

NUCLEAR  
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# LEGISLATIVE AND REGULATORY ACTIVITIES

## • *Belgium*

### ORGANISATION AND STRUCTURE

#### Royal Order of 1981 determining the duties and conditions of operation of the public body responsible for radioactive waste and fissile materials management

Following the Act of 5th August 1978 on economic and budgetary reforms, in particular in the energy field (see Nuclear Law Bulletin N° 23), another Act of 8th August 1980 concerning budgetary proposals for 1979-1980 provided for the creation of a public body to be responsible for management of the storage of conditioned radioactive waste, waste disposal, its transport as well as that of plutonium-bearing or enriched fissile materials, and finally, plutonium storage.

The purpose of this Royal Order of 30th March 1981 (published in the Official Gazette of 5th May 1981) is to set up this public body, which must become operational as soon as possible, in particular in the perspective of the Eurochemic Company's technical operations ceasing as from 31st December 1981. This body will be named the National Body for Radioactive Waste and Fissile Materials (ONDRAF)

This new public body will be responsible for undertaking the conditioning of radioactive waste from installations which are not equipped to do this work. However, in connection with such operations, the ONDRAF will not replace the national authorities competent under the regulations for protection of the population against the hazards of ionizing radiation or in accordance with regulations relating to state security in the nuclear field. It should be noted in this respect that the Nuclear Safety Service of the Ministry of Justice will supervise the activities of this new body which will also be submitted to the Euratom Security Control and the IAEA Safeguards.

In connection with radioactive waste, the duties of ONDRAF will imply dealing with transport, conditioning, storage and disposal. These operations may in future result in the setting up of a geological storage infrastructure if the studies and research in progress are conclusive in this respect.

As respects plutonium-bearing or enriched fissile materials, ONDRAF will deal with the transport of materials which, in accordance with the IAEA recommendations [INFCIRC/225/Rev.17], require physical

protection measures as well as with the storage of plutonium in excess of the quantity needed for operational purposes.

In practice, ONDRAF will take over various waste management activities which until now have been undertaken by the Nuclear Research Centre (CEN). This will result in transfer of certain CEN staff and facilities to the ONDRAF.

In addition, any person presently holding radioactive waste or operating waste-producing facilities must register with ONDRAF and supply it with all the information required for the carrying out of its duties.

ONDRAF enjoys a legal personality and may perform work of an industrial nature as well as administrative activities. It is placed under the supervision of the Ministry of Economic Affairs.

ONDRAF will be managed by a Board of Directors consisting of twenty members appointed for six years, representing solely the public sector. However, as ONDRAF is called upon to carry out its work in close consultation with interested industrial companies, appropriate consultations will be organised within a Standing Technical Committee whose role will be of an advisory nature. A Managing Director will be responsible for the day-to-day running of the ONDRAF. The funds required for its operation will be taken in charge by the Ministry of Economic Affairs; however, ONDRAF may, with the agreement of the Ministry, set up where necessary a fund for financing long-term activities, in particular, with a view to costs relating to radioactive waste disposal. This fund would be financed by contributions from waste producers.

## • *Brazil*

### ORGANISATION AND STRUCTURE

#### 1980 Decree-Law setting up a Protection System for the Brazilian Nuclear Programme

Decree-Law No 1809 of 7th October 1980 provides for the establishment of a Protection System for the overall Brazilian Nuclear Programme (SIPRON) to ensure integrated planning and joint action in radiation protection and nuclear safety as regards personnel, the general public and the environment.

SIPRON covers the following fields: physical protection, national security, nuclear safety, radiation protection, occupational safety and industrial medicine, protection of the population in emergencies, environmental protection and finally, information. The Decree-Law lays down the structure of SIPRON, and provides that the General Secretariat of the National Security Council will be the central body responsible for the System, assisted by the competent bodies in the

different sectors covered, which will be in charge of co-ordinating their activities, such as for example, the National Nuclear Energy Commission (CNEN) in connection with physical protection, nuclear safety and radiation protection, and the Special Secretariat for the Environment in the Ministry of the Interior as regards environmental protection

#### 1980 Decree defining the fields of activity within the scope of SIPRON

Decree N° 85.565 of 18th December 1980 was made in implementation of Decree-Law N° 1809 (see above) establishing a Protection System for the Brazilian Nuclear Programme (SIPRON). It defines in detail the sectors covered by SIPRON and sets up a Co-ordinating Commission for Protection of the Brazilian Nuclear Programme (COPRON) linked with the General Secretariat of the National Security Council (SG/CSN) which is responsible for the overall orientation and supervision of SIPRON. COPRON is chaired by a representative of SG/CSN and is made up of nine members, designated by the President of the Republic on the Chairman's proposal and drawn from the various Ministries concerned, the CNEN, the nuclear industry and electric utilities

The Decree furthermore specifies the responsibilities of the co-ordinating bodies in connection with SIPRON, for each sector as well as those of the executive bodies, inter alia, ELETROBAS (electric utilities) and NUCLEBRAS (nuclear facilities) (see Nuclear Law Bulletin N°s 9, 23 and 26). Finally, it is provided that in emergency situations, as defined in the Decree, that those responsible for the installations and transport operations involved must notify the authorities and keep them informed, in particular, the CNEN, taking all necessary measures to halt the emergency and minimize its effects, where necessary with the assistance of the Civil Defence specialized units, the Army or police forces.

#### 1980 Decree-Law authorizing NUCLEBRAS to design and construct nuclear installations

Decree-Law N° 1810 of 23rd October 1980 vests in NUCLEBRAS exclusive responsibility for all activities involving the design, construction and operation of nuclear installations and provision of services and materials therefor. The Decree-Law further provides that NUCLEBRAS may be authorized by decree to set up subsidiary companies to this effect, on condition that they remain under its control. Decree N° 85 290, also made on 23rd October 1980, accordingly authorizes NUCLEBRAS to set up, within ninety days, a subsidiary company Nuclebras Constructora de Centrais Nucleares (NUCON), for the specific purpose of constructing and servicing nuclear installations

## • *Denmark*

### REGIME OF NUCLEAR INSTALLATIONS

#### Circular of 6th August 1980 on the reservation of sites for nuclear power plants

This Circular of 6th August 1980 issued by the Department of the Environment contains certain restrictive rules on the construction of houses on sites reserved for nuclear power plants. These sites are reserved in the framework of general planning considerations so as to avoid any building which might prejudice possible future construction of a nuclear installation.

The Circular reserves six sites east of Storebaelt. The reserved areas around a potential installation are divided into two zones. zone 1 covers the area 3 km from the installation and zone 2 that at a distance of 3 to 10 km. The purpose of building restrictions in zone 1 is to avoid an increase in the number of dwellings and working premises, while those concerning zone 2 are intended to stop the development of urban areas which might be difficult to evacuate.

The final provision of the Circular specifies that, in January 1980, the Government decided that a safety evaluation of nuclear power plants would be carried out before it is decided to construct nuclear power plants.

## • *France*

### ORGANISATION AND STRUCTURE

#### 1981 Decree authorizing the CEA and COGEMA to undertake further activities connected with ores and fossile substances

Decree N° 81-300 of 31st March 1981 (published in the Official Gazette of 3rd April 1981) was made to enable COGEMA to diversify its activities in the mining sector. It was therefore necessary to amend both the Decree of 26th December 1975 authorizing the French Commissariat à l'Energie Atomique (CEA) to set up the COGEMA and the Decree of 29th September 1970 relating to the CEA, in view of the specific nature of the duties entrusted to this body by the latter Decree (see Nuclear Law Bulletin N° 6).

## REGIME OF RADIOACTIVE MATERIALS

### 1980 Order amending a previous Order fixing the list and conditions for labelling and packaging of certain dangerous substances

This Order of 10th December 1980 (published in the Official Gazette of 14th December 1980) amends the Order of 25th April 1979 which fixed the list and conditions for labelling and packaging of certain dangerous substances and preparations (see Nuclear Law Bulletin N° 24) This list includes uranium and its compounds in such substances

## • *Federal Republic of Germany*

### ORGANISATION AND STRUCTURE

#### 1980 Notification relating to the Reactor Safety Commission

An official Notification on the setting up of a Reactor Safety Commission was reissued on 15th December 1980 and replaced the Notification of 29th June 1973 (Bundesanzeiger N° 10 of 10th January 1981). According to Section 2 of the Notification it is the task of the Commission to advise the Federal Minister of the Interior on matters concerning the safety of installations for the fission of nuclear fuel (nuclear reactors) as well as the safety of the nuclear fuel cycle, this applies especially with regard to the exercise of Federal supervision under Section 85 of the Constitution (Grundgesetz) Membership in the Commission is ad personam and honorary and should include representatives of the various sectors of nuclear technology At present it comprises 19 members (Bundesanzeiger N° 21 of 31st January 1981).

### TRANSPORT OF RADIOACTIVE MATERIALS

#### Air Traffic Act, as amended, 1981

The Air Traffic Act of 18th September 1980, as amended was re-enacted on 14th January 1981 (Bundesgesetzblatt 1981 I p 61) Under Section 27, paragraph 4 of the Act, nuclear fuels and other nuclear substances may be carried in an aircraft only with a special permit This permit may be issued generally or in each individual case and may impose conditions and be limited to a certain period The Act does not affect any other regulations applicable to the transport of radioactive substances



## • *Greece*

### ORGANISATION AND STRUCTURE

#### 1979 Presidential Decree establishing an Institute of Radiation Physics

Presidential Decree N° 698 of 29th August 1979 (published in the Official Gazette, Part I of 6th September 1979) was made in pursuance of Presidential Decree N° 940 of 18th December 1978 reorganising the Greek Atomic Energy Commission (see Nuclear Law Bulletin N° 23). Decree N° 698 sets up an Institute of Radiation Physics, attached to the Democritos Nuclear Research Centre under the Commission. The duties of the Institute include, inter alia, the training of scientists in research relating to radiation protection and to study of the effects of radiation on living creatures and inorganic matter.

## • *Israel*

### RADIATION PROTECTION

#### Employment of Women Regulations (Work involving Ionizing Radiation) of 1979

The Employment of Women Regulations (Work involving Ionizing Radiation) N° 5739 of 5th February 1979 were made by the Minister of Labour under the 1954 Act on employment of women and, in particular, lay down the requirements to be complied with by employers for the radiation protection of occupationally exposed women of reproductive age.

Under the Regulations employers must take all reasonable action to minimize the rates of exposure of women working on their premises. They provide, inter alia, that women of reproductive age must not be exposed to radiation doses from external or internal radiation sources exceeding 5 rem in any one year. The equivalent dose for pregnant women must not exceed 1 rem for her whole period of pregnancy. The Regulations specify that an equivalent exposure dose in relation to internal radiation is that defined by the International Commission on Radiological Protection (ICRP) in its Publication N° 26.

These Regulations revoke the Employment of Women Regulations (Work involving Ionizing Radiation) N° 5738-1978.

## REGIME OF RADIOACTIVE MATERIALS

### Pharmacists Regulations (Radioactive Elements and Products Thereof) of 1979

The Pharmacists Regulations (Radioactive Elements and Products Thereof) of 2nd December 1979 made by the Minister of Health make provision for the licensing system for radioactive substances and products containing such substances. It is provided that no person may establish an installation for radioactive substances or manage, process, transport, store or trade in such substances without a permit granted by the Officer-in-Charge appointed by the Minister of Health for the purposes of the Regulations. This permit, which is valid for five years in principle, is granted following the approval of the Director-General of the Atomic Energy Commission. The same procedure applies in connection with radioactive waste disposal services.

Applications for permits are made to the Officer-in-Charge and must provide information on the type and quantities of radioactive substances, the planned safety measures and emergency procedures, and in the case of an installation, must also include a diagram of its design and details of its environmental effects in normal operation

## • *Italy*

### ORGANISATION AND STRUCTURE

#### 1980 Presidential Decree concerning the Higher Institute for Safety at Work

Presidential Decree N° 619 of 31st July 1980 contains regulations on the Higher Institute for Safety at Work (Istituto superiore per la prevenzione e la sicurezza del lavoro) (Supplement to the Official Gazette of 7th October 1980) which was set up by Act N° 833 of 28th December 1978 (see Nuclear Law Bulletin N° 23)

This Presidential Decree is important as respects nuclear energy insofar as the tasks of the new Institute which are mainly of an advisory nature, also concern radiation protection and safety in connection with nuclear activities

The Decree makes provision for an advisory role to be played by the Institute as regards health protection in the field of nuclear power generation and radioactive materials, including use of and trade in such materials. On the other hand, as provided by Act N° 833, it confirms that it does not affect the regulations governing the use of nuclear energy (in particular as concerns Act N° 1240 of 1971 reorganising the CEN),

Act N° 1860 of 1962 on the peaceful uses of nuclear energy, Presidential Decree N° 185 of 1964 on radiation protection and the decrees implementing these texts) This Decree provides that the Institute shall consult or co-ordinate with the Higher Institute for Health, CNEN and the National Research Council on the following.

- formulation of standards for injury and accident prevention in workplaces,
- methodology of readings and analyses of disamenities and their thresholds in workplaces, clinical and laboratory methods to monitor the health of workers in connection with specific risks;
- determination of safety criteria for approval of equipment, advice on instruments for individual protection;
- assessment and standardized interpretation of safety criteria for workers and the population exposed to the hazards of radioactivity,
- co-ordination of the activities of competent bodies in radiation protection with a view to provision of advice to regions, communes, etc ,
- co-ordination and formulation of proposals and decisions concerning the above in matters of radiation protection

Finally, the Decree provides for the transfer to the Institute of the tasks given to the National Association for Combustion Control (ANCC) concerning the surveillance of certain parts of nuclear installations.

#### RADIATION PROTECTION

##### 1981 Presidential Decree implementing the 1970 Act providing for aid and assistance to populations involved in catastrophes

Presidential Decree N° 66 of 6th February 1981 (Supplement to the Official Gazette of 16th March 1981) implements Act N° 996 of 8th December 1970 providing for aid and assistance to populations involved in catastrophes. The provisions of the Decree are of general application, and therefore cover nuclear emergencies, although they are not explicitly mentioned. The purpose of the Decree is to provide a framework for aid and assistance at a local level, taking into account the decentralization following the creation in 1972 of autonomous administration in the regions. The provisions deal, inter alia, with the establishment and organisation of tasks to be performed by the Ministry of the Interior and its services, by the regional and local (commune) services, some of which have been set up for this purpose. Detailed responsibilities have also been given to the Prefects of the provinces. Finally, in addition to co-operation between the Ministers concerned, the State and public or private bodies, other aspects are dealt with, in particular those concerning health measures, communications and transport as well as aid to private associations or foreign countries.

## • Norway

### RADIATION PROTECTION

#### Radiation protection regulations (1981)

Pursuant to Act No 1 of 18th June 1938 concerning the use of X-rays and radium and the Regulations of 23rd January 1976 (see Nuclear Law Bulletin No 21) on the supervision and use of installations, apparatus, material and substances which release ionizing or other radiation representing a danger to health, the State Institute of Radiation Hygiene has issued three sets of Regulations respectively concerning radiation protection in the use and handling of unsealed radioactive sources, radiation protection measures in the case of accidents connected with gamma-radiography and finally, concerning a system of inspection of gamma-radiography equipment.

All the above-mentioned Regulations enter into force on 1st July 1981.

### ENVIRONMENTAL PROTECTION

#### Pollution Control Act of 1981

The Pollution Control Act No 6 was adopted on 13th March 1981 and is expected to enter into operation on 1st January 1982. The purpose of the Act is to counteract pollution of the external environment and to promote improved treatment of waste. Radioactive waste is included in the Act's definition of waste.

The main principle of the Act is that no person may take any action liable to cause pollution unless such activities are permitted under the Act or approved by decision of the Pollution Control Authority. The Act establishes a duty to inform the Pollution Control Authority of activities which may lead to significant pollution problems and a duty to analyse the effects of the activities concerned on the environment.

No person may abandon, store or transport waste in such a way as to be of unsightly appearance or which may lead to damage or disamenity to the environment. Any person operating a storage site or facility for treatment of waste which can lead to pollution or which is unsightly must obtain permission from the Pollution Control Authority. The Act provides that radiation will only be regarded as pollution to the extent determined by the Pollution Control Authority.

The Pollution Control Authority may impose fines payable to the State by individuals, companies, associations etc. violating the act or any decisions pursuant to the Act. Violation of the Act may also lead to imprisonment of up to five years (this maximum penalty is applicable only to certain serious offences).

The Pollution Control Act has, until now, laid down no provisions concerning civil liability and compensation. A committee is at present

preparing such draft provisions. Situations covered by the Atomic Energy Act of 1972 (see Supplement to Nuclear Law Bulletin N° 11) will probably be excluded from the scope of these provisions.

## • *Spain*

### ORGANISATION AND STRUCTURE

#### 1980 Decree to amend the 1979 Decree reorganising the Ministry of Industry and Energy

Decree 2000/1980 of 3rd October 1980 (published in the Official Gazette of 7th October 1980) amends the Decree of 29th June 1979 (1613/1979) for the purpose of co-ordinating the autonomous bodies of the Ministry of Industry and Energy, and refining the structure of the different services so as to optimize the activities under the Ministry's control

Within this overall reorganisation, it is provided that the Commissioner for Energy and Mineral Resources will also be the Chairman of the *Junta de Energia Nuclear*.

## • *Sweden*

### THIRD PARTY LIABILITY

#### Draft Amendments to the 1968 Nuclear Liability Act (1981)

The Swedish Ministry of Justice has recently published a Memorandum. "Ändringar i atomansvarighetslagen" (Ds Ju 1981:5) containing proposals for amendments to the Nuclear Liability Act (1968:45) (see Nuclear Law Bulletin N° 19). The proposed amendments can be grouped into two different categories. The amendments belonging to the first category are those which are necessary in order to enable Sweden to ratify the draft Protocols to the Paris Convention and the Brussels Supplementary Convention, once these Protocols have been adopted by the OECD Council and opened for signature.

The second category of proposed amendments has no relationship

with the Protocols but is nevertheless of great importance. At present, the liability of a Swedish nuclear operator is limited to 50 million Swedish kronor (approximately 50 million French francs) per incident. It is proposed that this liability should be raised to 500 million Swedish kronor, and the amount covered by insurance. It is proposed, furthermore, to introduce a State liability over and above the compensation available under the Paris Convention and the Brussels Supplementary Convention. If, in case of a nuclear incident for which the operator of a nuclear installation located in Sweden is liable, the amounts available under the Paris Convention and the Brussels Supplementary Convention (according to their present wording or as amended by the draft Protocols) are insufficient to give full compensation to victims, the State will indemnify the victims. The aggregate amount available under the two Conventions and this State liability would be limited to 3,000 million Swedish kronor in respect of a single incident. The State indemnification will apply to nuclear damage sustained in Sweden, Denmark, Finland or Norway. It will also apply to damage in another State Party to the Brussels Supplementary Convention to the extent such State provides additional compensation out of public funds for damage caused in Sweden.

This Memorandum has been submitted for comment to interested authorities and organisations.

## • *United Kingdom*

### ORGANISATION AND STRUCTURE

#### The National Radiological Protection Board (Constitution Amendment) Order 1980

This Order [SI 1980 No 970], which came into operation on 31st July 1980, amends Section 2 of the Radiological Protection Act 1970 so as to increase from 9 to 12 the maximum membership of the Board (see Nuclear Law Bulletin Nos 4 and 6).

### REGIME OF RADIOACTIVE MATERIALS

#### The Radioactive Substances (Smoke Detectors) Exemption (Scotland) Order 1980

This Order [SI 1980 No 1599 (s.126)] which applies to Scotland and came into operation on 26th November 1980, exempts persons conditionally from registration under Sections 1 and 3 of the Radioactive Substances Act 1960 in respect of the keeping and use of radioactive material consisting of smoke detectors incorporating closed sources possessing limited radioactivity. It also excludes from certain other Sections of the 1960 Act relating to the accumulation and subsequent

disposal of radioactive waste, certain categories of radioactive waste arising from the keeping or use of smoke detectors.

The Order revokes and re-enacts with amendments the Radioactive Substances (Fire Detectors) Exemption (Scotland) Order 1967.

Measurements of radioactivity which were formerly specified in curies are now given in becquerels, following adoption of the International System of Units (SI Units)

#### TRANSPORT OF RADIOACTIVE MATERIALS

##### The Air Navigation (Restriction of Flying) (Atomic Energy Establishments) Regulations 1981

These Regulations [SI 1981 No 307], which came into operation on 9th February 1981, were made under the Air Navigation Order 1980 [SI 1980 No 19657]. They re-enact without amendment the Regulations with the same title dated 1976 (which are revoked) and continue the prohibition against aircraft flying below a specified height above the atomic energy establishments referred to in the Schedule to the Regulations.

#### ENVIRONMENTAL PROTECTION

##### The Control of Pollution (Special Waste) Regulations 1980

These Regulations [SI 1980 No 17097] apply to England, Scotland and Wales and came into operation on 16th March 1981 so as to give effect to certain provisions of the Council of the European Communities Directive No 78/319/EEC (Official Journal No L.84, 31st March 1978) concerned with toxic and dangerous waste. This is achieved by the use of the existing power of the Secretary of State for the Environment under Section 17 of the Control of Pollution Act 1974 (see Nuclear Law Bulletin Nos 14 and 19) to designate waste which is dangerous or difficult to dispose of as "special waste".

Regulation 3 deals with radioactive waste. Such waste will be special waste if it has dangerous properties other than radioactivity, so as to bring it within Regulation 2. Under these Regulations however, no account is taken of its radioactivity, precautions against which are dealt with under the Radioactive Substances Act 1960.

#### THIRD PARTY LIABILITY

##### The Nuclear Installations (Jersey) Order 1980

This Order [SI 1980 No 15277], which came into operation on 3rd November 1980, extends to Jersey, with certain exceptions, adaptations and modifications mentioned in the Schedule, those provisions of the Nuclear Installations Act 1965 as amended, which relate to the duty in respect of carriage of nuclear matter, to the right to compensation for

breach of that duty and to the bringing of claims and the satisfaction of claims and certain ancillary provisions. This Act implements the Paris Convention and the Brussels Supplementary Convention in the United Kingdom (see Supplement to Nuclear Law Bulletin N° 1 and N°s 3 and 4) A series of similar Orders were made, in particular in relation to the Isle of Man and Guernsey (see Nuclear Law Bulletin N°s 20 and 24)

Those provisions of the 1965 Act as amended relating to health and safety at work are not extended to Jersey as such matters fall within the scope of Jersey legislation.

## • *United States*

### REGIME OF NUCLEAR INSTALLATIONS

#### Nuclear Safety Research, Development and Demonstration Act of 1980

The Nuclear Safety Research, Development and Demonstration Act of 1980 (Pub L. 96-567, 25th December 1980) provides for an accelerated programme of light water nuclear reactor safety research and development by the Department of Energy (DOE) over the next five years. Congress set two objectives for the accelerated programme, firstly, to reduce the likelihood and severity of potential serious nuclear power plant accidents and secondly, to reduce the likelihood of disrupting the population in the vicinity of the power plant as a result of accidents.

The Act calls upon the Secretary of Energy (the Secretary) to establish a research programme among other things:

- 1) to develop potentially cost-beneficial changes in the generic methods, designs and operation of nuclear power plants to reduce the risks of unintentional radioactive releases;
- 2) to reduce the radiation exposures of workers during plant operation and maintenance; and
- 3) to improve the performance of power plant operators under routine, abnormal, and accident conditions.

The statute lists, without limiting, a number of important areas for further experimental investigations under routine and postulated accident conditions, including fuel cladding interactions, suppression and control of hydrogen gas, improved instrumentation for monitoring reactor cores and engineered barrier failure modes. In addition, the Secretary is authorized to examine and analyse hardware from a nuclear power plant made available to him or her at nominal cost

The Act also requires the Secretary to complete two studies by 1st January 1982. The first study, to be prepared in consultation



with the Nuclear Regulatory Commission and the Advisory Committee on Reactor Safeguards, is to consider the need for and the feasibility of establishing a national reactor engineering simulator. The primary purpose of the national simulator would be to foster research in generic design improvements by simulating the performance of various types of light water reactors under a variety of abnormal and postulated accident conditions. The legislative history of this provision makes it clear that the simulator is not intended to be used as a national training centre for reactor operators or to replace or duplicate simulators owned by nuclear vendors and utilities.

The second study, to be prepared in co-operation with the NRC, will consider the sufficiency of efforts in the United States to provide specially trained professionals to operate nuclear power plants and fuel cycle facilities. As part of the study the Secretary will assess the desirability and feasibility of creating a Federal Corps of such professionals to inspect and supervise these operations and consider the establishment of an academy to train Corps professionals in the relevant subject matter areas.

## ENVIRONMENTAL PROTECTION

### Low-Level Radioactive Waste Policy Act of 1980

The Low-Level Radioactive Waste Policy Act (Pub L 96-573, 23rd December 1980) establishes a federal policy that each State is responsible for providing capacity either within or outside the State for the disposal of low-level radioactive waste generated within its borders and that low-level waste can be most safely and efficiently managed on a regional basis. The Act authorizes States to enter into such compacts with their neighbours as may be necessary to establish and operate regional low-level waste disposal facilities pursuant to requirements established by the Nuclear Regulatory Commission. The transportation, management and disposal of low-level waste from defence-related facilities and activities of the Department of Energy and federal research and development activities are excluded from the scope of such compacts. A compact will not take effect until approved by the Congress and the Congress may withdraw its consent at five-year intervals once the compact has taken effect. After 1st January 1986, any compact may restrict the use of the regional disposal facilities to the disposal of low-level waste generated within the region.

To assist the States in carrying out the low-level waste policy, the Secretary of Energy is directed to prepare and submit to the Congress and the States, within 120 days after enactment of the Act a report which.

- 1) defines the disposal capacity needed for present and future low-level radioactive waste on a regional basis;
- 2) defines the status of all commercial low-level waste disposal sites and such recommendations as the Secretary considers appropriate to assure protection of the public health and safety from wastes transported to such sites,
- 3) evaluates the transportation requirements on a regional basis and in comparison with performance of present transportation practices for shipment of low-level waste and evaluates the shipment requirements for each type of

low-level waste and the ability of waste generators, shippers and carriers to meet such requirements; and

- 4) evaluates the capability of low-level waste disposal facilities owned and operated by the Department of Energy to provide interim storage for commercially generated low-level waste, and cost estimates for interim storage

In preparing the report, the Secretary of Energy is directed to consult with the Governors of the States, the Nuclear Regulatory Commission, the Environmental Protection Agency, the United States Geological Survey, the Secretary of Transportation, and other appropriate agencies and departments.

#### West Valley Demonstration Project Act of 1980

The West Valley Demonstration Project Act (Pub L 96-368, 1st October 1980) directs the Secretary of Energy to carry out a high-level waste management demonstration project for the purpose of demonstrating solidification techniques which can be used for preparing high-level radioactive waste for disposal. The project will be carried out at the Western New York Service Centre in West Valley, New York. The Centre is the site of the first commercial nuclear fuel reprocessing facility in the United States. The plant reprocessed about 625 metric tons of spent nuclear fuel between 1966, when it began operation, until 1972, when it shut down. Two types of high-level liquid nuclear waste are currently stored there. The first is 560,000 gallons of high-level liquid wastes which were produced from reprocessing uranium fuel using the Purex process. These wastes were neutralized prior to transfer into the current storage tank. The second type of waste, about 12,000 gallons, was produced from processing thorium-uranium fuel using the Thorex process. These wastes were not neutralized and still remain in an acidic state in the tank.

Under the provisions of the Act, the Secretary will have the liquid waste solidified by vitrification or by some other suitable process so that it is suitable for transportation and disposal. The Secretary will also have containers developed which are suitable for the permanent disposal of the solidified high-level waste. As soon as feasible, the waste will be transported to an appropriate Federal repository for permanent disposal. Low-level and transuranic radioactive waste produced by the solidification process will be disposed of in accordance with applicable licensing requirements. Finally, the Secretary will ensure decontamination and decommissioning of the storage tanks and any material and hardware used in connection with the project in accordance with such requirements as the Nuclear Regulatory Commission may prescribe.

The Secretary will hold public hearings in the vicinity of the Centre to inform residents of the proposed activities and receive their comments before the Secretary undertakes the project. The Act also provides that the Secretary will enter into an agreement with the Nuclear Regulatory Commission to establish arrangements for informal review and consultation by the Commission with respect to all phases of the project. The Secretary will also have appropriate safety analyses of the project conducted, the required environmental impact analyses prepared, and will submit annual progress reports to the Congress.

# CASE LAW

## • *Federal Republic of Germany*

### DECISION OF THE FEDERAL ADMINISTRATIVE COURT IN THE STADE CASE (1980)

The Federal Administrative Court, in a judgment of 22nd December 1980 (BVerwG 7 C 84.78) concerning the seventh partial construction licence for the Stade nuclear power station (see Nuclear Law Bulletin N° 15) has clarified a number of questions of principle in connection with the licensing of nuclear installations. The main points of the decision may be summed up as follows.

- In administrative court proceedings concerning atomic energy law, a citizen is entitled to file a suit if he is able to substantiate the alleged interference with his rights. If the claimant lives more than 25 km away from the nuclear installation he must exercise special care in showing in detail the encroachment upon his rights, at least insofar as normal working of the installation is concerned,
- Section 7 paragraph 2 N° 3 of the Atomic Energy Act enjoins the operator to take every necessary precaution in the light of existing scientific knowledge and technology to prevent damage; it does require the operator to take all preventive measures possible according to present standards of science and technology,
- Section 45 of the Radiation Protection Ordinance (the so-called 30/90 mrem concept\*) (see Nuclear Law Bulletin N°s 18 and 19) protects the neighbours of nuclear installations and they may consequently contest the licence in court if the licence permits the release of radioactivity in quantities beyond the limits laid down in Section 45. Against this, Section 28 of the Radiation Protection Ordinance containing an injunction to minimize radiation exposure does not confer a right to neighbours to file claims of their own. The same reasoning applies concerning the obligation of the operator of a nuclear installation to provide for the disposal of nuclear waste according to Section 9 of the Atomic Energy Act.

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\* This provision concerns the release of radioactive effluents into the environment from normal operation of nuclear installations. Annual dose limits to the public are set at 30 mrem for whole body exposure and 90 mrem for the thyroid

The decision furthermore contains a number of important passages on special problems of administrative procedural law, in particular with regard to the so-called preclusion of objections (Atomic Energy Law Procedural Regulation Section 3 paragraph 1, and Atomic Energy Act, Section 7 b)

In the meantime, the decision has been challenged by the losing claimant in the Federal Constitutional Court.

## • *Italy*

### DECISION OF THE COUNCIL OF STATE CONCERNING THE MONTALTO DI CASTRO NUCLEAR POWER PLANT (1980)

The setting up of the fifth Italian nuclear power plant, the Montalto di Castro plant, has been the subject of a lengthy legal conflict from the start. Selection of the site for the installation, and its construction, have involved complex approval procedures, as determined for nuclear power plants by Act No 393 of 1975 on nuclear power plant siting and Presidential Decree No 185 of 1964 on radiation protection. These texts provide for a series of consultations between the central administration, the regions and the communes involved in connection with site approval, the construction permit and the operating licence.

In February 1980, the Mayor of the commune of Montalto suspended by ordinance the construction of the plant on the ground that the measures to ensure the health and safety of the commune's population in connection with the construction of the plant were insufficient. Another ordinance was made in March 1980 in support of the first, stating the risk of seismicity near the power plant - this appraisal was based on a study undertaken by a group of geologists at the Mayor's request.

The national electricity-producing company, ENEL, on whose behalf the plant was being constructed, appealed against the ordinances before the regional administrative court. The court rejected ENEL's appeal on the ground that the essentially economic prejudice sustained by ENEL could easily have been avoided by the latter if the competent administration (in particular, the supervisory Ministry, namely the Ministry of Industry) had taken the necessary measures and made all the verifications concerning the points raised by the Mayor of Montalto.

ENEL then appealed against the judgment of the regional administrative tribunal before the Council of State and, in parallel, the Ministry of Industry asked the National Committee for Nuclear Energy (CNEN) to set up a high-level Expert Commission to verify the validity of the antiseismic measures taken for the plant on the basis of the CNEN's rules. In September 1980, the Commission submitted its conclusions to the CNEN - those tallied completely with the initial reports having led to approval of the site selected and the construction works. The conclusions of the Commission were communicated to the Ministry of Industry.

In the meantime, on 4th July 1980, the Council of State rendered its decision concerning the appeal by ENEL, and held that the ordinances of the Mayor of Montalto should remain in force until the verifications he had requested were completed. On the other hand, the Council of State indicated that the Mayor could not be considered competent to evaluate the technical content of these verifications, once the appropriate authorities had completed and assessed them in the framework of their own responsibility.

Consequently, the Ministry of Industry, after being informed of the conclusions of the CNEN's Expert Commission, invited ENEL, at the end of October 1980 to resume work on construction of the plant.

#### CONSTITUTIONAL COURT DECISION OPPOSING A REFERENDUM ON LEGISLATION CONCERNING SITE SELECTION FOR NUCLEAR POWER PLANTS (1981)

A request for a popular referendum the purpose of which was to have adopted a partial annulment of Act N° 393 of 2nd August 1975 on nuclear power plant siting (see Nuclear Law Bulletin N° 16) was filed in June 1980 with the Central Bureau set up to deal with such matters and attached to the Constitutional Court.

The Constitutional Court therefore considered the request and on 13th February 1981, held that it should be refused. The Court based its decision primarily on the ground that, if Act N° 393 were to be made the subject of a referendum for its partial annulment, the implementation of the Italian nuclear power plant programme - the very purpose of the Act - would be impossible. The Court further considered that the proposal for a referendum ran counter to the objectives fixed in the Euratom Treaty (nuclear power development within the Community) and to which Italy was committed as a Party to the Treaty. Italy should, in this connection, refrain from any action likely to put obstacles in the way of achieving the objectives involved, which would be the case in respect of the proposed referendum. In consequence, this Decision constitutes significant support for the carrying into effect of a nuclear equipment policy in Italy.

#### • *United States*

#### FOUR BILLION DOLLAR PROPERTY DAMAGE CLAIM FILED AGAINST THE NUCLEAR REGULATORY COMMISSION BY THE OWNERS OF THE THREE MILE ISLAND NUCLEAR POWER PLANT

General Public Utilities Corporation (GPU) and its subsidiaries filed a \$4.010 billion dollar claim against the Nuclear Regulatory Commission on 8th December 1980 for property damage arising from the Three Mile Island Accident. GPU is the holding company for the three co-owners of the Three Mile Island facility. The claim asserts that NRC was negligent in performing its statutory and regulatory duties by (1) failing

to warn GPU and its subsidiaries of problems associated with Babcock & Wilcox supplied plants of which NRC became aware during performance of its operational functions, and (2) failing to exercise due care in its regulatory review of B&W supplied equipment, analyses, procedures and training. Specific allegations include charges that NRC negligently certified the B&W simulator used for training the control room operators at the Three Mile Island facility even though NRC knew or should have known that the simulator could not simulate many loss-of-coolant accidents, and that NRC negligently failed to require B&W to submit the transient analyses necessary for the proper design and operation of the facility GPU further asserts that negligence of the NRC was a proximate cause of the TMI accident

The claim was filed under the provisions of the Federal Tort Claims Act. The Tort Claims Act, enacted by Congress in 1946, established the general principle that the United States should be liable for the negligence of its employees, subject to the limitations and exceptions contained in the Act. Hence the Act amounts to a partial waiver of the doctrine of sovereign immunity. Under the Act, state law, rather than federal law, governs on the issue of negligence. One interesting legal question associated with the GPU claim is which state law applies - the accident occurred in Pennsylvania, but the NRC is primarily located in Maryland and Washington D.C., although it also has a regional office in Pennsylvania. These questions may be significant if the law governing negligence varies among the jurisdictions. The Tort Claims Act also contains a number of exceptions to liability, including an exception for claims based on discretionary acts or omissions by Federal employees

The Act also provides that before an injured party may sue in the federal district court, the party must first file an administrative claim with the agency involved. The agency, in turn, may admit, deny or settle the claim. Any award or settlement by the agency in excess of \$25,000 must have the prior written approval of the United States Department of Justice. If the agency fails to act on the claim within six months, the claimant may sue any time thereafter in the federal court. The agency is not required to set out its legal position when it acts administratively on the claim. However, in the case of a denial, the federal district court would consider the case de novo and would not be bound by the agency's factual record or its statement of reasons.

The Nuclear Regulatory Commission presently has the GPU tort claim under consideration. Obviously, it would be inappropriate to discuss the merits of the case here. - However, given the huge size of the claim, the myriad legal and technical issues raised by the claim, and the complex factual situation associated with the Three Mile Island accident, final resolution of this matter is not expected for some time.

# INTERNATIONAL ORGANISATIONS AND AGREEMENTS

## INTERNATIONAL ORGANISATIONS

### • *The OECD Nuclear Energy Agency*

#### AGREEMENT ON THE INTERNATIONAL STRIPA PROJECT (1981)

The OECD Nuclear Energy Agency (NEA) has officially launched a programme of scientific investigations relevant to geological waste disposal. The Agreement establishing the International Stripa Project, conducted in Sweden, was opened for signature in April 1981; agencies in five NEA Member countries, Finland, Japan, Sweden, Switzerland and the United States are parties to the Agreement and Canada and France will join the Project as Associate Members.

The Project is being carried out at an abandoned iron ore mine located at Stripa in central Sweden under the management of the AB Svensk Kärnbränsleförsörjning (SKBF-Sweden). The Stripa Mine itself is not a suitable site for a repository, notably due to the extent of past mining activities, and radioactive waste will not be used during the test programme. However, as the mine and shafts are already excavated and provide good working conditions, they provide an opportunity to investigate some of the features of the geology of a deep underground granite rock mass relevant to the disposal of long-lived radioactive wastes.

Participation in the Project is open to any NEA Member country or public or private agency designated by the government of the Member country concerned. The Agreement is valid for a period of four years as from May 1980 and may be extended by unanimous decision of the Contracting Parties.

## • *International Atomic Energy Agency*

### INTERNATIONAL SPENT FUEL MANAGEMENT

The Expert Group on this subject that was first convened by the IAEA in 1979 continued its work through 1980 and in 1981. Much of the work on technical and economic issues has been completed and in 1981 emphasis will be placed on an examination of institutional matters.

A sub-group of the Expert Group has been charged with the responsibility of considering institutional, legal and procedural issues. This sub-group in turn has divided its work into four tasks, namely

- 1) Role of the IAEA;
- 2) Bilateral arrangements for spent fuel management,
- 3) Multinational and international arrangements for spent fuel management; and
- 4) Future models.

To date the sub-group has concentrated its work on the first three tasks. A thorough analysis has been made of experience and current practices in these areas in order to determine the adequacy of existing institutional arrangements and to identify areas where new arrangements might be useful. On the basis of these findings, the sub-group will proceed with examining future models for institutional arrangements in the area of spent fuel management.

### INTERNATIONAL PLUTONIUM STORAGE

The Expert Group on International Plutonium Storage (IPS) held its fifth meeting in May 1981. A sub-group has been charged with the responsibility of examining ways in which an IPS system could be operated in close association with the existing safeguards system.

### NUCLEAR SAFETY MISSIONS

In an effort to promote the adoption and implementation of the IAEA Codes of Practice and Safety Guides for nuclear power plants, the IAEA has made arrangements to send to Member States missions of safety experts directly involved in the preparation of those documents. So far, five missions have been sent to Pakistan, Syria, Hungary, Indonesia and Greece. Other missions to Poland, Portugal, Spain, Ecuador, Turkey and Mexico are planned for this year.

### ADVISORY SERVICES IN NUCLEAR LAW

At the request of the Governments of Chile and Ghana, the IAEA provided advisory services in nuclear legislation to the national atomic energy commissions of these countries in May and June respectively. The purpose of such services was to advise and assist the national authorities in a review of the organisational structure for effective control of the peaceful uses of atomic energy and in the consideration of requisite



legislation, including the regulatory steps to be taken during the planning stage of a nuclear power programme. These advisory services were carried out by a member of the IAEA Secretariat through discussions with the competent national authorities

## **AGREEMENTS**

### **• *France-Japan***

#### **1981 AGREEMENT ON LIGHT WATER REACTOR SAFETY**

The French Atomic Energy Commission (CEA) and the Atomic Energy Bureau of the Japan Science and Technology Agency (STA) concluded on 15th March 1979, a general co-operative Agreement on light water reactor safety which specified several technical areas concerning which information could be exchanged

This new Agreement was concluded on 23rd February 1981 between the CEA and the Japan Atomic Energy Research Institute (JAERI). The Agreement relates to the development of research programmes on the experimental reactors Phebus (France) and NSRR (Japan) and consists of subjecting light water fuels to conditions (temperature, power, pressure etc.) representative of those which might occur in nuclear power plants during serious hypothetical accidents, in order to analyse their behaviour.

The Agreement, which is valid for four years, determines the conditions for exchange of information in this field.

## • *F.R. of Germany-France*

### 1977 AGREEMENT ON MUTUAL ASSISTANCE IN THE EVENT OF CATASTROPHES AND GRAVE DISASTERS

The above Agreement of 3rd February 1977 between the Federal Republic of Germany and France, ratified by an Act of 14th December 1980 in the Federal Republic (see Nuclear Law Bulletin N° 25), was published in France by Decree N° 80-1151 of 30th December 1980. In accordance with its Article 15, the Convention came into force on 1st December 1980 (Bundesgesetzblatt 1980 II, p. 1438 and Journal Officiel de la République française of 4th January 1981)

## • *F.R. of Germany-United States*

### SUPPLEMENT TO THE 1974 CO-OPERATIVE AGREEMENT IN THE FIELD OF RADIOACTIVE WASTE MANAGEMENT (1980)

The Technical Exchange and Co-operative Agreement in the Field of Radioactive Waste Management between the Federal Republic of Germany and the United States of 20th December 1974 (see Nuclear Law Bulletin N° 15) was amended by a Supplement which was signed on 19th March 1980 (Bundesgesetzblatt 1980 II, p. 1418). The Supplement entered into force on the date of signature and contains the following amendments to the original Agreement

- Annex A, containing the technical topics of co-operation, is amended by a new list of topics;
- Article 5 of the Agreement dealing with the handling and dissemination of information is amended by a new Annex B,
- a new Article 16 provides that other national authorities of the Contracting Parties (in addition to the United States Department of Energy and the German Federal Ministry for Research and Technology) may participate in this co-operation

Finally, the Agreement will now remain in force until at least 31st December 1984.

## • *International Atomic Energy Agency*

### THE UNITED KINGDOM AND THE UNITED STATES IN RELATION TO IAEA SAFEGUARDS

On 9th December 1980 the International Atomic Energy Agency (IAEA) was notified by the United States Government that the statutory and constitutional requirements for the entry into force of the Agreement between the United States of America and the IAEA for the Application of Safeguards in the United States, and its Protocol, have been met. Accordingly, the Agreement entered into force on that date. This Agreement was approved by the IAEA Board of Governors in September 1976 and was initialled at Vienna on 18th November 1977. The instrument of ratification of the Agreement was signed by President Carter on 31st July 1980. Together with this notification the IAEA also received from the United States Government the list of facilities in the United States which are eligible to be safeguarded.

While under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) safeguards are not normally applied in nuclear-weapon States, safeguards are to be carried out in the United Kingdom and the United States under the offers made by both States. The purpose of these offers is to enable the Agency to apply its safeguards to all nuclear installations except those related to national security. The Safeguards Agreement between the United Kingdom, EURATOM and the IAEA (INFCIRC/263) has been in force since 14th August 1978.

The following initial designations have been made for routine inspections under the two agreements mentioned above.

- In the United Kingdom, a prototype fast reactor and fuel storage area as well as the associated reprocessing plant,
- In the United States, a fuel fabrication plant of advanced design and two large new light water reactor power plants.

In a statement to the Board of Governors at its meeting in February 1981, the Director General of the IAEA reported that in making these initial designations, account had been taken of the guidance given by the Safeguards Committee of the Board in 1970 that facilities of advanced design incorporating new technology or sensitive in terms of international competition should be selected. He further stated that all facilities in the United Kingdom eligible for designation for safeguards purposes were routinely reporting to the IAEA in the same way as facilities in EURATOM non-nuclear-weapon States, and that consideration was being given to other facilities in the United States to which the reporting arrangement could be extended.

### EGYPT RATIFIES NPT IN 1981

On 22nd February 1981 the Government of the Arab Republic of Egypt deposited its instrument of ratification of the NPT with the Government of the United Kingdom of Great Britain and Northern Ireland. Egypt signed the NPT on 1st July 1968, when the Treaty was first opened for signature. There are now 114 States party to the Treaty.

## SAFEGUARDS AGREEMENTS WITH SPAIN

After approval by the Board of Governors in February 1981, two agreements were concluded on 1st April 1981 between Spain and the IAEA for the application of safeguards, one in relation to the Vandellós I Nuclear Power Plant which consists of a 500 MW(e) gas-cooled reactor, and the other in relation to the following nuclear facilities

- The Argos and Arbi research reactors at the Higher Technical Schools for Industrial Engineers at Barcelona and Bilbao, respectively,
- The M-1 pilot reprocessing plant at the Juan Vigón National Nuclear Energy Centre; and
- The plant for the fabrication of research reactor fuel elements at the same Centre

Each of these agreements will enter into force upon receipt by the IAEA of a notification from the Spanish Government that it has complied with all requirements for such entry into force. Thereafter, all nuclear facilities hitherto unsafeguarded in Spain will accordingly be placed under IAEA safeguards.

## MULTILATERAL AGREEMENTS

### • *Italy*

#### ACCESSION TO THE ANTARCTIC TREATY (1980)

By Act N° 963 of 29th November 1980, Italy acceded to the Antarctic Treaty of 1st December 1959 (Official Gazette of 19th January 1981). It is recalled that the Treaty provides for the prohibition of all nuclear explosions in the Antarctic and of radioactive waste disposal in that area.

• *International Atomic Energy Agency*

CONVENTION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL

The Governments of the Socialist Republic of Romania, of Brazil and of South Africa signed the Convention on the Physical Protection of Nuclear Material at the IAEA Headquarters in Vienna on 15th January 1981, 15th May 1981 and 18th May 1981 respectively. The Convention has thus been signed by 29 States and the Commission of the European Communities (see Nuclear Law Bulletin N°s 24 and 26). Two States have ratified the Convention: Sweden and the German Democratic Republic, on 1st August 1980 and 5th February 1981 respectively.

# TEXTS

## • *Argentina-Brazil*

CO-OPERATION AGREEMENT BETWEEN THE GOVERNMENT OF THE  
ARGENTINE REPUBLIC AND THE GOVERNMENT OF THE  
FEDERATIVE REPUBLIC OF BRAZIL FOR THE  
DEVELOPMENT AND APPLICATION OF  
NUCLEAR ENERGY FOR PEACEFUL PURPOSES\*

The Government of the Argentine Republic and the Government of the Federative Republic of Brazil:

Motivated by the traditional friendship between their peoples and by the constant desire for extended co-operation that prompts their Governments;

Conscious of the right of all countries to develop and utilize nuclear energy for peaceful purposes, and likewise to possess the technology pertaining thereto;

Bearing in mind that the development of nuclear energy for peaceful purposes is a basic element in promoting the economic and social development of their peoples;

Bearing in mind the efforts that both countries have been making to enlist the service of nuclear energy for the needs of their economic and social development;

Convinced that co-operation in the use of nuclear energy for peaceful purposes will contribute to the development of Latin America,

Convinced of the need to prevent the proliferation of nuclear weapons through non-discriminatory measures that impose restrictions aimed at securing general and complete nuclear disarmament under strict international control;

Taking into consideration the objectives of the Treaty for the Prohibition of Nuclear Weapons in Latin America - the Tlatelolco Treaty,

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\* Translation from Spanish provided by the International Atomic Energy Agency Secretariat

Taking also into consideration the Scientific and Technological Co-operation Agreement signed on the same date;

Have decided to conclude this Co-operation Agreement for the development and use of nuclear energy for peaceful purposes.

#### Article I

The Parties shall co-operate in the development and use of nuclear energy for peaceful purposes in accordance with the requirements and priorities of their respective national nuclear programmes and with regard for the international commitments undertaken by the Parties.

#### Article II

The Parties shall designate the relevant competent bodies for implementing the co-operation envisaged in this Treaty.

#### Article III

1. The envisaged co-operation shall be applied in the following fields.

- (a) Study, development and technology of experimental and power reactors, including nuclear power plants;
- (b) Nuclear fuel cycle, including the search for and mining of nuclear minerals and the fabrication of fuel elements;
- (c) Industrial production of materials and equipment, as well as provision of services;
- (d) Production of radioisotopes and their applications,
- (e) Radiological protection and nuclear safety;
- (f) Physical protection of nuclear material;
- (g) Basic and applied research relating to the peaceful uses of nuclear energy;
- (h) Any other scientific and technological aspects of the peaceful use of nuclear energy that the Parties consider of mutual interest.

2. Co-operation in the fields indicated in Section 1 shall be implemented in the form of.

- (a) Mutual assistance in the instruction and training of scientific and technical personnel;
- (b) Exchange of experts;
- (c) Exchange of instructors for courses and seminars;
- (d) Study fellowships;
- (e) Mutual consultations on scientific and technological matters;

- (f) Formation of joint working groups to carry out specific studies and projects for scientific research and technological development,
- (g) Mutual supply of equipment, materials and services related to the areas indicated above,
- (h) Exchange of information relating to the areas indicated above,
- (i) Any other type of work that may be agreed upon under the terms of Article IV.

#### Article IV

In order to put into effect the collaboration envisaged in this Agreement, the competent bodies designated by each of the Parties shall conclude application agreements in which the specific conditions and procedures for co-operation, including the holding of joint technical meetings to study and evaluate programmes, shall be set forth. The competent bodies of each of the Parties shall likewise set up joint agencies for the purpose of technical and economic management of the programmes and projects agreed on, with promotion, whenever such is appropriate, of the participation of private legal entities in those agencies.

#### Article V

The Parties shall make free use of all information exchanged under this Agreement, except in cases in which the Party supplying the information has imposed restrictions or reservations regarding its use or dissemination. If the information exchanged is protected by patents registered with either of the Parties, the terms and conditions for its use and dissemination shall be subject to the normal legislation

#### Article VI

The Parties shall facilitate mutual supply in regard to the transfer, loan, renting and sale of nuclear materials, equipment and services required for the implementation of the joint programmes and national development plans in the area of the peaceful uses of atomic energy, such operations being in all cases subject to the legal provisions in force in the Argentine Republic and the Federative Republic of Brazil.

#### Article VII

1. Any material or equipment supplied by one of the Parties to the other, or any material derived from the use of the above or utilized in an item of equipment supplied under this Agreement shall be used solely for peaceful purposes. The Parties shall consult together on the application of safeguards procedures to materials and equipments supplied within the scope of this Agreement.

2. In order to apply the safeguards procedures referred to in paragraph 1, the Parties shall, as appropriate, conclude the relevant safeguards agreements with the International Atomic Energy Agency



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Article VIII

The Parties undertake to co-operate on a reciprocal basis in the development of joint projects to be implemented in accordance with this Agreement, and to facilitate in every possible way any collaboration that may be necessary in those projects with other public and private institutions or organisations in their respective countries.

Article IX

The Parties shall consult together on situations of mutual interest that may arise on an international level in connection with the use of nuclear energy for peaceful purposes so as to co-ordinate their stand, whenever such is advisable.

Article X

The Parties shall act in such a way that any differences of opinion arising with regard to interpretation and application of this Agreement are settled through diplomatic channels.

Article XI

1. The present Agreement shall enter into force on the date on which the exchange of instruments of ratification, which shall take place in Brazil, is effected, and shall have an initial validity of ten years, with automatic extension for successive periods of two years, unless six months before the expiry of any of those periods one Party notifies the other of its intention not to renew it.

2. The termination of this Agreement shall not affect continuation of implementation of any application agreements that may have been concluded in conformity with the provisions of Article IV

3. The present Agreement shall apply provisionally from the date of its signature within the sphere of competence of the authorities responsible for its implementation.

DONE in Buenos Aires on the seventeenth of May nineteen hundred and eighty, in two original copies, in Spanish and Portuguese, both texts being equally authentic.

# STUDIES AND ARTICLES

## ARTICLES

### THE NATURE AND SCOPE OF INTERNATIONAL CO-OPERATION IN CONNECTION WITH THE PEACEFUL USES OF NUCLEAR ENERGY, AND ITS LIMITS - AN ASSESSMENT\*

Dr. Norbert Pelzer

#### I. Internationalization of the use of nuclear energy

Nuclear law is generally considered to be a particularly "internationalized" branch of the law. Since 1956, the Official Federal Gazette in the Federal Republic of Germany has published 132 multilateral and bilateral agreements dealing with the use of atomic energy either exclusively or along with other questions (1). Numerous unpublished inter-governmental agreements also exist. In addition, there are a number of more or less formalized intergovernmental contacts as well as an unknown number of agreements within the nuclear industry itself. The statistics in other industrial countries must present a similar picture. The use of atomic energy is in fact bound up throughout the world in a system of close international co-operation.

The state of affairs confirms the claim that nuclear law is an example of "international legal interdependence" (2). In the case of the Federal Republic of Germany further confirmation is provided by the fact that the German legislator, in addition to the general provision for a "favourable attitude to international law" contained in the Basic Law itself (Sections 24-26 GG), a provision which has been seen as "the constitutional basis for international co-operation", (3) has made provision in Section 1(4) of the Atomic Energy Act (4) for the fulfilment of the international obligations of the Federal Republic of Germany in the field of nuclear energy and radiation protection. The Atomic Energy Act is expressly intended as a domestic instrument for implementing and fulfilling obligations under public international law (5). Although not totally unprecedented, this is certainly rather unusual.

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\* This paper was delivered at the Symposium "The Economy and Technology in Public International Law" on the occasion of the 50th Anniversary of the International Law Institute of Göttingen University, Göttingen, 6th-7th November 1980. It is reproduced by kind permission on the Institute and the author. Responsibility for the views expressed and the facts given rests solely with the author.

The special nature, objectives and bases of international co-operation in the nuclear energy field and its development were first studied in a wider context by Georg Erler in 1961 (6) and 1962 (7). In his essays, which are still worth reading in spite of more recent developments, Erler comes to the conclusion that the reason for this intensive international co-operation from the earliest days is to be found in the "combination of great harmful effects and exceptional advantages (8) which the use of atomic energy represents. He found that this combination had brought to "the international political and legal system, at first confusion, but later stimulation and creative development" (9). Erler's assessment is undoubtedly correct. The first attempt to internationalize atomic energy at universal level in 1946 revealed the dramatic conflict of risk and advantage: the American United Nations delegate Bernard M. Baruch opened his now famous speech to the first session of the United Nations Atomic Energy Commission on 14th June, 1946 with the words, "We are here to make a choice between the quick and the dead" (10). We would now express this more soberly and would base the need for legal regulation on the objectives of protection and promotion. We would probably - taking our cue from German nuclear law (11) - add that protection should have priority over promotion. In fact, in examining international progression we shall constantly come across the twin concepts of protection and the advancement of development, though it may be noted that at international level the goal of protection is by no means always highlighted (12).

Once it is understood that protection and promotion indicate the need for regulation, Erler's comment on the disturbing, stimulating and creative effect of atomic energy is by no means surprising. International law has in this case merely reacted as any legal system would to a new set of circumstances. The only surprising thing is that this reaction - at least in certain areas - occurred very quickly. Thus, for example, international agreements on civil liability for nuclear damage have already been in existence for twenty years, although to date there has been no case of their application. The international community thus reacted very promptly in establishing legal norms to cover the exceptional circumstances of the nuclear energy question.

In attempting to classify and explain the various forms and phases of international co-operation, several approaches are possible. Erler saw three main phases to the process (13): the first phase was marked by the efforts of the great powers to monopolize existing nuclear knowledge (1942-1953); the second phase was initiated by Eisenhower's "Atoms for Peace" speech of 8th December, 1953 (14), and was the beginning of what started as bilateral co-operation; in about 1956 the second phase led imperceptibly into the third, which formalized the structure of international co-operation, including in world terms the foundation of the International Atomic Energy Agency (IAEA), which constituted the most important step (15).

It would be interesting to follow up further developments in the light of this pattern of events. Among other things it would be found that the phase of monopolization of atomic energy by the great powers, considered by Erler to have come to an end in 1962, made a further appearance in about mid-1965 under the name "non-proliferation", although accompanied this time by qualifying provisions, and found almost brutal expression in the American Nuclear Non-Proliferation Act of 10th March, 1978 (16).

This proposed schema, however, says little about the effectiveness of co-operation, since although it brings out the dynamics and the continuing development of international legal co-operation, it does not reveal to what extent specific objectives have been attained. An investigation of the structure and extent of nuclear co-operation and its limits ought therefore to start with the requirements imposed by international rules on the use of atomic energy. It must be asked whether there is a need for international regulation in a given area and if so what the response, if any, has been. In other words, have existing forms of international co-operation been able to provide the international legal tools required by the promotion and protection objectives of nuclear law. Some important areas of nuclear regulation will be examined more closely from this standpoint. Discussion will be confined to the following points: international promotion of the use of nuclear energy, protection against the hazards involved in the use of nuclear energy, protection against the misuse of nuclear energy, and liability for nuclear damage.

## II. International promotion of the use of nuclear energy

International efforts to promote the use of nuclear energy seem from the beginning to have been relatively problem-free. Very few States possessed the required technical know-how and adequate financial resources for the new technology and international bilateral and multilateral co-operation was provided.

Admittedly, the difference in knowledge between the nuclear powers on the one hand and the nuclear have-nots on the other meant straightforward supply contracts rather than co-operation. In 1955 alone, the United States concluded contracts of this type, the so-called "Atoms for Peace" agreements, with twenty States (17). The beginnings of bilateral co-operation are found only in United States agreements with States which were more advanced (e.g. the United Kingdom) or with uranium suppliers (e.g. Canada) and the "power agreements" concluded in 1957-1959 (18).

Since those early days of nuclear energy a great many bilateral agreements promoting its use have been concluded between a large number of States. Their scope ranges from the supply of uranium ore where the receiving countries are as a rule the high technology European States - to the supply of nuclear installations - where the European States, along with the United States, Canada and the Soviet Union are the main suppliers (19). There are also general co-operation agreements, often within the framework of general treaties on technical and scientific co-operation which also cover other areas (20). In addition there are agreements with very specific objectives, e.g. research into reactor safety (21), the development of fast breeder reactors (22) and on prospecting and exploring for uranium ore (23).

It is not intended to go into detail on the content and form of these agreements. However, it may be noted that for the most part they are simply administrative agreements which under public law of the Federal Republic of Germany do not need to be ratified.

In connection with the international promotion of the use of nuclear energy, special mention needs to be made of those bilateral agreements concluded by the United States and the Federal Republic of Germany to obtain access to foreign territorial waters and ports for their nuclear merchant ships "Savannah" and "Otto Hahn" (24). In addition to procedures for access to ports and territorial waters, these agreements all deal with the question of civil liability for damage caused by the ship's reactor.

These "visiting" agreements can be seen on the one hand as examples of how a new technology can be commercialized for transport with the assistance of the law, but on the other hand the problems of concluding bilateral agreements have contributed to bringing nuclear merchant shipping virtually to a standstill. This was only to be expected, since nuclear merchant shipping cannot be brought about on a world-wide basis through bilateral arrangements reflecting the wishes of the countries of call. Such a procedure was just about practicable for the demonstration voyages of the "Savannah" and "Otto Hahn", but for a more extensive use of nuclear merchant ships, universally accepted rules are required, and though these are broadly to be found in the SOLAS Convention (25) and in the Brussels Convention on the Liability of Operators of Nuclear Ships (26) they have not been accepted by States as affording an adequate legal basis.

Promotion of the use of atomic energy is not only bilateral. It is mainly effected through world-wide multilateral agreements drawn up by the International Atomic Energy Agency (27), the European Atomic Energy Community (Euratom) (28), the European Organisation for Nuclear Research (CERN) (29) in Geneva and the Unified Institute for Nuclear Research in Dubna (30). The creation of the Nuclear Energy Agency (NEA) (31) within the OEEC/OECD should also be mentioned. In Europe there are the bilateral and then trilateral agreements on the construction and operation of a high flux reactor in Grenoble of 19th January, 1967 (32), and the Almelo Trilateral Agreement of 4th March, 1970 (33) on co-operation in the development and use of the gas centrifuge process for producing enriched uranium.

Many examples could be given of multilateral co-operation but this short list will suffice for our purposes.

The IAEA is of particular importance for the world-wide promotion of the use of atomic energy. Under Article III A - Nos. 1-4 of its Statute the promotion of atomic energy is one of the most important tasks of the Agency. To this end it enters into regular bilateral agreements with individual countries (34). In addition it encourages the use of atomic energy by holding symposia, setting up study groups, publishing recommendations and organising training seminars (35). The aid given by the IAEA, especially to the developing countries, includes help in drafting legislation.

An assessment of international co-operation to promote the use of atomic energy as broadly outlined above, turns out definitely positive. Without international co-operation, nuclear energy research and utilization which only became worldwide in about the mid-fifties would not have reached this present level. The bilateral agreement has proved to be the most effective legal instrument in promoting nuclear energy; this applies both to the early days and to more recent developments. In comparison, the multilateral agreement is found mainly in the form of treaties setting up international organisations or research facilities. Such organisations can in turn become parties to bilateral co-operation agreements.

As regards content, bilateral agreements have developed from one-sided supply contracts into real co-operation agreements between equal partners or technology transfer agreements between partners of unequal scientific standing.

This last type of agreement deserves greater attention from lawyers in the future (36). Technology transfer means more than simply supplying a nuclear power plant. The underlying philosophy of such agreements is the Chinese proverb that you should not give fish to a hungry

man by the river, but teach him to catch his own fish instead (37). Such agreements thus cannot be confined to treaties between governments, but require also a multiple infrastructure in both countries which can be described by the keywords "blueprint transfer" and "training on-the-job" on the part of the supplier and receiver of know-how. It is a matter of "creating a network of knowledge and abilities with the aid and interplay of which technology can fully be assimilated and utilized" (38).

An example of this modern type of co-operation is German-Brazilian co-operation - at first politically controversial for other reasons - under the Agreement of 27th June, 1975 (39). The extent of the co-operation, planned in detail for a period of ten to fifteen years ahead, ranges from obtaining approval for the plant to reprocessing and disposal. Federal ministries, technical control boards and a great number of firms are involved on the German side. The main thrust of this co-operation is to set up joint undertakings in Brazil. On the Brazilian side specific infrastructure has been created under the auspices of NUCLEBRAS and ELETROBRAS (40). In implementing this agreement an effort is being made increasingly to replace German expertise by newly acquired Brazilian expertise. Nuclear co-operation is thus also an instrument of advanced development aid, which brings advantages to both sides.

### III. International protection against the hazards arising from the use of nuclear energy

The effects of nuclear incidents do not stop at national frontiers. After the "Brookhaven Report" (41), which appears as early as 1957 (and is now considered out of date) in which enormous potential damages were forecast as a result of nuclear incidents, it was obviously necessary to make provision for transfrontier protection, at least in densely populated areas. Then, as now, the operation of nuclear reactors was at the focus of concern about potential hazards. It could thus be presumed that preventive protection measures in relation to the operation of reactors was an obvious area for international, or internationally harmonized, regulations. However, there have been as yet, no promising efforts in this direction. Despite the fact that research into reactor safety by technicians and scientists has always proceeded on an international basis, there are still no mandatory international standards for the licensing of nuclear plants. The difficulties of harmonization may be too great, but there is clearly also a lack of political willingness for harmonization in this area, since it is probably felt that national standards are adequate to ensure the transfrontier protection required by international public law. It is worth mentioning that not even preparatory legal groundwork for a standardized licensing system for nuclear installations has yet been completed (42). Safety concepts and prerequisites are thus dependent in each case on national requirements. It cannot even always be established what the rules for authorization in individual countries are, as in most countries they are not published either as laws or in any other form.

It is not so surprising, however, that the licensing system for nuclear installations has not so far been given international expression, when one considers that it concerns key areas of national jurisdiction. International harmonization is more likely to come about through a lengthy process of gradual adjustment than through spectacular action. Indeed, there is unlikely ever to be an international obligation or jurisdiction governing the licensing of nuclear installations. Even the European Atomic Energy Community, which in principle certainly has far-reaching powers, has no express competence for this purpose under the Treaty

The somewhat uncertain provision in Article 203 of the Euratom Treaty by means of which the Community could probably give itself this power, has so far not been used.

It can thus be said that there are as yet no mandatory international rules for the licensing of reactors. The only factor favouring harmonization is the international state of scientific knowledge and technology insofar as it can be identified for different reactor types and concepts and insofar as it is reflected - which is not necessarily the case - in national licensing procedures. Such harmonization at the technological and scientific level is nevertheless important in view of the protective measures to be applied.

As opposed to the field of reactor safety law, international co-operation relating to the law on radiation protection has achieved positive results, which have materialized at the legal level. The international legal significance of a uniform worldwide body of law on radiation protection is demonstrated in the first place by the establishment of threshold values for the discharge of radioactive materials liable to cause transfrontier damage into the environment. In this connection also radiation protection principles such as "as low as possible" or "as low as practicably/reasonably/readily achievable" are significant. It is obvious that international regulation in this field also affects reactor construction concepts and thus helps to unify reactor safety law.

The International Commission on Radiological Protection (ICRP) - a private agency - can to some extent be regarded as the "mother" of international law on radiation protection since the Commission's recommendations have a decisive influence on the content of radiation protection law throughout the world. This influence rests on the Commission's technical authority for it has no formal legislative powers.

The following international organisations contribute to the establishment of radiation protection standards and to the harmonization of national regulations mainly through analyses, guidelines, recommendations and proposed agreements (43):

- The United Nations through the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) (reports, data collection);
- IAEA (recommendations in the "Safety Series");
- WHO (reports, collected papers, documentation);
- ILO (agreement) (44);
- OECD through the Nuclear Energy Agency (NEA) (Council Decisions) (45);
- The European Atomic Energy Community (Article 30 et seq. of the Euratom Treaty, Directives to establish basic safety standards for the health protection of the population and workers against the dangers of ionizing radiation) (46).

The radiation protection activities of the international organisations named above and of other international groups (47) have led to very extensive unification of radiation protection standards all over the world. A particularly high level of harmonization has been attained by Member countries of the European Communities on the basis of the Euratom standards (48). Radiation protection law is thus certainly the area in which international co-operation has been most effective.

The need for protection against the hazards of nuclear energy has led to international regulation in other areas. This mainly applies to nuclear energy as it affects the sea. International regulation here ranges from the prohibition of radioactive contamination of the sea by Article 25 of the Convention on the High Seas of 29th April, 1958 (49), to the regulation of nuclear merchant shipping in the SOLAS Convention (50) and the bilateral port of call agreements (51), the more recent agreements on the sea dumping of radioactive waste (52) and corresponding national implementing legislation.

Finally, the international regulations on the carriage of dangerous goods, including radioactive materials, should be mentioned (53). The IAEA Recommendations in the "Regulations for the Safe Transport of Radioactive Materials" (54), the content of which was embodied in the CIM Convention (55) on rail traffic, the ADR Agreement (56) on road transport, the IMCO Code (57) for maritime transport and in national regulations, has proved to be particularly effective in unifying the law. The IAEA Recommendations are also the basis of the conditions of carriage of the IATA member airlines (58).

The positive results of international co-operation on protection against the hazards of nuclear energy will not be discussed any further here, but some problem areas will be indicated in which international solutions are still awaited.

The lack of international harmonization in reactor safety law has already been discussed. In this connection two subsidiary problems have recently become topical and are of particular concern to nuclear installations near frontiers (59). One problem concerns the question of transfrontier assistance where incidents occur. Bischof has considered this in detail in his paper to which reference may be made (60).

The second point arises from the question whether and to what extent the citizens of one country should be permitted to participate in the licensing procedures for a foreign nuclear installation situated close to the frontier. By way of example, of the several thousand objections made against a German nuclear plant in Gronau, as many as 40 per cent came from the Netherlands. There is a clear need for international regulation here, and this applies not only to nuclear energy, but to all installations close to frontiers liable to affect the environment (61). Under the heading "Equal Right of Access" the OECD has encouraged adoption of the same treatment as for nationals in these cases and has made recommendations in this respect (62). Related legal questions nevertheless require further clarification (63) and agreed international regulations are not to be expected in the near future

#### IV. International protection against the misuse of nuclear energy

In everyday speech the misuse of a thing commonly means its use in an irregular or unlawful manner. The misuse of nuclear energy would therefore mean its use for criminal purposes. The prevention of such misuse is first and foremost a matter for domestic law. However, it is clear that international instances of misuse are also conceivable, particularly in the course of transport operations.

Surprisingly enough, only with the terrorist activities of recent years have States come to be convinced that internationally agreed protection measures make particular sense in the field of nuclear energy with its high risk potential: on 28th October, 1979 a "Convention



on the Physical Protection of Nuclear Material " (64) was adopted under the aegis of the IAEA and opened for signature on 3rd March, 1980. This Convention makes it an obligation under international law to prosecute the misuse of nuclear substances as a criminal offence (Article 7 et seq.) and sets out in its Annex I the ways and means for the safe custody of such substances.

It might be thought that with this Convention the problem of misuse has been satisfactorily resolved. However, the misuse of nuclear energy has another aspect apart from that described above. The misuse of nuclear energy makes us think first and foremost of its use for non-peaceful purposes rather than of the theft of nuclear material by criminals. A distinction is of course made here between an attempt by a non-nuclear weapon State to produce them for the first time, which is qualified as misuse, and weapon tests by the atomic powers, which are rarely seen in this light. This may seem exaggerated, but is nevertheless an appropriate formulation of the concept of misuse as it has developed over the years and as described by Werner Ungerer in his article entitled, "The Misuse of Nuclear Energy - a Definition" (65). The expression "misuse of nuclear energy" serves as the initial pretext for attempts by the nuclear powers to prevent the further dissemination of atomic weapons and at the same time safeguard their own positions.

This paper will not go into detail concerning the development of non-proliferation policy at international level as it may be assumed to be a matter of common knowledge (66). Since the collapse in 1946 of the Baruch Plan, (67) which provided for the internationalization of atomic energy, efforts have and still are being made to prevent the spread of atomic weapons through internationally agreed security controls. This was true of the early bilateral agreements between the United States and the United Kingdom. Security control under the Euratom Treaty (Article 77 et seq.), the OECD Convention on Security Control of 20th December, 1957 (68) and the Nuclear Test Ban Treaty of 5th August, 1963 (69) were all landmarks on the way towards worldwide control of the spread of nuclear weapons. The most recent steps in this direction were the Treaty on the Non-proliferation of Nuclear Weapons of 1st July, 1968 (70) the verification agreement (71) for non-nuclear weapon States of the European Communities and the series of bilateral control agreements concluded by the IAEA (72).

Whether this costly system of treaties has attained the desired objectives is difficult to ascertain. The only certainty is that States seriously striving to obtain atomic weapons will not be prevented from doing so by these treaties. Total non-proliferation has not been attained and at best the spread of nuclear weapons has been slowed down.

On the other hand the Non-Proliferation Treaty has given explicit legal sanction to the hitherto purely factual distinction between States which do and those which do not possess nuclear weapons. Although the Treaty in its Article IV expressly confirms the right of non-nuclear weapon states to use nuclear energy for peaceful purposes, an element of discrimination is thereby introduced the practical effects of which cannot be assessed in this paper.

Developments subsequent to the Non-Proliferation Treaty have reflected worldwide anxiety. On the one side there is the fear of non-nuclear weapons states that the Treaty will hinder the development of their peaceful nuclear energy programmes. On the other side it is felt that the machinery of the Treaty is inadequate to prevent the spread of nuclear weapons. This preoccupation has found particular national expression in the controversial American Nuclear Non-Proliferation Act

of 1978 (73), the terms of which would appear to signal the end of American deliveries, particularly in the field of nuclear fuel. At international level, the London Club of supplier countries lays down guidelines for nuclear exports (74) thereby giving rise to the concern of importing countries. This concern was first given expression at a world Conference on an International Fuel Cycle Evaluation (INFCE) in 1977-79 at which the prospects and possibilities for nuclear energy and non-proliferation were discussed in depth (75). It remains to be seen what the concrete results of INFCE will be.

#### V. Internationalization of liability for nuclear damage

The international uncertainty surrounding non-proliferation of nuclear weapons contrasts with the striking lack of problems in the field of civil liability for nuclear damage. International agreements on nuclear liability have existed since 1960 and are examples of far sighted international co-operation. They have established universally accepted principles of liability for the special risks associated with nuclear energy.

The following agreements have been concluded

- the Paris Convention of 29th July, 1960 on Third Party Liability in the Field of Nuclear Energy, as amended by Additional Protocol of 28th January, 1964 (76) in force since 1st April, 1968;
- the Brussels Convention Supplementary to the Paris Convention, dated 31st January, 1963 as amended by its Additional Protocol of 28th January, 1964 (77) in force since 4th December, 1974,
- the Brussels Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material of 17th December, 1971 (78) in force since 15th July, 1975,
- the Vienna Convention on Civil Liability for Nuclear Damage of 21st May, 1963 (79) in force since 12th November, 1977,
- the Brussels Convention on the Liability of Operators of Nuclear Ships of 25th May, 1962 (80) which has not yet come into force.

The basic principles of these agreements - no-fault liability, the channelling of liability onto the operator, liability ceilings, the duty to maintain financial security and State intervention in cases of major damage - have also been accepted by States which are not parties to them. This is undoubtedly an outstanding success on the road to legal unification and is not to be underestimated.

On the other hand there has recently been criticism of the substantive provisions of the Conventions (81). The Conventions which were drafted in the early days of commercial use of nuclear energy, at a time when the nuclear sector was still relatively inefficient, give priority to encouraging its development. This works to the detriment of potential victims, particularly the provisions concerning liability ceilings and exemptions from liability. The minimum liability figure in the Paris Convention of five million units of account (originally US\$5 million) and the maximum State contribution of 120 million units of account in the Brussels Supplementary Convention represent amounts

of compensation disproportionate to the risk involved and are based solely on considerations of promoting the use of nuclear energy. The same applies to the exemptions from liability (Article 9, Paris Convention), the periods of limitation (Article 8), the geographical area of application (Article 2) and the jurisdiction of the courts (Article 13) (82).

Efforts to improve the Paris Convention and the Brussels Supplementary Convention as part of a general revision of those Conventions have proved to be extremely difficult, since the majority of the Contracting States see the existing provisions as adequate. Nevertheless, it has been possible to reach agreement on an additional protocol raising the contribution of States to 300 million Special Drawing Rights of the International Monetary Fund. This protocol will shortly be made available for signature.

This remedy is nevertheless unsatisfactory since it leaves untouched the low level of liability of the operator. The fact that most of the Contracting States are against a comprehensive revision of the Convention has led to a certain erosion of its authority among the parties to it. Switzerland - a Signatory to the Paris Convention - has refused ratification on the grounds that the Convention is inadequate and is currently considering draft legislation providing for unlimited liability (83). In the Federal Republic of Germany there is also talk of replacing the existing liability rules by a system of unlimited liability (84). The consequence of this action by the two States for the European Conventions' system of nuclear liability as a whole, are at the present time impossible to assess. Some basic principles of the Conventions' liability system are nevertheless thereby called into question by Switzerland and the Federal Republic of Germany and the international consensus which has hitherto existed has been disturbed.

## VI. Final Assessment

In his paper referred to above, Georg Erler summed up the matter by saying (85) that "seldom, if ever, in the international arena has a common task resulting from a historical process of development been tackled with keener interest by the majority of states and seldom has a basically uniform solution taken a greater variety of forms". In the light of the present situation it may be doubted whether this optimistic conclusion remains fully valid.

Co-operation between States in the field of nuclear energy has unquestionably led to significant achievements. This is true in particular of co-operation designed to promote the use of nuclear energy. But even here tensions are apparent as soon as vital economic interests are involved. Opposition to the German-Brazilian co-operation agreement was by no means based solely on the fear of the spread of nuclear weapons. Rival economic interests were also at stake (86).

International co-operation has also had successes in the more technical fields of radiation protection, protection of the sea against radioactive contamination and the transport of radioactive materials. The law on the licensing of nuclear reactors, clearly at the centre of current national debate, has nevertheless so far escaped international regulation. A key area of nuclear regulation for the protection of the public thus remains a purely national matter.

As regards co-operation to prevent the misuse of nuclear energy, the spread of atomic weapons has thus far been delayed but not prevented. It is also widely felt that non-proliferation policy is used to discriminate against non-nuclear weapon States.

Lastly, nuclear liability law, seen as an example of international legal unification, has also been called into question recently, since a number of States feel that the interests of potential victims would be better protected by supplementary national legislation than by existing international Conventions on nuclear liability which are seen as inadequate on many points.

These findings nevertheless do not amount to a crisis in international co-operation in the nuclear energy field. They merely show that "the force of novelty" (87) which initially gave nuclear co-operation specific impetus has now subsided into everyday concerns of public international law.

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- (2) Pelzer, Das Atomenergierecht als Beispiel internationaler Rechtsverflechtung, DVB1, 1965, p.391 et seq.
- (3) K. Vogel, Recht und Staat, Nos. 292/293, Tübingen 1964
- (4) Act on the Peaceful Uses of Atomic Energy and Protection Against Its Hazards (Atomic Energy Act) of 23rd December, 1959 in its revised version of 31st October, 1976 (BGBl. Part I p.3053) last amended by the Act of 20th August, 1980 (BGBl. Part I p. 1556).
- (5) See also Fischerhof - Pelzer, Deutsches Atomgesetz und Strahlenschutzrecht, Vol. 1, 2nd Edition, Baden-Baden 1978, note 14 to Section 1 of the Atomic Energy Act.
- (6) Formen und Ziele der internationalen Zusammenarbeit bei der friedlichen Kernenergienutzung, published by Institut für Energierecht an der Universität Bonn (VEnergR), No. 3/4, p.47 et seq., Düsseldorf (1961).
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- (8) Erler, VEnergR (footnote 6) p.47.
- (9) Erler, Rechtsentwicklung (footnote 7) p.6.
- (10) UN Atomic Energy Commission, Official Records No. 1, 14th June, 1946, p.4.
- (11) cf. for example BVerwG DVBl. 1972, p.678.
- (12) This can be seen for example in the international nuclear liability Conventions which in many respects stress the need for protection of the nuclear industry more than that of the victims of nuclear damage.
- (13) Erler, Rechtsentwicklung (footnote 7) pp. 6 et seq. and 14 et seq.
- (14) Atoms for Peace Manual, 84th Congress, 1st Session, Senate, Doc. No. 55, p.1.
- (15) BGBI. 1957 II p. 1357, 1958 II p.4, 1963 II p.329, 1971 II p.849.
- (16) Public Law 95-242.
- (17) Argentina (TIAS 3299), Belgium (TIAS 3301); Brazil (TIAS 3303), Canada (TIAS 3304), Chile (TIAS 3306); China (TIAS 3307), Colombia (TIAS 3308); Denmark (TIAS 3309); Greece (TIAS 3310); Israel (TIAS 3311); Italy (TIAS 3312); Lebanon (TIAS 3313); Pakistan (TIAS 3315); Philippines (TIAS 3316); Portugal (TIAS 3317); Spain (TIAS 3318); Switzerland (TIAS 3319); Turkey (TIAS 3320); United Kingdom (TIAS 3321 and 3359); Venezuela (TIAS 3323).
- (18) For details see Erler, Rechtsentwicklung (footnote 7) p.26 et seq.; Drück, Die internationale Zusammenarbeit bei der friedlichen Verwendung der Atomenergie innerhalb Europas, Frankfurt am Main, Berlin 1959, p.38 et seq. References to early Soviet bilateral co-operation are also to be found in both sources.
- (19) Documentation is to be found in Part L of the Göttinger Atomrechtskatalog and in the NEA Nuclear Law Bulletin, in each case under the country concerned.
- (20) cf. for example the outline agreement between Argentina and the Federal Republic of Germany on co-operation in scientific research and technological development of 31st March, 1969 (BGBI. 1970 II p.5), the Pakistan-Federal Republic of Germany agreement of 30th November, 1972 (BGBI. 1974 II p.69) or the Romania-Federal Republic of Germany agreement of 29th June, 1973 (BGBI. II p.1481).
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- (30) Europa-Archiv 1956, p.9067. Also reproduced in Drück, op. cit., (footnote 18), p.146.
- (31) Council Decision of the OEEC of 17th December, 1957 (BANz 1959 No. 70; 1966 No. 36; 1975 No. 157; BGBl. 1976 II p.628, 1977 II p.26; 1978 II p.909).
- (32) BGBl. 1967 II p. 2431; 1971 II p. 1090; 1976 II p.245; 1977 II p.81.
- (33) BGBl. 1971 II p.930.
- (34) These agreements are published by the IAEA in the INFCIRC series, cf. for example, Master Agreement between the IAEA and the United Mexican States for assistance by the Agency in furthering projects for the supply of materials, 28th November, 1973 (INFCIRC/194).
- (35) The IAEA publishes numerous series: Proceedings Series; Safety Series; Technical Directories, Technical Report Series, Bibliographical Series; Study Tour Reports; Legal Series; INIS Reference Series; Periodicals; Miscellaneous.
- (36) On this see the well-documented, although scientifically unsatisfactory book published by Muntzing, "International Instruments for Nuclear Technology Transfer", La Grange Park, Illinois 1978, in particular the introduction by Stoiber, A Framework for Analysis, p.1 et seq.
- (37) For details see Gnam, Engineering Companies as an Instrument for Transfer of Technology in Nuclear Export, Nuclear Inter Jura '79, Buenos Aires 21st-25th October 1979, p.2 et seq.
- (38) Ibid. (footnote 37) p.3.
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- (42) Only recently have the first steps towards harmonization been noticed within the framework of IAEA. Cf. Fischerhof-Pelzer (footnote 5) footnote 42 to Section 7 of the Atomic Energy Act.
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- (49) BGBl. 1972 II p.1089; 1974 I p.469, 555.
- (50) Cf. footnote 25.
- (51) Cf. footnote 24.
- (52) Convention of 29th November, 1972 on the Prevention of Marine Pollution by the Dumping of Waste and other Matter (London Convention) (BGBl. 1977 II p.165, 180) and the definitions in IAEA INFCIRC/205/Addendum 1 as well as the Convention on Protection of Marine Environment in the Baltic Sea area of 22nd March, 1974 (Helsinki Convention) (BGBl. 1979 II p.1230).
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De l'énergie nucléaire aux nouvelles sources d'énergie: vers un nouvel ordre énergétique mondial?, Université de Dijon, Librairies techniques, Paris, 1979, 532 pages

This book contains the reports presented and the comments made at an international colloquium on "nuclear energy and new energy sources the beginning of a new world-wide energy regime?". This colloquium, which was held in Dijon from 22nd to 24th March 1979, was organised by the International Relations Institute of Dijon University and the Research Centre on the international law of contract and investments (CREDIMI). This book was published with the co-operation of the National Centre for Scientific Research (CNRS). The reports dealing more specifically with nuclear energy cover its commercial organisation (economic and legal data) and its public organisation (French and international)

## • *Italy*

Il Regime Giuridico dell'Impiego Pacifico dell'Energia Nucleare,  
I. Normative Nazionale, CNEN, Rome, April 1980, 410 pages

This volume I is part of a series relating to the legal regime for the peaceful uses of nuclear energy published by the Comitato Nazionale per l'Energia Nucleare (CNEN), and contains the basic legislation governing all nuclear activities in Italy.

The two main nuclear laws are Act No. 1860 of 31st December 1962 on the peaceful uses of nuclear energy, which provides the essential framework for the regulation of nuclear activities and Presidential Decree No. 185 of 13th February 1964 on the safety of nuclear installations and radiation protection of workers and the population, made under the 1962 Act. Most of the Decrees and regulations in force were made in implementation of either one or the other text of law. The Appendix contains a list of more general legislative texts

which also have a bearing on certain nuclear activities.

This volume is the 6th Edition of the collection of nuclear laws and regulations in force in Italy.

Il Regime Giuridico dell'Impiego Pacifico dell'Energia Nucleare,

II. Normativa Internazionale

Parte Prima Norme sull'Impiego Pacifico, CNEN, Rome, December 1979, 543 pages

Part One of Volume II of the series published by CNEN (see above) contains a collection of international regulations in the nuclear field

The collection includes, in particular, the conventions and other international instruments relating to co-operation in nuclear research and development, the instruments setting up the international bodies for the purpose of encouraging and furthering such co-operation, inter alia, IAEA, NEA and Euratom, international recommendations and standards on nuclear safety and radiation protection, as well as the nuclear third party liability conventions. Also reproduced are the instruments setting up joint undertakings and projects such as the Eurochemic Company for the Processing of Irradiated Fuels, the Halden Boiling Water Reactor Project and the Joint European Torus (JET) joint undertaking.

Parte Seconda, Garanzie dell'Impiego Pacifico, CNEN, Rome, September 1980, 291 pages

Part Two of Volume II covers international texts of law concerned with the control of nuclear energy, with prevention of diversion of nuclear material for non-peaceful purposes and with environmental protection, in particular of the marine environment.

The texts reproduced include the conventions and international regulations on security control, non-proliferation, safeguards, denuclearization of certain areas and prevention of marine pollution. The following are given as examples. the Non-Proliferation Treaty, Communications regarding the export of nuclear material and equipment (Trigger list), the Convention on Physical Protection of Nuclear Material, the Nuclear Test Ban Treaty, the London Convention on Prevention of Marine Pollution by the Dumping of Waste and Other Matter.

XXV Congresso Nucleare di Roma: Energia Nucleare e Fonti Integrative - Aspetti finanziari, giuridici ed assicurativi, CNEN, Rome, 1980, 80 pages

The XXV Rome Nuclear Congress was organised from 13th to 14th March 1980 by the Comitato Nazionale per l'Energia Nucleare (CNEN), the Ente Nazionale per l'Energia Elettrica (ENEL) and the Forum Italiano dell'Energia Nucleare (FIEN). The Congress was devoted to nuclear energy and integrative sources - financial, legal and insurance aspects.

The Proceedings of the Congress reproduce in Italian the papers presented to the three sessions which deal respectively with financial aspects, insurance and the legal framework for nuclear activities. The subjects covered in the papers concern, inter alia, the financial means available to the Commission of the European Communities

for R and D work; regulatory, administrative and financial problems raised by radioactive waste disposal; insurance cover for nuclear risks and nuclear insurance pools; contractual aspects of nuclear power plant establishment; legal aspects of the transfer of nuclear technology, and finally, the international aspects of nuclear energy as a guarantee for peaceful applications

## • *United Kingdom*

Uranium and Nuclear Energy : 1980 - Proceedings of the Fifth International Symposium held by the Uranium Institute, London, September 1980, published by Westbury House, 359 pages

The Fifth International Symposium of the Uranium Institute (see Nuclear Law Bulletin N° 21) comprised five sessions respectively dealing with uranium supply and demand, production and supply, industrial and commercial matters, nuclear energy and public acceptability and finally, policy issues affecting international trade in uranium. The Proceedings contain a transcript of the speakers' presentations, together with summaries of the discussions. Although the subjects covered in the Proceedings do not encompass purely legal matters, given the key issues of energy policy and non-proliferation dealt with in the latter part of the Symposium, it was thought useful to report more particularly on the papers concerning these issues in the Bulletin

Part four of the Proceedings covers nuclear energy policies and public acceptability. In this context, it contains presentations on the 1980 Swedish referendum, its political background and the external influences on the campaign, the nuclear controversy in Austria, viewed as a sociological problem, and public attitudes towards the nuclear industry in Canada, the abundance of energy resources and the difficulty in establishing a clear energy policy.

Part five of the Proceedings concerns policy issues affecting international trade in uranium. The papers deal respectively with the conclusions reached by the International Nuclear Fuel Cycle Evaluation (INFCE); non-proliferation viewed as a political problem and the Non-Proliferation Treaty, the Canadian viewpoint on international trade and non-proliferation issues; and finally, nuclear energy and assurance of supply, with emphasis on the complementarity of non-proliferation

• *NEA*

Regulations governing the transport of radioactive materials, OECD Nuclear Energy Agency, Paris, 1980, 201 pages

The OECD Nuclear Energy Agency (NEA) has published the last volume in a series of analytical studies of the major aspects of nuclear energy legislation in force in OECD Member Countries. This study deals with national and international transport regulations for radioactive materials and was prepared, like the preceding studies, following a standard plan to the extent possible for all the countries, to facilitate information retrieval and comparisons.

More perhaps than in any other area of nuclear law, national regulations dealing specifically with the transport of radioactive materials have followed internationally-established rules and standards and, in view of this degree of harmonization, the study is presented in two sections. The first, contributed by the IAEA Secretariat, contains a description of the existing international rules, in particular, the IAEA Regulations for the Safe Transport of Radioactive Materials which have served as a model for other international rules concerning particular modes of transport. In this way the equivalent provisions of national law, analysed in the second section of the study are described in detail only when they differ materially from the international regulations. The national section also deals with rules governing the licensing of transport operations involving radioactive materials as well as the laws regulating their import and export, inasmuch as they affect the transport operation in the country concerned.

The other studies in the same series respectively deal with the organisation and general regime governing nuclear activities, regulations governing nuclear installations and radiation protection, and nuclear third party liability (see Nuclear Law Bulletin N° 19).

Description of licensing systems and inspection of nuclear installations, OECD Nuclear Energy Agency, Paris, 1980, 179 pages

This study, which updates certain parts of the analytical study on regulations governing nuclear installations and radiation protection in the above-mentioned series, covers the legislative and regulatory provisions as well as the practices applied in OECD Member countries which have specific regulations on licensing and inspection of nuclear installations.

The systems in each country have been described according to a plan, standardized to the extent possible, so as to facilitate comparison between the national systems. In most cases, the descriptions are supplemented by flow charts illustrating the steps in the licensing procedure and the intervention of the competent bodies concerned, as well as by explanatory notes to the flow charts.



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