CHAPTER 2

PRESENT POSITION AND ISSUES CONSIDERED

NUCLEAR WEAPONS CAPABLE VESSELS

Presence of Nuclear Weapons

2.1 It is the policy of nuclear weapons countries to neither confirm nor deny the presence of nuclear weapons aboard their warships. The declared purpose of this policy is to deny strategic information to potentially hostile powers. It has been the policy of successive Australian Governments not to require other governments to reveal whether their warships making routine visits to Australian ports are carrying nuclear weapons.[1]

2.2 In 1985, the Minister for Defence was asked if equipment existed for the detection of nuclear weapons on visiting warships, and if so, whether Australia possessed such equipment. In a written reply he responded:

> Highly sensitive detectors capable of detecting the low levels of radiation emanating from nuclear weapons have been in laboratory use for many years. Consistent with the practice of successive Australian Governments, it is not proposed to comment on whether Australia

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1. e.g. see HR, Hansard, 12 March 1981, pp. 712, 713 and 30 May 1984, p. 2397; Senate, Hansard, 9 December 1987, p. 2752.

> possesses, operates or has access to specific intelligence gathering capabilities...[2]

2.3 Although official information is not publicly available on whether any particular ship is nuclear armed, the fact that a ship is capable of deploying nuclear arms (i.e. is nuclear weapons capable) can generally be determined from publicly available materials. Using these materials, it has been calculated that 87 per cent of United States warships which visited Australian ports in 1980-85 were nuclear weapons capable.[3] The Committee comments on factors relevant to the accuracy of this figure in chapter 11.[4]

Current Contingency Planning

2.4 In 1987, 36 United States Navy ships visited one or more Australian ports. The 16 ports which received visits, together with the number of visits received by each, were: Albany (1), Brisbane (7), Bunbury (1), Cairns (2), Darwin (4), Fremantle and Gage Roads, WA (30), Geelong (1), Geraldton (1), Gladstone (1), Hobart (3), Mackay (1), Melbourne (1), Newcastle (1), Sydney (9),

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2. HR, Hansard, 16 October 1985, p. 2257. See also Evidence, p. 231 (Department of Defence), p. 441 (letter from Dr D. G. Walker, ANSTO). For background, see G. Brown, Detection of Nuclear Weapons and the US Non-disclosure Policy, (WP No. 107, ANU Strategic and Defence Studies Centre, Canberra, 1986). At a press conference in Washington on 10 December 1987 the Soviet leader, Mikhail Gorbachev, said that his country had developed a technical means of verifying not only the presence of nuclear weapons on warships, but also the weapons' capacity, without any actual inspection on the vessels themselves: USSR Embassy in Canberra, Soviet News Bulletin, No. 40, 14 December 1987, p. 4. In a letter to the editor, Australian Financial Review, 5 December 1988, p. 14, Mr Andrew Mack, Head of the Peace Research Centre, Australian National University, commented that this claim:
   > is simply not true. Both Soviet and US experts now agree that nuclear weapons on surface ships can be shielded in such a way that their presence can be disguised from even the most sensitive radiation detectors.
3. Submission from Mr R. Bolt, p. 15 (Evidence, p. 965). cf. the submission from Greenpeace Australia (NSW) Ltd, p. 31: at least 4 in every 5 US warships visiting Australia in the period 1976-1984 were nuclear weapons capable.
4. See paras. 11.30-11.31.

Townsville (1) and HMAS STIRLING, Cockburn Sound, WA (1).[5]

2.5 Visits by vessels of the Royal Navy are less common. It is unclear how likely it is that they would be carrying nuclear arms.[6] It seems to be widely assumed that visits by French vessels likely to be carrying nuclear weapons have not taken place.[7]

2.6 At present nuclear weapons capable warships are permitted to visit any port in Australia, subject only to standard navigational safety requirements and berth availability.[8] There is no requirement that specific plans exist to deal with an accident involving release of ionizing radiation from a nuclear weapon. Such an accident would be dealt with under whatever plan existed for the particular port to deal with shipping/cargo

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5. Senate, Hansard, 15 March 1988, pp. 796-97.
6. UK, Parliamentary Debates (Commons), 6th Series, vol. 129, Written Answers, 7 March 1988, col. 62: all British nuclear forces, including maritime tactical nuclear weapons, are committed to NATO. This would appear to reduce the likelihood of nuclear weapons being aboard a British vessel visiting Australia. However, the British Government stated that its vessels due to visit Australia in the latter part of 1988 'will remain assigned to NATO' during the visit: ibid., vol. 130, Written Answers, 28 March 1988, col. 62. See also UK, Parliamentary Debates (Lords), 5th Series, vol. 498, 15 June 1988, Written Answers, col. 364. Other factors suggesting a reduced likelihood of nuclear weapons being on board during visits are the apparent smallness of the British nuclear arsenal per vessel compared to that of the US, and the more limited range of weapon types within it: see para. 11.23 below on these points.
7. e.g. submissions from the Peace Squadron (Sydney), p. 4: Mr R. Addison, p. 4.
8. Submission from the Department of Defence, p. 3 (Evidence, p. 8); Senate, Hansard, 19 August 1986, p. 53.

accidents,[9] or under more general civil emergency procedures.[10]

2.7 Two possible exceptions to the position stated in the previous paragraph emerged during the Committee's inquiry. One related to suggestions that the Commonwealth had drawn up contingency plans to deal with a nuclear weapon accident in an Australian port. The other related to allegations that a nuclear weapon accident plan existed for the port of Sydney. Neither in fact proved to be an exception.

2.8 With regard to the Commonwealth plan, the Government stated on 27 September 1988 that a preliminary draft of document outlining procedures for responding to nuclear weapon accidents had been prepared within the Department of Defence. The document had, however, no status as it had neither been approved within the Department of Defence, by the relevant interdepartmental committee, nor by the Minister of Defence.[11]

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9. See generally on planning for such accidents, Natural Disasters Organisation, Department of Defence, Port Disaster Seminar, 26-29 April, 1982: Report of Proceedings, (Australian Counter Disaster College, Mt Macedon, Vic., 1982). For example, in Western Australia the transport emergency scheme for chemical accidents was in early 1988 being rewritten to apply to all types of transport accidents and would then be used for an accident involving a nuclear weapon: information supplied at briefing to Committee members by WA officials, 1 February 1988.
10. cf. Senate, Hansard, 27 March 1985, p. 878; 2 May 1986, p. 2292; 19 August 1986, p. 53; 24 September 1986, p. 754; 14 November 1986, p. 2360. In South Australia, for example, the State Disaster Plan would be used: South Australia, Council, Parliamentary Debates, 18 November 1986, p. 1962. In P. Hayes and others, 'Nuclear Weapons Accidents: Are we ready?', Current Affairs Bulletin, September 1988, vol. 65(4), p. 26 it is stated that plans for nuclear weapon accidents exist in Tasmania, Western Australia, and the Northern Territory. This is not correct. The authors appear to have erroneously assumed that contingency planning in place for accidents involving the reactors of visiting warships also deals with the possibility of a nuclear weapon accident. In 1988, the Queensland Premier said that the safety plan for visits by nuclear powered warships to Brisbane also catered for nuclear weapons accidents on visiting vessels: Queensland, Parliamentary Debates, 7 September 1988, p. 603. The plan does not, however, contain any provisions relating to nuclear weapon accidents.
11. Senate, Hansard, 27 September 1988, p. 753. In a letter of 22 December 1988, the Minister for Defence stated that, as the document was still in the development stage and had no official status, he did not believe its release to the Committee would serve a useful purpose.

2.9 The Committee was informed by the New South Wales Government of the current arrangements for the port of Sydney.[12] These provide that the general marine counter-disaster plan, MARDAP, would apply to an accident involving a nuclear weapon on a visiting warship.

> MARDAP has recently been amended so that it specifically lists an incident involving a nuclear capable ship as one of the thirteen separate natural or man-made circumstances which might cause the Maritime Services Board to order activation of the plan. Specifically, it states that, in an incident involving a nuclear capable ship, the Radiation Health Services Branch of the Health Department should be contacted immediately with a view to monitoring any potential radiation leakage.[13]

NUCLEAR POWERED VESSELS

Introduction

2.10 The nuclear powered vessels that have visited Australia have all belonged to the United States Navy. About forty percent of the United States Navy's combatant fleet is currently nuclear

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12. Letter from the Premier, the Hon N. Greiner, 31 October 1988. See also NSW, Assembly, Parliamentary Debates, 22 September 1988, pp. 1773-74.
13. Letter from the Premier, the Hon N. Greiner, 31 October 1988, p. 2. The letter notes:

> Nuclear capable warships also visit Newcastle and Port Kembla. These ports have their own counter disaster plans. The Maritime Services Board has briefed the harbour masters of both ports on the changes to MARDAP which are discussed ... [in the extract quoted in the text] so that they can follow the MARDAP procedures in the event of an incident involving a nuclear capable warship in their ports.

powered.[14] About ninety percent of these nuclear powered vessels are submarines, all of which are powered by a single reactor. The remainder are cruisers or aircraft carriers, each powered by two reactors except for the aircraft carrier USS Enterprise, which is powered by eight reactors.[15]

2.11 From the first visit in 1960 until 1971 fourteen visits were made, during none of which was there any incident involving leakage of radioactivity.[16] A moratorium on nuclear powered warship visits was imposed in 1971.[17] This was done to allow consideration of issues relating to safety, environmental impact and legal liability. The moratorium was lifted in mid-1976.[18] Since then nuclear powered warship visits have occurred every year except 1977 and 1988. The number of visits has fluctuated from year to year, being lower since 1985 than earlier in the decade. (Appendix 3 contains a table setting out the vessels, dates and places visited in the period 1976 to 1988.)

Ports Visited

2.12 From the beginning of 1980 until the end of 1988 the ports in Australia which have been visited by nuclear powered

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14. US, H of R, Committee on Armed Services, Subcommittee on Seapower and Strategic and Critical Materials, Hearings on National Defense Authorization Act for FY 1988/1989 - H. R. 1748, 10 March 1987, p. 453 (Admiral K. R. McKee).
15. US, Departments of Defense and Energy, A Review of the United States Naval Nuclear Propulsion Program, (June 1986), p. 3 states that 137 nuclear powered submarines and 13 nuclear powered surface ships were operational. The latter total was made up of 4 aircraft carriers and 9 cruisers. A further 24 submarines and 3 aircraft carriers were either authorised or under construction. An additional 14 nuclear powered submarines had been decommissioned or were not in service. The comparable figures for the UK are 16 nuclear powered vessels in operation, with 4 more undergoing refit or on standby; all 20 are submarines: UK, Secretary of State for Defence, Statement on the Defence Estimates 1988, (Cm 344-1, HMSO, London, 1988), vol. 1, p. 70.
16. Australia, Environmental Considerations of Visits of Nuclear Powered Warships to Australia, (May 1976), p. 2 (Evidence, p. 119). Only four ports received visits - Bunbury, Fremantle, Melbourne and Sydney: ibid.
17. ibid., p. 3 (Evidence, p. 120).
18. HR, Hansard, 4 June 1976, p. 3039.

warships have been Albany (2 visits), Brisbane (3 visits), Darwin (2 visits), Hobart (6 visits), Jervis Bay (1 visit), HMAS STIRLING (Cockburn Sound, WA) (56 visits) and Gage Roads (off Fremantle) (5 visits). It is unlikely there will be a requirement to visit many additional ports in the foreseeable future.[19] As a result, the Committee's inquiry in regard to nuclear powered warships focused on contingency planning for these ports.

Lifting of 1971 Moratorium

2.13 During the 1971-1976 moratorium an assessment was made of the safety and environmental aspects of nuclear powered warship visits. A draft environmental impact statement was prepared by the Department of Defence with assistance from other Commonwealth agencies.[20] This statement remained classified until recently.[21]

2.14 A document was prepared from the statement which contained the maximum amount of information which at the time the Government considered could be released.[22] This document was entitled Environmental Considerations of Visits of Nuclear Powered Warships to Australia and dated May 1976. It was tabled in Parliament by the Prime Minister on 4 June 1976, when he announced the Government's intention to end the moratorium and to permit nuclear powered warship visits, subject to conditions.

2.15 The Prime Minister stated in his announcement that all necessary control and safety measures would be implemented at the

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19. Evidence, pp. 229-30 (Department of Defence). But note Senate, Hansard, 17 October 1985, p. 1409 (Senator Evans): 'The Government has indicated that it would like to see a wider spread of port visits by United States vessels; the United States Government has similar interests'. Presumably this relates to conventionally powered warships.
20. Department of Defence, The Environmental Impact of Visits by Nuclear Powered Warships to Australia, (July 1974).
21. The declassified version supplied to the Committee in March 1988 has some deletions on security grounds.
22. HR, Hansard, 4 June 1976, p. 3039.

berths to be used.[23] The tabled document set out the general conditions of entry which would apply to nuclear powered warship visits.[24] It also dealt with the characteristics of nuclear propulsion plant, radiation hazards, possible accidents and their consequences, and safety precautions.

2.16 The measures introduced in 1976 were directed at two possible types of events: the discharge of radioactive wastes, and reactor accidents causing a major release of radiation to the environment. The latter category was the main focus.

The Reference Accident

2.17 It is necessary to determine what types of accidents are likely or possible in order to have a basis for devising appropriate counter-measures. The Australian Atomic Energy Commission (AAEC) acted as consultant and technical advisor to the Department of Defence in the reassessment that led to the resumption of visits in 1976.[25] In its submission, the AAEC explained the basis used for the measures introduced in 1976.

> Despite the excellent safety record and the high degree of protection inherent in the design and quality of nuclear propulsion plant, the remote possibility of an accident causing the release of radioactive material cannot be ignored. In the interests of public safety it is prudent to consider the consequences of hypothetical accidents and to make emergency arrangements to protect the public.
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> It is physically impossible for any reactor accident to result in an atomic bomb type explosion. However, it is nevertheless conceivable that serious accidents could result from component failures, material faults, design weaknesses, human errors or deliberate human acts.

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23. HR, Hansard, 4 June 1976, p. 3040.
24. See paras. 12-13 of the document. The complete document is set out in Evidence, pp. 114-82.
25. Australia, Environmental Considerations of Visits of Nuclear Powered Warships to Australia, (May 1976), p. i.

> The AAEC approach to this problem has been to review the various possible accident mechanisms, discarding those which it is considered could result only in trivial activity releases and those with probabilities so low as to be considered incredible (ie, of no practical significance). This procedure identifies a range of credible and significant accidents, and in the particular case of warship reactor systems, leads to a single Reference Accident (contained loss of coolant ...) which is considered to represent an upper limit of risk in terms of its probability and consequence. This Reference Accident is used as the basis for judging the acceptability of berths and also for planning emergency procedures. The emergency planning does not take account of accidents judged to be incredible (e.g. uncontained loss of coolant accidents).[26]

2.18 This approach to planning and the particular reference accident identified remain the basis of current contingency planning.[27]

Federal Government Conditions of Entry

2.19 In September 1981, the Department of Defence issued a manual entitled Visits by Nuclear Powered Warships to Australian Ports: Procedures (OPSMAN 1). This contained a revised statement of the general conditions of entry. These conditions were further revised in 1982.[28] The manual also set out the detailed procedures and allocation of responsibilities for dealing with visit requests, radiation monitoring, security, safety, etc. A list of approved berths and anchorages was included in the manual. A revised version of this manual, OPSMAN 1 (Revision 1), was issued in October 1986. A second edition was issued in September 1987, and further amendments were issued in May

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26. Submission from ANSTO, attachment 1, p. 1 (Evidence, p. 247). The AAEC became the Australian Nuclear Science and Technology Organisation (ANSTO) on 27 April 1987. For simplicity, the body is referred to as ANSTO throughout the remainder of this report.
27. Evidence, pp. 370-71 (ANSTO); submission from the Department of Defence, p. 8 (Evidence, p. 13).
28. HR, Hansard, 8 December 1982, pp. 3078-79.

1988.[29] The manual is publicly available.

2.20 Paragraphs 201-202 of the revised version state:

> Conditions of entry to Australian ports by visiting NPWs have been established by the Australian Government. Approval of visits is subject to satisfaction of these general conditions, which are:
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> a. visits will be for purposes such as crew rest and recreation, and not for fuel handling or repairs to reactor plant (necessitating breach of reactor containment);
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> b. visits will be subject to satisfactory arrangements covering liability and indemnity, and to provision of adequate assurances relating to the operation and safety of the warships while they are in Australian waters;
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> c. movement of vessels must take place during daylight hours under conditions where visibility is not less than three-quarters of a nautical mile;
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> d. navigational controls on other shipping will be applied during the time that NPWs are entering and leaving port;
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> e. there must be a capability to remove the vessel, either under its own power or under tow, to a designated safe anchorage or a designated distance to sea, within the time frame specified for the particular berth or anchorage, and in any case within 24 hours, if an incident should occur; and
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> f. an operating safety organisation, competent to conduct a suitable radiation monitoring programme and able to initiate

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29. The text of OPSMAN 1 (Revision 1) is set out in Evidence, pp. 34-113. The major changes since Revision 1 affect approved anchorages at Hobart and Cockburn Sound, WA, and the terms of reference of the Visiting Ships Panel (Nuclear). Other changes are relatively minor, mostly relating to changes in the titles of departments, offices and organizations. Paragraph numbering remains unchanged. Although footnote references are to the latest version, for convenience cross-references are supplied to the Evidence pages containing the corresponding (usually identical) paragraph from Revision 1.

actions and provide services necessary to safeguard the public in the event of a release of radioactivity following an accident, must exist for the port being visited.

The acceptance of visits under these conditions is applicable to current classes of NPWs of the United States Navy and the Royal Navy.

2.21 The Commonwealth Government in 1986 stated that the conditions of entry have always been complied with.[30]

Visiting Ships Panel (Nuclear)

2.22 The Commonwealth Government established in 1972 an inter-departmental committee called the Visiting Ships Panel (Nuclear), abbreviated to VSP(N).[31] The present terms of reference for the Panel are to:

a. make recommendations to the Minister for Defence on the approval of NPW visits;

b. develop and maintain procedures related to NPW visits;

c. generally oversee the implementation of specific arrangements, especially safety requirements, for visits by NPWs; and

d. maintain and oversee safety arrangements for visits by nuclear weapons capable warships.[32]

2.23 The addition of item (d) to the terms of reference was approved by the Minister for Defence on 9 February 1988. This was done in response to this Committee's activities: 'the VSP(N) considered that the Panel should be the forum to produce safe-

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30. HR, Hansard, 19 August 1986, p. 135.
31. Second supplementary submission from the Department of Defence, p. 4 (Evidence, p. 238.259).
32. OPSMAN 1 (2nd edn.), para. 305. See Evidence, p. 61 for the previous terms of reference.

guards should they be necessary'.[33]

2.24 The VSP(N) is made up of representatives from:

a. Department of Defence:
   (1) Director General Joint Operations and Plans - Chair;
   (2) Joint Operations and Plans Branch - Secretary;
   (3) Navy Office;
   (4) Strategic and International Policy Division;
   (5) Natural Disasters Organisation (NDO); and
   (6) Defence Science and Technology Organisation.

b. Australian Nuclear Science and Technology Organisation (ANSTO);
c. Department of Arts, Sport, the Environment, Tourism and Territories; and
d. Department of Health.[34]

Representatives from other federal Departments may be invited to attend particular meetings. There is no provision for State or Territory representation.

Approval of Berths and Anchorages

2.25 Irrespective of who bears responsibility for port safety organisation, the VSP(N) determines the suitability of particular berths or anchorages for use by visiting nuclear powered warships.[35] No primary or alternative berth or anchorage may be used without approval from the VSP(N).[36] A similar constraint applies to any remote anchorages, to which a vessel may be towed in the event of an accident. Diplomatic clearance (ie. formal permission to enter Australia) for a particular visit specifies

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33. Letter from Cdre N. J. Stoker RAN, Chairman of the VSP(N), 26 April 1988, p. 2 (Evidence, p. 706.717). See also Evidence, p. 1246 (Department of Defence).
34. OPSMAN 1 (2nd edn.), para. 303 (Evidence, pp. 60-61).
35. ibid., para. 204 (Evidence, p. 50).
36. ibid.

the berths or anchorages to be used for the visit.[37]

2.26 Assessments of the suitability of berths and anchorages 'have been made with respect to the radiological consequences on the population of a reference accident in the light of the constraints imposed by the Conditions of Entry'.[38]

2.27 Not all major ports have been assessed for nuclear powered warship visits. Sydney is the only port which has been assessed and not approved (in terms of meeting the radiological and zoning criteria).[39] The only berths and anchorages approved in South Australia (at Adelaide) have never been used by nuclear powered warships as these ships have never visited South Australia.[40] The only currently approved anchorages in Victoria are off Melbourne, but no nuclear powered warship visits have been made to Victoria since 1979.[41] The State Governments take the view that development, population movement and other factors would necessitate the suitability of the approvals for both Adelaide and Melbourne being reassessed should nuclear powered warship visits be contemplated.[42]

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37. ibid., para. 206 (Evidence, p. 50).
38. ibid., para. 203 (Evidence, p. 50). For greater detail on the basis for berth assessment see the submission from ANSTO, pp. 2-3 and attachment 2 (Evidence, pp. 244-45 and 258-60). The berth assessment for Brisbane is set out as an illustration at attachment 3 (Evidence, pp. 261-73).
39. Second supplementary submission from the Department of Defence, p. 5 (Evidence, p. 238.260).
40. First supplementary submission from the Department of Defence, section 6B, (Evidence, p. 238.251).
41. During 24-29 October 1979, USS Gurnard berthed at Station Pier, Melbourne, which at that time was an approved berth: second supplementary submission from the Department of Defence, p. 5 (Evidence, p. 238.260). The berth is no longer available due to changed land use.
42. Submissions from the South Australian Government, p. 2; the Victorian Government, pp. 5-6. See also the second supplementary submission from the Department of Defence, p. 13 (Evidence, p. 238.268). But contrast Evidence, p. 1291 (Department of Defence), where it is said there may be no need to alter the approved locations.

Radiation Monitoring

2.28 Radiation monitoring services are provided by the Commonwealth during all nuclear powered warship visits, with State assistance where available. The monitoring is controlled by the Australian Nuclear Science and Technology Organisation (ANSTO) in conjunction with the Australian Radiation Laboratory and State or Territory authorities.[43]

2.29 Monitoring is conducted by reference to guidelines, the current version of which date from May 1988.[44] The guidelines are available to the public. The aims of monitoring programs are to detect the release of radioactive waste and to provide warning of any reactor malfunction on a nuclear powered warship which might lead to a release of radioactivity.[45] A handbook of some 50 pages governs the operational detail of carrying out the monitoring.[46]

2.30 Annual reports have been issued on environmental radiation monitoring during nuclear powered warship visits to Australian ports for each year since 1976, except for 1977 and 1988, when no visits occurred.[47] The reports, which are publicly available, were made until 1986 under the aegis of the Department having responsibility for the environment. Since then the Department of Defence has taken on responsibility for reporting.[48]

2.31 The annual reports describe the steps taken to monitor each nuclear powered warship visit and the results obtained.

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43. OPSMAN 1 (2nd edn.), para. 307 (Evidence, p. 62).
44. Department of Defence, Environmental Radiation Monitoring during Visits of Nuclear Powered Warships to Australian Ports: Requirements, Arrangements and Procedures, (May 1988).
45. ibid., Part 1, para. 1.
46. ANSTO, Radiation Monitoring Handbook for Visits by Nuclear Powered Warships to Australian Ports, (ANSTO, Lucas Heights, NSW, 1985). The text of the handbook is set out in Evidence, pp. 293-344.
47. The report for 1985 is set out as an example in Evidence, pp. 345-65.
48. Submission from the Department of Arts, Heritage and Environment, p. 4; Letter from Cdre N. J. Stoker RAN, Chairman of the VSP(N), 26 April 1988, p. 3 (Evidence, p. 706.718).

These results have been uniform. In no case has any infringement of Australian public health standards been detected. Monitoring has never detected any release of radioactive material. Nor has any radiation measurement indicated any value in excess of background levels of ionizing radiation either during or subsequent to any nuclear powered warship visit. There have, however, been a number of false alarms caused by faulty instruments.[49]

Responsibility for Port Safety Organisation

2.32 The Royal Australian Navy is responsible for the implementation and control of safety plans for nuclear powered warship visits to those ports under its control that receive visits, which at present includes only an anchorage off HMAS CRESWELL at Jervis Bay, ACT and HMAS STIRLING at Cockburn Sound, WA.[50] For ports under the jurisdiction of State or Northern Territory authorities, the State or Territory is responsible for drawing up contingency plans and for control of the port safety organisation.[51] The Commonwealth provides technical expertise, trained manpower and specialised equipment to assist the State or Territory to carry out its role.[52]

State and Territory Port Safety Organisations

2.33 OPSMAN 1 sets out the desirable characteristics for the operating safety organisation required by condition (f) of the conditions of entry. It notes that each State/Territory has

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49. Evidence, p. 433 (Mr P. Wright, ANSTO):

> I would require notice to give the exact frequency of occurrence of faults, but I can say that I know of at least four occasions in the past seven years where false alarms have occurred. But these alarms were thoroughly investigated at the time. All of them were due either to some electrical problem or mechanical bumping and could not be interpreted as representing a release of radioactive material into the compartment, or a plume.

See also para. 8.126.

50. OPSMAN 1 (2nd edn.), para. 306 (Evidence, p. 62).
51. ibid. See also paras. 402-03 (Evidence, p. 69).
52. ibid., para. 403 (Evidence, p. 69).

established a nuclear powered warship visits committee charged with the responsibility for creating and administering the State/Territory safety organisation.[53] The States and Northern Territory all have some form of organisation established to deal with natural disasters and other civil emergencies. For the ports which receive nuclear powered warship visits, these organisations have been given the responsibility for reactor-related accident contingency planning.

Port Safety Plans

2.34 Strictly interpreted, condition (f) of the conditions of entry for nuclear powered warships does not make the existence of a port safety plan a specific precondition for visits.[54] However, OPSMAN 1 states that 'each port likely to be visited will require a general safety plan as well as a detailed instruction for each specific visit'.[55] It also contains guidelines for the preparation and maintenance of these plans and instructions. The guidelines state that the general plan should address the following topics: background information; introduction; facilities; State/Territory organisation; procedures; and radiation monitoring.[56] Detailed instructions are also referred to as Visit Operation Orders. OPSMAN 1 states that a typical order would contain: a summary of the nuclear powered warship's characteristics; the visit timetable; the location of the fixed radiation monitoring post; details of the port emergency communications net; a personnel contact directory; and personnel rosters.[57]

2.35 The Natural Disasters Organisation, a unit within the Department of Defence, holds copies of all State/Territory plans

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53. ibid., para. 436 (Evidence, p. 78).
54. First and second supplementary submissions from the Department of Defence, section 6B and p. 4 respectively (Evidence, p. 238.251 and p. 238.259).
55. OPSMAN 1 (2nd edn.), para. 404 (Evidence, p. 69).
56. ibid., Annex H to Chapter 4, para. 2 (Evidence, p. 108). Paras. 3-11 elaborate on each topic.
57. ibid., para. 12 (Evidence, p. 111).

and is informed of all amendments to the plans.[58] It has the responsibility for confirming that a completed safety plan is in existence for a particular port.[59]

2.36 Of the two ports under Royal Australian Navy control that are approved for nuclear powered warship visits, only HMAS STIRLING at Cockburn Sound, WA has a port safety plan. The plan forms a sub-set of the standing orders for the base and is intended to be read in conjunction with the Western Australian plan described in the next paragraph. The standing orders have not been publicly available. However, an unrestricted version of the plan was prepared in 1988,[60] and was supplied to the Committee. For HMAS CRESWELL at Jervis Bay, the normal emergency plan for the base has been considered adequate by the Department of Defence, given the isolation of the anchorage used for visits.[61]

2.37 The current Western Australian Government plan for Gage Roads (off Fremantle) and Cockburn Sound (where HMAS STIRLING is located) was issued in August 1986.[62] Amendments, although not formally adopted, have been developed to the stage where they could be implemented prior to the next warship visit.[63] The plan is publicly available. Although earlier arrangements existed, the present plan is the outcome of a Commonwealth initiative in 1983.[64]

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58. ibid., para. 15 (Evidence, p. 111).
59. Second supplementary submission from the Department of Defence, p. 14 (Evidence, p. 238.269).
60. Department of Defence, Nuclear Powered Warship Visits to HMAS STIRLING: Nuclear Powered Warship Visit Sub-Plan, (1988, incorporating amendments made by Change 1, 30 September 1988).
61. Second supplementary submission from the Department of Defence, p. 13 (Evidence, p. 238.268).
62. Western Australia, State Emergency Service, Western Australian Port Safety Scheme for the Visits of Nuclear Powered Warships to Fremantle and Cockburn Sound.
63. Letter from the Assistant Director, Operations, WA State Emergency Service, 21 September 1988.
64. Second supplementary submission from the Department of Defence, p. 14 (Evidence, p. 238.269).

2.38 Albany in Western Australia has received two visits by nuclear powered warships. The last such visit occurred in November 1984. A draft plan, based upon the arrangements for Gage Roads/Cockburn Sound, was employed during the visits. A revised draft (July 1987) has not been formally ratified, but the Committee was told that it 'is in sufficient detail to be used should a need arise'.[65] Further visits to Albany are regarded by the Western Australian authorities as unlikely: the approved anchorages at Albany are exposed to rough weather and are therefore not attractive for visits.[66] A copy of the draft plan was made available to the Committee on a confidential basis.

2.39 The Queensland Government has prepared a safety plan for Brisbane.[67] The plan is publicly available.[68] A summary statement, 'Details of Queensland Government Safety Organisation for N.P.W. Visit', was released publicly in 1983.[69] The plan is currently undergoing revision.

2.40 Although berths at Townsville have been approved for nuclear powered warship visits, changes to land use require that these be reassessed before they are used.[70] No visits have been made to Townsville. No safety plan exists,[71] although it appears that some work on preparing a plan has been done.

2.41 The Tasmanian Government has prepared a port safety scheme for nuclear powered warship visits to Hobart. The

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65. Letter from the Director, Western Australian State Emergency Service, 30 November 1988.
66. ibid.
67. Queensland State Counter Disaster Organisation, Safety Plan for the Visit by Nuclear Powered Warships to the Port of Brisbane, (undated).
68. Letter from the Director-General, Queensland Premier's Department, 28 November 1988: 'the Plan is no longer classified as Confidential and is freely available to the public upon written application'.
69. Submission from the Queensland Government, p. 1.
70. Evidence, p. 1290 (Department of Defence).
71. Submission from the Department of Defence, p. 7 (Evidence, p. 12).

Tasmanian Government summarised the elements in this scheme in its submission and gave the Committee a detailed briefing on it during the Committee's visit to Hobart in March, 1988. It subsequently provided a copy of the plan to the Committee.[72] Copies of the scheme are not available to the public, although the Tasmanian Government has undertaken to have details of it published prior to the next nuclear powered vessel visit to Hobart.[73]

2.42 The Northern Territory Emergency Service has prepared a plan for the visit of nuclear powered warships to Darwin.[74] The plan has not been released to the public. A copy was provided in confidence to the Committee.

2.43 In Victoria a limited plan exists.[75] The plan has not been released publicly, and appears to lack current Victorian Government approval.[76] The Department of Defence informed the Committee that were further nuclear powered warship visits to

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72. Tasmania, Nuclear Powered Warships Visits Committee, Safety Scheme for Visits of Nuclear Powered Warships to Tasmania, (25 November 1987). A copy of a supplement to the scheme, 'Royal Hobart Hospital Arrangements', was also provided. The Committee was advised that the supplement was 'currently under further review': letter from Hon R. Cornish, Minister for Police and Emergency Services, 31 March 1989. From the copy of the main scheme that was provided, the two sections which relate to personal contact details and security arrangements for major public buildings were removed for security reasons.
73. Tasmania, Assembly, Debates, 5 October 1988, p. 3169.
74. Northern Territory Emergency Service, Safety Plan for the Visit by Nuclear Powered Warships to Port Darwin, (Interim, 1984 with amendments to June 1988).
75. Visits of Nuclear Powered Ships: Standing Plan: Police Role in Safety Organisation. The authorship of the plan is unclear. A copy containing amendments to August 1985 was released in 1986 under the Victorian Freedom of Information Act: submission from Coalition Against Nuclear Powered & Armed Ships, p. 4 (Evidence, p. 1376). See also the second supplementary submission from the Department of Defence, p. 13 (Evidence, p. 238.268).
76. e.g. letter from the Victorian Minister of Police and Emergency Services, the Hon R. Mathews, to Senator J. Vallentine, 15 July 1986: 'Victoria has not developed a Port Safety Plan which specifically addresses contingencies involving visiting nuclear powered or armed vessels'.

take place to Victoria, consideration of the adequacy of planning would be required.[77]

2.44 For New South Wales and South Australia, the Department of Defence informed the Committee in March 1987 there was no requirement foreseen for detailed plans to be developed at that stage, as no visits were planned.[78]

2.45 The authors of some submissions referred to a confidential 'Point Piper Plan',[79] which they believed related to visits to Sydney Harbour. The New South Wales Government told the Committee that this plan was drawn up by the New South Wales Police in 1976 for the evacuation of some harbour-side residential areas in the event of a reactor accident on a visiting warship. It was assumed then that visits to Sydney would occur. This has not happened, and there are no berths or anchorages at Sydney approved for use by visiting nuclear powered warships. The New South Wales Government told the Committee that, given this, it regarded the plan as 'irrelevant'.[80]

2.46 The Department of Arts, Heritage and Environment assured the Committee that the plans for HMAS STIRLING and Gage Roads in Western Australia, and for Brisbane, Hobart and Darwin have all been extensively examined and approved by both the VSP(N) and the Australian Ionising Radiation Council (AIRAC).[81] The Committee was provided with a copy of AIRAC's 1984-85 review of the Brisbane, Hobart and Darwin plans, together with a report on

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77. First supplementary submission from the Department of Defence, section 6B (Evidence, p. 238.251).
78. ibid. See also NSW, Assembly, Parliamentary Debates, 27 February 1985, pp. 3844-46 and 22 September 1988, p. 1774.
79. e.g. submissions from Illawarra People for Nuclear Disarmament, p. 1; Dr B. Ewald, p. 2; Medical Association for the Prevention of War (NSW), p. 5.
80. Letter from the NSW Premier, the Hon N. Greiner, 31 October 1988, p. 1. See also NSW, Assembly, Parliamentary Debates, 22 September 1988, p. 1774.
81. Submission from the Department of Arts, Heritage and Environment, p. 4.

actions taken to follow up AIRAC's comments and recommendations.[82]

2.47 All the State and Territory plans are based on the reference accident. State officials made it clear to the Committee that they regarded the Commonwealth as having the responsibility to define the basis of planning, that is the reference accident.[83] State or Territory officials have not re-evaluated the reference accident chosen by the Commonwealth.

ISSUES CONSIDERED BY THE COMMITTEE

Types of Visiting Nuclear Powered Vessels

2.48 Non-military nuclear powered vessels have not visited Australia. The only vessels of this type currently in service are vessels with ice-breaking capability employed by the Soviet Union in Arctic waters. Because non-military nuclear powered vessels are not likely to visit Australia in the foreseeable future the Committee has not thought it necessary to consider safety planning issues which would be raised if such visits were to occur.[84]

2.49 Current planning permits the entry only of existing classes of United States and British nuclear powered warships.[85] The only nuclear powered naval vessels that have visited Australia have been those of the United States Navy. This is likely to remain the case. At present all British and French nuclear powered vessels are submarines. For operational reasons

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82. The documents are incorporated in Evidence at pp. 752-70.
83. Information supplied at briefings to Committee members by WA officials, 1 February 1988; Tasmanian officials, 21 March 1988.
84. cf. Evidence, p. 191 (Department of Defence).
85. OPSMAN 1 (2nd edn.), paras. 105 and 202 (Evidence, pp. 42 and 50).

these appear unlikely to visit Australia.[86] Nuclear powered vessels from other navies also appear unlikely to visit in the foreseeable future.

2.50 The Committee therefore focused its inquiry on United States nuclear powered warships currently in service.[87] Its conclusions apply only to those vessels, although the Committee has no reason to consider that its conclusions would not be equally applicable to current British vessels.

2.51 Nuclear powered submarines visiting Australia have been attack-class vessels (ie. designed and armed to attack other vessels). Submarines armed with ballistic missiles have never visited Australia. For operational reasons, these vessels are unlikely to visit in the future.[88] Accordingly the Committee excluded these vessels and the weapons that they carry from its inquiry. The Committee noted that the Australian Government has not assessed the safety of the reactors used by ballistic missile submarines. Under the current framework for permitting visits by nuclear powered vessels, such an assessment would be required

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86. cf. Evidence, p. 189 (Department of Defence) relating to the Royal Navy.
87. A new type of US nuclear powered submarine, the SSN-21, is planned to enter service in the 1990's. The Committee has not considered the question whether its reactor design will be sufficiently different from current designs to warrant a fresh assessment by Australian authorities.
88. The operational role of a ballistic missile submarine involves its remaining submerged from the time it leaves its base until it returns. The aim is to minimise the opportunity for opposing forces to target the vessel. This in turn maximises the deterrent value of the weapons aboard, as it increases the likelihood that a first strike made against the forces of which the submarine is a part would fail to locate and destroy it. Making casual port visits while on patrol is incompatible with this role, as it removes the submarine's greatest value - its relative invulnerability while submerged. Moreover, because of the location of the targets at which their weapons are aimed, ballistic missile submarines do not normally patrol in the southern hemisphere and hence would have no occasion to visit Australia. See J. Handler and W. M. Arkin, Nuclear Warships and Naval Nuclear Weapons: A Complete Inventory, (Neptune Papers, No. 2, Greenpeace/ Institute of Policy Studies, Washington, 1988): 'US ballistic missile submarines operate regularly in the Arctic, north Atlantic, and north Pacific Oceans and the Mediterranean Sea' (p. 12), and their British counterparts patrol in the north Atlantic (p. 25).

before a visit would be permitted.[89]

Only Current Planning Considered

2.52 A number of submissions argued that visits had taken place in the past to ports for which there were not then adequate contingency arrangements in place.[90] For example, the fact that the current Western Australian plan dates from only 1984-86, while visits took place from 1976, was put to the Committee to support this argument.[91] The Committee's terms of reference refer to 'current' contingency planning. As a result, the Committee has considered previous plans and the process that led to those plans only to the extent necessary to assess the adequacy of current planning.

Nuclear Weapons Capable Vessels

2.53 The United States and United Kingdom policy of neither confirming nor denying the presence of nuclear weapons on vessels was noted earlier in this chapter. Whatever the validity of the arguments used to justify this policy, it is unlikely to change. This means that official information from a foreign country on whether one of its vessels entering an Australian port or harbour is nuclear armed will remain unavailable.

2.54 For the purposes of its inquiry the Committee adopted the hypothesis that nuclear weapons are on board some visiting

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89. The distinction drawn in Australian berth and anchorage assessment criteria based on a vessel's reactor size is noted in para. 8.44 below, and the method of assessing reactor size is explained in para. 4.12. The reactor size on the newer US ballistic missile submarines, the Ohio class, is too large to meet the criteria for all currently approved berths, and all but one of the currently approved anchorages, that at Gage Roads off Fremantle which is approved for visits by Nimitz-class aircraft carriers.
90. e.g. see submissions from Mr R. Bolt, p. 4 (Evidence, p. 954); Coalition Against Nuclear Powered & Armed Ships, p. 4 (Evidence, p. 1376).
91. Submission from Senator J. Vallentine, p. 4 (Evidence, p. 1047).

warships.[92] As most of these vessels are from the United States, the Committee concentrated its inquiry on United States nuclear weapons and nuclear weapons capable vessels.

2.55 If contingency arrangements are thought necessary to deal with potential nuclear weapon accidents, they could be put in place whenever a nuclear weapons capable warship visits an Australian port. On this basis, the policy of neither confirm nor deny is not, in the Committee's view, a serious obstacle to specific contingency planning. The effect would be that the expense of whatever contingency planning was thought desirable would be incurred unnecessarily in the case of those visits in which nuclear weapons were not in fact on board.

Territorial Waters

2.56 Australia claims a territorial sea extending three nautical miles (5.6 km) from its shores. Australia's ability to control events occurring outside its territorial waters is limited in both a practical and legal sense.[93] The effects on Australia of an accident occurring beyond its territorial waters would be limited, perhaps negligible, compared to a similar accident occurring in one of its ports. The Committee has interpreted the expression 'Australian waters' in its terms of reference as meaning Australian territorial waters.

2.57 In practice, nuclear powered and/or nuclear armed warships seldom enter Australian territorial waters except to

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92. It should be stressed that it is only a hypothesis. cf. submission from Mr R. Bolt, p. 15 (Evidence, p. 965): the fact that nuclear weapons are carried into Australian ports is 'evidenced by the terms of the enquiry for which this submission has been prepared'.
93. e.g. Evidence, pp. 210-11 (Department of Defence).

visit ports or to use anchorages adjacent to ports.[94] Accordingly the Committee has considered contingency planning only in the context of visits to ports and adjacent anchorages.[95]

Purpose of Visits

2.58 The issues raised by visits of nuclear weapons capable vessels for repairs involving dry-docking are considered in chapter 11. For nuclear powered warships, the Committee has confined its inquiry to visits made for goodwill purposes or to permit crew shore leave, and to routine operational visits. These are the only purposes for which visits are permitted under the current conditions of entry.[96]

2.59 The Committee has not considered issues which would arise if visits were for the purpose of major repairs, such as those involving dry-docking or disabling the vessel's main power plant. The Committee notes that the Government has acknowledged that 'dockyard repair and maintenance work on nuclear powered warships involve considerations significantly different from those that apply to port visits by those vessels'.[97] As is explained at various points in this report, the Committee's conclusions rest to some extent on assumptions that the vessel is afloat to permit easy flooding of its reactor, and that the vessel could quickly be moved to a remote anchorage if necessary.

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94. cf. Evidence, pp. 187-89 (Department of Defence); submission from the Department of Arts, Heritage and the Environment, p. 5; Senate, Hansard, 19 August 1986, p. 53. Contrast, for example, the submission from Mr R. Addison, p. 12 raising the possibility of a nuclear powered warship grounding and breaking up on an Australian coral reef. As part of the diplomatic clearance required of visiting nuclear powered warships intending to anchor in Australian waters, an obligation to observe the conditions of entry (set out at para. 2.20 above) is imposed: second supplementary submission from the Department of Defence, p. 5 (Evidence, p. 238.260).
95. For views that accidents in other areas should be considered, see for example the submissions from Assoc Prof P. Jennings, p. 3; the Victorian Government, p. 2.
96. See condition (a) set out in para. 2.20 above.
97. Senate, Hansard, 17 May 1983, p. 507. See also Evidence, pp. 377-78 (ANSTO).

Planning for Visits in Peacetime

2.60 All the planning that is the subject of this inquiry assumes that the visits in question will take place at a time when neither Australia nor the foreign country to which the vessels belong is at war. The Committee has made a similar assumption, recognising that planning in wartime raises different issues.[98]

Arrangement of Remainder of Report

2.61 In popular discussion reference is often made to visits by nuclear warships, without distinguishing vessels powered by nuclear reactors from conventionally powered vessels which are capable of deploying nuclear weapons. A vessel may of course be both nuclear powered and nuclear armed. But the Committee considers it essential to clarification of many of the issues raised by its inquiry that a distinction be made between nuclear powered warships and warships that may be nuclear armed.

2.62 Accordingly, the remainder of the report consists of two parts. Chapters 3 to 10 deal with the main issues relating to nuclear powered warship visits and the adequacy of current contingency plans. Chapters 11 to 13 deal with the question whether any specific planning is required for visits by nuclear weapons capable warship visits.

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98. cf. Evidence, p. 205-06 (Department of Defence); pp. 584-89 (Prof W. J. Davis).