CHAPTER 8

RISK MANAGEMENT AND COMMUNITY CONCERNS

Introduction

8.1 The objectives of radioactive waste management are to manage radioactive waste in a manner which protects worker safety, public health and the environment. Safety considerations are planned to ensure that only a small fraction of the permitted exposure limits can occur.[1]

8.2 The International Commission on Radiological Protection recommendations, on which Australian radiation protection regulations are based, assume a linear hypothesis; that is, the risks from exposure to ionising radiation are proportional to dose, without a threshold. The Australian Nuclear Association argued that the linear hypothesis almost certainly overestimates risks at low doses and low dose rates.[2] The ANA argues that low level radiation may be beneficial and points out that the adverse effects have not been scientifically proven.[3]

8.3 However, the linear hypothesis is generally accepted as a precautionary measure because of the uncertainty of the effects at low radiation levels. Using the linear hypothesis does have important implications for risk assessment and formulation of public policy. The absence of a threshold implies that there is no such thing as an absolutely safe level of exposure. Every increment of dose above zero, however small, results in an increment of risk. The question that must be answered is thus not 'What is the safe dose?' but 'How safe is safe enough?'

8.4 The Committee was told that radioactive waste management was based on the ALARA principle (as low as reasonably achievable, social and economic factors taken into account) which tries to balance the benefits against the harms of the use of radioactive materials.[4] However, this approach is regarded with mistrust by some, as being a way of justifying economically profitable strategies, without regard for best practice.[5] It was argued that the ALARA

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1 Fleischmann, Submission No 9, p. 3

2 Australian Nuclear Association, Submission No 16, p. 1

3 Ibid, p. 1

4 Carter, Transcript of Evidence, p. 824

5 Sutherland Shire Council, Submission No 20, p. 14

principle is unscientific and should be replaced by ALATA (as low as technically possible) which achieves the safest possible outcome.[6]

Risk Management

8.5 The Committee agrees that there can never be a complete absence of risk in radioactive waste management policies. It was pointed out that:

> Safety can never be unconditionally guaranteed in any process. The only procedure that is absolutely safe is one that never starts.[7]

> Nothing in life is totally without risk. The whole idea of the codes, of the regulations, of the management approach is to minimise that risk to the community.[8]

> adequate safety does not consist of the complete absence of risk. This is quite an impossible concept and we cannot live in this world without accepting some levels of risk. ... we are exposed to risks from industries which apparently we accept, like transportation and chemical industry, the supply of gas, water, electricity etc.[9]

8.6 Quantitative risk analyses are used to establish the guidelines for most safety procedures, including the codes used by governments for radioactive waste management. They are divided into two parts: risk assessment, which attempts to measure the risk associated with the activity, and risk level, which is determined by comparing the activity to other risk producing agents. The International Atomic Energy Agency considers that:

> The standards recognise that radiation is only one of many sources of risk in life and that the risk associated with radiation should not only be weighed against experiences but also viewed in perceptive of all the risks.[10]

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6 Medical Association for the Prevention of War, Submission No. 51, p.2

7 Fleischmann, Submission No 9, p. 2

8 Makeham, Transcript of Evidence, p. 688

9 Higson, Transcript of Evidence, p. 605

10 International Atomic Energy Agency (1994) *International Basic Safety Standard for Protection Against Radiation and the Safety of Radiation Sources*, Safety Series No. 115-I, Interim Edition, Vienna, Preface, p. 1.

8.7 Risk analysis relies on probability; it seeks to quantify both the probability and the magnitude of adverse consequences that individuals, populations, or ecosystems might suffer from specific hazards.[11]

8.8 Mr Fleischmann said that:

> The level of safety (or hazard) can be assessed on the basis of both experience and considered opinion and can then be compared with safety assessments for other procedures. ... These levels of risk can be given numerical values that provide the chances of a fatal accident or of a severe injury.[12]

8.9 The concept of what constitutes an acceptable risk is based on an attempt to measure the risk or hazard associated with the use of a substance or technology. To this must be added consideration of the benefits to society of using the substance or technology and the cost to society of reducing the risks.[13] For example, compulsory X-rays for tuberculosis were not required once the risk to the population of getting cancer from the radiation was greater than the risk of getting tuberculosis. Witnesses who strongly opposed radioactive procedures in Australia maintained that, in general, the risks far outweigh the benefits.

8.10 The Report of the Research Reactor Review referred to these risks:

> The risks of radiation-induced cancer are well studied and well documented and are the basis of all radiation protection standards and systems. The public perception is that such risks are high; but they are, in fact, relatively low.[14]

8.11 The International Commission on Radiological Protection confirmed this view:

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11 Institute of Energy and Environmental Research (1995) *Science for Democratic Action* 4(1): p.6

12 Fleischmann, Submission No 9, p. 2

13 Gail de Planque E (1994), 'The Science and Philosophy of Developing Programs for Radiation Protection', Paper presented at the Institution of Engineers Australia Australian Nuclear Association, *9th Pacific Basin Nuclear Conference*, 1-6 May 1994, Sydney, p. 527

14 Research Reactor Review (1993) *Future Reaction, Report of the Research Reactor Review*, August 1993, pp. 146-7

> All those concerned [with radiological protection] have to make value judgments about the relative importance of different kinds of risk and about the balancing of risks and benefits.[15]

8.12 However, the Committee was given the example of the Rasmussen report in 1974 in which the New South Wales Government's policy for hazard risk analysis indicated that the Kurnell AOR Caltex refinery had a risk of one in one million of a fire; it has recently had two fires.[16]

8.13 Also, the Committee was told that statistically it would be impossible to prove one way or another whether low levels of radiation have a deleterious or a beneficial impact on humans.[17] Over the next 30 to 40 years it can be expected that one million cancers will result from the accident at Chernobyl. However, in a population of 250 million this will not be statistically detected. Therefore sufficiently large sample sizes and good health records would be needed to detect any significant changes.

8.14 Dr Lokan told the Committee that it is difficult to detect the effects of the atomic bomb on the Hiroshima community, in which the fatalities measured 500 out of 100 000 under conditions where exposures were very high.[18] In Australia, as the number of people working in the radiation field is quite small, statistical analysis would be insignificant.

8.15 The Australian Radiation Laboratory believes that the exposure off site from the ANSTO facilities are so low that any effects would be undetectable.[19] The Committee was told, however, that a risk assessment conducted in relation to the air emission at the Lucas Heights Research Laboratories has not been made public to enable peer review.[20]

8.16 The Committee was told that in Australia it would be difficult to have a sufficiently controlled population for the purposes of collecting meaningful statistics on population exposure to radiation.[21] It would be impossible to prove scientifically, based on statistics, that very low levels of radiation either

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15 *International Commission on Radiological Protection*, ICRP Publication 60, *1990* Recommendations of the International Commission on Radiological Protection, Pergamon Press, p. 67

16 Robertson, Transcript of Evidence, p. 579

17 Samuel, Transcript of Evidence, p. 410

18 Lokan, Transcript of Evidence, p. 111

19 Lokan, Transcript of Evidence, p. 111

20 Sutherland Shire Council, Submission No. 20, p. 22

21 Burch, Transcript of Evidence, p. 501

did or did not have a deleterious impact on humans.[22] Mr Fleischmann pointed out, however, that if statistics are not used then there is virtually nothing.[23]

Community Perceptions of Risks

8.17 In the evidence presented to the Committee, there was a clear divergence of views between scientists and those representing the community on the perception of risk from radioactive waste. Radiation is a scientific matter, but public perceptions value judgments play an important role in weighing the risks against the benefits in radiation protection.

8.18 The Committee believes that the scientific and engineering considerations in determining the siting of a national facility will prove to be less challenging than convincing the local community of its acceptability. Attempts by the Department of Radiation Oncology at the Royal Hobart Hospital to establish a repository have been frustrated by the public's perception of risk.[24] The accomplishment of radiation management objectives is viewed very differently by the public and the experts.

8.19 The point was emphasised that although there was no technical urgency in removing the radioactive waste held at Lucas Heights, the local community felt differently.[25] In relation to interim storage facilities for radioactive waste at many sites in Australia, Mr Davoren said:

> There is also the very real issue of concern in a number of communities in built-up areas of Australia at the storage of radioactive waste. Technically, these things do not present a serious hazard, but the reality is that people are upset about it and that reality has to be addressed.[26]

8.20 Mr John Wallace told the Committee that:

> Public perception of risk is something that is going to take a long time to change, so any education program has to realistic in its targets and expectations ... It is not going to turn the world around no matter how much you invest in it[27]

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22 Samuel, Transcript of Evidence, p. 410

23 Fleischmann, Transcript of Evidence, p. 494

24 Chappell, Submission No. 70, p. 1

25 Jostsons, Transcript of Evidence, p. 72; Rolland, Transcript of Evidence, p. 79

26 Davoren, Transcript of Evidence, p. 32

27 Wallace, Transcript of Evidence, p. 717

8.21 A number of factors must be considered in dealing with people's perceptions of risk:

- people's perceptions of risk generally undervalue high risks and over value low risks compared with levels estimated by various risk analysis techniques;
- risk managers may need to accept the reality of perception rather than the reality of the mathematics;
- perceived risks can damage the quality of life as much as the real risk;
- decisions must also take into account popular opinion as well as technical advice;
- perceptions of risk can be distorted by factors such as who imposes the risk, who benefits from it, how many are affected, how dreaded the outcome is, outrage factors, whether risks can be avoided or are part of our way of life and so on; and
- risk can be acceptable provided people are aware of the risk, there is some commensurate benefit and the acceptability increases as the odds increase.[28]

Community Concerns

8.22 A United States study by Hinman found that radioactive waste causes the second or third highest feelings of dread among the public, greater than nuclear power itself, despite the fact that waste risks form the smallest component of the total nuclear fuel cycle.[29]

8.23 It was suggested that public concerns in Australia about radioactive waste stem from the following perceptions:

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28 Fleischmann, Submission No. 9, p. 3; Selinger B (1995) 'Changing the perception of risk' *Search* 26(10): 313-315, pp. 313-314; Royal Alexandra Hospital for Children, Submission No. 5, p. 3

29 Hinman G, Rosa A, Kleinhesselink R and Lowinger T (1993)' Perception of Nuclear and Other Risks in Japan and the United States', *Risk Analysis 13(4):* 449-456; quoted in Inhaber, H (1994) 'Risk Analysis and Solving the Nuclear Waste Siting Problem', Paper presented at Institution of Engineers Australia and Australian Nuclear Association, *9th Pacific Basin Nuclear Conference*, 1-6 May 1994, Sydney, p. 519

- not enough is known about radioactivity. Nobody can promise that unforeseen events will not happen;
- the effects of a nuclear accident are disproportionate to any quantified risk associated with radioactivity. There is perceived potential for catastrophic disasters;
- no kind of burial or containment is safe;
- any unseen, unfelt hazard is more threatening than one you can see and grasp. Exposure may go unnoticed at the time but may have effects which go even across generations. The risk to future generations cannot be predicted;
- if it has to be safely contained and removed far from human habitation, it must be extremely dangerous;
- radioactive waste management has to be controlled for thousands of years. Nobody can predict the certainty of such management;
- transporting waste across land, with the possibility of spillage, will detract from the value of the land;
- rural areas will become a dumping ground for cities' problems;
- the government cannot be trusted to make public all the facts;
- the government is not sufficiently accountable; and
- nuclear waste disposal is a threat to civil liberties.

8.24 Public perception of the dangers of radioactive waste were considered by some as linked to the origin of nuclear activity in war:

> Because there is a perception that all radiation is man-made, visions of the bomb seem to be the first thing that comes to people's minds. I think that is poor because firstly it creates a panic mentality ... which blocks the opportunity to rationally educate people about what they should be doing either for their own safety relating to radiation matters or for where it is appropriate for radiation to be used.[30]

30 Schache, Transcript of Evidence, p. 287

8.25 Evidence to the Committee suggests that radiation is principally seen by the public as something intangible and therefore more threatening, and as having such long term effects that decisions made now could affect many generations to come. The latter point particularly reflects the value basis of the public perception.

> I am aware that it can take up to 40 years for health effects to show up in the population so I think what we have seen so far is just the tip of the iceberg. I am very concerned about what is going to show up in the future.[31]

> People have been told constantly that there is no problem with low level waste. Yet, repeatedly, we are also told that low level radioactive wastes cause mutation of the cells, increase the aging capacity of the body, and increase leukemias, birth defects, breast cancers and general lung cancers for hundreds, possibly thousands of years.[32]

> I feel that we have a moral responsibility - to not only the rest of the State but to our unborn children and grandchildren for whom we caretake this planet - to protect our river from radioactive contamination likely to cause cancers for thousands of years.[33]

8.26 These views are confirmed by a statement about risk in the Research Reactor Review, which asserts:

> Heightened perceptions of risk usually relate to new or unfamiliar risks, where the risks are thought to be beyond the individual's control, where the effects may be delayed for a long period, where the detection of danger is impossible because it is invisible and odourless and where children's health is involved.[34]

All of these criteria apply to radioactivity.

Community Concerns in Relation to the Transport of Radioactive Waste

8.27 Concern was also evident in relation to transporting radioactive waste, despite the fact that no accidents with serious radiological consequences had ever been encountered in the transport of radioactive waste anywhere. This

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31 Ward, Transcript of Evidence, p. 592

32 Lannstrom, Transcript of Evidence, p. 190

33 Lannstrom, Submission No 29, p.1

34 Research Reactor Review (1993) *Future Reactions Report of the Research Reactor Review*, August 1993, p. 146

may be attributed to a history of incidents and disputes involving the transportation of other hazardous wastes, eg pesticides.

8.28 When radioactive waste was to be transported from Sydney to Woomera, a petition of 3000 signatures was collected asking the South Australian Government to make the Riverland area a Nuclear Free Zone to stop transport of radioactive waste through the area.[35] Ms Lannstrom spoke to almost one thousand people, the majority of whom were angry.[36]

> The Riverland communities have since begun a petition: their concern is that they have not been involved in any sort of consultation about the development of the appropriateness of the route and the risks that the transportation poses to them as a community.[37]

8.29 The Committee was told that when a community is given assurances that everything will be all right and then there is an incident such as the one at Port Augusta, the community is rightly concerned that they not have been told the complete story.[38] It was also suggested to the Committee that the community should be more informed about the transportation of radioactive waste and then there may be more acceptance of it.[39]

Community Concerns in Relation to the Lucas Heights Research Laboratories

8.30 Professor Baxter, the then Chairman of the Australian Atomic Energy Commission, told the Sutherland Shire Council and the community in the 1950's that there would be no emissions to air and water from the Lucas Heights site.[40] It was pointed out by the Sutherland Council that this was an example of misinformation right at the beginning of the process.[41]

8.31 The Sutherland Shire Environment Centre expressed its concern about the lack or inadequacy of epidemiological studies being carried out on radiation

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35 Lannstrom, Submission No. 29, p. 1

36 Lannstrom, Transcript of Evidence p. 197

37 Hine, Transcript of Evidence, p. 148

38 Ibid, p. 180

39 Botten, Transcript of Evidence, p. 183

40 Rankin, Transcript of Evidence, p 537

41 Ibid, p. 537

workers and communities adjacent to ANSTO facilities.[42] Mr Robinson told the Committee that the research reactor review:

> requested an epidemiological study together with a review of the medical histories of all workers and ex-workers in the plant. ANSTO put up a furphy in response to them, claiming that there were such privacy implications to anonymously reviewing medical histories that it would have created so-called industrial relations problems on the site.[43]

> Residents have been calling for adequate health studies for well over 15 years.[44]

8.32 ANSTO referred the Committee to two recent studies which showed no significant differences in the health of residents of Sutherland Shire compared with that of other residents of New South Wales. A detailed survey of the health of workers at Lucas Heights in the mid-seventies also concluded that there was no evidence of internal effects of exposure to radiation.[45] ANSTO is participating in an international study of nuclear industry workers which is being conducted in 14 countries.[46]

8.33 Technical difficulties at ANSTO have allowed community concerns to persist. Attempts by ANSTO to solidify high level molywaste from the Australian Radioisotopes so that it is stabilised and safer have been going on for some years.[47] In 1987 this was recognised as a significant safety problem. Solidification has still not been achieved and ANSTO is now looking at alternative possible processes from overseas.[48] Some in the Sutherland community claimed to have heard about radioactive accidents with fuel rods coming out of the reactor at Lucas Heights.[49]

8.34 The Committee was told that the Sutherland Shire Environment Centre had door knocked residents of Lucas Heights and Menai. It claims people had been told by real estate agents that the reactor would soon be closed.[50] There

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42 Sutherland Shire Environment Centre, Submission No. 7, p. 6

43 Robertson, Transcript of Evidence, p. 557

44 Rankin, Transcript of Evidence, p. 557

45 Australian Nuclear Science & Technology Organisation, Supplementary Submission No 32a, pp. 7-8

46 Australian Nuclear Science & Technology Organisation, Supplementary Submission No. 32b, pp. 8-9

47 Smith, Transcript of Evidence, p. 564

48 Ibid, p. 565

49 Ibid, p. 547

50 Priceman, Transcript of Evidence, p. 596

were also claims that to avoid widespread panic, the general community had not been informed that iodine tablets to be taken in the event of exposure to radiation, were kept at Engadine Police Station.[51] Nevertheless real estate values in the area have remained high.[52]

8.35 One submission stated that the exemption of ANSTO from State legislation:

> clearly rekindled the widespread and deep distrust of ANSTO which had tended to decline in recent years.[53]

8.36 Sutherland Shire Council claimed that its community and any other communities affected by radioactive waste management practices should have some representation on the appropriate decision-making bodies.[54] Mr Smith from the Sutherland Council is a member of the ANSTO Safety Review Committee. However, he is unable to report to Council on confidential information that is tabled at the Committee.[55] The former Mayor pointed out that the existing Safety Review Committee is to be abolished and that after the establishment of the proposed Australian Institute of Radiation Protection is set up, she believed that there would be no community representation.[56]

8.37 Community representatives are also concerned that important information may be being withheld. The Committee was told that neither the Interdepartmental Committee report from 1994 which considered the management of high level waste, nor a risk assessment of the air emissions from Lucas Heights Research Laboratories, have been made available to the public.[57]

Community Concerns in Relation to the Mt Walton East Site

8.38 There was significant community opposition to the establishment of the Mt Walton East repository. Petitions containing approximately 9000 signatures were collected in relation to the proposal.[58] The site is in a mining area where

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51 Ward, Transcript of Evidence, p. 596-597

52 Priceman, Transcript of Evidence, p. 597

53 Women Opposing Uranium Mining, Submission No. 39, p. 3

54 Sutherland Shire Council, Submission No. 20, p. 23

55 Rankin, Transcript of Evidence, p. 538

56 Ibid, p. 538

57 Sutherland Shire Council, Submission No. 20, p. 21

58 Botica, Transcript of Evidence, p. 852; Goldfields Against Serious Pollution, Submission No. 57, p. 1

it was claimed that people do not publicly oppose the site for fear of losing their jobs.[59]

8.39 The Committee was told that the intention at the time of the establishment of the Mt Walton Intractable Waste Facility was that:

> There was always a commitment that the community would be involved, there would be the community consultative committee and they would be directly involved in what was going on out there. They would know what is happening all the time and we would know what is going out to Mount Walton and when it would go.[60]

8.40 Prior to the construction of Mt Walton the community took a considerable length of time to develop a degree of trust.[61] In November 1988, before the establishment of the Mt Walton East facility, a Community Liaison Committee was set up.

> This process allowed a full and frank exchange of information and views between the officers representing State Government and other members of the Committee. While this has been successful in building some level of trust between members, on a one-to-one basis, there were consistent ongoing concerns expressed by the community group members.[62]

8.41 The efficacy of this Committee, however, was brought into question in one submission:

> In actual fact the community liaison process was totally manipulated by the Health Department ... The Health Department orchestrated the whole thing, allowing us only an avenue to 'question, growl and complain.' And when the meetings were over the Health Department went ahead and did exactly what they were going to do anyway. The committee had no decision making powers nor could pass any recommendations.[63]

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59 Botica, Transcript of Evidence, p. 852

60 Taylor, Transcript of Evidence, p. 857

61 Munslow-Davies, Transcript of Evidence, p. 310

62 Hartley, B *et al* (1994) 'The Establishment of a Radioactive Waste Disposal Facility in Western Australia for Low Level Waste', Paper presented at the Institution of Engineers Australia Australian Nuclear Association, 9th Pacific Basin Nuclear Conference, Sydney, 1 -6 May 1994, p. 909

63 Peebles, Submission No 43, p. 6

8.42 The Committee was told of a long saga of public relations difficulties concerning the Mt Walton site. The community living adjacent to Mt Walton was told by the Commissioner of Public Health that no new industries relying on the Mt Walton facility would be established; rather it was for radioactive and other hazardous material which had accumulated to that point and which amounted to no more than a few hundred weight.[64]

8.43 The community became aware of a proposed increase in the dimensions of the Mt Walton site after the proposal appeared on the Department of Minerals and Energy's Tengraph computer system in July 1995.[65] At community liaison meetings the changes were denied by the Acting Director of the Waste Management Division on 14 August and 30 October 1995 at.[66] On 9 December 1994 that officer had written a letter to the Department of Land Administration stating that:

> I can also confirm that we will be pursuing the extension of the reserve to the north west as outlined in your earlier correspondence, and have reached informal agreement with DOME on this. The matter, at a policy level, will be dealt with in a pending Cabinet minute which I hope will set general government policies for the use of the site.[67]

The Committee was given copies of letters dated 11 April 1995 and 5 May 1995 which commented on the proposed extension.

8.44 The community liaison meetings are run by the managers of the Mt Walton East site. This situation is unacceptable to some members of the liaison committee.[68] The liaison meetings are a requirement of the Environmental Protection Authority approval and it was suggested that an independent party such as the EPA should manage the community liaison process, not the proponent.[69]

8.45 The community living adjacent to the Mt Walton East site expressed its concern that this site may be used for a national repository because it is part of

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64 Cohen, Transcript of Evidence, p. 318

65 Peebles, Transcript of Evidence, p. 834

66 Peebles, Transcript of Evidence, p. 834

67 Schuster, Letter to Department of Land Administration, 9 December 1994, p. 1

68 Peebles, Transcript of Evidence, p. 835

69 Ibid, p. 835

the Jackson Region. The community's concerns were heightened by a number of events:

- the federally funded upgrade of the Esperance port facilities can now handle radioactive materials;
- the federally funded upgrade of the Jaurdie railway siding (near Mt Walton) at a cost of $1.5 million;
- alleged comments by the former Minister for the Commonwealth Department of Primary Industries and Energy that the Commonwealth Government was not prepared to pay the price asked by the Western Australian Government to dispose of waste at Mt Walton East, despite the fact that the site was to be for Western Australian waste only;
- the failure of the Western Australian Government to incorporate a clause in the legislation designating the Mt Walton site for Western Australian waste only;
- the number of changes that have already occurred in the proposed uses of the site for disposal;
- the proposed extension to the existing Mt Walton East area;
- the announcement by the Waste Management Division that they had $1 million dollars to spend at the site but were not prepared to reveal the purpose for which the funding would be used;
- the support of the local Federal member for the project; and
- the listing of the Jackson Region as one of the eight preferred sites.[70]

8.46 Of particular concern to the community was the disposal of radioactive waste at Mt Walton East which was of a higher level than that revealed in the public consultation process.[71] This was explained as confusion of two inventory lists,[72] items being mislabelled[73] and a data management error.[74] It

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70 Peebles, Transcript of Evidence, p. 839-844; Botica, Transcript of Evidence, p.853; Taylor, Transcript of Evidence, p. 865

71 Peebles, Transcript of Evidence, p. 839

72 Schuster, Transcript of Evidence, p. 247-248

73 Hewson, Transcript of Evidence, p. 250

74 Hutchinson, Transcript of Evidence, p. 384

was stated that this type of problem still undermines the community's confidence in the Government's management ability.

8.47 Mr Ian Taylor, who was the Western Australian Minister for Health at the time the Mt Walton project commenced, told the Committee that:

> There seems to me to be an unnecessary degree of secrecy surrounding what is happening at Mount Walton ... In more recent times ... the organisation that looks after it has denied any knowledge and involvement on proposals to expand the size, yet questions in parliament show quite clearly that they have been involved. All of those sorts of things are the absolute wrong way to approach these sort of issues. There is only one way to approach it - that is, you have to be absolutely open with people ... unless it is open and unless they know what is going on, they feel they are being conned.[75]

8.48 This was reinforced by the Mayor of Kalgoorlie-Boulder who said that:

> People want to be told up front what is going on and they do not want the issues sidelined.[76]

8.49 Mr Taylor told the Committee that:

> We will use our rail system and anything else we can use to stop these wastes [from other states] being transported to Western Australia. We will not accept them because they are not our responsibility ... They [Commonwealth Government] may be allowed to overrule but what they will not overrule is the overwhelming community view that this is not for us to deal with, I believe the entire city would not accept that. Quite frankly, they would not get the waste through. People would sit on the railway line and blockade the railway line to stop those wastes coming through.[77]

8.50 The local Mayor also told the Committee that the City of Kalgoorlie-Boulder is unanimously opposed to the establishment of a national radioactive waste repository in the Goldfields Region.[78] He went on to say that:

> The people of Kalgoorlie-Boulder have galvanised themselves against the establishment of a radioactive waste facility in our area.

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75 Taylor, Transcript of Evidence, p. 857-858

76 Yuryevich, Transcript of Evidence, p. 866

77 Taylor, Transcript of Evidence, p. 863

78 Yuryevich. Transcript of Evidence, p. 865

> It has been the biggest single issue that I have been involved in the seven years that I have been in local government.
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> The situation has not changed. The people of Kalgoorlie-Boulder as one, are opposed to it and will continue to oppose it. What Mr Taylor mentioned before - about having the unions support us in blockading the railway line, and the Esperance port if need be, to stop the waste of the rest of Australia moving into Kalgoorlie-Boulder and the surrounding district - has already been mooted. That is not an idle statement.[79]
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> Any failed site selection procedure will simply make the next approval much more difficult.[80]

Community Concern in Relation to the Esk Facility

8.51 Initially there was community opposition to the Esk Radioactive Waste Storage Facility, but the community has since been included in the consultation process. It appears that the Queensland Government has accepted a number of the conditions requested by the community. The management committee has an equal number of representatives from both the Department and the Shire Council.

8.52 The Queensland Government announced that the Esk facility would be used to store waste which had previously been stored under the Storey Bridge and there was only 11 cubic metres of waste.[81] The Committee was told that it now appears that the Esk facility will be receiving waste for the next 100 years and that waste is doubling every five years.[82]

Community Consultations

8.53 Principle 10 of the Declaration on Environment and Development 1992, known as the Rio Declaration, to which Australia is a signatory, states:

> 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

79 Yuryevich. Transcript of Evidence, p. 865

80 Hartley, Submission No. 24, p. 6

81 Mahoney, Transcript of Evidence, p. 620

82 Ibid, p. 620

> communities, and the opportunity to participate in decision-making processes.

8.54 The Women Opposing Uranium Mining were concerned that:

> the prevailing ethos is one that sees community consultation merely as a criteria to be met rather than a pivotal aspect of waste management policy development.[83]

8.55 In a comprehensive report to the previous Federal Government in 1984, *Australia's Role in the Fuel Cycle,* Australian Science and Technology Council recommended:

> Radioactive waste methods must conform to the highest practicable standards and be acceptable to the general public. Because of public concern over the hazards of radioactivity, there must be an emphasis on a consensus approach to decisions in relation to nuclear waste management with responsibility accepted jointly by government and the industry producing the waste.[84]

8.56 Allan & Stephens stated that:

> The general public and potential host communities are important constituencies which contribute to the decision-making when identifying options for waste management. Building public confidence in a program is therefore an important part of its development. The process to be followed in reviewing the program and deciding on future steps should involve consultation with, and the active participation of, the communities and public affected. Decision-makers need to have a mechanism to take public concerns into account when advancing major projects such as a disposal facility.[85]

8.57 Many authorities, both in Australia and overseas, have echoed this approach. For example, the French nuclear authority (ANDRA) has become an independent public service company with a mandate for three inter-related programs: information, disposal and research. Public information must be provided on all waste types. A national waste register is being established, collecting data from all waste-generating facilities, and making the information widely available. Community participation in the French search for a suitable

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83 Women Opposing Uranium Mining, Submission No. 39, p.2-3

84 Australian Science and Technology Council (1984) *Australia's role in the Fuel Cycle,* p. 19

85 Allen C and Stephens M (1994) *Status of Canada's Nuclear Fuel Waste Management Program: On the Threshold of the Environmental Review of the Disposal Concept*, Institution of Engineers Australia and Australian Nuclear Association, 9th Pacific Basin Nuclear Conference, Sydney, 1-6 May 1994, p. 854

repository (*Waste Act 1991*), includes economic incentives up to about 60 million francs a year, to be provided to local communities to assist in its development and for environmental protection.

8.58 The Committee was told that the public should have the opportunity to contribute to any discussions on radioactive waste storage or disposal. This should include decisions on retrievability, siting, monitoring and measures of institutional control. Information on any transport of radioactive waste should be openly available, including the content of the load, the route to be taken and the safety precautions in place. The Committee sees the lack of information on radioactive waste as partly the cause of public mistrust of both State and Commonwealth governments.

> Policies pertaining to radioactive waste management must be developed with the full participation of the public. The public does have the right to know what is going on. We believe there are cover-ups.[86]

> It is of great concern to us that, through the community liaison process, the community has not been able to access its full democratic rights.[87]

8.59 There is an awareness by communities now that enables them to obtain government documents which would not have been previously available. If a particular site is chosen by the Federal Government for a national repository the Committee believes that the Government should be straight forward and liaise with the community about their requirements for the storage of the nation's radioactive waste at that site.

> Whilst history shows continued pressure from public on government will result in higher safety standards and there appears to be no reason why the pressure should be assumed to be exhausted.[88]

8.60 The Committee received requests for much more detailed information to establish public trust:

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86 Mahoney, Transcript of Evidence, p. 629

87 Peebles, Transcript of Evidence, p. 835

88 Organisation for Economic Cooperation and Development (1995) *Nuclear Safety Issues in OECD Countries* - Nuclear Energy Agencies, p. 18

> We would like to recommend that an annual report of radioactive waste is prepared and to be made available on request to concerned individuals or public organisations.[89]

8.61 One of the recommendations of the Pacific Nuclear Council's Taskforce on the Management of Low Level Radioactive Waste states:

> The importance of early and good public information programs should be recognised as essential for radioactive waste management to be successfully accomplished. A pro-active public information program is more effective than a retrospective program after there has been public opposition to a particular management proposal.[90]

8.62 The Committee believes that a decision to construct a national repository or store should involve adequate consultation with the public.

Recommendation 19

The Committee recommends that the public, particularly the local community, should be involved in consultation on the construction of a national storage facility and the transport arrangements to any such facility.

8.63 Further, should there be contemplation of a change to the type or quantity of radioactive material stored there, there should be a further public consultation process. The community should also have input into the ongoing management of the facility.

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89 The Queensland Greens, Submission No 15, p. 5

90 Pacific Nuclear Council (1995) *The Management of Low Level Radioactive Waste,* Report to PNC Meeting Tokyo April 1995, Taskforce on the Management of Low Level Radioactive Waste, March 1995, p. 30

Recommendation 20

The Committee recommends that a management committee for the facility be established including an equal number of representatives from the local community and the users of the national storage facility, together with a representative from the Australian Institute of Radiation Protection and one from the relevant State or Territory authority. This Committee should oversee the design, construction and management of the facility.

8.64 The Committee believes that as part of the accountability process for the management of the radioactive waste facility the managers should be required to produce an annual report to Parliament.

Recommendation 21

The Committee recommends that the managers of the national storage facility be required to produce an annual report to Parliament.

Community Confidence

8.65 The Committee was told that adequate government accountability to the public will be a major factor contributing to community satisfaction with the management of radioactive waste in Australia. To establish credibility, the regulator must be seen to be independent and apply criteria which are relevant through credible and comprehensive assessment procedures. The community must be convinced that the entire process is subject to independent assessment.[91]

91 Botten, Transcript of Evidence, p. 184

> An independent body would be much more likely to convince me than having that information come from ANSTO, which obviously has a vested interest. Also, I would probably want some supporting evidence from overseas...[92]

8.66 The Committee believes that governments must also be seen to be minimising the amount of radioactive waste created, particularly by ANSTO but also by hospitals. This can be achieved by implementing effective justification procedures, using alternative technologies and recycling or reusing sources where possible. The public must feel confident that these measures are being actively pursued.

8.67 The 1991 ICRP 60 recommendations for public and occupational radiation protection require more stringent local regulations to protect people from ionising radiation. The fact that scientists have deemed it necessary to upgrade safety standards has instilled doubt in people's minds.

8.68 The Committee was told that public confidence in the governments' ability to manage radioactive waste is also being undermined by the failure to decide on a long term strategic plans:

> The lack of defined plans for the long term management of this waste, reinforced by lack of public understanding of the significant differences in potential hazards from different radioactive wastes, has had an important effect on public confidence.[93]

8.69 The Committee believes that undue secrecy has had a negative effect on community trust and organisational credibility.

> When we asked for further information from the CSIRO regarding their soil, we were told they were not allowed to talk to us. What does that say to you? It says to me there is a cover-up.[94]

8.70 An article in the *Journal of the American Medical Association* confirms the perception of undue secrecy and also criticises the confident approach of scientists.

> In part, these problems reflect a growing public distrust in governmental agencies that has been characterised as 'the decline of deference.[95]

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92 Ward, Transcript of Evidence, p. 598

93 Uranium Institute (1992) 'The management of radioactive waste' *The Mining Review* (August 1992): 8-15, p. 11

94 Gosling, Transcript of Evidence, p. 348

8.71 The Committee was also told that confusion associated with the classification of radioactive waste is an important element in the public's perception of the dangers inherent in radioactive waste management. This is particularly so where the public believes it is being deceived.

> One method used by the nuclear industry to attempt to reduce the problem of nuclear waste stocks is to alter the standards used to define waste, e.g. by changing intermediate level to low level or high level to intermediate.[96]

8.72 Of the three classes of radioactive waste, low level waste has up until now made up the greatest volume of waste generated in Australia, and much discussion about management of radioactive waste has centred on this category. The waste includes a very wide variety of material, from contaminated clothing to large volumes of liquid waste. When terms such as 'low level' are used in discussion to avoid quantitative detail, because the classification of radioisotopes is a complex issue, problems occur. It is therefore considered not surprising that reports of higher level material being included in so-called low level waste have been easily believed by the community.[97]

> It is said to be low level, but I notice the company [Rhone Poulenc] is now calling it medium level waste; and a lot of people would think it is more than medium level waste.[98]

8.73 Evidence to the Committee indicated that a clearer understanding of waste classification by the public would be aided by a more detailed breakdown of the low level waste category, closer supervision of boundaries between the categories and a better information policy. Information about the classification system should be widely disseminated in plain English accessible to the non-scientific community:

> a variety of units of measurement are used, making it difficult for a lay person to feel confident that they have understood the basis of the material.[99]

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95 Hendee W (1993) 'Disposal of Low-Level Radioactive Waste', *Journal of the American Medical Association* 269(18):2405-6

96 Sutherland Shire Environment Centre, Submission No 7, p. 2

97 Friends of The Earth, Submission No 47, pp. 22

98 Cohen, Transcript of Evidence, p. 318

99 Environment Centre Northern Territory Inc, Submission No. 35, p. 1

The Role of the Media in Enhancing Community Concerns

8.74 Some misinformation was blamed on the media which seems to present nuclear-related activities in a negative light. For instance, during the controversy over the transportation of radioactive waste from Sydney to Woomera, the print media gave considerable coverage to the quantity of waste being transported and the regions through which it was transported, but little to its composition or the protection measures taken. Coverage was given to the alleged leakage in January 1995, but the fact that it was a false alarm was barely mentioned. Coverage was given to public comment criticising the project but reassurances from government or scientists received little media attention. More recently, during the French nuclear testing program, television channels screened several programs highlighting the dangers of radioactivity.[100]

8.75 The role of the media during the transportation of radioactive waste to Woomera was summarised to the Committee as follows:

> The media really has raised everybody's concern on it, I think, because they reported probably the negative side of it more than giving us in detail what precautions have been taken.[101]

8.76 The Australian Radiation Laboratory and the Department of Industry Science and Technology believed that the precautions were adequate. A transport plan does not eliminate the risk of incidents but minimised the risk to acceptable limits and specifies action to be taken in the event of a mishap. In general, radioactive incidents are considered newsworthy, and many in the Australian community have consequently been made aware of the negative experiences with waste leaking from facilities in the United States.

Public Education

8.77 The Committee was told that community concerns may be partly allayed by appropriate public education programs. These programs should:

- discuss the benefits of nuclear medicine for diagnosis and treatment, and the inevitable consequence of a certain amount of waste creation;

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100 Walshe, Transcript of Evidence, p. 595

101 Pitt, Transcript of Evidence, p. 165

- include discussion on waste minimisation; they should explore the likelihood of technological advances reducing the dangers of radioactivity;
- state the importance of Australia's place in international research so that we may contribute with credibility in determining international best practice; and
- establish international safety regimes, even though we do not use nuclear power for energy.

8.78 The view was presented that:

> All Australians, one way or another, have benefited from the medical, chemical, agricultural and industrial processes which have produced or used them.[102]

8.79 Dr William Hendee said:

> Surveys have shown that when laypersons are informed about the beneficial uses and low risks of tracer quantities of radioactivity, they support the availability of disposal facilities for low-level radioactive waste. Yet, when siting of a facility is proposed in a particular state or community, opposition invariably arises that in part expresses a 'not in my back yard' (NIMBY) reaction and in part reflects past packaging and transportation incidents, legitimate concerns about requirements, such as isolation of radioactive waste from the environment and the need for continuous monitoring, and fears that expenses of operating the facility will drive disposal costs to new heights.[103]

8.80 In conclusion, achieving an outcome for radioactive waste management in Australia acceptable to the community, may depend on a better public knowledge of the facts; appreciation and inclusion of community concerns; and regulatory controls which satisfy both government and community.

8.81 Most witnesses agreed that a public education program could address some of the difficulties associated with reconciling community and expert views. The difficulty of achieving a satisfactory level of trust was summed up by Mr Wallace of the Queensland Health Department:

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102 Harvey, Submission No. 54, p. 1

103 Hendee W (1993) 'Disposal of Low-Level Radioactive Waste', *Journal of the American Medical Association* 269(18):2403

> Radioactive material is one of those things that our society currently treats as anathema to everything. There is a significant emotional content in this area. While an education program will be helpful - there is no question about that; it is absolutely essential - one has to be realistic about it. The reality is that it is going to take major cultural change and that is not going to happen in the life time of the project even if it runs for several years. We are talking about, I think, decades...
>
> But it is inevitable that in any of these things which attract a lot of public attention and sensitivity - and radiation is certainly one of them - that there will be misunderstanding and, I dare say, some misinformation generated too.[104]

Ethical Considerations

8.82 The Committee is also concerned that the siting of a national facility should be based on issues of public safety rather than political expediency. The South Australian Premier, the Hon Dean Brown suggested to the Prime Minister that:

> ... the South Australian Government believes the prerequisite to establishing radioactive waste storage sites or repositories in the Woomera region is that the adjacent Lake Eyre region should not be considered for world heritage listing. It therefore seeks an agreement from the Commonwealth that it will not proceed with World Heritage listing of the Lake Eyre region on the grounds that such listing is inconsistent with the location of storage sites for radioactive waste on the edge of that region.[105]

8.83 The Committee was told that the Queensland Department of Housing and Local Government wrote a letter to the Esk Council saying that it would not accept the Esk Shire Council strategic plan because it did not include the proposed radioactive waste facility, and the Council was given ten days to do so or the whole strategic plan for the Shire could not be accepted.[106]

8.84 The Conservation Council of South Australia is concerned that:

> the contentious nature of the issue of radioactive waste management is susceptible to the vagaries of the interaction of

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104 Wallace, Transcript of Evidence, p. 717

105 Premier of South Australia, Letter to the former Prime Minister, the Hon PJ Keating, 28 February 1995, p. 1

106 Mahoney, Transcript of Evidence, p. 640

> State and Commonwealth political agendas at the expense of public interest, effective public consultation and sound environmental management.[107]

8.85 The Committee believes that the issue of radioactive waste management, in the interest of public health and safety and the protection of the environment, should not be subjected to the type of political deals outlined above.

107 Nuclear Issues Action Group, Submission No. 42, p. 8