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NUCLEAR LEGISLATION IN OECD COUNTRIES

Regulatory and Institutional Framework for Nuclear Activities

Australia

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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

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AUSTRALIA

This chapter was last revised in 2001 and is correct as of that date.

The NEA Secretariat is currently revising this chapter in close consultation with the national authorities and plans to issue a new version in the near future.

AUSTRALIA

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I. GENERAL REGULATORY REGIME

1. Introduction

Australia's basic legislation in the nuclear field consists of five Acts passed by the Federal Parliament. These Acts are as follows:

- the South Pacific Nuclear Free Zone Treaty Act [No. 140 of 1986];
- the Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987];
- the Australian Nuclear Science and Technology Organisation Act [No. 3 of 1987];
- the Australian Nuclear Science and Technology Organisation Amendment Act 1992 [No. 83 of 1992]; and
- the Radiation Protection and Nuclear Safety Act [No. 133 of 1998].

The first two Acts were prompted by the need for domestic legislation to implement Australia's international obligations. The third arose from a long-standing recognition that the Atomic Energy Act 1953 was inappropriate as the legislative basis for the activities of Australia's national nuclear organisation. For its part, the 1992 Act introduced some necessary changes into the Australian Nuclear Science and Technology Organisation Act. Finally, the 1998 Act establishes a regime to regulate the operation of nuclear installations and the management of radiation sources, where these activities are undertaken by Commonwealth entities.

Each of these Acts will be discussed in more detail below but, briefly, their scope is as follows.

The South Pacific Nuclear Free Zone Treaty Act of 1986 implements Australia's obligations under the Treaty. The manufacture, possession and testing of nuclear weapons in Australia are prohibited, as is research and development relating to the production of nuclear weapons.

The Nuclear Non-Proliferation (Safeguards) Act of 1987 provides a legislative basis for Australia's safeguards system, implementing its obligations under the Nuclear Non-Proliferation Treaty, Australia's bilateral safeguards agreement with the International Atomic Energy Agency and the Convention on the Physical Protection of Nuclear Material. This Act regulates the possession, transport and communication of nuclear material, and associated material, facilities, equipment and technology.

The Australian Nuclear Science and Technology Organisation Act of 1992 transformed the Australian Atomic Energy Commission into the Australian Nuclear Science and Technology

Organisation (ANSTO). The change represented a move away from work on power generation and the nuclear fuel cycle, the basis of the Australian Atomic Energy Commission's charter, to focus instead on the development and utilisation of nuclear and associated technologies, concentrating in particular on radiation and radioisotope applications in medicine, industry, science and agriculture. ANSTO operates one nuclear research reactor to further its research in these areas.

The Australian Radiation Protection and Nuclear Safety Act of 1998 provided for the appointment of the Chief Executive Officer (CEO) of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), who is entrusted to perform functions and exercise powers under the Act. The Nuclear Safety Bureau, which had been responsible for monitoring and reviewing the safety of ANSTO's nuclear plant under the ANSTO Act, was abolished. The CEO regulates, through a licensing system, nuclear installations from the time at which plans are drawn up for their construction through all stages of operation until decommissioning, as well as the use of radiation sources. The Act applies to the uses of radiation by Commonwealth entities. Other uses are controlled by the legislation of the relevant state or territory. The Act also established the Radiation Health and Safety Advisory Council and two supporting Committees. The Council's tasks include advising the CEO on matters relating to nuclear safety and radiation protection.

In addition, the Atomic Energy Act [No. 31 of 1953] is still partly relevant. Although substantial parts of it were repealed in 1987 when ANSTO replaced the Australian Atomic Energy Commission, a few provisions remain which are significant in the context of the regulatory regime governing uranium mining in the Northern Territory.

Another relevant federal Act, discussed below, is the Environment Protection (Sea Dumping) Act 1981 [Act No. 101 of 1981].

Because Australia is a federal state, with a division of power between the national (Commonwealth) government and the six state governments, the Commonwealth Government does not have the capacity to legislate on all aspects relevant to nuclear activities. For this reason, it will be necessary to discuss state laws in some areas, for example, radiation protection and transport. In addition to the states, Australia has two internal Territories (the Northern Territory and the Australian Capital Territory) whose constitutional position is different from that of the states. Essentially, the Territories have fewer legislative powers than the states and are subject to Commonwealth intervention in areas where the states are not. The legislative framework that exists in relation to the mining of uranium in the Northern Territory, is an illustration of this situation: the law governing the operations of the Northern Territory's uranium mines is a combination of Commonwealth and territory law.

2. Mining Regime

Mining is an area over which the Commonwealth Government has no direct power under Australia's Constitution. However, uranium mines possess uranium and so require a permit under the Nuclear Non-Proliferation (Safeguards) Act (for further details, see *infra* under Section 8 "Non-Proliferation and Physical Protection"). The Commonwealth can also exercise indirect control over uranium mining because it does have constitutional power over Australia's international trade and commerce [Constitution, Article 51(i)], and therefore has the power to regulate or prohibit exports and imports. The Customs (Prohibited Exports) Regulations, made under the Customs Act [No. 6 of 1901], forbid the export of uranium and other source material, including thorium bearing ores such as monazite, except with a permit from the Minister for Industry, Science and Resources. In this way, the

Commonwealth Government is able, in practice, to control the decisions of state governments and of mining companies as to the establishment of uranium mines.

The regulatory system covering uranium mining in the Northern Territory is complicated by the constitutional position of this Territory. Under the Australian Constitution, the Commonwealth Government has plenary legislative power over the Territories [Article 122]. In 1978, the national Parliament passed the Northern Territory (Self-Government) Act [Act No. 58 of 1978], which enabled the Northern Territory to elect its own legislature, and conferred general powers on that legislature. In respect of certain subject matters, however, such as Aboriginal affairs and uranium mining, the Commonwealth Government has retained control, though not necessarily to the total exclusion of a role for the Territory's own legislature.

The specific effects of this in relation to uranium mining in the Northern Territory are as follows:

- The Commonwealth has retained ownership of all uranium found in the Territory [Atomic Energy Act No. 31 of 1953, Section 35].
- All discoveries of uranium and thorium must be reported to the Commonwealth authorities within one month [Atomic Energy Act, Section 36].
- The Ranger uranium mine venture is authorised by the Commonwealth Minister for Industry, Science and Resources [Atomic Energy Act, Section 41].

In addition, the Commonwealth has passed environmental protection legislation to cover the Alligator Rivers region, which contains the Ranger uranium mine, the now decommissioned Nabarlek uranium mine, and the Jabiluka and Koongarra uranium deposits. This Act, the Environment Protection (Alligator Rivers Region) Act 1978 [Act No. 28 of 1978], provides for the appointment of a Supervising Scientist, who is to report and provide advice to the Commonwealth Minister for the Environment and Heritage on the environmental effects of uranium mining in the region [Section 5].

However, the Northern Territory legislature is not excluded from the field of uranium mining. The Northern Territory Mining Act [No. 15 of 1980] establishes a system of licences and leases for mineral exploration and mining, "minerals" being defined broadly enough to include uranium [Section 4(1)]. However, since the Commonwealth has retained ownership of uranium in the Northern Territory, the Northern Territory provides that an authorisation in relation to uranium mining can only be issued at the direction of the relevant Commonwealth Minister [Section 175]. The Northern Territory also has its own environmental legislation, specifically aimed at the uranium mining activities carried on in the Territory. The Uranium Mining (Environment Control) Act [No. 46 of 1979] applies to the whole of the Alligator Rivers region. It stipulates that the owner or manager of any uranium mine within the region must appoint a qualified environment protection officer [Section 5]; mining and incidental activities can only be carried out if authorised by the Territory's Minister [Sections 8, 9, 10 and 12]; and the Minister may require the mine owner to rehabilitate land which has been affected by mining operations [Section 11]. The Act provides for inspectors to enforce compliance with the Act and with the conditions of ministerial authorisations [Section 19]. Contravention of the Act, of an authorisation or of an inspector's direction is a criminal offence [Section 27].

Uranium mining activities in South Australia are regulated primarily by South Australian legislation. In the case of the Olympic Dam Project, this is subject to separate legislation: the Roxby Downs (Indenture Ratification) Act 1982 (as amended). This Act ratifies the Olympic Dam and Stuart

Shelf Indenture, a detailed agreement between the operator and the Government of South Australia. The Act deals with matters such as protection of the rights of the project, streamlining of some administrative procedures, compliance with radiation protection codes, environmental protection requirements and enforcement of conditions. The Indenture overrides some general South Australian legislation, such as the Mining Act 1971, by granting a special mining lease for the Olympic Dam.

In contrast, the new Beverley uranium mine is regulated primarily under the Mining Act 1971 and the Radiation Protection and Control Act 1982. The Mining Act governs the granting of mining leases which are granted subject to compliance with certain terms and conditions, including environmental protection and rehabilitation requirements. A licence is required under the Radiation Protection and Control Act to carry out operations for the mining and milling of radioactive ores. The Beverley mine holds such a licence, with similar conditions to those prescribed for Olympic Dam. The proposed Honeymoon mine would operate under similar regulatory arrangements.

Commonwealth regulation and involvement is minimal, with interaction generally restricted to participation in consultative arrangements. For Olympic Dam, these consist of two consultative committees, the Olympic Dam Environment Consultative Committee (ODECC) and the Community Consultative Forum (CCF). ODECC, consisting of representatives of the state, the Commonwealth and the operator of the mine, exchanges information on environmental and related matters affecting the Olympic Dam project. The CCF includes Aboriginal, pastoralist, environmentalist and Roxby Downs township representatives, and provides the mechanism for a regular flow of information to the public on the project's environmental performance. The Beverley Environment Consultative Committee operates in a similar manner to ODECC, but also includes a process of public consultation.

In contrast to the situation in the Northern Territory and South Australia, two states have legislated to prohibit prospecting for and mining of uranium. Victoria passed its Nuclear Activities (Prohibitions) Act in 1983 [Act No. 9923] and New South Wales passed the Uranium Mining and Nuclear Facilities (Prohibitions) Act in 1986 [Act No. 194].

3. Radioactive Substances and Equipment

The regulation of radioactive substances and equipment used in the medical and industrial contexts is largely a matter for the states. Each state, the Northern Territory and the Australian Capital Territory has legislation establishing a permit or licensing system to cover the sale, use, possession, disposal, etc., of radiation apparatus and radioactive substances (for further details on this subject, see, *infra*, Section 6 "Radiation Protection"). Where the substance involved is uranium, plutonium, thorium, heavy water or nuclear grade graphite, or where the equipment is related to the nuclear fuel cycle, the Nuclear Non-Proliferation (Safeguards) Act may be relevant (for further details, see, *infra*, Section 8 "Non-Proliferation and Physical Protection").

4. Nuclear Installations

a) Licensing and inspection, including nuclear safety

All nuclear installations are regulated by the Nuclear Non-Proliferation (Safeguards) Act (for further details, see, *infra*, Section 8 "Non-Proliferation and Physical Protection"). In addition, Commonwealth nuclear installations are regulated by the Australian Radiation Protection and Nuclear

Safety Act [No. 133 of 1998] while non-Commonwealth installations are governed by state or territory legislation.

The Australian Radiation Protection and Nuclear Safety Act prohibits the construction or operation by controlled persons of nuclear fuel fabrication plants, nuclear power plants, uranium enrichment plants and reprocessing facilities. Australia, however, has one research reactor and radioactive waste management facilities. Under the Act, the Chief Executive Officer (CEO) of the Australian Radiation Protection and Nuclear Safety Agency is the major authority in the regulation of the safety of those nuclear installations.

The CEO is empowered to issue facility licences which authorise controlled persons to prepare a site for, construct, have possession or control of, operate, decommission, dispose of, or abandon, nuclear installations. A “controlled person” means, under the Act, a Commonwealth entity or a person who has a contractual relationship with a Commonwealth entity [Section 32]. The facility licence is issued subject to the condition that any licensee allow the CEO, or a person authorised by him, to enter and inspect the site and the facility, and comply with any requirements specified in the regulations in relation to such an inspection. The licence is also subject to the conditions prescribed by the regulations or imposed by the CEO at the time of issue or amendment [Section 35]. Licences remain in force until cancelled by the CEO or surrendered by licensees [Section 37]. The CEO may suspend or cancel a licence on grounds prescribed in the Act, including for breach of a condition of the licence [Section 38]. Licence decisions made by the CEO can be reviewed by the Minister or the Administrative Appeals Tribunal at the request of applicants or licensees [Section 40].

The CEO may appoint an inspector who may enter any premises and exercise powers, with the consent of the occupiers of the premises or under a warrant issued by the magistrate in order to ensure compliance with this Act and the regulations [Sections 62 and 63]. An inspector may exercise powers by searching premises, inspecting, examining, taking measurements of, or conducting tests concerning anything on the premises which relates to controlled material, apparatus or facility [Section 67].

The Australian Radiation Protection and Nuclear Safety (Licences Charges) Act [No. 134] requires licence-holders of both nuclear installations and radioactive materials to pay an annual charge, to be prescribed by regulation. The Australian Radiation Protection and Nuclear Safety (Consequential Amendments) Act [No. 135] repeals those provisions of the 1987 Australian Nuclear Science and Technology Organisation Act which concern the Nuclear Safety Bureau, and the 1978 Environment Protection (Nuclear Codes) Act [No. 38].

In 1999, the Australian Radiation Protection and Nuclear Safety Regulations (Statutory Rules No. 37) were proclaimed. They were amended by Statutory Rules No. 97 (for further details, see *infra* Section 6 “Radiation Protection”).

At the international level, Australia is a Party to the following conventions:

- 1994 Convention on Nuclear Safety, ratified on 24 December 1996;
- 1986 Convention on Early Notification of a Nuclear Accident, ratified on 22 September 1987; and
- 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, ratified on 22 September 1987.

b) Protection of the environment against radiation effects

The Environment Protection and Biodiversity Conservation Act 1999 [No. 91], which is administered by the Commonwealth, establishes requirements for environmental impact assessment processes for actions in relation to seven defined matters of national environmental significance. One of those matters is the protection of the environment from “nuclear actions”. The definition of “a nuclear action” [Section 22] includes, *inter alia*, mining or milling uranium ore, transporting spent nuclear fuel, and establishing, significantly modifying, decommissioning or rehabilitating a research reactor. The Environment Protection and Biodiversity Conservation Regulations of 2000 define nuclear actions and installations by setting out the activity levels beyond which certain actions or installations are considered as nuclear actions or installations.

Under the Act, the proponent of a nuclear action must refer the proposal to the Commonwealth Minister for the Environment and Heritage who determines whether environmental impact assessment is required, and if so, the level of the assessment. The proponent must not take the action unless it has been approved by the Minister for the Environment and Heritage, subject to any conditions placed on the approval.

Each of the Australian States and Territories has also enacted environmental impact assessment legislation. The Environmental Protection and Biodiversity Conservation Act [Section 45] provides for the conclusion of a bilateral agreement between the Commonwealth and any State or Territory to minimise the duplication of environmental assessment and approval processes through the Commonwealth accreditation of the State or Territory process (or vice versa).

Section 140A of the Act specifically prohibits the Minister from approving actions involving the construction or operation of a nuclear fuel fabrication plant, a nuclear power plant, an enrichment plant, or a reprocessing facility.

5. Trade in Nuclear Materials and Equipment

Australia’s trade in the uranium it produces is international, since there is no domestic nuclear power industry. As already mentioned, the Commonwealth Government exercises control over this trade by virtue of its constitutional power in relation to international trade and commerce. Specifically, the Customs (Prohibited Exports) Regulations, made under the Customs Act [No. 6 of 1901], prohibit the export of uranium unless the approval of the Minister for Industry, Science and Resources has been obtained. The Minister’s decision is affected by government policy and by the need to comply with Australia’s obligations under, for example, the Non-Proliferation Treaty, Australia’s network of bilateral safeguards agreements and the South Pacific Nuclear Free Zone Treaty. Australia’s membership of the Nuclear Suppliers’ Group and the Zangger Committee is also relevant in this regard. These restrictions extend to other nuclear materials and to nuclear equipment and technology, including items which also have non-nuclear applications.

6. Radiation Protection

In 1998, the 1978 Environment Protection (Nuclear Codes) Act [No. 32], which aimed to provide for the protection of people and the environment from possible harmful effects associated with nuclear activities, was repealed. Under the new regime established by the Australian Radiation Protection and Nuclear Safety Act [No. 133 of 1998], the Chief Executive Officer (CEO) of the

Australian Radiation Protection and Nuclear Safety Agency is the regulatory authority in this field, in relation to radiation sources under Commonwealth control.

The CEO may issue a radiation source licence which authorises controlled persons to deal with a controlled apparatus or material [Section 33 of Act No. 133]. A “controlled apparatus” is defined as (a) an apparatus that produces ionising radiation when energised or that would, if assembled or repaired, be capable of producing ionising radiation when energised, (b) an apparatus that produces ionising radiation because it contains radioactive material or (c) an apparatus prescribed by the regulations that produces harmful non-ionising radiation when energised. “Controlled material” means any natural or artificial material, whether in solid or liquid form, or in the form of a gas or vapour, which emits ionising radiation spontaneously [Section 13]. The source licence is issued subject to the conditions that the licensee allow the CEO, or a person authorised by CEO, to inspect a controlled apparatus or material, and comply with any requirements specified in the regulations in relation to such an inspection [Section 35]. Sections 35, 37, 38, and 40 of the Act, which were described under Section 4 “Nuclear Installations” *supra*, are also applied to the delivery of source licences.

As already said *supra*, the Australian Radiation Protection and Nuclear Safety Regulations (Statutory Rules No. 37) were adopted in 1999 to implement Act No. 133. They were amended by Statutory Rules No. 97. These Regulations cover, *inter alia*, facility and source licences, exemptions and applications for licences. In this respect, they list matters that the CEO must take into account when issuing licences. Furthermore, the Regulations lay down the effective dose limit for occupational exposure, which is set at 20 mSv annually, averaged over five consecutive calendar years, and the effective dose limit for public exposure, set at 1 mSv annually.

The following Codes of Practice have been made under the Environment Protection (Nuclear Codes) Act [No. 38 of 1978] and are currently reflected in state and territory law:

- Code of Practice on the Management of Radioactive Waste from the Mining and Milling of Radioactive Ores (1982);
- Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (1987);
- Code of Practice for the Safe Transport of Radioactive Substances (1990).

In addition to the Codes developed under the Environment Protection (Nuclear Codes) Act 1978, there are a number of other codes and standards relating to radiation protection which have been developed by organisations like the National Health and Medical Research Council, the National Occupational Health and Safety Council and Standards Australia (two such instruments were adopted in June 1995, based upon the 1990 Recommendations of the International Commission on Radiological Protection, Publication No. 60). The Codes formerly published by the National Health and Medical Research Council, and those published under the Environment Protection (Nuclear Codes) Act 1978, are now under review by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) through its Radiation Health Committee, with the aim of republishing a single ARPANSA Radiation Protection Series of publications. Although states are not obliged to adopt these

codes, most states have incorporated them, usually into licence or registration conditions implemented under their own radiation protection Acts.¹

The Northern Territory and the Australian Capital Territory also have their own radiation protection legislation and adopt codes in a similar way.²

Although these Acts are not identical, they have a common approach and their major elements are as follows:

- a permit or licence is required before a person can make, store, transport, sell, possess or use radioactive materials and ionising radiation-emitting equipment;
- the permit will not be issued unless the responsible authority is satisfied that the person is properly trained and is in other respects a “fit and proper person”;
- the permit is granted for a limited period and may be made subject to conditions. If a condition is breached, or the permit-holder contravenes the legislation, the permit may be revoked;
- permit-holders must keep records indicating the nature, purpose, usage, manner of storage etc., of radioactive substances and radiation-emitting equipment in their possession;
- specified precautions must be adopted for the protection of workers and persons undergoing medical diagnosis or treatment;
- maximum limits of radiation dosage are prescribed for radiation workers and medical patients;
- controls are imposed on methods of radioactive waste disposal;
- compliance with the regulatory system is achieved through the appointment of inspectors with statutory powers to enter and search premises and to collect information;
- contraventions of the relevant Act or regulations are criminal offences.

With regard to the specific issue of radiation protection in relation to uranium mining, the Northern Territory Mines Safety Control (Radiation Protection) Regulations [S.I. No. 30 of 1981] set safety standards by direct reference to the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (as amended from time to time). In addition, it sets out its own safety precautions, imposing detailed duties on the owner and the manager of the mine and on the employees at the mine. The owner’s responsibilities include ensuring that new employees are instructed in the radiation risks in their work and how to avoid them; that regular inspections of safety facilities are made and recorded; that a radiation safety officer, responsible to the manager, is appointed; and that

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1. New South Wales: Radiation Control Act 1990; Queensland: Radiation Safety Act 1999; South Australia: Radiation Protection and Control Act 1982; Tasmania: Radiation Control Act 1977; Victoria: Health Act 1958 (as amended), Division 2AA Radiation Safety; Western Australia: Radiation Safety Act 1975.
 2. Australian Capital Territory: Radiation Act 1983; Northern Territory: Radiation (Safety Control) Act 1979.

the health of employees is monitored regularly [Section 4]. Duties are also imposed on the employees; they are obliged to report any defect which may contribute to a radiation hazard, use the protective equipment that is provided to them and submit to health assessments as required by the Code [Section 5]. A person who contravenes any of the Regulations, whether owner, manager or employee, is guilty of an offence and may be fined.

7. Radioactive Waste Management

Management of radioactive waste in Australia is the responsibility of the government in whose jurisdiction it is produced. Australia's radioactive waste comes from two main sources: mining activities and the use of radionuclides in research, medicine and industry.

Waste from uranium mining activities is managed and disposed of near the site of origin at the cost of the mine operator and in accordance with the requirements of the Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores (1982). These requirements have been incorporated in the Northern Territory's Mines Safety Control (Radioactive Wastes Management) Regulations and, by reference, in South Australia's Roxby Downs (Indenture Ratification) Act of 1982.

Low-level and short-lived intermediate-level radioactive waste resulting from research and the medical and industrial uses of radionuclides is at present held at over 50 temporary storage sites throughout Australia. The Minister for Industry, Science and Resources has announced that a site located in the Woomera Prohibited Area in the central north region of South Australia has been selected as the preferred site to hold Australia's solid low level radioactive waste. The selection of the preferred site, and two alternative sites also in the same region, is the culmination of an Australia-wide search and public consultation process initiated by the Commonwealth Government in 1992 after general agreement by the States and Territories on the need for a central waste repository. The 1992 amendments to the ANSTO Act added to ANSTO's functions that of conditioning, managing and storing radioactive materials and waste, but only if the materials or waste had arisen either from ANSTO's own activities or from the activities of persons specified in the regulations [ANSTO Act, Section 5(1)]. The Act specifically states that ANSTO's premises are not to become a permanent national nuclear waste repository [Section 5(1)(a)]. The Code of Practice for the Near-Surface Disposal of Radioactive Waste in Australia (issued in 1992 by the National Health and Medical Research Council) sets out requirements for siting, design and operation of a new near-surface disposal facility. Separate licences to site, construct and operate the facility must be obtained from the Australian Radiation Protection and Nuclear Safety Agency before the repository can be constructed and commence operations. The licensing process will begin during 2001.

The State of Western Australia has established its own near surface disposal facility for low level radioactive waste. Regulations made under Western Australia's Radiation Safety Act 1975 have incorporated the requirements of the Code of Practice for the Near-Surface Disposal of Radioactive Waste in Australia.

The storage and disposal of radioactive substances and apparatus are also addressed by the Code of Practice for the Disposal of Radioactive Wastes by the User (1985) and by the radiation control Acts and Regulations of the states and territories.³

3. New South Wales: Radiation Control Act 1990; Queensland: Radiation Safety Act 1999; South Australia: Radiation Protection and Control Act 1982; Tasmania: Radiation Control Act 1977; Victoria: Health

The Commonwealth's Environment Protection (Sea Dumping) Act [No. 101 of 1981] regulates the dumping at sea of radioactive material. Until 1986, the Act prohibited dumping of high level radioactive waste, but allowed dumping under permit of other radioactive wastes and materials. In 1986 amendments were made to the Act following Australia's ratification of the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention, ratified on 21 August 1985) and of the 1985 South Pacific Nuclear Free Zone Treaty (the Rarotonga Treaty, ratified on 11 December 1986). The result of the amendments is that all dumping of radioactive material in Australia's territorial sea is now prohibited [Section 9(a)]. Australia ratified the 1996 Protocol to the London Convention on 4 December 2000.

"Radioactive material" is defined as material that has an activity of more than 35 becquerels per gram [Section 4(1)]. If radioactive material is dumped in contravention of the Act, the owner and the person in charge of the vessel, aircraft or platform from which the dumping occurred are both guilty of an offence, as is the owner of the material dumped [Section 9(a)]. The amendments did not alter the exemptions contained in the original Act. The Act does not apply to the disposal of wastes arising from exploration and exploitation of seabed mineral resources [Section 5], nor does it apply in relation to a vessel, aircraft or platform belonging to the defence forces of Australia or of a foreign country [Section 7].

In September 1995 Australia signed the 1995 Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes with the South Pacific Region (Waigani Convention). On 13 November 1998, Australia signed the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

8. Non-Proliferation and Physical Protection

Australia has ratified the following international instruments in this field:

- 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 23 January 1973;
- 1985 South Pacific Nuclear Free Zone Treaty on 11 December 1986;
- 1996 Comprehensive Nuclear Test Ban Treaty on 9 July 1998; and
- 1979 Convention on the Physical Protection of Nuclear Material on 22 September 1987.

Other relevant international instruments are Australia's safeguards agreement of 10 July 1974 with the International Atomic Energy Agency (IAEA), Additional Protocol to that Agreement of 23 September 1997 and Australia's bilateral nuclear safeguards agreements with individual countries and Euratom.

The Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987] and the South Pacific Nuclear Free Zone Treaty Act [No. 140 of 1986] establish the legal framework that is required at a national level by the Non-Proliferation Treaty and the South Pacific Nuclear Free Zone Treaty. An account of each of these elements now follows.

Act 1958 (as amended), Division 2AA Radiation Safety; Western Australia: Radiation Safety Act 1975; Australian Capital Territory: Radiation Act 1983; Northern Territory: Radiation (Safety Control) Act 1979.

a) *Bilateral Safeguards Agreements*

The Commonwealth Government permits exports of nuclear material only to countries with which Australia has concluded a bilateral safeguards agreement. These agreements are designed to guarantee that Australian uranium can be used only in the civil nuclear fuel cycle of the importing state. This state undertakes that:

- Australian obligated nuclear material will not be used in the manufacture of nuclear weapons or other nuclear explosive devices, or in related research or development;
- Australian obligated nuclear material will not be used for any military purpose;
- Australian obligated nuclear material will be covered by IAEA safeguards;
- fallback safeguards will apply if at any stage IAEA safeguards cease to operate;
- the enrichment of Australian uranium beyond 20% U²³⁵, the reprocessing of spent fuel from Australian uranium, or the retransfer of Australian uranium to another country will not occur without prior Australian consent;
- physical security to internationally agreed levels to prevent theft of nuclear material will be applied;
- it will participate in consultations with Australia, as and when required, particularly in respect of reprocessing and plutonium use questions.

Each of these bilateral agreements is supplemented by an administrative arrangement which sets out details as to the manner in which the obligations under the agreement are to be performed, including arrangements for accounting for Australian obligated nuclear material as it passes through each phase of the recipient's fuel cycle.

b) *International Atomic Energy Agency Safeguards Agreement*

In 1974 Australia concluded a safeguards agreement with the IAEA, as required by the Treaty on the Non-Proliferation of Nuclear Weapons. Although the main function of the Agreement is to establish a system of safeguards to apply to nuclear material within Australia, it also requires Australia to notify the IAEA of intended transfers of material subject to IAEA safeguards out of Australia. On 23 September 1997 Australia became the first country to sign a Protocol supplementing and strengthening its basic safeguards agreement with the IAEA, based on the Model Protocol developed by the IAEA's Programme 93+2.

c) *The South Pacific Nuclear Free Zone Treaty Act*

The South Pacific Nuclear Free Zone Treaty Act [No. 140 of 1986] gives effect to all the substantive provisions of the Treaty. Its main provisions are contained in Part II (a series of prohibitions relating to nuclear explosive devices) and in Part IV (dealing with inspections to ensure Australia's compliance with the Treaty).

Part II of the Act prohibits the manufacture, production and acquisition of nuclear explosive devices [Section 8]. Research and development directed towards the manufacture of a nuclear explosive device is forbidden [Section 9], as is the possession of, or control over, such a device [Section 10]. It is an offence to station a nuclear explosive device in Australia [Section 11] or to carry out a test of such a device [Section 12]. Section 14 extends all these offence provisions to acts occurring outside Australia if those acts are committed by a commonwealth, state or territory government or government authority, or if those acts are committed on an Australian ship or aircraft. However, the Act does not seek to affect the visits of foreign ships or aircraft visiting Australia, navigating through Australian waters or flying through Australian airspace [Section 15]. The penalty for any of these offences is, in the case of an individual, a fine of 100 000 Australian dollars (AUD), a prison sentence of 20 years, or both, and, in the case of a body corporate, a fine of AUD 500 000 [Section 16].

Part IV of the Act provides for the appointment of special Treaty inspectors to investigate a complaint brought against Australia under the Treaty [Section 19]. While the Treaty inspectors are given certain powers to enter premises with the consent of the owner or occupier, to examine, take samples, make copies of documents, etc. [Section 22], it is envisaged that their inspections will be facilitated by Australian inspectors who have been appointed under the Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987]. These Australian inspectors are given extensive powers, for example, to apply to a magistrate for a search warrant [Section 21] and to require information from a person suspected of committing an offence against the Act [Section 24].

d) *The Nuclear Non-Proliferation (Safeguards) Act*

Until the enactment of the Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987], those aspects of the Non-Proliferation Treaty which required domestic implementation through control of the possession, use and transport of nuclear material were dealt with by means of the Customs Act [No. 6 of 1901] and regulations made under it, and by relying on co-operation from holders of nuclear items. The Safeguards Act now regulates the possession, use and transport of nuclear items in Australia. There are express provisions in the Act stating that its objects are to give effect to certain obligations under the Non-Proliferation Treaty and the Physical Protection Convention [Section 3], and that the Act will be administered in accordance with these Treaties [Section 70].

The Act establishes a national system regulating the possession of nuclear material, equipment and technology. In practice, the bodies chiefly affected by this system are uranium mining companies and ANSTO. The Act seeks to subject all nuclear material and associated items within Australia to a system of stringent and detailed controls.

“Nuclear material” is defined in Section 4(1) to mean any source or special fissionable material, as defined in Article XX of the IAEA Statute, but not including ore or ore residue. “Associated item” means associated material, associated equipment or associated technology [Section 4(1)]. Broadly speaking, this means:

- material of a kind specially suited for use in the construction or operation of a nuclear reactor;
- equipment or plant that is specially suited to the production of nuclear weapons or for use in other nuclear activities; and

- information (other than information available to the public) that is applicable primarily to nuclear weapons or to equipment for the enrichment of nuclear material, the reprocessing of irradiated material, or the production of heavy water [Section 4(1)].

The Minister has the power to exempt certain nuclear material and associated items from the Act [Section 11] and this has been done under the Nuclear Non Proliferation (Safeguards) Regulations [S.I. No. 75 of 1987]. The regulations exempt, for example, depleted uranium and heavy water in non-nuclear use; thorium incorporated in electronic components and aircraft parts; source material incorporated in ceramic glazes; and source material contained in certain chemical mixtures in which the uranium or thorium content is less than 0.05% of the weight of the mixture [Regulation 3].

The principle underlying the safeguards system is that all possession, use and transportation of nuclear material covered by the Act is prohibited unless it is carried out under a permit granted by the Minister for Foreign Affairs [Sections 13 and 16]. The procedure is described below.

A person may apply for a permit to the Director of Safeguards, who may request more information from the person. The Director then makes a report to the Minister in relation to the application [Section 12]. The Minister may not grant the permit unless the applicant has provided all the information required by the Director, and the Director is satisfied that:

- a) appropriate procedures can be applied at the nuclear facility concerned for the implementation of the Australian safeguards system; and
- b) adequate physical security can be applied to nuclear material and associated items at the facility [Section 14].

If the Minister grants the permit, it may be made subject to conditions and restrictions [Section 13(2)]. Customarily, the conditions will specify the following matters [Section 13(3)]:

- precisely what material is covered by the permit;
- the period of time for which the permit is valid;
- the procedures which must be followed if the material is to be transported (including notifying the Director or Minister);
- the measures which must be taken to ensure the physical security of the material;
- who is to be allowed access to the material;
- the steps to be followed, and the records to be kept, in order to account for the material;
- the permitted uses of the material;
- the inspections which must be permitted in relation to the material;
- the conditions under which any transfer of the ownership, possession or control of the material may take place;
- in the case of a permit to possess information covered by the Act, any restrictions on the communication of that information.

Similar procedures apply in relation to a transport permit and an authority allowing the communication of information that comes within the definition of “associated item” [Section 4(1)]. A permit to allow nuclear material to be moved from one specified location to another may be subject to conditions stipulating the means of transport, the route, physical security measures, records to be kept, reports to be made etc. [Section 16]. In the case of communication of information, an authority may be given subject to restrictions as to precisely what information may be passed on, to whom it may be given, and within what time period it may be given [Section 18].

Further control can be exercised over the holders of permits and authorities by means of ministerial orders and directions [Section 73]. Broadly speaking, these may deal with the same matters as those that are dealt with by the conditions which may be attached to a permit or authority (for example, requirements as to physical security measures to be taken, the permitted uses of the nuclear material, etc.).

If the holder of a permit or authority contravenes one of the conditions attaching to it, or a direction under Section 73, or is convicted of an offence against the Act, the permit or authority may be revoked by the Minister [Section 19]. A further deterrent is that any contravention of a condition or a Section 73 order or direction is itself an offence against the Act [Section 25], punishable by a fine or a prison sentence or both. The Act also ensures that safeguards can be maintained even if the permit-holder has failed to carry out his or her obligations. In such a situation, the Director may authorise an inspector to do anything necessary to ensure compliance with the condition, order or direction that has been contravened [Section 68]. Any costs incurred by the Commonwealth as a result of the inspector’s actions become a debt due to the Commonwealth by the permit-holder [Section 68(4)].

The safeguards system established by these provisions is supported by the creation of a number of offences. The basic offence is that of possessing nuclear material or an associated item without a permit granted under Section 13 or 16. The offence provision [Section 23] is drafted so as to extend to possession outside Australia if the material is on an Australian ship or aircraft or is in the course of a journey which began at a place in Australia. The communication of information covered by the Act without an authority under Section 18 is also made an offence [Section 26]. The Act creates several other related offences, all punishable by a fine, a term of imprisonment or both [Sections 25 and 28-31]. As is usual in Commonwealth law, the fine incurred by a company may be up to five times higher than the amount of the fine incurred by an individual.

Two final points should be noted regarding the permit and authority system. The first is that where the Minister has made an adverse decision (for example, refusing to grant a permit or revoking a permit), the person affected must be given reasons for the decision and has the right to have the decision reviewed by an independent administrative tribunal, which has the power to overturn the Minister’s decision [Section 22]. The second point concerns the relationship between the system of permits and authorities established under this Act, and any state or territory law that regulates radioactive substances, etc. The Commonwealth Act makes it quite clear that its requirements are additional to any that may exist under state law; the granting of a permit under this Act does not excuse the permit-holder from complying with relevant state law [Section 21].

In addition to establishing this system of permits and authorities, the Safeguards Act gave statutory recognition to the Australian Safeguards Office, which is part of the Australian Safeguards and Non-Proliferation Office (ASNO), and the Director of Safeguards, who is also the Director General of ASNO. The functions of the Director include ensuring the effective operation of the permit system, carrying out Australia’s safeguards obligations under its agreement with the IAEA and its

bilateral agreements, and monitoring compliance by Australia's partners in those bilateral agreements [Section 43].

Australia's agreement with the IAEA requires Australia to ensure that inspections on national territory can be carried out by the Agency. The Safeguards Act provides both for the appointment of Australian inspectors to ensure compliance with the Act and the Regulations, and also for the recognition by the Minister of inspectors who have been designated by the Agency for the purpose of making Agency inspections [Section 57].

Agency inspectors have powers to examine, take samples, verify the proper functioning of equipment, take measurements, install or operate a containment device or a surveillance device, take extracts from records and other documents, as well as a general power to do anything necessary to carry out an Agency inspection [Section 60]. Their powers are more limited than those of the Australian inspectors; for example they have no powers to enter premises without the consent of the owner. However, the Act provides that one of the functions of a local inspector is to facilitate an inspection by an Agency inspector [Section 59(1)(e)]. The Act envisages situations where a local inspector will obtain a search warrant [Section 59(6)] for the purpose of facilitating an Agency inspection, and the Agency inspector will then accompany the local inspector to the premises or land in question and carry out an Agency inspection [Section 60(3)].

The Safeguards Act contains a Division creating a number of offences relevant to the Convention on the Physical Protection of Nuclear Material. It is an offence to steal nuclear material or obtain it by false pretences [Section 33], to demand it by threats [Section 34] or to use or threaten to use it to cause serious personal injury and substantial property damage [Section 36]. These offences are punishable by a maximum fine of AUD 20 000 or imprisonment for a maximum of ten years or both. In addition, a court convicting a person of one of these offences may order the forfeiture of any article used in the offence [Section 39].

One of the regulation-making powers under the Act concerns the making of standards for the physical security to be applied with respect to nuclear material and associated items [Section 74(f)].

Finally, it should be noted that the Australian Radiation Protection and Nuclear Safety Act 1998 does not exclude the implementation of the Nuclear Non-Proliferation (Safeguards) Act. For example, a controlled person may be required by 1998 Act to hold a licence, and by 1987 Act to hold a permit, in respect of the same thing. The controlled person must satisfy the requirements of both Acts in so far as they are capable of being satisfied concurrently [1998 Act, Section 9].

9. Transport

As previously mentioned, the Commonwealth controls the import and export of radioactive substances and requires a permit to be obtained before such substances can either leave or enter Australia [S.I. No. 90 of 1956 (dealing with imports) and S.I. No. 5 of 1958 (dealing with exports)].

In relation to transport within Australia, the Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987] provides that conditions may be attached to a permit to possess nuclear material and that they may set out the procedures to be followed if the material is to be transported from one location to another [Section 13(3)(c)]. The Act also provides for a special transport permit, which may have detailed conditions attached to it [Section 16].

The Commonwealth has formulated a Code of Practice for the Safe Transport of Radioactive Substances. Originally formulated in 1982 and revised in 1990, the Code adopts the IAEA Regulations for the Safe Transport of Radioactive Material. The Code is currently being reviewed with the intention of adopting the IAEA 1996 Regulations for the Safe Transport of Radioactive Material (revised) (TS-R-1). Different aspects of the current Code are now reflected in various pieces of legislation dealing with different types of transport.

Transport of dangerous goods by sea is covered by the Navigation Act [No. 4 of 1913] and by regulations made under it.

Transport of dangerous goods by air is covered by the Crimes (Aviation) Act 1991 [No. 139 of 1991] and by regulations made under it.

The regulation of land transport is, generally speaking, a matter for States and Territory governments. The Code of Practice, insofar as it applies to land transport, is implemented by the States and Territories through regulations made under their respective transport Acts. As mentioned previously, requirements imposed by the States regarding the possession and transport of nuclear material operate in addition to those imposed under the Commonwealth's Safeguards Act (provided, of course, that the state requirements are not inconsistent with those of the Commonwealth).

10. Nuclear Third Party Liability

There are no specific provisions in Australian legislation governing nuclear third party liability. Moreover, Australia is not a party to any of the conventions on nuclear third party liability although it has signed the 1997 Convention on Supplementary Compensation for Nuclear Damage.

II. INSTITUTIONAL FRAMEWORK

1. Regulatory and Supervisory Authorities

a) *Minister for Industry, Science and Resources*

The Minister for Industry, Science and Resources has the power to allow or disallow the movement of uranium and other source material, and special fissionable material, out of Australia. The Customs (Prohibited Exports) Regulations, made under the Customs Act [No. 6 of 1901], forbid the export of uranium and related products except with a permit from the Minister [Regulation 9]. The Regulations were amended in 2000 to enable the Minister to issue permits subject to compliance with specified conditions.

The Minister is also responsible for those provisions of the Atomic Energy Act [No. 31 of 1953] which remain in force. All discoveries of uranium and thorium in Australia must be reported to the Minister within one month [Section 36]. Provision is also made in this Act for the Minister to

represent the Commonwealth's continuing interests in the Ranger uranium mining venture in the Northern Territory. The Minister may authorise a person to carry on operations in the Ranger Project Area on behalf of or in association with the Commonwealth and the Minister may vary or revoke the authority if satisfied that its conditions are not being met [Section 41(a)]. A person who has been given the authority may not assign his or her interest in the venture to another person without the consent of the Minister [Section 41(b)]. The Minister also has the power to renew the authority for a further period and to impose conditions and restrictions on the new authority [Section 41(c)].

The Australian Nuclear Science and Technology Organisation (ANSTO) is accountable to the Minister for Industry, Science and Resources. The Minister may direct ANSTO to undertake research and development in relation to matters specified by the Minister [Section 5(1)(a)(iii)]. The Minister may also give directions to the Board of Directors of ANSTO with respect to the performance of ANSTO's functions [Section 11], and may convene meetings of the Board [Section 16].

The Board of ANSTO is financially accountable to the Minister. It must prepare estimates of its receipts and expenditure for each financial year and submit them to the Minister [Section 28].

b) *Minister for the Environment and Heritage*

The Minister for the Environment and Heritage has certain powers and functions under the Environment Protection (Alligator Rivers Region) Act [No. 28 of 1978]. The Minister may give directions to the supervising scientist and may request that he provides information in relation to the operation of the Act [Section 7]. The Minister receives advice from the supervising scientist on a range of environmental issues arising from the mining operations in the Alligator Rivers Region [Section 5(e)]. The Minister is obliged to lay before each House of Parliament a copy of the supervising scientist's annual report and any other reports that the supervising scientist has made to the Minister, except for reports made to the Minister in connection with scientific and technical advice on environmental matters outside the Alligator Rivers Region [Section 36]. Under the Environment Protection and Biodiversity Conservation Act [No. 91 of 1999] the Minister for the Environment and Heritage is responsible for assessing and approving nuclear actions as defined in that Act. The Minister may attach conditions to approvals.

c) *Minister for Foreign Affairs*

Under the South Pacific Nuclear Free Zone Treaty Act [No. 140 of 1986], the Minister for Foreign Affairs is responsible for nominating a Treaty inspector for the purposes of the Act. The Minister will only make this declaration if the person has been appointed as a special inspector under the Treaty for the purpose of investigating a complaint brought against Australia pursuant to the Treaty [Section 19].

The Minister is responsible for the administration of the Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987] (hereinafter referred to as "the Safeguards Act"). Under the Safeguards Act it is the Minister who grants or refuses to grant a permit for the possession of nuclear material, an associated item or associated technology [Sections 13, 16 and 18]. Similarly, it is the Minister who imposes conditions and restrictions on any permit or authority granted [Sections 13, 16 and 18] and who exercises the power to revoke the permit or authority in certain circumstances [Section 20]. The Minister has a further power to control the activities of permit-holders, in the shape of orders and directions under Section 73. Under this Section, the Minister may make orders which are to be complied with by all permit-holders, and may also give directions to a particular permit-holder.

All these decisions of the Minister are subject to review by the Administrative Appeals Tribunal [Section 22]. This is an independent tribunal established by legislation for the purpose of reviewing a wide range of administrative decisions. Upon application by a person adversely affected by such a decision, the tribunal is empowered to examine the merits of the decision, as well as its procedural correctness [Administrative Appeals Tribunal Act, No. 91 of 1975]. The Safeguards Act envisages, however, that some ministerial decisions made under it may not be suitable for review by the Administrative Appeals Tribunal. Section 22(5) provides that the Minister can issue a certificate stating that it is in the public interest that responsibility for a particular decision should reside solely with the Minister, and that the Minister's decision should not be reviewable. The Minister is obliged to include in the certificate a statement of the grounds on which the certificate is issued [Section 22(6)], and must table the certificate before each House of Parliament [Section 22(9)].

The Minister has the power to issue directions to the Director of Safeguards and the Director must comply with any such directions in the performance of his or her functions under the Act [Section 44].

The Minister's other responsibilities under the Safeguards Act include the appointment of inspectors for the purposes of the Act, and the declaration of Agency inspectors where these have been designated by the IAEA [Section 57]. The Minister is also required to submit to Parliament the annual report made by the Director of Safeguards [Section 51].

The Minister has the power to delegate any of the functions mentioned above (except the power to certify that a decision is not subject to administrative review) to the Director of Safeguards or to an officer of the Ministry [Section 72]. The Minister has delegated many of these functions to the Director of Safeguards.

d) *Minister for Health and Aged Care*

The Australian Radiation Protection and Nuclear Safety Agency is within the portfolio of the Minister for Health and Aged Care, which is responsible for providing protection, promoting the health of all Australians and minimising the incidence and severity of preventable mortality, illness, injury and disability. The Minister must, by notice in writing, give directions to the chief executive officer (CEO) with respect to the performance of the CEO's functions or the exercise of his powers, if it is in the public interest to do so. This Minister is one of the two ministers responsible for the issue of permits to import radioactive material and substances. The other minister who may exercise this power is the Minister for Customs [Customs (Prohibited Imports) Regulations, Section 4(r)].

e) *Minister for Finance*

The Minister for Finance has various functions under the Australian Nuclear Science and Technology Organisation Act [No. 3 of 1987]. Parliament decides each year an amount of money to be provided for the purposes of ANSTO [Section 27(1)]. The Minister may give directions as to the times at which, and the amounts in which, that money will be paid to the organisation [Section 27(2)]. The Minister for Finance may also lend money to ANSTO on behalf of the Commonwealth [Section 32].

2. Advisory Bodies

a) Advisory Committees

Section 41 of the ANSTO Act [No. 3 of 1987] allows the Minister to establish committees to give advice to the Board of Directors on a particular matter or classes of matter relating to the functions of ANSTO.

b) Radiation Health and Safety Advisory Council

The Radiation Health and Safety Advisory Council was established by the Australian Radiation Protection and Nuclear Safety Act [No. 133 of 1998] as a consultative body on radiation and nuclear safety [Section 19]. The Council examines issues of major concern to the community in relation to radiation protection and nuclear safety and advises the Chief Executive Officer (CEO) of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) on these issues, as well as on the adoption of recommendations, policies and codes [Section 20]. The Radiation Health Committee and the Nuclear Safety Committee were established as advisory committees to the CEO and the Council [Sections 22 and 25]. Both Committees draft national policies, codes and standards in their respective fields and review their effectiveness periodically [Sections 23 and 26].

The membership of the Council includes the CEO of ARPANSA, two state/territory radiation control officers, a person to represent the interests of the general public and eight other members with expertise in the area. The Radiation Health Committee includes the CEO of ARPANSA, a radiation control officer from each state and territory, a Nuclear Safety Committee representative, a person to represent the interests of the general public, and two other members. The Nuclear Safety Committee includes the CEO of ARPANSA, a representative of local governments, a person to represent the interests of the general public, a Radiation Health Committee representative and eight other members. Each member of the Council, other than the CEO, is appointed by the Minister [Section 21]. Members of the Committees are appointed by the CEO.

3. Public and Semi-Public Agencies

a) Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

i) Legal Status

The Chief Executive Officer (CEO) of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is the statutory officer whose functions are laid down in the Australian Radiation Protection and Nuclear Safety Act [No. 133 of 1998].

ii) Responsibilities

The functions of the CEO fall into the following categories [1998 Act, Section 15]:

- to promote uniformity of radiation protection and nuclear safety policy and practices;

- to provide advice and services concerning radiation protection and nuclear safety;
- to undertake research in relation to radiation protection, nuclear safety and related issues;
- to accredit persons with technical expertise for the purpose of this Act;
- to monitor the operations of ARPANSA, the Radiation Health and Safety Advisory Council, the Radiation Health Committee and the Nuclear Safety Committee and to report on their operations to the relevant minister and to the Parliament;
- to monitor compliance with the provision which deals with the prohibition of construction or operation of nuclear installations or possession of controlled material or controlled apparatus, without a licence.

The CEO must comply with the directions which are given by the Minister with respect to the performance of the CEO's functions or the exercise of his powers [Section 16]. The CEO may give written directions to controlled persons requiring them to take appropriate steps, in order to protect the health and safety of people or to avoid damage to the environment [Section 41].

iii) Structure

The CEO is appointed by the Governor-General for a period up to five years [Section 45]. The CEO's appointment can be terminated only on certain grounds specified in the Act (for example, misbehaviour or incapacity) [Section 51]. The CEO may engage the staff or consultants to assist in the performance of any of its functions [Section 58].

iv) Financing

The ARPANSA Reserve was established to make payments for the implementation of the Australian Radiation Protection and Nuclear Safety Act and otherwise in connection with the performance of the CEO's function. The Reserve consists of money appropriated by Parliament for the purposes of the CEO and amounts equal to amounts received by the Commonwealth in connection with the performance of the CEO's functions under this Act or regulations [Section 56].

b) Australian Safeguards and Non-Proliferation Office

i) Legal Status

The Australian Safeguards Office was established by Section 54 of the Nuclear Non-Proliferation (Safeguards) Act [No. 8 of 1987], and consists of the Director of Safeguards and staff. This Office combined with the Chemical Weapons Convention Office and the Australian Comprehensive Test Ban Office to make up the Australian Safeguards and Non-Proliferation Office (ASNO). The Director General of ASNO is also the Director of each of the constituent organisations.

ii) Responsibilities

The statutory functions of the Director are, with the assistance of the staff, to ensure the effective operation of the Australian safeguards system; to carry out Australia's reporting obligations under the IAEA Agreement and bilateral agreements in relation to the Australian safeguards system; to monitor compliance by Australia's bilateral agreement partners; to undertake research and development in relation to nuclear safeguards; and to advise the Minister for Foreign Affairs on matters relating to the operation of the Australian safeguards system. The Director is required to make an annual report to the Minister, which must include details of all nuclear material and associated items of Australian origin transferred from Australia to any foreign jurisdiction, their quantities and their intended end-use [Section 51].

iii) Financing

The Australian Safeguards and Non-Proliferation Office is funded by money appropriated by the Parliament. Two amending Acts, the Nuclear Non-Proliferation (Safeguards) Amendment Act [No. 33 of 1993] and the Nuclear Safeguards (Producers of Uranium Ore Concentrates) Charge Act [No. 34 of 1993] provide for the imposition of a charge on commercial uranium producers in Australia in order to recover some of the costs of the Office's activities. However, the charge collected goes directly to Consolidated Revenue and has no effect on ASNO's budget.

c) Australian Nuclear Science and Technology Organisation (ANSTO)

i) Legal Status

On 27 April 1987 the Australian Atomic Energy Commission became the Australian Nuclear Science and Technology Organisation (ANSTO) [Australian Nuclear Science and Technology Organisation Act (No. 3 of 1987), Section 4]. ANSTO is a body corporate, with the capacity to sue and be sued [Section 4(2)]. It can enter into contracts, own property and form, or participate in the formation of, companies [Section 6]. Its participation in companies is subject to certain limitations and to the approval of its supervisory Minister.

ii) Responsibilities

The functions of ANSTO fall into the following general categories:

- undertaking research and development in relation to nuclear science and technology and in relation to the production and use of radioisotopes, the use of isotopic techniques and nuclear radiation, for medicine, science, industry, commerce and agriculture;
- conditioning, managing and storing specified radioactive materials and radioactive waste;
- encouraging and facilitating the application and utilisation of the results of such research and development;
- providing and selling goods and services in connection with ANSTO's activities;

- liaising between Australia and other countries, and between other Commonwealth and state authorities in relation to its activities;
- providing advice on aspects of nuclear science and nuclear technology;
- making available to other people, on a commercial basis, ANSTO's knowledge, equipment and facilities;
- publishing scientific and technical reports, periodicals and papers; and
- arranging and encouraging training in matters related to its activities [Section 5].

In undertaking its statutory functions, ANSTO is required to have regard to the government's national science, technology and energy policy objectives and to its commercialisation objectives for public research institutions [Section 5(3)].

iii) Structure

The Organisation consists of a board of directors, and an executive director and staff. The board consists of the executive director and at least two other members. The total maximum number of members is seven [Section 9]. The members, other than the executive director, are appointed by the Governor-General for a term of up to five years, and they can be dismissed from office only by the Governor-General, on the ground of misbehaviour or physical or mental incapacity [Sections 9 and 14].

The board's role is to ensure the proper and efficient performance by ANSTO of its functions, and in doing so, the board is to have regard to the policies of the Commonwealth Government insofar as they are relevant to ANSTO's work [Section 10]. ANSTO's Minister may give directions to the board about the performance of ANSTO's functions, if satisfied that it is in the public interest to do so [Section 11].

The Executive Director of ANSTO is appointed by the board of directors [Section 18] to manage the affairs of the Organisation subject to the directions, and in accordance with the policies, of the board [Section 19].

The Executive Director is empowered to appoint such staff as the board considers necessary for the purposes of the Act [Section 24].

iv) Financing

ANSTO is funded by money appropriated by Parliament for the purposes of the Organisation. The Minister for Finance may give directions as to the amounts in which, and the times at which, the money appropriated is to be paid to ANSTO [Section 27]. The Organisation may also borrow Commonwealth money from the Minister for Finance, on conditions determined by the Minister [Section 32], and may deal with securities, with the approval of the Treasurer [Section 34]. ANSTO may also accept gifts and bequests made to it [Section 38]. Lastly ANSTO is empowered to provide and sell goods and services, and a significant proportion of the Organisation's revenue is earned in that way [Section 5(1)(c)].

d) *Supervising Scientist*

The Environment Protection (Alligator Rivers Region) Act [No. 28 of 1978] creates the position of Supervising Scientist for the Alligator Rivers Region [Section 4]. This area of the Northern Territory contains the Ranger uranium mine, the now decommissioned Nabarlek uranium mine and the Jabiluka and Koongarra uranium deposits. The functions of the Supervising Scientist in relation to the protection of the environment were originally confined to the effects of uranium mining in the region, but the Act was amended in 1987 [Act No. 17] to extend these functions to all mining operations in an area declared to be a conservation zone. The Supervising Scientist's general functions include the following:

- developing research and information programmes on the environmental effects of mining in the areas concerned;
- developing and promoting standards and procedures in relation to mining for the protection of the environment in the areas concerned;
- supervising the implementation of Commonwealth and Northern Territory laws relating to environmental protection of the areas from the adverse effects of mining; and
- advising the Commonwealth Minister for the Environment and Heritage on all these matters [Sections 5 and 5A].

The Supervising Scientist is also a member of the Advisory Committee established under the Act. The other members of the Committee are:

- a chairperson appointed by the Minister for the Environment and Heritage;
- the Director of the Commonwealth's National Parks and Wildlife Service;
- a member appointed by the Minister for the Environment and Heritage on the nomination of the Northern Territory government;
- a member appointed by the Minister for the Environment and Heritage on the nomination of the appropriate Aboriginal Land Council; and
- such other members as are appointed by the Minister for the Environment and Heritage from time to time.

The Advisory Committee provides a formal forum for consultation on the effects of uranium on the environment in the Alligator Rivers Region and on matters relating to environmental research conducted in the region and referred to it by the Technical Committee.

Associated with the Advisory Committee is the Technical Committee, appointed by the Minister for the Environment and Heritage. The Technical Committee considers environmental research needs in relation to uranium mining in the region, reviews research programmes, refers matters relating to such programmes to the Advisory Committee, and makes recommendations to the Minister on the nature and extent of research necessary, and on the appropriate organisation to conduct the research.

Finally, the Supervising Scientist is charged with the management of the Environmental Research Institute of the Supervising Scientist. The functions of the Institute are, in general terms, to

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support the Supervising Scientist in the research and information functions conferred under Sections 5 and 5A [Section 24]. It is also permitted to undertake research on matters outside the region on a commercial basis.