CHAPTER 2

REGULATION OF RADIOACTIVE WASTE MANAGEMENT

Introduction

2.1 Control of radioactive materials and radioactive waste is, in principle, the responsibility of the States and Territories. All States and Territories have laws which explicitly control the use of radioactive materials.

2.2 In practice, Commonwealth bodies - primarily the Australian Nuclear Science and Technology Organisation - are responsible for about 90 per cent of Australia's radioactive waste (other than that arising from mining and milling operations). There is no Commonwealth legislation comparable with the State laws controlling the use of radioactive materials, therefore Commonwealth bodies' creation and use of radioactive materials is mostly not subject to external monitoring or legal control.[1] Some Commonwealth laws are relevant, and are mentioned below, but these do not constitute a complete regime of licensing and monitoring comparable to that which applies to private persons and organisations under State laws.

2.3 Sometimes Commonwealth bodies comply with State laws as a matter of policy, as good corporate citizens, but the 'regulatory gap' was a major concern in many submissions, and the means of addressing the situation is a major issue in the proposal to establish an Australian Institute of Radiation Protection.

2.4 A second theme in this chapter concerns the number of bodies that are involved in radiation policy or administration at the Commonwealth level. Interested departments are Primary Industries and Energy; Industry, Science and Tourism; Health and Family Services; Industrial Relations; Environment, Sport and Territories; Transport and Regional Development; Defence; and Foreign Affairs and Trade (details are in APPENDIX 3).[2]

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1 This situation arises because of the legal principle that the Commonwealth is not bound by State laws. However the situation varies according to the circumstances, and the law has developed in recent years and contains some uncertainties. See Senate Standing Committee on Legal and Constitutional Affairs, *The Doctrine of the Shield of the Crown*, December 1992. In the case of ANSTO, which is most relevant to the discussion in this chapter, any uncertainty is removed by section 7A of the *Australian Nuclear Science and Technology Act 1987*, which explicitly exempts ANSTO from State laws on environment, landuse planning, radioactive materials and dangerous goods, and licensing of business or employment.

2 These are portfolios established by the administrative arrangements gazetted on 11 March 1996. Submissions to the Inquiry are cited under former portfolio names.

2.5 The need for and the means of simplifying this situation has implications for the structure of the proposed Australian Institute of Radiation Protection. It raises the general question: to what extent radiation control, because of its special features, should be concentrated in a special purpose body; alternatively, to what extent *aspects* of radiation control (such as occupational health and safety, environmental protection) should be shared by departments (such as Industrial Relations, Environment) which already have general responsibility for such aspects.

National Codes on Radioactive Waste

2.6 Relevant codes are those promulgated under the *Environment Protection (Nuclear Codes) Act 1978,* and the codes of the National Health and Medical Research Council. None have legal force unless they are taken into State/Territory law[3] or used to inform State/Territory administrative decisions (such as licensing decisions); there are some inconsistencies in the approach and application from State to State.

Codes under the Environment Protection (Nuclear Codes) Act 1978

2.7 Under the *Environment Protection (Nuclear Codes) Act 1978 Act* the Commonwealth, subject to consultation with the States/Territories, may promulgate codes of practice relating to nuclear activities. The Act authorises regulations which may give a code the force of law in any State which does not have equivalent State law, but only at that State's request, and subject to the overriding limits on the Commonwealth's legislative powers under the Constitution.

2.8 Three codes of practice have been promulgated. They are the *Code of Practice for the Safe Transport of Radioactive Substances* (1982, revised 1990), and two codes on mining and milling of radioactive ores (1982 and 1987). Although uranium mining is outside the terms of reference of this inquiry, the latter two codes are mentioned here briefly because they are relevant to the extent that they apply to sand mining.

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3 Or, in the case of codes under the *Environment Protection (Nuclear Codes) Act 1978,* unless a State requests the Commonwealth to make a regulation that gives a code legal force in that State.

Code of Practice for the Safe Transport of Radioactive Substances (1982, revised 1990) ('the Transport Code')

2.9 This Code sets out standards for packaging, storing and segregation of radioactive materials during transport, testing, monitoring and administrative arrangements. It is based on *Regulations for the Safe Transport of Radioactive Material* (1988) by the International Atomic Energy Agency, with some local modifications. Transport by air shall be in accordance with the *Civil Aviation Act 1988,* transport by sea shall be in accordance with the *Navigation Act 1912* and the international standards for radiation protection[4] are superseded by National Health and Medical Research Council standards.[5]

Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (1980, revised 1987)

2.10 The Code sets out administrative procedures for training, certification, allocation of responsibilities and monitoring which are designed to ensure that exposure to radiation doses as a result of mining and milling are 'as low as reasonably achievable, economic and social factors being taken into account'.[6]

2.11 Dr Hartley was critical of the Code, commenting:

> [The Code] was originally produced in a political climate when Roxby Downs uranium mine was about to be established... Much of the detail is dictated by the politics of the time and is not really suited to control Radiation Health in mining in a proper scientific way.[7]

On the other hand, in its evidence, the Western Australia Department of Minerals and Energy pointed to 'very great reductions in occupational exposure' since the introduction of the Code.[8]

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4 International Atomic Energy Agency (1982) *Basic Standards for Radiation Protection*, Safety Series No. 9, IAEA, Vienna 1982, referred to in paragraph 201 of the IAEA's *Regulations for the Safe Transport of Radioactive Material*, Vienna 1988

5 National Health and Medical Research Council, *Recommended Radiation Protection Standards for Individuals Exposed to Ionising Radiation*, 1981, as amended

6 *Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores* (1987), section 2

7 Hartley, Submission No. 24, p. 3

8 Hewson, Transcript of Evidence, p. 271

Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores (1982)

2.12 The Code provides for approval of a waste management program for each mining or milling operation, to ensure 'an approach to waste management which is best suited to the particular circumstances of each operation'.[9] The code is focussed more on administrative procedures than technical details as is the case in the radiation protection code and it relies on phrases like 'best practicable technology', radiation exposure to be 'as low as reasonably achievable', and procedures to be 'to the satisfaction of the appropriate authority.'

2.13 As with the radiation protection code, opinions on the usefulness of this code were mixed.[10]

> ...the code is a general road map. If you want to get to a particular destination, you might need to look at a much more detailed map, and I believe the regulations which prevail at state level do that. [11]

Codes of the National Health and Medical Research Council

2.14 The National Health and Medical Research Council (NHMRC) has published about 40 codes or recommendations on particular aspects of radiation safety. They are listed in APPENDIX 4. Underpinning them are basic standards for radiation exposure expressed in *Recommended Radiation Protection Standards for Individuals Exposed to Ionising Radiation* (1980, as amended). The 1980 basic standards were superseded in 1995,[12] and the detailed codes are being revised accordingly.

2.15 The codes most relevant to the Committee's inquiry are the *Code of Practice for the Disposal of Radioactive Wastes by the User (1985)* and the

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9 *Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores* (1982), foreword

10 Hartley, Submission No. 24, p. 3; Transcript of Evidence, p. 371; Hewson, Transcript of Evidence, p. 271

11 Schache, Transcript of Evidence, p. 283

12 The 1980 standards were replaced by National Health and Medical Research Council, *Recommendations for Limiting Exposure to Ionising Radiation (1995) and National Standard for Limiting Occupational Exposure to Ionising Radiation.*

Code of Practice for the Near Surface Disposal of Radioactive Waste in Australia (1992).[13]

Code of Practice for the Disposal of Radioactive Wastes by the User (1985) ('the User Code')

2.16 The Code recommends conditions for disposing of low level radioactive waste in municipal tips, incinerators, the sewer or the atmosphere. Temporary storage is envisaged to allow materials with short half lives to decay to a level of radioactivity low enough that they can be disposed of by these means.

2.17 The Code is used in all States and Territories except New South Wales and Western Australia. Although the Code has not been adopted in Western Australia the *Radiation Safety Act* 1975 and Regulations have a similar outcome.[14] In the Australian Capital Territory the maximum allowed radioactivity of solid radioactive waste to landfill is more lenient than that in the Code and in Tasmania and Victoria an additional requirement applies to the concentration of liquid radioactive effluent being discharged to sewer.[15]

Code of Practice for the Near Surface Disposal of Radioactive Waste in Australia (1992)

2.18 This Code recommends conditions for disposing, by shallow burial, of waste[16] such that the dose received by anyone in the vicinity of the disposal site should be within limits recommended by the NHMRC (currently 1 millisievert per year for members of the public, and 20 millisieverts per year on average for radiation workers). It is assumed that an increase of one millisievert per year over the background levels of exposure (also about 1-2 millisieverts per year) falls within the acceptable range of risk as perceived by the public.[17]

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13 In the hospital context the National Health and Medical Research Council's *National Guidelines for the Management of Clinical and Related Wastes* (1988), *Recommendations relating to the Discharge of Patients Undergoing Treatment with Radioactive Substances* (1983) and *Code of Practice for the Safe Handling of Corpses Containing Radioactive Materials* (1986) are also relevant; St George Hospital, Submission No. 66, p. 4; Australian Radiation Laboratory, Submission No. 21, p. 2

14 University of Western Australia, Submission No. 22, p. 4

15 Australian Radiation Laboratory, Submission No. 21, p. 2

16 other than waste covered by the *Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores* (1982), or the *Code of Practice for the Disposal of Radioactive Waste by the User* (1985)

17 Munslow-Davies, Transcript of Evidence, p. 312-313

2.19 The Code is consistent with International Atomic Energy Agency publications *Principles of Radioactive Waste Management* and *Establishing a National System for Radioactive Waste Management.*[18] It deals with site selection criteria, waste characteristics, design of the facility and operational requirements. It suggests an 'institutional control period' of at least 100 years, and facilities with a design life of 300 years to allow the more long lived materials to substantially decay before the site is likely to be disturbed.[19]

Comments on the National Codes

2.20 In general there is mixed opinion about the usefulness of the national codes. Some witnesses found them helpful; others thought they are hard to understand or need updating and enforcing.[20] The Committee mentions the following points only briefly, as we are mindful of the fact that the codes are now being revised.

Need for Plain English

2.21 A common concern was that the codes are hard to understand. Several witnesses commented that the Transport Code is not user-friendly.[21]

> The Transport code itself is a detailed and somewhat complex document for those not familiar with it, or without relevant technical skills.[22]

> I have also been advised by colleagues who have had exposure to the [Transport] Code that it is a complicated document, difficult to understand comprehensively.[23]

2.22 On the other hand, it was said that adherence to the Code in Western Australia has led to a good standard of transport with very few incidents.[24]

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18 Australian Radiation Laboratory, Submission No. 21, p. 2

19 Munslow-Davies, Transcript of Evidence, p. 304

20 Siewert, Transcript of Evidence, p. 317; Townsville General Hospital, Submission No. 62, p. 2; Women's and Children's Hospital , Submission No. 63, p. 1

21 Rosen, Transcript of Evidence, p. 770; Collins, Transcript of Evidence, p. 770; Royal Alexandra Hospital for Children, Submission No. 5, p. 2

22 Codd M (1995) *Review of the Arrangements for the Recent Transportation of Radioactive Waste*, Report to the Minister for Industry, Science and Technology, July 1995, p. 3

23 Royal Alexandra Hospital for Children, Submission No. 5, p. 2

24 University of Western Australia, Submission No. 22, p. 3

2.23 The Committee was told that the User Code was 'not particularly helpful' in that the upper limit of radioactivity which may be disposed of by the user is not given in precise words but rather by referring to other documents.[25] On the other hand, the Committee was told that:

> It certainly would not be easy to understand for someone without the appropriate training, but it is not designed for someone who does not have that training.[26]

2.24 Many users write their own 'Plain English' summaries of the national codes. These extract from a wide-ranging code, for easy reference, items of particular relevance:

> I know of one hospital's Radiation Safety Officer who has gone to considerable trouble to attempt to produce an accurate summary [of the Transport Code] for easy use.[27]

Compliance and Enforcement

2.25 Some witnesses felt that the codes are inadequately enforced. Compliance with national codes depends on their incorporation in State/Territory law or administrative decisions, the attitudes of users, and the resources available to monitor compliance. Compliance relates more to the administrative arrangements than to the Code itself. However, there is an obvious interaction between the 'user-friendliness' of a code and the ease of compliance. This comment expresses the interaction:

> the [Transport] Code requirements are often not followed simply because of the unavailability of appropriate transport containers, or the lack of understanding of the Code, or both.[28]

Need for Update to New International Standards

2.26 Some submissions mentioned that the codes need to be updated generally, particularly in view of revised basic standards for radiation protection published by the International Commission on Radiological Protection (ICRP) in publication 'ICRP 60', 1991. ICRP 60 recommends more stringent standards of radiation protection than in the past, based on recent research on Japanese atomic bomb victims.

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25 University of New South Wales, Submission No. 75, p. 2

26 Wong, Transcript of Evidence, p. 744

27 Hanlon, Submission No. 5, p. 2

28 Westmead Hospital and Community Health Service, Submission No. 65, p. 4

2.27 In June 1995 the NHMRC and the National Occupational Health and Safety Commission jointly released revised Australian basic standards for radiation exposure, based on ICRP 60.[29] The NHMRC codes are now being revised accordingly.[30] The Committee also believes that further revisions of national codes may be needed after the publication of the Radioactive Waste Safety Standards program (RADWASS) guideline statements.

Problems of Large Hospitals

2.28 A particular problem of the User Code, according to some submissions, is that the standards are framed in such a way that larger hospitals which treat a higher volume of patients are disadvantaged because of the higher volumes of waste:

> the NHMRC [User Code] talks about a maximum absolute amount [of radioactive waste] which can be discharged into the sewer per week, based on the radionuclide, whereas various regulations in states and other countries talk about the maximum concentration of radionuclide. So the higher volume flow of effluent from your institution, the higher the amount that you can actually discharge.[31]

2.29 The Committee was told that the absolute weekly limit allows smaller hospitals to discharge larger amounts of radioactive waste per patient, and effectively restricts the number of patients that can be treated in larger hospitals.[32] Therefore this type of treatment may be concentrated in the few hospitals which have delay tank facilities, and this will increase the demand on existing facilities.[33]

2.30 By contrast, the New Zealand *Code of Safe Practice for the Use of Unsealed Radioactive Materials in Medical Diagnosis, Therapy and Research* sets limits based on concentration rather than the total quantity of radioactivity in a discharge. The Australian and New Zealand Society of Nuclear Medicine believes that this approach encourages all users, regardless of size, to improve

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29 National Health and Medical Research Council & National Occupational Health and Safety Commission, (1995) *Recommendations for Limiting Exposure to Ionising Radiation and National Standard for Limiting Occupational Exposure to Ionising Radiation*

30 The Transport Code is also being revised to be consistent with ICRP 60 recommendations and with the International Atomic Energy Agency's Basic Safety Standards; Nuclear Safety Bureau, Submission No. 31, p. 3

31 Collins, Transcript of Evidence, p. 753

32 Australian & New Zealand Society of Nuclear Medicine, Submission No. 68, p. 2

33 Hanlon, Transcript of Evidence, p. 754

their waste management techniques.[34] The National Health and Medical Research Council is currently looking into this issue.[35]

International Treaties, Agreements and Codes of Practice

2.31 Australia is party to a number of international treaties and other agreements relevant to management of radioactive waste. The Department of Foreign Affairs and Trade co-ordinates Australia's position, consulting with other bodies (Commonwealth, State and non-government) on the scientific aspects of radiation policy.

2.32 The Declaration on Development and the Environment (Rio de Janeiro, 1992), to which Australia is a signatory, is a primary source for international objectives in environmental protection. Various principles in the Declaration have a bearing on radioactive waste management, especially those relating to the need for public participation in decision making, the principle of polluter pays and the importance of the precautionary approach to possible environmental degradation.

Treaties

2.33 The most relevant treaties (not including treaties more relevant to nuclear weapons control) are:

- the *Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter*, which prohibits the dumping of radioactive matter at sea;
- the *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region*, which prohibits dumping or disposal of radioactive material in international waters of the region;
- the *South Pacific Nuclear Free Zone Treaty*, which prohibits the dumping of radioactive material at sea; and
- the *Convention on Early Notification of a Nuclear Accident*, which requires parties to notify affected states in the event of an accident involving, or likely to involve, an international release of radioactive material.
- the *Convention on Nuclear Safety,* which relates to civil nuclear power plants (expected to come into force by the end of 1996).

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34 Australian & New Zealand Society of Nuclear Medicine, Submission No. 68, p. 2

35 Collins, Transcript of Evidence, p. 753

2.34 Other treaties under negotiation with potential relevance:

- the *Convention on the Safety of Radioactive Waste Management*, (considered below);
- the *Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Waste and to control the Transboundary Movement of Hazardous Waste within the South Pacific Region*, under which Australia would be obliged to ban the export of radioactive waste to all Pacific Island developing countries which are members of the South Pacific Forum.

Arrangements of Less Than Treaty Status

2.35 Australia is a member of the International Atomic Energy Agency (IAEA), which has a major role in developing international standards and codes of practice.

> Over the years, Australian technical experts have played important parts in the development of international approaches to the regulation of peaceful nuclear activity and cooperation, from the viewpoint of nonproliferation and safeguards, safety and radiation protection or the viewpoint of the physical protection of peaceful nuclear activity.[36]

2.36 Current Australian codes and standards have regard to a number of international codes. These include the *International Basic Safety Standards for Protection Against Ionising Radiation and for the Safety of Radiation Sources*, based on the work of the International Commission on Radiological Protection and last issued in 1991; and the IAEA Safety Series.

2.37 Two non-binding Codes of Practice are:

- IAEA *Code of Practice for the Transboundary Movement of Radioactive Waste,* which provides a framework for an international notification regime;
- joint IAEA/ International Maritime Organisation/ UN Environment Program *Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High Level Radioactive Wastes in Flasks on Board Ships*.

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36 Luck, Transcript of Evidence, p. 661

2.38 The proposed transfer of spent fuel rods from Lucas Heights to the United States and to Dounreay in Scotland for reprocessing are being carried out under the provisions of bilateral Australia/UK and Australia/USA agreements on the peaceful uses of nuclear energy and the Australia/IAEA agreements on safeguards connected with the non-proliferation of nuclear weapons.

The IAEA Radioactive Waste Safety Standards (RADWASS) Program

2.39 The RADWASS program commenced in 1991 and is scheduled for completion in 1996. The outcome will be a set of publications dealing with every aspect of radioactive waste management. These documents are intended to reflect existing international consensus and to provide users with a comprehensive set of internationally agreed standards which they may use in forming local standards. Experts from the Australian Nuclear Science and Technology Organisation are participating in the development of these publications.[37]

2.40 The Committee supports the principles of the RADWASS program, which are that:

- waste should be managed so as to ensure an acceptable level of protection for human health.
- waste should be managed so as to ensure an acceptable level of protection for the environment.
- possible effects on health and the environment beyond national borders should be taken into account.
- predicted effects on the health of future generations should not be greater than those considered acceptable today.
- management should not impose undue burdens on future generations.
- waste should be managed within a clear legal framework that includes independent regulatory functions.
- creation of radioactive waste should be kept to the minimum practicable.
- interdependencies among the steps in the creation and management of radioactive waste should be taken into account.
- the safety of facilities should be assured during their lifetime.[38]

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37 Australian Nuclear Science & Technology Organisation, Submission No. 32, p. 29

38 International Atomic Energy Agency (1994) *Safety Fundamentals - the Principles of Radioactive Waste Management - Safety Series No. 111-F*, pp. 4-11

2.41 It was suggested that future reviews of Australian codes should be based at least as much on Australian experience as on overseas documents.[39] The RADWASS documents acknowledge that the suggested standards are only for guidance, and each authority must work out the regime which best suits it having regard to local circumstances.

Convention on the Safety of Radioactive Waste Management (Radwaste Convention)

2.42 Negotiations began in 1995 under the auspices of the IAEA, and it is hoped that the convention will be open for signature by the end of 1996. The Convention is expected to cover all aspects of the topic other than those covered by the *Convention on Nuclear Safety*, which relates to nuclear power stations.

2.43 It is expected that the Convention will oblige parties to introduce appropriate domestic legislation to enforce agreed standards as laid down in IAEA and RADWASS documents. This would require the establishment of a legislative regime which separates regulatory and operational functions; includes provisions for licensing and independent inspection of waste storage and disposal facilities to determine compliance with regulatory standards; and provides a framework for information and early notification to states at risk of transboundary contamination.[40] The Convention is expected to recommend standards for domestic radioactive waste management, disposal regimes and obligations on contracting parties for safety issues such as safety analyses, design and construction of facilities, quality assurance and safety reviews. The Convention foreshadows that accountability would be addressed through reporting and peer review arrangements, as occurs with the *Convention on Nuclear Safety*.[41]

2.44 The Convention is envisaged as incentive-based, to provide for the sharing of knowledge and experience[42] and to reflect the evolutionary nature of radioactive waste practices. The Convention should be flexible and take into account developments in international practice so that international standards keep pace with technological improvements.

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39 Fleischmann, Submission No. 9, p. 7

40 Smith, Transcript of Evidence, p. 663

41 The Nuclear Safety Convention was signed by Australia in 1994. It is hoped to come into force by end 1996.

42 Department of Foreign Affairs and Trade, Supplementary Submission No. 26a, p. 2

> We believe that is what is achievable is a treaty we characterise as an incentive treaty which does not contain strong prescriptions and sanctions against non-compliance but which sets high standards and standards which we think can be achievable and which will be signed on to by the members of the international community, and they will than be obliged to implement those things in the domestic legislation ... in Australia's case, we have already the kinds of regulations and arrangements in place which this convention would probably require us to have.[43]

2.45 It is proposed that the Convention will form part of an integrated network of international codes, standards, conventions and treaties aimed at ensuring the best possible international arrangements for maintaining high levels of safety for all forms of nuclear activity.

State/Territory Radiation Control Legislation

2.46 Under the Constitution, control of radioactive materials generally lies with States and Territories. All States and Territories have laws explicitly controlling radioactive materials, which are listed in APPENDIX 5. Most have rewritten their original laws and all have made amendments from time to time. As a result the laws, though similar in tenor, have many differences of detail. Some differences may be minor, others may be significantly inconvenient, such as to interstate trade. Some differences occur as the chance result of separate evolution, others reflect differences in administrative arrangements between the States.

2.47 Examples of variations in State law follow:

- the division of instruction and detail between Acts and Regulations varies widely. Terminology may differ.
- Definitions and thresholds vary. For example, the threshold definition of 'radioactive material' (representing a level of radiation below which the material is not of official concern) varies. Some Acts refer to specific activity (becquerels per gram), others to the total activity of an object (becquerels) and the actual numbers vary. Other Acts refer to maximum permissible doses[44] and these also vary.

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43 Luck, Transcript of Evidence, p. 668

44 The 'total activity' method creates a situation in which one large object is subject to control but when cut into two smaller objects is not.

- Some Acts which set maximum permissible doses also contain the concept of minimising doses where possible.[45]

- Legislative anomalies may result because of differences in the reach of the law, in terms of the activities and types of persons that are controlled.

- In addition to licensing conditions, some States impose a separate general duty on those in charge of radioactive materials to ensure that people on the premises are not exposed to more than a maximum dose.

- The decision maker on licensing varies - from a statutory officer or departmental officer (Chief Medical Officer, Northern Territory; Chief General Manager, Victorian Department of Health) to a statutory authority (Environment Protection Authority of NSW), to a Minister (Queensland) or a special council appointed by a Minister.

- The amount of explicit direction which is given to decision makers in licensing decisions varies. Some decisions must merely 'take into account' maximum doses or consider whether applicants are fit and proper persons. There are other schemes where the decision maker must be satisfied that an application complies with dose limits or other detailed conditions set out in the law. The form of advisory councils vary, some with power of veto, some without.[46]

- Where transport or waste disposal are controlled in parts of Acts separate from basic 'manufacture, use or sell' provisions, the decision makers on transport or waste disposal may be different, or the decision maker's discretion level may be different.[47]

- The way in which the law is linked to national codes, or includes equivalent details in full, varies.

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45 For example, Queensland *Radioactive Substances Regulation 1961,* section 21; South Australian *Radiation Protection and Control Act 1982*, section 23.

46 This comment is not meant to imply that decision-makers with wide statutory discretion make less rigorous decisions. All administrations use detailed guidelines (whether their own policies or national codes) to guide license conditions. It is a matter of opinion and convenience how much detailed matter should be in Acts, how much in regulations, and how much in administrative guidelines.

47 For example, New South Wales and Australian Capital Territory. In New South Wales the Environment Protection Authority (EPA) controls licenses to use while the *Director-General* of the EPA gives consent to disposal, with wide discretion.

- There are differences in provisions for licensing and training of the users of radioactive sources.

2.48 In spite of these differences the State/Territory laws have similar results in practice. The Committee believes that most of the differences are the result of separate evolution and different administrative schemes, rather than different policies.

2.49 Many witnesses at the inquiry expressed a desire for greater national co-ordination, and the Committee believes that this is achievable.[48] Most State/Territory radiation control laws are now under review, and this may be an appropriate time to attempt greater co-ordination.

The Role of ANSTO in Dealing with Radioactive Waste

2.50 The Australian Nuclear Science and Technology Organisation (ANSTO) is a Commonwealth statutory authority. ANSTO is Australia's national centre for research and development in nuclear science and technology. Its activities include operating nuclear facilities, scientific research, producing radioactive materials and other irradiation services for medical use on a commercial basis, providing advice to Government, and assisting industry to develop new or improved products and processes. ANSTO supplies about 85 per cent of the demand for radioisotopes and radiopharmaceuticals in Australia.[49]

2.51 ANSTO's functions most relevant to this Inquiry are -

> to condition, manage and store radioactive materials and radioactive waste, arising from:
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> (i) the Organisation's activities (including the production of radioactive materials for other persons); or
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> (ii) the activities of companies in which the Organisation holds a controlling interest (including the production of radioactive materials for other persons); or
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> (iii) the use by other persons of radioactive materials produced by the Organisation or such companies; or

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48 See also Swindon T (1995) 'On achieving a uniform approach to radiation control in Australia', *Radiation Protection in Australia*, 13 (2):55-60.

49 Australian Nuclear Science & Technology Organisation, Supplementary Submission No. 32b, p. 3

(iv) the activities of other persons who are specified in the regulations.[50]

ANSTO's Power to Deal with Radioactive Materials Owned by Others

2.52 The functions just quoted were added to the ANSTO Act in 1992. The last item, section 5(1)(ba)(iv) relating to radioactive materials produced by persons other than ANSTO, had the effect of neutralising a decision of the New South Wales Land and Environment Court forbidding ANSTO from storing radioactive materials owned by CSIRO.[51] This function is a significant one, since material produced by persons other than ANSTO is an important part of the national inventory of radioactive materials and waste.

2.53 The addition of section 5(1)(ba)(iv) has opened the way to controversial situations, such as the 1994 proposal to move Australian Defence Industries waste from St Marys to ANSTO's Lucas Heights property for treatment. This aroused objection from bodies such as Sutherland Shire Council, which feared that this might create a precedent for the development of a national radioactive waste repository at Lucas Heights, even though the ANSTO Act specifically prohibits this.[52]

2.54 On the other hand, the Department of Industry, Science and Technology argued that ANSTO's power to deal with radioactive materials produced by others should be facilitated by removing the limitation to persons 'specified in the regulations.' The Department argues that a regulation naming a party for the purpose of section 5(1)(ba)(iv) takes time to gazette, but without it ANSTO might not legally be able to help with emergencies (even those involving other Commonwealth authorities). The Department referred to several emergencies involving ANSTO-related radioactive materials since the ANSTO Act was amended, and pointed out the possibility that similar incidents could occur involving non-ANSTO-related materials.[53]

2.55 The Committee agrees that the need to make a regulation under section 5(1)(ba)(iv) is cumbersome. It could be replaced by a suitable scheme of

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50 *Australian Nuclear Science and Technology Organisation Act 1987*, section 5(1)(ba)

51 ANSTO had accepted for storage about 2000 cubic metres of slightly contaminated soil from CSIRO's Fishermens Bend site. The Court, on application by Sutherland Shire Council, held that this was outside ANSTO's legal functions. *Environmental Law Reporter*, 27 March 1992, p. 33

52 *Australian Nuclear Science and Technology Organisation Act 1987*, subsection 5(1A). See also Senate Legal and Constitutional Legislation Committee, *The Drafting of the ANSTO Regulations (No. 259 of 1994)*, November 1994.

53 Department of Industry, Science and Technology, Submission No. 74, p. 2

external licensing and monitoring of ANSTO's 'conditioning, managing and storing' activities by an independent body - a function that could be carried by the proposed Australian Institute of Radiation Protection (AIRP).

2.56 In the case of non-emergency work, such as conditioning and storing waste on a commercial basis, the time lag involved in getting external approval is not an issue and, in the Committee's view, it is desirable to retain external scrutiny in light of public sensitivities about storage of material at Lucas Heights.

2.57 Should an emergency arise, the Committee notes that non-ANSTO waste tends to have lower levels of radioactivity; State laws and licenses require detailed contingency planning for emergencies; ANSTO can give advice to anyone at any time, even without a regulation under section 5(1)(ba)(iv); and some private contractors can carry out emergency work. There is a question as to whether ANSTO needs to be physically involved in emergency work.

2.58 A further concern is that, while the argument for removing the requirement for a regulation based on the need to respond quickly to emergencies may have merit, it would also reduce control of everyday commercial activities, since the current law does not distinguish between the two. A regime of control by an independent AIRP could provide different levels of control for everyday and emergency activities.

2.59 The Committee notes that ANSTO's Strategy Review Recommendations take account of developing opportunities arising from the expansion of the nuclear power industry in Asia.[54] Sutherland Shire Council expressed concern that:

> The absence of effective nuclear industry regulation in Australia leaves the public susceptible to Commonwealth attempts to generate revenue and derive political gains through processing and/or disposing of Asian radioactive waste in Australia.[55]

2.60 The Committee does not believe that an expansion of ANSTO's activities should allow importing of radioactive waste into Australia for treatment or conditioning. To encourage community confidence in the Commonwealth's intentions, any change to the law should exclude this type of possibility. The Committee believes that if in future ANSTO's consideration of such a proposal

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54 Australian Nuclear Science & Technology Organisation (1994) *Strategy Review Recommendations* Final Report, 9 December 1994, p. 57

55 Sutherland Shire Council, Submission No. 20, p. 30

should be subjected to Parliamentary scrutiny, as required under the present ANSTO Act.

ANSTO's Immunity from State Law

2.61 The *Australian Nuclear Science and Technology Act 1987* explicitly exempts ANSTO from State laws on land use, environment protection, radioactive materials and dangerous goods, and licensing of business and employment (section 7A). This provision was also added after the 1992 New South Wales Land and Environment Court case.

2.62 ANSTO told the Committee that it complies with all Commonwealth requirements and conforms to New South Wales norms.[56] Nevertheless, groups such as Greenpeace and the Sutherland Shire Council have been critical of the immunity provision, which provides that ANSTO is not subject to control or supervision by the NSW Environmental Protection Authority.[57] Since there is no equivalent Commonwealth law, in practice ANSTO regulates much of its activities itself.[58]

2.63 ANSTO points out that:

> The policy of successive Commonwealth Governments is that such instrumentalities (ie ANSTO) are to operate consistently with all State laws where there is no existing, parallel, Commonwealth law and where those laws do not directly conflict with the existing ANSTO Act....[59]

2.64 Disputes surrounding Commonwealth bodies' immunity from State laws are not unique to ANSTO, and they raise broader issues which have not been canvassed by the Committee in this Inquiry.[60] It could be argued that if a Commonwealth body complies with State standards as a matter of policy, then

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56 Jostsons, Transcript of Evidence, p. 57

57 Pearson, Transcript of Evidence, p. 462; Sutherland Shire Council, Submission No. 20, p. 13

58 ANSTO is subject to direction by the Nuclear Safety Bureau, a separate Commonwealth statutory authority, but only in respect of the operation of its nuclear reactor. There is also an issue in whether the Nuclear Safety Bureau is sufficiently at an arm's length from ANSTO to ensure effective regulation. The Commonwealth's *Environment Protection (Impact of Proposals) Act 1974* is relevant but (in the context of this discussion of *external* controls), has the weakness that it is only triggered if a proposal is environmentally significant *in the opinion of the authority proposing it.*

59 Australian Nuclear Science & Technology Organisation, Submission No. 32, p. 17

60 See Senate Standing Committee on Legal and Constitutional Affairs, *The Doctrine of the Shield of the Crown*, Canberra, December 1992

it should have no reason to object to complying in law as well, since the difference will not affect its operations.

2.65 In the case of ANSTO the position is complicated by the obvious national security aspect of Australia's nuclear research capability, which underpins the argument for immunity from State laws:

> As Australia's centre for nuclear science and technology expertise, ANSTO undertakes what is essentially a national role in the effective development and implementation of the Commonwealth's nuclear safeguards, uranium export, non-proliferation and nuclear arms control policies. These are not matters which can be subject to the approval of individual local councils or State governments.[61]

2.66 The Committee accepts this argument, but with a caution. In a liberal democracy, while national security remains paramount, it must also compete with other interests. National security might require ANSTO to be able to operate without hindrance by State or local regulations; on the other hand, residents of Sutherland Shire claim a right to know, through independent audits, what radioactive waste is being created on ANSTO's property or emitted from it. The Committee believes that Sutherland Shire residents' concern is reasonable in principle regardless of how good ANSTO's environmental record is at the moment. Both ANSTO and the Sutherland Shire residents have legitimate interests.

2.67 Part of the problem is that ANSTO combines research and advice functions which may involve the national interest, as well as commercial activities in which, arguably, it deserves no advantage over private enterprise.[62]

2.68 The Committee accepts the 'national interest' argument but does not consider it satisfactory that ANSTO's waste or commercial operations are exempt from controls that apply to its private sector competitors. The Committee believes that this is not an area where self-regulation is appropriate.

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61 The Hon. Ross Free, former Minister for Science and Technology, second reading speech on *Australian Nuclear Science and Technology Organisation Amendment Bill 1992*, House of Representatives *Hansard* 4 May 1992, p. 2320

62 ANSTO earns about a third of its income from commercial activities and supplies about 85 per cent of Australia's demand for radioisotopes and radiopharmaceuticals. Australian Nuclear Science & Technology Organisation, Supplementary Submission No. 32b, p. 3; Research Reactor Review, *Future Reaction - Report of the Research Reactor Review*, August 1993, p. xviii

2.69 Separation of ANSTO's commercial activities, which might be made subject to State law, from its 'national interest' activities (which arguably should remain the province of the Commonwealth), is not considered practical. The creation of a Commonwealth regulatory body independent of ANSTO and the implementation of Commonwealth legislation equivalent to existing State laws would play an important role in enhancing public trust in ANSTO. These are issues which should be addressed in deciding the structure and powers of the planned Australian Institute of Radiation Protection.

The 'Regulatory Gap'

2.70 The Australian Radiation Laboratory emphasised that there are regulations and penalties in the States which are not present at the Commonwealth level.[63] This 'regulatory gap' was a common concern raised submissions to the Inquiry.

2.71 Some Commonwealth agencies allow State authorities to license their radioactive materials.[64] On the other hand, the Committee was told that there have been long standing difficulties in the application of the Western Australian *Radiation Safety Act 1975-81* on Commonwealth sites even though Western Australians are employed at those sites.[65]

2.72 Several pieces of Commonwealth legislation go a little way to filling the gap, but the results are 'ad hoc'.

Environment Protection (Nuclear Codes) Act 1978

2.73 Regulations under this Act may provide that a State law equivalent to a code promulgated under this Act will apply to Commonwealth places (section 11). However, no such regulations have ever been made under this provision.

Australian Nuclear Science and Technology Organisation Act 1987

2.74 The Act establishes a Safety Review Committee to oversee the safety of ANSTO's activities (section 26). The Committee may advise the Minister or ANSTO but has no powers of enforcement. Its members are appointed by the Minister, and the majority must not be employees of ANSTO.

63 Burns, Transcript of Evidence, p. 113

64 Hartley, Submission No. 24, p. 3

65 Hutchinson, Transcript of Evidence, p. 378

2.75 The Act establishes the Nuclear Safety Bureau, reporting to the Minister for Health and Family Services, to monitor the safety of ANSTO's nuclear reactor (section 37). The Bureau can impose conditions on the operation of ANSTO's reactor and provides technical advice to the Commonwealth on other nuclear matters. There are no restrictions on staffing for the Bureau comparable with those that apply to the Safety Review Committee to ensure that the Bureau is kept at arm's length from ANSTO. It should also be noted that a large proportion of ANSTO's waste comes from production of radiopharmaceuticals, which is not subject to the Bureau's control.[66]

The Environment Protection (Impact of Proposals) Act 1974

2.76 This Act aims to ensure that environmental matters are considered in Commonwealth decision making. A Commonwealth minister or authority proposing an action which, in his/its opinion, might affect the environment 'to a significant extent', must 'designate' the proposal, and bring it within the scope of the Act.

2.77 The Minister for the Environment may then direct the designated proponent to prepare a Public Environment Report (PER) or, in more significant cases, a more comprehensive Environmental Impact Statement (EIS). The Minister for the Environment may then make comments or recommendations, which the action Minister/authority must then take into account.

2.78 Significantly, a proposed 'action' includes administrative decisions or recommendations. Thus, though the Act does not directly affect the rights or duties of anyone other than Commonwealth ministers and authorities, it may affect other people indirectly. For example, the recommendations of an EIS may influence a Commonwealth's authority's decision on a private company's license application.

2.79 This scheme raises two issues. First, whether a proposal is sufficiently significant to justify triggering the Act's procedures is left to the discretion of the Minister responsible for the proposal, not the Minister for the Environment. Similarly at the next level, even if the procedures are triggered, there may be dispute over what level of environmental assessment is warranted. For example, the Minister for the Environment decided that neither an EIS nor a PER was required for movement of Fishermens Bend soil from Lucas Heights to Woomera nor the relocation of the Australian Defence Industries radioactive

66 Allen, Transcript of Evidence, p. 108

waste from St Marys to Woomera in 1994 and 1995 respectively.[67] On the other hand, a PER was prepared on the proposal to ship spent fuel rods from Lucas Heights to the United States and the United Kingdom for reprocessing.[68]

2.80 Secondly, even if a proposal is 'designated' under the Act and an EIS prepared, the Minister for the Environment has no power of veto. Neither authorities or ministers directly responsible are bound by the recommendations of the Minister for the Environment: they must merely 'take them into account'.[69]

2.81 The Committee notes that these issues, which go far beyond the issue of radioactive waste may be addressed during the current review of the Act.

Commonwealth Places (Applications of Laws) Act 1970

2.82 This Act provides that, in principle, State laws apply to Commonwealth places. However there are significant exceptions (subsections 4(2-3)) which involve complex Constitutional legal issues. The result is the application of this Act in a particular case may be uncertain.[70]

The Proposed Australian Institute of Radiation Protection

2.83 International standards require that use of radioactive materials should be controlled by an independent regulatory body with legal powers of enforcement.

> Essential parts of the national infrastructure are: legislation and regulations; a regulatory authority empowered to authorise and inspect regulated activities and to enforce the legislation and regulations; sufficient resources; and adequate numbers of trained personnel.[71]
>
> Separation of the regulatory function, including enforcement, from the operating function is required ... This separation will permit independent review and overseeing of radioactive waste

67 Commonwealth Environment Protection Agency, Supplementary Submission No. 46a, p. 1

68 The Public Environment Report was advertised for public comment in November 1995 and the Minister for the Environment provided his consequent advice to the Minister for Industry, Science and Technology by letter dated 22 December 1995.

69 *Environment Protection (Impact of Proposals) Act 1974,* section 8

70 See Senate Standing Committee on Legal and Constitutional Affairs, *The Doctrine of the Shield of the Crown*, December 1992.

71 International Atomic Energy Agency (1994) *International Basic Safety Standards for Protection Against Radiation,* IAEA, Vienna, p. 7

> management activities. The legal framework should specify the way in which separation of the functions is achieved.[72]

In Australia, at the Commonwealth level, these standards have not yet been met.

2.84 The Commonwealth Government proposes to create an Australian Institute of Radiation Protection (AIRP) by combining the Nuclear Safety Bureau[73] and the Australian Radiation Laboratory.[74] This proposal would also abolish the Australian Ionising Radiation Advisory Council and absorb its functions in the AIRP. The AIRP will have the additional function of regulating and licensing Commonwealth activities and places involving radiation:

> The Commonwealth will have the power to impose penalties in the case of breaches of operating licenses issued by the AIRP, except that where it finds an occupational radiation health infringement, the Institute will be required to advise Comcare on the bringing of proceedings under the *Occupational Health and Safety (Commonwealth Employment) Act 1991*.[75]

An Independent Regulator

2.85 The Committee strongly supports the proposal for an independent regulator of Commonwealth bodies' radiation activities, with functions of regulating, licensing, monitoring and imposing penalties for breaches of licenses. An independent regulator is required by international standards, and would go some way towards meeting the concerns of many witnesses at this inquiry.

2.86 However, some concerns were raised in the inquiry over whether, under the scheme now proposed, the AIRP will be a truly independent regulator. There are three main concerns.

2.87 First, it is unclear whether it is proposed that the AIRP will itself have substantive 'operating functions' as well as regulatory functions. The Australian Radiation Laboratory's present structure allows it to charge for

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72 International Atomic Energy Agency (1994) *Safety Fundamentals - the Principles of Radioactive Waste Management - Safety Series No. 111-F*, p. 9

73 The Nuclear Safety Bureau is a statutory authority which oversees the safety of ANSTO's reactor.

74 The Australian Radiation Laboratory is part of the Department of Health and Family Services, with functions of research and advice.

75 Australian Radiation Laboratory, Supplementary Submission No. 21b, p. 1

services;[76] in its advice role it might be seen as being in competition with ANSTO, particularly if giving advice became a commercial activity. Sutherland Shire Council commented:

> [The Australian Radiation Laboratory] have had commercial interaction with the nuclear industry by way of selling safety processes, intellectual capabilities and so on ... some of the long lived waste that we are talking about here probably passed through the ownership of ARL ... You cannot expect public confidence to occur unless there is a *de novo* independent process set up.[77]

2.88 The Committee shares this concern about the possible conflict of interest if the Australian Radiation Laboratory, as now constituted, simply becomes 'part of' the AIRP. The principle of separation of the regulator from the industry requires that the regulator should be *only* a regulator. The functions of AIRP should reflect this.

Recommendation 1

The Committee recommends that in order to conform with international standards on separating the regulatory body from the regulated industry, the Australian Institute of Radiation Protection as proposed regulator should have no substantive operational functions or commercial activities in nuclear science.

2.89 Secondly, there was a concern that locating the AIRP in the Health and Family Services portfolio raises a possible conflict of interest, in that this Department also has an obvious interest in the use of radiopharmaceuticals. It is conceivable that radiation safety controls might come into conflict with the aim of keeping radiopharmaceuticals cheap and accessible. It was suggested that the proposed AIRP should be in the Environment portfolio.[78]

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76 *Australian Radiation Laboratory Order*, Commonwealth Gazette 7 October 1987, p. 1360

77 Smith, Transcript of Evidence, p. 577

78 Sutherland Shire Council, Submission No. 20, p. 27

2.90 The previous Government proposed that the AIRP would be part of the Health and Family Services portfolio to ensure legal separation from ANSTO, which is in the Industry, Science and Tourism portfolio.[79] There is an argument that 'public health' as a concept covers the field of radiation control more aptly than 'environmental protection'. The storage of radioactive materials is an obvious public health issue requiring monitoring although, providing the store is securely sealed, it may be argued whether it is an 'environmental' issue properly defined. Most State and Territory radiation safety regulators sit in Health portfolios. On the other hand ANSTO, a Commonwealth statutory authority, produces 85 per cent of Australia's radiopharmaceuticals, so there is real potential for conflict of interest within the Health portfolio - a conflict that does not arise at State level. This issue needs to be further considered.

Recommendation 2

The Committee recommends that the Minister responsible for the proposed Australian Institute of Radiation Protection be required to act to ensure that the administrative arrangements avoid conflicts of interest.

2.91 Thirdly, there was concern over how truly independent a regulatory body will be in what is a small specialised field where the staff of the regulator may often be moving to or from the 'regulatee'. Sutherland Shire Council claimed:

> There is no nuclear physicist or chemist in Australia who has not been, at one stage, either an employee of ANSTO or dependent on ANSTO's largesse ... The concern we would have is that there would be a revolving door for people who join the regulatory agency, leave it and have only one source of employment, directly or indirectly - the industry they have regulated.[80]

79 Ibid, p. 1

80 Robertson, Transcript of Evidence, p. 574,576

2.92 Sutherland Shire Council pointed to what it called a historic lack of independence between ANSTO and the Nuclear Safety Bureau.[81] On this issue the 1993 Research Reactor Review commented:

> Perceptions of potential conflicts of interest of staff of the NSB, arising from secondment ex-ANSTO and the somewhat limited career structure for specialist staff, are well based.[82]

2.93 It is feared that the role of ANSTO in funding research would also be a significant lever - particularly because of the trend towards commercialisation of university research in recent years:

> ... there are a significant minority of scientists who, because of the recent steps towards commercialisation of basic research in tertiary institutions, feel - whatever the truth of the matter is - that if they assisted someone who was seen to be an opponent of the industry that would prejudice them in their future life.[83]

2.94 The risk of regulators becoming too close to the industry they are regulating is, of course, not unique to nuclear science. However in the present case the concern does have some extra force in that the regulator and the regulated industry will both be parts of the Commonwealth government - contrasting with the more usual situation of a government body regulating the private sector. Given this, and given that nuclear science is a small specialised field, the Committee cannot suggest any easy solution to the problem. But it is essential to acknowledge the risk and to structure the AIRP to pre-empt that risk as far as possible. Sutherland Shire Council suggested:

> There are mechanisms for coping with this problem by banning for a certain number of years employment in the industry you have been regulating and they work reasonably well in other countries.[84]

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81 Sutherland Shire Council, Submission No. 20, p. 26

82 Research Reactor Review (1993) *Future Reaction - Report of the Research Reactor Review*, August 1993, p. 230

83 Robertson, Transcript of Evidence, p. 576-7

84 Ibid, p. 576

Recommendation 3

The Committee recommends that the Government should structure the proposed Australian Institute of Radiation Protection to maintain an arm's length relationship with the industry as far as possible having regard to international best practice, and the industry be required to provide the information the regulator needs to perform its functions.

Community Participation

2.95 Principle 10 of the Declaration on Environment and Development 1992 (known as the Rio Declaration) states that:

> Environmental issues are best handled with the participation of all concerned citizens at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy shall be provided.

2.96 This raises three questions:

- How is the community involved in framing proposed new systems?
- How is the community involved, by way of appropriate representation and access to information, in administering new systems on an on-going basis?
- Who has the right to take action in court to restrain a breach of the law?

2.97 On the development of the AIRP proposal, there has been no proposal advertised for public comment, although State authorities have been consulted:

> We called together representatives from each state health authority and affected Commonwealth departments to have a sort of show and tell at the Australian Radiation Laboratory, where we outlined what the proposal was and what the nature of the combined organisation would be and how its national committee - like our radiation health committee - would assist and so on.[85]

A State representative characterised this as 'being kept informed of progress'.[86]

2.98 In relation to ongoing community representation on the AIRP, the Committee was told that the AIRP Board and working committees will include 'suitable scientific and public interest representations'.[87] It was argued there should also be representation from communities near the existing ANSTO site, any future research reactor site or national repository site, the Australian conservation movement and consumer organisations.[88]

2.99 The Committee believes that appropriate representation *and* public access to relevant information are necessary. The public's right of access to information should be affirmed in principle, although, of course, national security considerations might raise the need for some exceptions in practice.

Recommendation 4

The Committee recommends that the proposed Australian Institute of Radiation Protection structure should include appropriate community representation.

2.100 The third question raised above was, 'who has the right to take action in court to restrain a breach of the law?' The facility for interested persons to take court action against administrative decisions by government is a matter of civil

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85 Lokan, Transcript of Evidence, p. 109

86 Colgan, Transcript of Evidence, p. 415

87 Australian Radiation Laboratory, Supplementary Submission No. 21b, p. 1

88 Rankin, Transcript of Evidence, p. 539; Queensland Greens, Submission No. 15, p. 5; Sutherland Shire Council, Submission No. 20, p. 23

may help maintain the diligence of administrative decision makers, which is the basis for comments such as:

> there is no third party and no community right to enforce and supervise the regulatory process proposed at a federal level... There will be no right on the part of the community to go to the courts for an independent, unbiased, third-party review of regulatory decisions.[89]

2.101 This is particularly relevant to environmental matters (by contrast with matters involving private rights) because in environmental matters it is common that there is *no* individual with a close enough private 'interest', according to traditional legal definitions, to have the right to take action.

2.102 In general, the scope of those whom courts regard as having a close enough interest to have the right to take action on environmental matters has broadened over the years. Some Acts of Parliament also make explicit provision to the effect that 'any person may take action to restrain a breach of the Act'.[90] The Committee supports this principle. In the case of the proposed AIRP this approach is warranted not least to foster trust in the new scheme and to allay the concerns as to whether in practice the AIRP can be truly independent.

Recommendation 5

The Committee recommends that the proposed Australian Institute of Radiation Protection legislation should include a provision to the effect that 'any person may take action in court to restrain a breach of this Act'.

89 Rankin, Transcript of Evidence, p. 544

90 For example, the New South Wales *Environmental Planning and Assessment Act 1979,* section 123

A National Approach

2.103 The above discussion of the structure of the AIRP, its powers and independence, leaves open the question of *what* regulations it will be administering. The Committee considers that the details should reflect a consistent, nationally agreed scheme, devised by the Commonwealth and the States/Territories as equal partners.

2.104 Present State laws, though different in detail, have similar outcomes, and most of their differences probably reflect historical accidents rather than significant differences of opinion. Many witnesses at the Inquiry expressed a desire for greater national co-ordination, and this should be achievable.

2.105 The hospitals asked for:

> a national uniform approach to storing, handling and moving radioactive waste so that we all work by the same set of rules and there are no conflicts between various arms.[91]

2.106 Another examples of anomalies that can arise is:

> Because the activity of Americium [241] [in smoke detectors] is less that 40 Kbq [kilobecquerels] this quantity is exempt from the licensing provision of the [New South Wales] *Radiation Control Act* [1990]. However, wholesalers who sell smoke detectors are licensed by the NSW EPA [Environment Protection Authority].... [but] it is quite possible for detectors to be imported by wholesalers in other states and then sold to retailers which the EPA does not control.[92]

2.107 If nationally consistent regulations could be introduced simultaneously, it would prevent behaviour exploiting commercial advantage in states with different standards. The revision of the national codes in the light of ICRP 60 recommendations provides an excellent opportunity to implement nationally consistent regulations.

2.108 The previous section, discussing the structure of the AIRP, has assumed it will be a *Commonwealth* body - that is, a body set up under Commonwealth law, which will include State and community representation in a form yet to be finalised but subject to the Commonwealth's decision. The Committee accepts this scheme for the *regulatory* body because of the 'national security'

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91 Collins, Transcript of Evidence, p. 752

92 New South Wales Environment Protection Authority, Submission No. 45, p. 3-4

argument. ANSTO (for example) has functions that the Commonwealth could not allow to be put under the control of State governments or local councils. Accordingly the AIRP, in its role as regulator licensing particular activities of bodies such as ANSTO and Defence, must be a Commonwealth body.

2.109 The function of co-ordinating national standards in regulations - including the regulations which the AIRP will administer - is a rather different one, and it is here that a full degree of State and community participation is necessary. It was suggested that:

> Amalgamation of Commonwealth bodies into a single organisation is not likely to serve the needs of the states significantly better than is the case at present. The States need to play a significant role in policy formulation, direction and priority setting.[93]

2.110 This 'significant role' is primarily a matter of genuine consultation and co-operation at the administrative level - the Committee does not recommend detailed mechanisms here. It is not essential for all jurisdictions to have identical administrative details. Different administrative frameworks may prevent this. However, the outcomes of regulation should be compatible. The Committee believes that co-operative actions in setting national standards must be seen as completely distinct from the AIRP's unilateral role as a Commonwealth decision-maker on individual Commonwealth cases. Commonwealth regulations should conform to the nationally agreed scheme.

2.111 If the Commonwealth wishes to take leadership role in co-ordinating a national scheme, its initiatives must be timely. In this regard the Committee notes that revised international basic standards for radiation exposure published in 1991 (ICRP 60) were incorporated into the New South Wales *Radiation Control Regulation* in 1993,[94] but not reflected in new national standards until 1995.[95] The Committee is concerned at the time it has taken to produce new national standards, since delays may encourage individual States to 'go it alone', making it more difficult to achieve a nationally agreed system.

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93 Hartley B (1993) 'A National Institute of Radiation Protection and Nuclear Safety' *Radiation Protection in Australia*, 11 (1):3-7, p. 3

94 Smart, Transcript of Evidence, p. 772

95 National Health and Medical Research Council, *Recommendations for Limiting Exposure to Ionising Radiation (1995) and National Standard for Limiting Occupational Exposure to Ionising Radiation*

Recommendation 6

The Committee recommends that the Government review current procedures for developing national guidelines to ensure that they are prepared in a more timely manner.

Recommendation 7

The Committee recommends that the Commonwealth together with the States and Territories should act to expedite revision of national codes and development of a nationally agreed regulatory scheme.

Recommendation 8

The Committee recommends that Commonwealth regulation of Commonwealth bodies under the proposed Australian Institute of Radiation Protection legislation should conform to a nationally agreed scheme.

Compliance and Enforcement of Regulations

2.112 Some witnesses felt that the level of compliance and enforcement of radiation safety regulations is less than satisfactory. For example:

> the incentives for compliance are too few, and the penalties for non-compliance too rarely applied. With financial and

> productivity-related pressures steadily increasing, there is the risk that work practices will become less stringent.[96]

2.113 According to Townsville General Hospital:

> ... the wording and application of *the Queensland Radioactive Substances Act (1958* & 1978) to be ambiguous in parts, unclear in others and at times irrelevant. The administration of the act is largely left to the user, which may not be a bad thing if the act itself was not so ambiguous. There seems to be a genuine lack of commitment or understanding of the act by those officers whose primary function is to enforce and advise on this act. A lack of communication from these officers to the practitioners in the field is clearly present. In addition, it would appear that a surfeit of red tape and administrative requirements is severely hampering [t]he effectiveness of the application of this act.[97]

2.114 The threat to efficient compliance if the law is too complicated or has no Plain English guidelines was mentioned in paragraph 2.25 in connection with the national codes.

2.115 As well as the need for adequate resources for monitoring and enforcement in known situations, there is a potential problem with radiation sources of which the authorities were not aware:

> There are a lot of sealed, long-lived sources around which somebody can buy, and that is it. They vanish, and they could end up anywhere.[98]

2.116 In Western Australia an industrial radiation source was sold to a scrap metal dealer in Singapore after a mine had been decommissioned.[99] One waste contractor in New South Wales employs science graduates with radiation training as truck drivers because:

> many institutions actually submit waste for disposal which exceeds the threshold level and is therefore technically radioactive.[100]

2.117 Some States now have a system of registering all radiation sources.[101] The New South Wales Environment Protection Authority registers all fixed

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96 Royal Alexandra Hospital for Children, Submission No. 5, p. 3

97 Townsville General Hospital, Submission No. 62, p. 2

98 Collins, Transcript of Evidence, p. 763

99 Wong, Transcript of Evidence, p. 746-747

100 Ibid, p. 743

radiation gauges, which are inspected every two years.[102] Of particular concern to the Committee are comments made by the Queensland Department of Health:

> in the public interest, we have to be able to deal with illegal possessions. We have, as I say, a radiation surveillance program, but it is not as large as we would like ... Of course, establishing those informal links through other regulatory authorities, suppliers and all of that enables you to become aware of the situation ... we do hear about things that are going on in the industry ... It is unusual for something to slip through the whole system totally undetected, but it is not impossible.[103]

2.118 In New South Wales there are problems with the legal coverage in that radiation sources must be registered, but once considered waste, no longer have to be registered.[104] This is an example of the type of anomaly with which a nationally agreed scheme of regulation might deal.

2.119 A related matter is control of imports to Australia. Under the *Customs Act 1901* importation of radioactive materials requires a license; licenses are issued by the Australian Radiation Laboratory as delegate of the Australian Customs Service, and after consultation with State authorities. There was a concern that some materials, though legally declared to Customs, might not be recognised as radioactive by Customs officers; and once off the wharf they might disappear from the view of the State authorities who license possession and use.

> There are mechanisms by virtue of customs prohibited imports. While that does catch most of them, the fact is that things turn up from time to time that do not seem to have been caught by that net...[105]

2.120 For example, the Queensland Criminal Justice Commission discovered some stored X-Ray equipment in a disused Gold Coast shopping centre which had been imported from the United States. A Faxitron Radiographic Inspection System was confiscated by the Queensland Health Department because the owner did not have a license. Initially a TI-204 Thickness Gauge Probe was

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101 Collins, Transcript of Evidence, p. 763

102 Samuel, Transcript of Evidence, p. 389

103 Wallace, Transcript of Evidence, p. 719-720

104 Towson, Transcript of Evidence, p. 763

105 Wallace, Transcript of Evidence, p. 720

also seized but was later returned as it did not constitute a breach of the relevant State Act.

2.121 There is a need for better procedures in Customs to recognise radioactive materials, and for better co-ordination between Customs and State authorities so that materials are detected and once recognised, remain in view of State authorities.

Recommendation 9

The Committee recommends that the Australian Customs Service should consult with the Australian Radiation Laboratory and the State and Territory radiation authorities to develop better procedures for recognising radioactive imports and for co-ordinating licensing procedures.

Conclusions

2.122 The underlying theme of this chapter is consultation and co-ordination between Commonwealth and States/Territories - on national codes; on compatible regulations; on licenses to import and licenses to use. A nationally agreed scheme of regulation applying to Commonwealth bodies in the same way as it applies to other people would help allay public concerns about the 'regulatory gap' and would enhance confidence in the independence of the proposed Australian Institute of Radiation Protection.

2.123 Although, for national security reasons, the Commonwealth cannot be expected to put its radiation activities directly under the control of State authorities, it is important that they should be under the control of an independent Commonwealth body administering regulations that conform to an agreed national scheme. The regulator and the 'industry' will both be Commonwealth bodies. There will therefore need to be special care in designing the regulatory scheme so that the regulator is genuinely independent, and is seen to be independent, having regard to international best practice.

2.124 The Commonwealth regulator's unilateral role in making administrative decisions on the activities of Commonwealth bodies must be seen as completely distinct from the Commonwealth's co-operative role in achieving a nationally agreed regulatory scheme. In this the Commonwealth and the States must be equal partners. Now is an appropriate time to move towards a nationally agreed scheme because of the need to review standards in the light of the new international standards of ICRP 60 and the RADWASS program. If the Commonwealth wishes to take a role as facilitator in co-ordinating a national scheme, its initiatives must be timely, to pre-empt the situation in which one State decides to 'go it alone' while waiting for national standards to emerge.