Land Government for almost six years and every year, a major disaster took place as a result of a thunderstorm or a flood and once even an earthquake - every time, the question promptly arose as to whether the State should not help the victims. On each occasion, it was proclaimed loud and clear. It is not up to the State to help them, the State is not an insurance company; and arguments in this vein. Yet every time, millions were made available so as to provide assistance for the non-insured - and the procedure for implementing this was expected to be "unconventional and

umbureaucratic." Clearly, the individual claims were limited in regard to their preconditions and their ~~maximum~~ level; and there was, of course, a global ceiling beyond which the minister of finance would not pay a penny. Yet all of this cannot side-step the fact that, at the decisive moment, the State substantiated claims which should not have existed according to the law.

Let us now take the next case, namely mass unemployment. This might arise from a further decoupling of our country from world technological standards or from additional rationalisation measures which are to a great extent linked up with it. One cannot say that such developments are primarily caused by governmental policy or failures. Nevertheless, in the public interest the State accepted its undoubted responsibility in this field at an early stage, and it discharges it in the form of insurance benefits rather than compensation. By virtue of the law, an individual is entitled to such benefits which are limited in amount. There is no ~~maximum~~ global sum which the Federal Institution for Employment could invoke. However, the State can intervene by paying a subsidy, if necessary. If the Federal Institution for Employment suffers a loss of income or if the number of unemployed persons increases to such an extent as to make it impossible to cover the rights of those insured, then there remain three ways of counteracting this situation. Moreover, these three methods may be exercised in parallel or in succession. Firstly, one can raise the unemployment contributions and thus also raise the Federal Institution's income; secondly, one can of course increase the state subsidy ("if available", as the authors of cookery books used to say), thirdly, if all else fails, then there could be an apportionment - in other words, a scaling down of claims.

The provision of funds to cover the damage from civilization diseases hardly differs from this model. Here, too, the issue is not compensation but insurance, such cases may be covered by the statutory health insurance scheme. Sick persons have had suable claims in law without any distinction being drawn between civilization - and other diseases. These claims are fixed by law. There are no ~~maximum~~ limits in respect of sick individuals and, of course, no such limit exists in law regarding the total volume of benefits payable under the statutory health insurance scheme. However, we have seen in past years what must be done when a branch of social insurance encounters grave difficulties. The contributions are raised, the possibility of state subsidies is broached (although these have been replaced by the switching of surpluses and deficits between the various branches of insurance) and one can, of course, also start apportioning the insurance benefits. However, this latter method has affected not so much the real sufferers from civilization diseases (such as cancer patients) as other categories of persons and quite rightly so.

If we take a cross-section of our observations so far, then we can safely establish the following ground rules:

1. The State usually furnishes help for the victims of such catastrophes, although not normally in the form of claims for compensation (and not because of its absolute liability) but in the form of insurance benefits or similar benefits.

2. There exists a legal claim to such benefits generally based on legislation. Only in the case of damage due to bad weather is the claim established by cabinet decision and administrative decision.
3. The claim is fundamentally unlimited in amount, provided that the facts required by law as a basis for the claim do exist, and presumably, when the legal requirements are being defined consideration is given to whether or not there is something to be financed
4. With the exception of the non-typical case of natural disasters, there are no global maximum levels for the total volume of money payable by any given organisation. If all else fails, as I have already mentioned, the State helps by granting subsidies of its own (as with unemployment insurance in particular) or it helps by adopting statutory measures for providing cover - including also the curtailment of claims.

Finally, if we consider the settlement under German law of the economic and human consequences of the Second World War we see that here, too, the above-described principles prevail. It must, however, be admitted that legal spheres such as war victims' pensions and the equalisation of burdens have experienced completely different treatment - and this manifests itself not least in the methods of financing. However, that is not the subject of our discussion today.

III

It will not have escaped your notice that in the above I have dealt solely with such liability cases as involve payment by the State and not by some other private delinquent. However, private individuals are involved inasmuch as they have had to finance the public payments in question either in the form of contributions (for example, to health and unemployment insurance) or as taxpayers (for example, in the case of damage due to a natural disaster and mainly in that of state subsidies for unemployment insurance).

Naturally, the position is totally different regarding liability for damage from nuclear power plants. This usually involves an operator whose capital stock is generally held by public authorities - a fact often forgotten by operators and their critics alike. However, as the term "capital stock" indicates, an operator is a legal entity incorporated under private law. It will come as no surprise that this leads us to two sets of questions:

1. What form must the liability take in respect of such an operator incorporated under private law? And,
2. What is the State's role in this connection? (The fact that the State plays a role in this context is clear and requires no further proof.)

I would like to begin with the second question because - as everyone knows - this contains the really crucial points. Why in fact is the State involved when a private operator causes damage? There are two explanations of which you are well aware of course, but allow me nevertheless to set them out in brief.

To begin with, the State is involved because one of its most fundamental and, incidentally, most ancient tasks consists in shielding its citizens from damage as well as from the dangers normally preceding the incidence of such damage. No special legal basis is needed to cover such a situation: this duty derives from the State's very character as a State. As for the life of its citizens, it has meanwhile also been recognised in the rulings pronounced by the Federal Constitutional Court that the State is committed to protect them pursuant to valid German constitutional law. Admittedly, this is not yet actually expressed in regard to the health of citizens or (as the Basic Law puts it) in regard to their bodily integrity. Hence, nothing else can in fact apply - especially since both these rights are guaranteed in one and the same constitutional provision.

Hence, if the State finds dangers to the life and health of its citizens in social reality, then it must provide relief by legal enactment and administrative regulation, and if the administrative authorities infringe a requirement imposed upon them by law, the State as a whole must assume liability. It is for the lawmakers to decide how the State should comply with the requirement. It can apply the normal principles of civil law on liability for damage caused by negligence or those of absolute liability just as it can also invoke the principles of public law governing the liability of the State. The State can also decree that it will enter into the liability borne by third parties (in this case, the private operators) and thus act as a legal intermediary by discharging certain tasks itself i.e. via public undertakings such as has happened in the Federal Republic of Germany with waste treatment and disposal. The fact that it is involved in this matter and therefore jointly liable for resultant damage does not alter these legal aspects.

There exists another facet to this matter of a more fundamental nature. The assumption today - usually based on the reference to Germany being a "Welfare State" contained in Article 20 of the Basic Law - is that the genuine tasks of the State embrace not only the protection of its citizens' life, limb and property, but also active provision for their well-being. In our highly civilized and technicalised society of today, this means to begin with that the State must safeguard their standard of living, i.e. ensure the economic prosperity of the whole community. Questions as to the limits to this task for the State as well as the State's responsibilities in respect of ecological preservation and restitution are not up for discussion, albeit of eminent importance, they do not form part of today's subject. At any rate, the obligation incumbent upon the State during our phase of historical state development to make appropriate provision also includes the replacement and duplication of human labour by natural energy activated by technical means. Lenin once declared: socialism is marxism plus electricity. Our Basic Law does not stipulate the introduction of marxism or socialism, but it does set out the State's responsibility for providing adequate and, above all, low-cost sources of energy including, of course, the "ecological costs" - and I am deliberately stressing this point.

Naturally, this also extends to nuclear energy - in principle at any rate. Needless to say, a decision on all other concomitant problems must come from the political sphere rather than from constitutional law. A political decision is necessary, in particular, for the extremely important questions of the apportionment and most important of all - the minimisation of risks, weighing up the ecological problems inherent in nuclear energy, and comparing these with the ecological pollution produced by coal or oil-fired power plants.

or a landscape criss-crossed with hydraulic power plants. Last but not least, there remains the highly explosive issue in foreign policy. To what extent should a country like ours, almost destitute of its own sources of energy, counter the danger of dependence on supplying countries in the long run by diversifying its sources of energy?

As we have already noted, these are problems which must generally be resolved pursuant to political responsibility rather than constitutional law. But it is and remains a fundamental point of constitutional nature that, in accordance with the Basic Law, our State must ensure - by one way or another - that adequate quantities of energy are available on an economically viable scale. Here again, there are political factors (although not constitutional ones) which argue in favour of making the State co-responsible for liability questions emanating from the fulfilment of this assignment. This is, at any rate, more obvious and logical than the fact emerging from our past experience that the State must also accept responsibility for damage from civilization diseases, natural disasters and structural unemployment. After all, the State has little to do with the causes of civilization diseases and absolutely nothing to do with the causes of natural disasters; and it can only be blamed for unemployment under a free market-economy system if it has allegedly conducted a completely idiotic policy in economic and technological affairs - its responsibility derives not from former action but from humanitarian responsibility for its unemployed citizens.

IV

In the sphere under discussion, the operator and the State must jointly bear the burden of liability, and this takes us to the question. In what ratio must they bear such liability?

Under the valid liability system - and it should not be amended in this respect - the answer reads as follows. The State and the operator simply bear liability concurrently (not joint and several liability for the same fault, and in particular not to the same amount). Hence, each of them is liable for part of their joint responsibility. For two reasons, there are no objections to this. In the first place, complete liability for the operators (even if only joint and several) would engender a clearly prohibitive impact. Hence, it would severely curtail the possibility and willingness to set up nuclear power plants. The second point is this: both debtors are so strong (albeit for different reasons) that their joint and several liability would be an entirely superfluous luxury.

This leaves us with the question as to whether we can find rules for approximately quantifying the two shares of liability - that of the operator and that of the State.

To begin with, we must consider the role played by the prohibitive effect of too high a share for the operator especially when this is backed by very high absolute figures. You will no doubt save me the trouble of quoting the statistics in detail, because in any case you already know them much better than I do. Moreover, I am inclined to acknowledge the justification for this argument. Nonetheless, this inclination of mine would have proved much greater - let me add this quite frankly - if I had not sometimes had the impression that the pricing policy adopted by many electricity supply

undertakings rests on the simple formula deficit divided by sales equals increase in electricity prices. Here, too, things have changed somewhat in the meantime.

To be precise, the argument about prohibitive effect is not directed at the operators but at the State's responsibility for energy policy. The State itself must not render its energy policy illusory by imposing on the operators burdens likely to take the whole undertaking into the red.

This has two implications. Firstly, the really gripping question in major occurrences of damage is not the liability of the operators but the commitment of the State. Secondly, the matter also rests there if thought is given to raising the maximum levels of liability or even eliminating them. The reasons already briefly cited would, in any case, endorse the idea of fixing a firm sum for operator's coverage. I am unable to judge whether the current amount of 500 million DM is the right sum or whether it might stand somewhat higher. At any rate, the sum in question very rapidly climbed to its absolute level, and anything that might be discussed in excess of that in an honest exchange of views would constitute a debate on the scale of the State's own commitment - and, in the final analysis, that calls for a "political" decision.

Let me make a few more observations of a perhaps theoretical nature, but nevertheless of serious intent.

Let us just imagine for a moment that something which we all deem impossible and which each of us in his own way does his utmost to prevent actually happens - a disaster causing damage which exceeds the present maximum level of a billion DM by 1,000 or even 2,000 per cent. Can anyone really believe that in such a contingency somebody would invoke Section 31 of the Atomic Law or even read it? The Bundestag would convene and call for the largest possible "unconventional and unbureaucratic" indemnification for all the damage suffered. The same would take place in the Government and not even the Minister of Finance would protest; he would simply nod his head in sympathy. Just think: this is the very same State which does not refuse its help - and quite rightly so in my opinion - when a hailstorm or a flood occurs.

With this in mind, I sometimes ask myself why people show such reluctance regarding the question of unlimited liability or, to put it bluntly, regarding an assumption of unlimited commitment by the State. This is especially so in a case of liability where all responsible parties feel sure that such a commitment can be almost ruled out.

Naturally, I am familiar with the constitutional questions which crop up in this context, but let me leave these aside for the moment. I do not think that this issue is a legal one at all. In my opinion, it is of a politico-psychological nature and nothing else! But since I left the arena of active politics a year ago, this has no longer been my sphere of competence. And so let me close on that note, ladies and gentlemen.

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Beispiel der EG-Staaten, doctoral thesis by Rüdiger von Preuschen, Cologne
University, 1984, 234 pages

The subject of this detailed legal doctoral thesis at Cologne University is both the purpose and the scope of the world-wide International Atomic Energy Agency (IAEA) Non-Proliferation Treaty (NPT) Safeguards, known as INFCIRC/153 Safeguards, as well as the specific aspects of their execution at national level. For this analysis, the author draws on the international and national provisions which apply to the countries of the European Communities.

The first part explains the concept of "diversion of nuclear material" which, under international law, represents a tort which can be committed by governments of non-nuclear weapon states, as well as by those sub-national groups for whose acts governments are held responsible. The analysis also shows that nuclear weapon states are under an obligation to provide physical protection of nuclear material against its misuse by sub-national groups.

The second part demonstrates in detail how the safeguards system functions in order to prevent diversion of nuclear material, describing the technical measures within nuclear facilities to be performed by the operator, Euratom and IAEA respectively, the involvement of Euratom on behalf of IAEA, costs, liability and legal proceedings.

• *Sweden*

New Swedish nuclear legislation, Ministry of Industry, Stockholm, 1984,
71 pages

This publication is an English translation of new Swedish nuclear legislation. It reproduces the new Act on Nuclear Activities of 1st February 1984 which replaces the 1956 Atomic Energy Act and like it, is based on a system of licensing, conditions and supervision. It defines the division of responsibility between the State and the nuclear industry to meet security demands and Sweden's international commitments in areas such as nuclear non-proliferation. Great importance has been attached to provisions governing nuclear waste management as well as research in this area and the financing of waste disposal.

The publication also includes the Act amended on 12th January 1984 on the financing of future measures for the disposal of spent fuel

Finally, the publication is supplemented by an Exposé des Motifs for the new nuclear legislation.

• *United States*

Nuclear Safeguards. A Reader, Report by the Congressional Research Service,
Library of Congress, for the Sub-committee on Energy Research and Production,
transmitted to the Committee on Science and Technology, US House of
Representatives, 98th Congress, 1st Session, December 1983, 999 pages

This reader on nuclear safeguards is a compilation of official documents and reports, as well as articles and other writings, designed to provide the reader with a comprehensive view of nuclear safeguard issues. A background note defines the term "nuclear safeguards" and traces its origins from both a historical and international perspective. There is also included a Fact Sheet describing the International Atomic Energy Agency's organisation, purpose and most important functions as concerns safeguards.

Part II contains a series of official documents relevant to nuclear safeguards such as Congressional reports, treaties and excerpts from the Nuclear Non-Proliferation Act of 1978 which are provided as reference materials.

Finally, Part III is a chronological (1967 to 1982) presentation of articles and other writings which have been selected in order to illustrate those arguments both supportive and sceptical of nuclear safeguards. The materials are fairly well evenly divided between both views and include articles by well known authors in the field of nuclear proliferation.

A bibliography with citations to materials on nuclear safeguards which focus on those administered by the IAEA and on related US policy is contained in Appendix A.

Nuclear Regulatory Legislation (NUREG-0980), US Nuclear Regulatory Commission, Washington DC 20555, 1984, 668 pages

This is a compilation of statutes and related materials pertaining to nuclear legislation through the 97th Congress, 2nd Session, prepared by the Office of the Executive Legal Director, US Nuclear Regulatory Commission (NRC). It includes the text of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, NRC Authorization Acts; the Low Level Radioactive Waste Policy Act of 1980; and the Nuclear Waste Policy Act of 1982, as well as environmental protection statutes. Also included are statutes, treaties, and related materials regarding export licensing and nuclear non-proliferation. Although this compilation was prepared mainly for use as an internal resource document, it may be obtained from the NRC.

• *The OECD Nuclear Energy Agency*

Long term Management of Radioactive Waste. Legal, Administrative and Financial Aspects, OECD/NEA, Paris, 1984, 133 pages

This study analyses questions of a legal, administrative and financial nature connected with the implementation of programmes for the storage and disposal of radioactive waste. The purpose of the study is to provide a common basis of reflection and experience on all those questions with a view to assisting national authorities in preparing and implementing institutional structures that will contribute to the long-term safety of radioactive waste management operations.

The safety of methods for isolating certain categories of waste requires surveillance (or other control measures) of storage and disposal facilities, even after their closure. The study assesses the conditions for carrying out this task efficiently and durably, without laying too heavy a

burden on future generations. It demonstrates that institutional controls do not involve technically different operations nor do they require the marshalling of large-scale industrial and administrative resources. It is estimated that such controls could last a maximum of one hundred to three hundred years.

The continuity and duration requirements of radioactive waste management involve greater Government responsibility. It is up to Governments to allocate and co-ordinate management operations and control tasks between the public sector and industry and to set up a regulatory system which will meet long-term requirements. The study analyses the different possible approaches in the light of regulations already adopted in certain OECD countries. The annex to the study gives examples of relevant provisions.

The availability of financial resources for the technical operations and institutional controls, to be committed in the distant future, is a significant safety factor. The economic bases for such financing are difficult to evaluate because of uncertainties in estimates and the timetable for expenditures. The study describes possible financing methods, taking these factors into account. Finally, the study considers compensation of damage that might occur following a dispersal of contained material - a negligible risk which nevertheless cannot be overlooked. It would seem that the present nuclear third party liability and insurance regime may be applied without difficulty for compensation of damage linked to the operational phase of the storage and disposal facilities. It would be unrealistic on the other hand to maintain application of this regime for an indefinite duration after closure of the facilities. A mechanism for indemnification based on State intervention might be a viable solution.

Nuclear Power and Public Opinion, OECD/NEA, Paris, 1984, 117 pages

This study examines the different experiences acquired in seventeen OECD Member countries and underlines basic approaches and practices aimed at winning greater public acceptance for nuclear power.

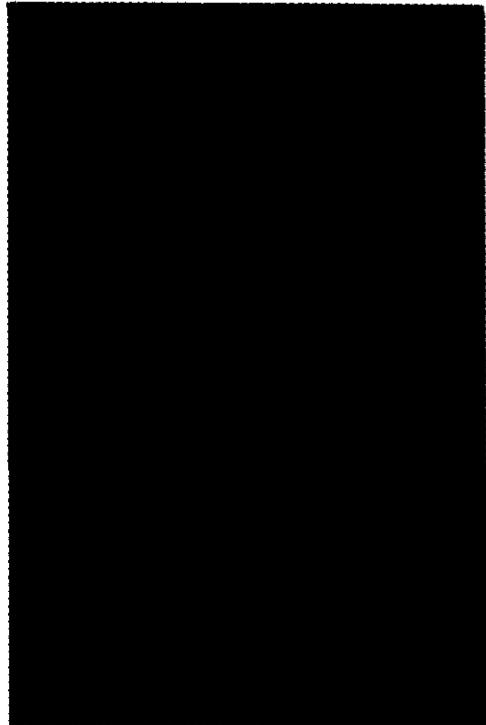
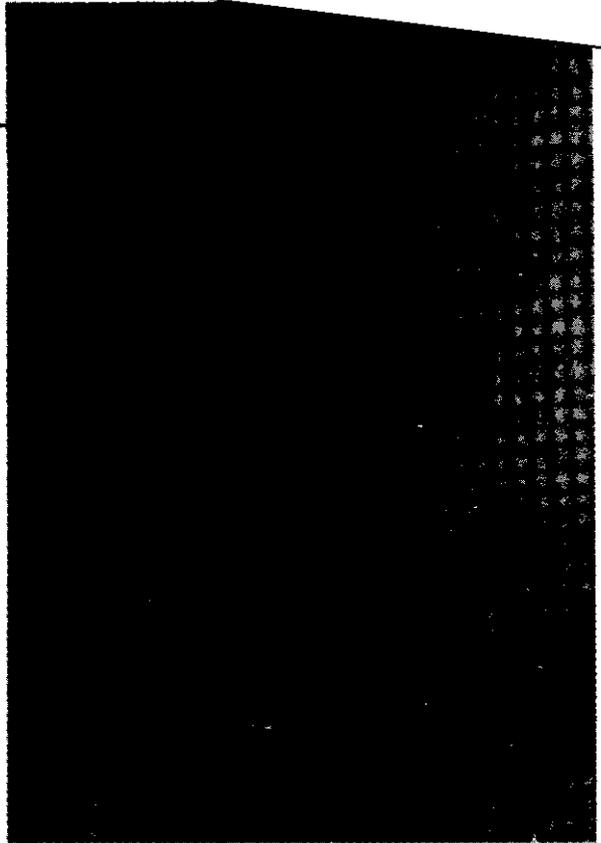
The first part of the study is a country-by-country presentation of public acceptance activities and the role of the various public or private bodies involved. There is also a description of the background energy situation and the place of nuclear power, the evolution of the nuclear debate and a review of present public and political attitudes to nuclear energy.

In the second part, some of the notable factors which determine public attitudes to, and perception of, nuclear energy have been assembled. The study points, in particular, to a number of general principles which require continuous implementation, not least because they contribute to placing nuclear energy in its proper context for the public. In addition to these basic principles, the study calls attention to some of the most successful means of improving communication between the authorities and the public, notably at the local level. The contribution of public participation to the decision-making process is also evaluated in the light of recent national experiences.

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This Study constitutes an initial analysis, at an international level, of the institutional aspects of the long-term management of radioactive waste and may be added to the numerous scientific and technical studies devoted to this question. It describes how legislation and regulatory controls, financing methods and the nuclear third party liability regime may be adapted so as to help ensure the long-term safety of the technical containment systems for radioactive waste.

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This Study, which is published in two volumes, reviews national legislation governing nuclear activities in OECD Member countries and describes the institutional framework within which it is applied. Volume I was published in December 1983. Volume II, published in August 1984, covers New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. It also contains tables of the major international conventions in force affecting the nuclear field.

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