## Target country: Australia

| Target Country | CG No. | Target CG Coordina-tor | JC Article No. | National Report Citation | Question/Comment and Answer | |
|---|---|---|---|---|---|---|
| AU | 2 | P Kayser | 6, 13 | Section G, p. 22 and Section H, p. 27 | **Question** | The process for the siting of new installations (e.g. a new research reactor) is described only briefly. What is the process of site selection? Which are the criteria that the site has to meet and which are the details of an EIA and the involvement of the public? |
| | | | | | **Answer** | Australia has 9 separate legal jurisdictions:<br>• the Commonwealth of Australia;<br>• the State of New South Wales;<br>• the State of Queensland;<br>• the State of Victoria;<br>• the State of Tasmania;<br>• the State of South Australia;<br>• the State of Western Australia;<br>• the self-governed Australian Capital Territory; and<br>• the self-governed Northern Territory;<br>each with its own legislative and regulatory framework for governing the safety of spent fuel and radioactive waste management.<br><br>Australia has accumulated approximately 3,500 cubic metres of low level and short-lived intermediate level radioactive waste over the last 40 years. By international standards this quantity is very small.<br><br>Queensland, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory operate a store for radioactive waste generated in that State or Territory. New South Wales has a non-operational radioactive waste store. Victoria does not have any radioactive waste management facilities within the meaning of the Convention but does have an interim storage facility for seized and abandoned radioactive materials – (storage of radioactive waste is not the primary purpose of the facility). Western Australia operates a near-surface radioactive waste repository for waste generated in Western Australia. The stores and the repository are State owned. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | It is unlikely that any State or Territory will build a new store or facility in the near future. In the event that a store or facility were proposed, the relevant State or Territory regulatory body would manage the development of appropriate regulations and procedures to assess siting, design, construction and operation.<br><br>At present, the Commonwealth has applied to the federal regulatory body, the Australian Radiation Protection and Nuclear Safety Agency, for a licence to site, construct and operate a national short-lived intermediate-level and low-level radioactive waste near surface repository. Further details of the proposal can be found at http://www.radioactivewaste.gov.au<br><br>The *Australian Radiation Protection and Nuclear Safety Act 1998* (the ARPANS Act) and its regulations, the Australian Radiation Protection and Nuclear Safety Regulations 1999, prescribe the framework for the Commonwealth.<br><br>Section 30 of the ARPANS Act prohibits any part of the Australian Government from undertaking the following conduct unless the person is authorised under a facility licence issued by the CEO of the Australian Radiation Protection and Nuclear Safety Agency:<br>(i) prepare a site for a controlled facility;<br>(ii) construct a controlled facility;<br>(iii) have possession or control of a controlled facility;<br>(iv) operate a controlled facility;<br>(v) de-commission, dispose of or abandon a controlled facility.<br><br>A controlled facility includes a plant for preparing or storing fuel for use in a nuclear reactor and a nuclear waste storage or disposal facility.<br><br>An applicant for a licence must submit the information set out in Part 1 of Schedule 3 of the Regulations which includes the applicant's plans and arrangements for maintaining effective control of the facility; the safety management plan for the controlled facility; the radiation protection plan for the controlled facility; the radioactive waste management plan for the controlled facility; the security plan for the controlled facility; and the emergency plan for the controlled facility. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | In accordance with Regulation 40, ARPANSA is required to invite public submissions on any application involving a nuclear installation such as the proposed National Radioactive Waste Repository and National Intermediate Level Waste Store. Paragraph 41(3)(g) of the Regulations requires ARPANSA to take into account the content of any public submissions in deciding whether or not to issue a licence. In the past, public submissions have been invited as part of the assessing the application for a licence to operate the Australian Nuclear Science and Technology Organisation's waste management facilities mentioned on page 9 of the National Report.<br><br>ARPANSA's Regulatory Branch assess all licence applications against accepted standards for radiation protection and nuclear safety. The assessment and subsequent licensing recommendations (including non-statutory conditions of licence) are recorded in a report to the CEO of ARPANSA called the 'Regulatory Assessment Report'. All licences issued by the CEO are subject to the statutory conditions of licence, that is, the conditions mentioned either in the Act or Regulations. Licence conditions enforcing accepted standards in areas such as occupational exposure, disposal of radioactive waste and dose limits are found in Part 4, Division 4 and Part 5 of the Regulations.<br><br>In deciding whether or not to issue a licence, the CEO of ARPANSA must take into account the following significant matters:<br>(i) international best practice in relation to radiation protection and nuclear safety as it relates to the licence application;<br>(ii) whether the information establishes that the proposed conduct can be carried out without undue risk to the health and safety of people, and to the environment;<br>(iii) whether the applicant has shown that there is a net benefit from carrying out the conduct relating to the controlled facility; and<br>(iv) whether the applicant has shown that the magnitude of individual doses, the number of people exposed, and the likelihood that exposure will happen, are as low as reasonably achievable, having regard to economic and social factors; and<br>(v) whether the applicant has shown a capacity for complying with these |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | regulations and the licence conditions; and<br>(vi) the content of any submissions made by members of the public about the application.<br><br>A copy of the licence authorising the decommissioning of the Moata nuclear research reactor can be found at: http://www.arpansa.gov.au/pubs/moata_dec_lic.pdf<br>The reference to an environmental impact assessment/statement on page 28 of the National Report refers to a separate national regulatory framework for environment protection established under the *Environment Protection and Biodiversity Conservation Act 1999*. Further information on this framework is available at http://www.ea.gov.au/epbc/index.html |
| AU | 2 | P Kayser | 8 /15 | Section G, p. 22-23 / Section H, p. 28-29 | **Question** | What are, in detail, the legal bases for licensing spent fuel/radioactive waste management facilities? On which regulations, codes, standards and guidelines are the safety and environmental assessments of spent fuel/radioactive waste management facilities based? |
| | | | | | **Answer** | All spent fuel in Australia is owned and managed by the Australian Government and is licensed under the ARPANS Act and Regulations. Radioactive Waste is managed in one of nine jurisdictions (the Australian Government, the six State Governments and the two Territory Governments) in accordance with the Act and Regulations in that jurisdiction. Codes of Practice promulgated by the Radiation Health Committee are utilised by all jurisdictions for the management of radioactive waste.<br>For further information please see the answer to the question above. |
| AU | 2 | P Kayser | 8 / 15 | Section G, p. 22-23 / Section H, p. 28-29 | **Question** | How does licensing proceed? what documents with which contents have to be submitted and who is the licensing organization / agency? Who applies for the licence? |
| | | | | | **Answer** | Please see the answer to the question two above. |
| AU | 2 | P Kayser | 8 / 12 / 15 | Section G, | **Question** | It is stated, that a review of safety could lead to an amendment of license conditions |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | p. 22-23 / Section H, p. 28-29 | | to instigate facility improvements. Are there any regulations demanding the compliance to the actual state of the art? Could modifications for compliance with the state of the art and science be required during the operating lifetime of spent fuel/radioactive waste management facilities? |
| | | | | | **Answer** | Legislation in all jurisdictions allows the regulatory body to review facility safety and imposed improvements through licence conditions. Most State and Territory legislation requires adherence to the ALARA principal. Changes to state of the art could lead to changes to licence conditions.<br><br>The following information is provided on the licensing process undertaken by the Commonwealth regulatory body, the Australian Radiation Protection and Nuclear Safety Agency.<br><br>Pursuant to Regulation 50 of the Australian Radiation Protection and Nuclear Safety Regulations 1999, the holder of a licence must, at least once every 12 months, review and update any plans and arrangements for managing the controlled facility, controlled material or controlled apparatus to ensure the health and safety of people and protection of the environment. Section 36 of the *Australian Radiation Protection and Nuclear Safety Act 1998* allows the CEO of ARPANSA to impose addition or vary existing licence conditions. Details of what ARPANSA would expect licence holders to consider in reviewing plans and arrangements in contained in the Regulatory Expectations Guideline available at http://www.arpansa.gov.au/ass_info.htm#plans |
| AU | 2 | P Kayser | 8 /15 | Section G, p. 22-23 / Section H, p. 28-29 | **Question** | Which organization or governmental agency monitors compliance of spent fuel/radioactive waste management facilities with the safety conditions foreseen in the submitted licensing documents during and after construction (who is the regulatory body)? |
| | | | | | **Answer** | There are nine regulatory bodies within Australia, as follows:<br>• Commonwealth: the Australian Radiation Protection and Nuclear Safety Agency;<br>• New South Wales: the Department of Environment and Conservation, previously know as the Environment Protection Authority;<br>• Queensland: Department of Health |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | • South Australia: Department of Human Services<br>• Tasmania: Department of Health and Human Services<br>• Victoria: Department of Human Services;<br>• Western Australia: Radiological Council within the Department of Health<br>• Australian Capital Territory: Department of Health<br>• Northern Territory: Department of Health and Community Services |
| AU | 2 | P Kayser | 8 / 15 | Section G, p. 22-23 / Section H, p. 28-29 | **Question** | To what extent is decommissioning considered during licensing of spent fuel/radioactive waste management facilities? |
| | | | | | **Answer** | The only agencies that conduct operations that are of a sufficiently large scale to warrant considerations of decommissioning prior to licensing are Australian Government agencies.<br><br>The Australian Government operates the spent fuel and radioactive waste management facilities set out on 9 of the National Report. Decommissioning was considered in the Preliminary Safety Analysis Report submitted with the licence application to construct the new Replacement Research Reactor, which includes a spent fuel facility. This included the choice of materials to minimise activation, space for access and minimisation of the radioactive waste that will be produced during commissioning. A preliminary decommissioning plan will be established during the construction of the reactor. The regulatory body, the Australian Radiation Protection and Nuclear Safety Agency, must be satisfied that the applicant has plans and arrangements to satisfy decommissioning requirements before it will issue a licence to operate the replacement reactor and spent fuel facility. |
| AU | 2 | P Kayser | 11 | Section H, p. 27, 5th para | **Question** | It is a bit confusing to read that radioactive waste is discharged into the air or sewer etc. Is this waste released from supervision before i.e. is it no longer considered to be radioactive waste before? |
| | | | | | | Discharge of radioactive waste to the air or sewer usually takes place as part of an on line operation such as in the preparation and dispensing of radionuclides. Once material has been collected and classified as radioactive waste it is rarely disposed of by this method. |

## Target country: Australia

| | | | | | | |
|---|---|---|---|---|---|---|
| AU | 2 | P Kayser | 12 | Section H, p. 27 | **Question** | It does not become clear what is meant by “past practices” for the purposes of this report. Which are “past practices” in Australia relevant for the Convention? |
| | | | | | **Answer** | Without wishing to incorrectly interpreting the Joint Convention, Australia has taken the term ‘past practices’ to refer to radioactive waste management facilities that do not exist or are not under general regulatory control at the time the Convention entered into force on 18 June 2001. In this regard, Australia wishes to clarify its National Report to identify the place know as the British Atomic Weapons Test Site at Maralinga in South Australia as a past practice for the purposes of the Joint Convention. Further information on the regulatory oversight and rehabilitation of the place can be found at http://www.arpansa.gov.au/licon.htm#disr |
| AU | 2 | P Kayser | 13 | Section H, p. 28 | **Question** | It is stated, that an environmental impact assessment may be required. Which are the circumstances, that could lead to such an EIA and what is the reason not to make it compulsory? |
| | | | | | **Answer** | The reference to an environmental impact assessment/statement on page 28 of the National Report refers to a separate national regulatory framework for environment protection established under the *Environment Protection and Biodiversity Conservation Act 1999*. Further information on this framework is available at http://www.ea.gov.au/epbc/index.html The actions taken that might affect the environment include nuclear actions (as defined in the Act). If a person has referred a proposed nuclear action to the Commonwealth Environment Minister and the Minister has decided that the proposed action requires approval, an environmental assessment must be carried out.<br>The purpose of an environmental assessment is to bring together all the information on the impacts that a proposed action would have on matters protected by the EPBC Act, to ensure that the Minister makes an informed decision on whether or not to approve the action. As indicated above, the regulatory framework established under the Act is distinct from that established under the *Australian Radiation Protection and Nuclear Safety Act 1998* in that the former is limited to assessing and authorising the impact of an action on the environment (the latter covers people **and** the environment). |
| AU | 2 | P Kayser | 16 | Section H, p. 28 | **Question** | It is stated, that conditions could be imposed to cover the reporting of significant safety incidents. Which are the circumstances, that could lead to such an imposition |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | and wouldn't it be convenient to have it as a generally binding obligation? |
| | | | | | **Answer** | The legislation in each jursidictions contains reporting requirements on matters such abnormal or unplanned exposure to radiation, out of control radiation sources, damage or malfunction of a source of radiation, loss or theft of a source of radiation, contamination by a radioactive substance, unintentional or accidental release of a radioactive substance, corrective actions taken.<br><br>The following additional information is provided in relation to the Commonwealth jurisdiction.<br><br>A licence holder under the *Australian Radiation Protection and Nuclear Safety Act 1998* must comply with the following statutory conditions set out in the Regulations to the Act:<br>(i) The licence holder must investigate suspected breaches of licence conditions. If a breach is identified, the licence holder must rectify the breach and any of its consequences as soon as reasonably practicable. The licence holder must also inform the CEO about the breach as soon as reasonably practicable.<br>(ii) The licence holder must take all reasonably practicable steps to prevent accidents involving controlled material, controlled apparatus or controlled facilities described in the licence. If an accident happens, the licence holder must take all reasonably practicable steps to control the accident, minimise its consequences (including injury to any person and damage or harm to the environment), tell the CEO about the accident within 24 hours of it happening and submit a written report within 14 days.<br><br>In accordance with Regulation 63, ARPANSA has published guidelines on how licence holders will report their compliance with the Act, the Regulations and licence conditions. These guidelines, although currently being updated, can be found on the web at http://www.arpansa.gov.au/reg63_1b.pdf.<br><br>In accordance with the Act and Regulations, past incidents have been reported to the Parliament in ARPANSA's quarterly reports. These reports are available on the web at http://www.arpansa.gov.au/qtrlyrpts.htm. |

## Target country: Australia

| | | | | | | |
|---|---|---|---|---|---|---|
| AU | 2 | P Kayser | 18-20 | Section E, pp. 14-15 | **Question** | The description of the legislative and regulatory system is comparatively short. Which are the relevant parts of the regulatory framework (detailed and annotated references), and how are they interrelated? |
| | | | | | **Answer** | Australia is a federation of States and self-governing Territories. The Constitution of Australia unites the States and Territories in a federal Commonwealth under the name of the Commonwealth of Australia. The Commonwealth and each State and self-governing Territory have passed legislation to establish a legal and governmental framework for radiation protection and nuclear safety in their jurisdiction. In total there are 9 jurisdictions that have passed legislation. Annex F of the National Report sets out the relevant Commonwealth, State and Territory legislation.<br><br>The framework established by the States and Territories licenses the user of the radioactive material or the apparatus and requires the premises and the material/apparatus to be registered. The Commonwealth framework takes an entirely different approach. It divides licensing into 2 parts, controlled facilities and controlled materials and apparatus. Controlled facilities are subdivided into nuclear installations and prescribed radiation facilities. A nuclear installation includes a nuclear research reactor, a plant for preparing or storing fuel for use in a nuclear research reactor and a nuclear waste storage or disposal facility with an activity at or above the level prescribed in the legislation. A prescribed radiation facility includes a nuclear waste storage or disposal facility that has a lower activity level. Controlled facilities are licensed by activity stage eg siting, construction, possession and operation and decommissioning. The licensing process for a nuclear installation includes a public consultation process. Controlled material and controlled apparatus include sealed and unsealed sources as well as ionising and non-ionising apparatus. A user is licensed to deal with the material or the apparatus.<br><br>The legislation passed in each jurisdiction establishes a regulatory body and includes requirements to comply with accepted standards for dose limits, radioactive waste disposal etc and also require reporting of incident and exposures and gives the regulatory body powers to monitor and enforce compliance with legislative requirements. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | All jurisdictions enforce accepted standards for occupational exposure limits, dose limits, disposal of radioactive waste, transport of radioactive, air and waterborne discharge limits etc upon licence holders and registered users. These standards are usually imposed by Regulations made under the Act that created the regulatory framework but may also be imposed as specific conditions of licence or registration. Below is a schedule identifying the standard by subject and IAEA or ICRP equivalent.<br><br><u>Occupational exposure and dose limits</u><br>Australian code or standard: *Recommendations for Limiting Exposure to Ionizing Radiation, National Standard for Limiting Occupational Exposure to Ionizing Radiation (Printed 1995 - Republished 2002)*<br>International equivalent: *ICRP 60* and *BSS 115*.<br><br><u>Transport of radioactive material</u><br>Australian code or standard: *Code of Practice for the Safe Transport of Radioactive Material*<br>International equivalent: IAEA *Regulations for the Safe Transport of Radioactive Material 1996 Edition (Revised)*<br><br><u>Disposal of radioactive waste</u><br>Australian code or standard: *Code of Practice for the Disposal of Radioactive Waste by the User, Code of Practice for the Near-Surface Disposal of Radioactive Waste in Australia*<br>International equivalent: There is no international equivalent for the *Code of Practice for the Disposal of Radioactive Waste by the User,* IAEA *Near Surface Disposal of Radioactive Waste Requirements, Safety Standards Series No. WS-R-1*<br><br>The *Code of Practice for Disposal of Radioactive Wastes by the User* was promulgated by the National Health and Medical Research Council of Australia in 1985 and is used as guidance by all jurisdictions for disposal by air, water, landfill and by incineration.<br><br>A copy of the Australian codes and standards are available at |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | http://www.arpansa.gov.au/codes.htm<br><br>A copy of key provisions in Commonwealth, State and Territory legislation can be made available in request.<br><br>The following additional information is provided on the Commonwealth regulatory framework.<br><br>Section 30 of the *ARPANS Act* prohibits any part of the Australian Government from undertaking the following conduct unless the person is authorised under a facility licence issued by the CEO of the Australian Radiation Protection and Nuclear Safety Agency:<br>(i) prepare a site for a controlled facility;<br>(ii) construct a controlled facility;<br>(iii) have possession or control of a controlled facility;<br>(iv) operate a controlled facility;<br>(v) de-commission, dispose of or abandon a controlled facility.<br><br>A controlled facility includes a plant for preparing or storing fuel for use in a nuclear reactor, a nuclear waste storage or disposal facility and a nuclear reactor for research or production of nuclear materials for industrial or medical use (including critical and sub-critical assemblies).<br><br>An applicant must submit the information set out in Part 1 of Schedule 3 of the Regulations which includes the applicant's plans and arrangements for maintaining effective control of the facility; the safety management plan for the controlled facility; the radiation protection plan for the controlled facility; the radioactive waste management plan for the controlled facility; the security plan for the controlled facility; and the emergency plan for the controlled facility.<br><br>In accordance with Regulation 40, ARPANSA is required to invite public submissions on any application involving a nuclear installation such as the Replacement Research Reactor or the proposed National Radioactive Waste Repository and National Intermediate Level Waste Store. Paragraph 41(3)(g) of the Regulations requires ARPANSA to take into account the content of any public |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | submissions in deciding whether or not to issue a licence. In the past, public submissions have been invited as part of the licensing process to decommission the Australian Nuclear Science and Technology Organisation's Moata nuclear research reactor and to licence operation of ANSTO's waste and spent fuel management facilities.<br><br>ARPANSA's Regulatory Branch assess all licence applications against accepted standards for radiation protection and nuclear safety (including the Code of Practice for the Near Surface Disposal of Radioactive Waste in Australia in relation to the proposed repository and store). Regulatory expectations guidelines are available at http://www.arpansa.gov.au/ass_info.htm#plans The assessment and subsequent licensing recommendations (including non-statutory conditions of licence) are recorded in a report to the CEO of ARPANSA called the 'Regulatory Assessment Report'. All licences issued by the CEO are subject to the statutory conditions of licence, that is, the conditions mentioned either in the Act or Regulations. Licence conditions enforcing accepted standards in areas such as occupational exposure, disposal of radioactive waste and dose limits are found in Part 4, Division 4 and Part 5 of the Regulations.<br><br>In deciding whether or not to issue a licence, the CEO of ARPANSA must take into account the following significant matters:<br>(i) international best practice in relation to radiation protection and nuclear safety as it relates to the licence application;<br>(ii) whether the information establishes that the proposed conduct can be carried out without undue risk to the health and safety of people, and to the environment;<br>(iii) whether the applicant has shown that there is a net benefit from carrying out the conduct relating to the controlled facility; and<br>(iv) whether the applicant has shown that the magnitude of individual doses, the number of people exposed, and the likelihood that exposure will happen, are as low as reasonably achievable, having regard to economic and social factors; and<br>(v) whether the applicant has shown a capacity for complying with these regulations and the licence conditions; and<br>(vi) the content of any submissions made by members of the public about the |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | application.<br><br>A copy of the licence authorising the decommissioning of the Moata nuclear research reactor can be found at: http://www.arpansa.gov.au/pubs/moata_dec_lic.pdf<br><br>A copy of the licences authorising siting and construction of the Replacement Research Reactor can be found at http://www.arpansa.gov.au/rrrp.htm Further details of the Replacement Research Reactor Project can be found on the licence holder's website at http://www.ansto.gov.au/ansto/RRR/index.html |
| AU | 2 | P Kayser | 18-20 | Section E, p. 15, 4th para | **Question** | It is stated, that it is generally expected, that the appropriate regulatory bodies will be designated with the implementation and maintenance of the requirements of this convention. When is it expected, that this is put into practise? |
| | | | | | **Answer** | Each jurisdiction has established a regulatory body to implement the requirements of this Convention. |
| AU | 2 | P Kayser | 21-26 | Section F, pp. 16-17 | **Question** | The description of the general safety provisions is comparatively short. What are the provisions for financing and for the availability of experienced personnel, both for the operational phase and for the decommissioning of research reactors and U mines and mills? |
| | | | | | **Answer** | The federal government of Australia has one operating nuclear research reactor (called HIFAR), one under construction (called the Replacement Research Reactor) and one being decommissioned (Moata). These activities are regulated by the Australian Radiation Protection and Nuclear Safety Agency under the Australian Radiation Protection and Nuclear Safety Act 1998. There are no reactors under State or Territory regulatory oversight. However, uranium mining and milling activities are undertaken in and are regulated by South Australia and the Northern Territory. The mining and milling operations are required to comply with the Australian *Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores* and *the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores*. The Codes reflect internationally accepted practice at the time of publication and considered the following international documents, the *Manual on Radiological Safety in Uranium* |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | *and Thorium Mines and Mills*, Safety Series 43 (1976) and the *Management of Wastes from the Milling and Milling of Uranium and Thorium Ores, A Code of Practice and Guide to the Code*, Safety Series 44 (1976).<br><br>The following additional information is provided in relation to the Commonwealth jurisdiction.<br><br>Section 30 of the *ARPANS Act* prohibits any part of the Australian Government from undertaking the following conduct unless the person is authorised under a facility licence issued by the CEO of the Australian Radiation Protection and Nuclear Safety Agency:<br>(i) prepare a site for a controlled facility;<br>(ii) construct a controlled facility;<br>(iii) have possession or control of a controlled facility;<br>(iv) operate a controlled facility;<br>(v) de-commission, dispose of or abandon a controlled facility.<br><br>A controlled facility includes a plant for preparing or storing fuel for use in a nuclear reactor, a nuclear waste storage or disposal facility and a nuclear reactor for research or production of nuclear materials for industrial or medical use (including critical and sub-critical assemblies).<br><br>An applicant must submit the information set out in Part 1 of Schedule 3 of the Regulations which includes the applicant's plans and arrangements for maintaining effective control of the facility; the safety management plan for the controlled facility; the radiation protection plan for the controlled facility; the radioactive waste management plan for the controlled facility; the security plan for the controlled facility; and the emergency plan for the controlled facility – for an application to decommission a nuclear installation, an applicant also needs to provide a decommissioning plan and schedule.<br><br>ARPANSA's Regulatory Branch assess all licence applications against accepted standards for radiation protection and nuclear safety (including the Code of Practice for the Near Surface Disposal of Radioactive Waste in Australia in relation to the proposed repository and store). Regulatory expectations guidelines are available at |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | http://www.arpansa.gov.au/ass_info.htm#plans The assessment and subsequent licensing recommendations (including non-statutory conditions of licence) are recorded in a report to the CEO of ARPANSA called the 'Regulatory Assessment Report'. All licences issued by the CEO are subject to the statutory conditions of licence, that is, the conditions mentioned either in the Act or Regulations. Licence conditions enforcing accepted standards in areas such as occupational exposure, disposal of radioactive waste and dose limits are found in Part 4, Division 4 and Part 5 of the Regulations.<br><br>A copy of the licence authorising the decommissioning of the Moata nuclear research reactor can be found at: http://www.arpansa.gov.au/pubs/moata_dec_lic.pdf<br><br>The reactors mentioned above are owned, funded and the liability carried by the Australian Government represented by the operate of the facilities, the Australian Nuclear Science and Technology Organisation. The mines and milling facilities mentioned above are privately owned and any liability would be carried by the owner. Regulatory bodies in South Australian and the Northern Territory require a bank guarantee or cash deposit before operations can commence.<br><br>ANSTO retains staff with the necessary skills, knowledge and expertise to undertake its licensed activities – for further information visit http://www.ansto.gov.au/info/reports/ar0102/anstoar0102s2.pdf . The Organisation also co-operates with the Australian Institute of Nuclear Science and Engineering http://www.ansto.gov.au/ainse/index.html to promote education and co-operation in the fields of nuclear science and engineering.<br><br>Similarly, Australian universities provide a broad program of undergraduate and postgraduate education in the field of mining engineering. There is no anecdotal evidence to suggest there is an under supply of personnel with relevant experience in the uranium mining and milling industry. |
| AU | 2 | P Kayser | 24 | Section F | **Question** | What measures are taken to protect the public against radiation emanating from spent fuel / radioactive waste management facilities and to protect the staff in these facilities? |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | **Answer** | Australia has 9 separate legal jurisdictions:<br>• the Commonwealth of Australia;<br>• the State of New South Wales;<br>• the State of Queensland;<br>• the State of Victoria;<br>• the State of Tasmania;<br>• the State of South Australia;<br>• the State of Western Australia;<br>• the self-governed Australian Capital Territory; and<br>• the self-governed Northern Territory;<br>each with its own legislative and regulatory framework for governing the safety of radioactive waste management radiation.<br><br>The legislation relevant to each jurisdiction is listed in pages 46-48 of the National Report.<br><br>All jurisdictions enforce accepted standards for occupational exposure limits, dose limits, disposal of radioactive waste, transport of radioactive, air and waterborne discharge limits etc upon licence holders and registered users. The standards mentioned are usually imposed by Regulations made under the Act that created the regulatory framework but may also be imposed as specific conditions of licence or registration. Below is a schedule identifying the standard by subject and IAEA or ICRP equivalent.<br><br><u>Occupational exposure and dose limits</u><br>Australian code or standard: *Recommendations for Limiting Exposure to Ionizing Radiation, National Standard for Limiting Occupational Exposure to Ionizing Radiation (Printed 1995 – Republished 2002)*<br>International equivalent: *ICRP 60 and BSS 115*.<br><br>A copy of the Australian codes and standards are available at<br><u>http://www.arpansa.gov.au/codes.htm</u><br><br>Regulatory requirements mentioned above include a requirement that workers who receive radiation exposure are required to wear personal radiation monitors. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | Environmental monitoring in the vicinity of facilities ensures that doses to members of the public are below dose limits.<br><br>The following additional information is provided in relation to the policy and practices of the principal Australian Government entity, the Australian Nuclear Science and Technology Organisation, that possesses and operates radioactive waste and spent fuel facilities (set out on page 9 of the National Report).<br><br>ANSTO's Health, Safety and Environment Policy contains principles that commit ANSTO to undertake its activities in a manner that protects human health and the environment and is consistent with national and international standards. ANSTO undertakes regular and continuous monitoring of staff and of all emissions from its activities. That monitoring shows that members of the public resident in areas surrounding the site receive less than 1% of the public dose limit of 1 mSv per year. Public health studies have confirmed that the operation of ANSTO's facilities has had no negative impact upon the health of nearby residents.<br>Exposure limits for occupationally exposed workers are set under the National Standard for Limiting Occupational Exposure to Ionising Radiation [NOHSC:1013 (1995)]. The effective dose limit is 20mSv per year, averaged over a period of 5 consecutive calendar years. ANSTO has an internal ALARA trigger that requires ALARA investigations for annual worker doses greater than 2 mSv. |
| AU | 2 | P Kayser | 24 | Section F | **Question** | What are the exposure limits for workers and what other safety precautions are taken (have limits been set for women of child-bearing age)? Is a radiation dose pass kept for each worker? |
| | | | | | **Answer** | Please see answer to the question above. Dose limits are set out in *Recommendations for Limiting Exposure to Ionizing Radiation* and are 100mSv averaged over 5 years with no more than 50mSv in one year. For women who declare a pregnancy the dose limit is 1mSv to the foetus for the remainder of the pregnancy. Most workers work under a system of dose constraints and most workers who routinely receive more than a few mSv per year are monitored with personal radiation monitors.<br><br>The following additional information is provided in relation to the policy and practices of the principal Australian Government entity, the Australian Nuclear Science and Technology Organisation, that possesses and operates radioactive waste |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | and spent fuel facilities (set out on page 9 of the National Report).<br>Exposure limits for occupationally exposed workers are set under the National Standard for Limiting Occupational Exposure to Ionising Radiation [NOHSC:1013 (1995)] (which is incorporated into the in *Recommendations for Limiting Exposure to Ionizing Radiation).* The effective dose limit is 20mSv per year, averaged over a period of 5 consecutive calendar years. ANSTO has an internal ALARA trigger which requires ALARA investigations for annual worker doses greater than 2 mSv. The system of radiation protection employed is considered adequate for protection of the foetus prior to declaration of pregnancy so there are no special limits for women of child-bearing age. Occupationally exposed workers are routinely monitored for external exposure (and internal exposure if required). Comprehensive records are maintained. |
| AU | 2 | P Kayser | 24 | Section F | **Question** | What limit standards for radiation discharges to water and air do spent fuel / radioactive waste management facilities have to comply with? |
| | | | | | **Answer** | In respect of spent fuel management facilities, dose constraints are imposed usually at one-third of the public dose limits ie. 0.3 mSv per annum from any airborne or liquid discharge plus ALARA requirements (eg for ANSTO airborne discharges the ALARA objective is 0.02 mSv to a member of the public from all authorised airborne discharges).<br>Emissions from radioactive waste management facilities are regulated to levels set out in legislation or where this is not appropriate to specific licence conditions. Most radiation waste management facilities are storage facilities or near surface disposal facilities. |
| AU | 2 | P Kayser | 25 | Section F | **Question** | What measures are taken to prevent and control nuclear emergency situations? |
| | | | | | **Answer** | A licence application in relation to a nuclear installation must include the following information: the applicant's plans and arrangements for maintaining effective control of the facility; the safety management plan for the controlled facility; the radiation protection plan for the controlled facility; the radioactive waste management plan for the controlled facility; the security plan for the controlled facility; and the emergency plan for the controlled facility.<br>The following additional information is provided by ANSTO, measures to prevent |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | nuclear emergency situations include plant design; operating procedures and limits; site safety culture; ARPANSA regulation; formal processes for approval of modifications or changes to procedures.<br>In the unlikely event of a nuclear emergency situation, ANSTO's Response Plan for Accidents and Incidents at ANSTO/LHSTC covers all events. |
| AU | 2 | P Kayser | 28.1 | Section J, p. 32 | **Question** | Do you have information about orphan sources in your country? |
| | | | | | **Answer** | Yes – a centralised electronic orphaned sources register is held by ARPANSA in co-operation with State and Territory radiation protection regulators. |
| AU | 2 | P Kayser | 28.1 | Section J, p. 32 | **Question** | Are there any radiation monitors for example at points of entry into or out of the Country to detect orphan sources? |
| | | | | | **Answer** | The Australian Customs Service operates radiation monitors at various entry points into Australia. Monitors are also maintained at the Lucas Heights Science and Technology Centre (which houses ANSTO, one of the major produces of Australian origin sources) and some scrap metal merchants. |
| AU | 2 | P Kayser | 28.1 | Section J, p. 32 | **Question** | Do you have control monitors to detect orphan sources before they may reach a foundry and be melted? |
| | | | | | **Answer** | Yes. |
| AU | 2 | P Kayser | 32.1 (ii) | Section B, p. 6, first para | **Question** | It is stated, that fuel elements are transferred to a dry storage facility. How long do you intend to leave the spent fuel elements in the bedrock facility? Is this merely an interim storage or is it perhaps an indefinite repository? |
| | | | | | **Answer** | The fuel elements are held in the dry store pending shipment abroad. In preparation for a shipment, fuel elements are transferred to a cooling pond for loading into an irradiated fuel transport cask underwater. There is no intention to leave the fuel in dry store indefinitely. All spent fuel will be sent abroad in planned shipments to the US and France. |
| AU | 2 | P Kayser | 32.1 (iii) | Section B, p. 7, 12$^{th}$ line | **Question** | It is said, that users are encouraged to return disused sources to the supplier or where appropriate, arrange for their disposal at the states low-level waste repository. What happens if they do not follow this encouragement? |
| | | | | | **Answer** | The licensing and registration of sources is meant to ensure that such practices are followed. |

## Target country: Australia

| | | | | | | |
|---|---|---|---|---|---|---|
| AU | 2 | P Kayser | 32.1 (v) | Section B, p. 10 | **Question** | Does clearance (release of material) constitute part of the radwaste categorization scheme? If so, what are the general clearance criteria, and on which dose level are they based? |
| | | | | | **Answer** | There are no clearance criteria in Australia as such. If waste falls below exemption criteria it can be cleared. Waste that fall within the requirements of the User Disposal Code can be disposed of with the approval of the regulatory authority. |
| AU | 2 | P Kayser | 32.2 (iv) | Section D, p. 13, 2nd para | **Question** | Article 32 (2) (iv) (b) asks for a report that includes an inventory of radioactive waste that is subject to the convention and has been disposed of. In your report it is stated that waste already disposed of at the Mt Walton East facility is not included in the volume estimates. Does it mean that this waste does not fall under the obligations of this convention? What kind of repository is the Western Australia ´s Mt Walton East facility? |
| | | | | | **Answer** | The waste already disposed of at the Mount Walton East Facility is incorporated into the inventory in the National Report. It is identified separately in table E3 on page 45 of the National Report |
| AU | 2 | P Kayser | 32.2 (iv) | Section D, pp. 12-13, Annex E | **Question** | Do the figures given in Annex E, Table E1, contain waste from “past practices”, or do “past practices” in Australia refer only to disused U mining activities listed on p. 44? |
| | | | | | **Answer** | These are wastes from past practices not including those wastes stored at ANSTO which are in Table E2 and uranium mining wastes which are in table E3. |
| AU | 2 | P Kayser | - | - | **Question** | General question: Is it correctly understood, that there is a splitted responsibility not only in supervision but as well in legislation separating responsibility between the federal authorities and the states and territories. Does this mean, that there could be differing demands for instance in the allowed yearly dose of radiation for the general public or professionally exposed people in different states or territories? |
| | | | | | **Answer** | There are separate jurisdictions for radiation protection regulation; however, the same dose limits to workers and the public apply across all jurisdictions. |