Joint Convention
Questions Posted To Australia in 2018

Q.No	Country	Article	Ref. in National Report
*	Spain	Planned Activities	Page 65. 4th para

Question/ Comment: Who will be responsible for the implementation and operation of the NRWMF operation? Which producers will be directed to disposing of their waste at the future NRWMF?

Answer: Department of Industry, Innovation and Science (DIIS): The operator of the NRWMF is yet to be determined but will be part of the DIIS package to Government in late 2018.

The arrangements for deciding whose waste will come to the NRWMF is yet to be determined but will be part of the DIIS package to Government in late 2018. Refer to the Framework doc for this: http://www.radioactivewaste.gov.au/news/media-release-new-framework-function-guide-management-radioactive-waste-and-disposal-pathway

Q.No	Country	Article	Ref. in National Report
*	France	General	Matrix

Question/ Comment: According to the guidelines regarding the Form and Structure of National Reports (INFCIRC/604/Rev.3), the report from Australia should include an overview matrix to be used by the Rapporteur during the Country Group review.

Answer: The overview matrix is included in the published National Report available on the JC website, as Annex C (page 83).

Q.No	Country	Article	Ref. in National Report
*	Spain	General	Page 7

Question/ Comment: What are the plans of the Commonwealth Government to develop a framework governing the long-term management of radioactive wastes arising from its activities including long-term storage and disposal?

Answer: Department of Industry, Innovation and Science: The Australian Government recently released a National Radioactive Waste Management Framework which sets out the Government's policy framework, principles, objectives and the institutional arrangements needed to deliver.

It reaffirms the Government's commitment to managing radioactive waste on a life cycle basis, including through a new dedicated Waste Management Function and the identification and development of a pathway for disposal of Australia's intermediate level radioactive waste.

Refer to the Framework doc for more detail: http://www.radioactivewaste.gov.au/news/media-release-new-framework-function-guide-management-radioactive-waste-and-disposal-pathway

Q.No	Country	Article	Ref. in National Report
*	Spain	General	Section K - page 65

Question/ Comment: Please develop how design extension conditions are considered in your regulatory framework, and how do they apply to the interim storage of spent fuel and ILW.

Answer: ARPANSA applies relevant international standards, particularly those published by the IAEA, in the regulatory process and practices. For spent fuel and ILW facilities the design extension conditions are considered in the assessment of safety analyses that are prepared by the operator. The regulatory assessment takes into account the design safety features, functions of the items important for safety and the postulated events to demonstrate that the facility can withstand accidents and their progression in line with the principle of defence in depth. ARPANSA has published a regulatory guideline on construction of an item important for safety. This guideline describes the principles and criteria to be considered including principles of defence in depth, independency and diversity, single failure criteria, etc.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 6	G,44

Question/ Comment: Are you thinking about the design and construction of new facilities?

Answer: As noted at page 65 of the report:
ANSTO is currently in the design process for a new radioactive waste treatment facility (Synroc) to process (treat and condition) intermediate level liquid wastes from radiopharmaceutical production into a solid and stable form suitable for final disposal. ANSTO is also extending its radioactive waste storage facilities, both its low level solid waste and intermediate level solid waste facilities to account for future production demands of radioactive waste. The storage extension for ILW will provide for an additional five years of intermediate level solid waste production whilst the extension for LLW is projected to provide for an additional eight years of low level solid waste production.

Q.No	Country	Article	Ref. in National Report
*	Germany	Article 6	pp. 44/45, Section G.6

Question/ Comment: Siting of Proposed Facilities:
To what extent and on which level will the public submissions be part of the assessment? How is the consideration of public submissions documented?

Answer	The legislation requires consideration of the public submissions in the regulatory decision-making process. Assessment of public submissions forms part of the regulatory assessment process. The results of the assessment also indicate how the public submissions have been resolved, and the results of assessment are published on the ARPANSA website.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 8	G, 45 and 56

Question/ Comment	According to GSR Part 4 (Rq #24). How often must be reviewed and updated the Safety assessments for a spent fuel facility?
Answer	Typically the periodic safety review is performed every 10 years or at a time agreed by the CEO of ARPANSA. However, in some cases the first peridoic safety review may be required to be performed in 5 years. Further, if any changes with significant implications is undertaken at the facility, which requires prior approval from ARPANSA, the safety assessment is updated following the implementation of such approved changes.

Q.No	Country	Article	Ref. in National Report
*	Japan	Article 9.5	46

Question/ Comment	National Report states that mechanizm on event notification is existing. Can you let us know whether any events significant to safety occurred in this reporting period? It is appreciate if event description and measures taken by licensee and/or regulator is provided. (Concrete example allow us to determine whether it contains element of good practice.)
Answer	Australia has a federal system of Government with separate Federal, State and Territory radiation regulators. Each regulator is responsible for reporting to the Australian Radiation Incident Register in accordance with the National Directory for Radiation Protection - RPS6. In the reporting period there have been no incidents specifically related to spent fuel or radioactive waste management. Roughly 95% of radiation incidents are medical in nature. In the reporting period there have been two significant accidents: The first occurred in Queensland in February 2014 and involved a borehole logging source that was accidentally left on a drilling platform. It was rated at INES Level 3. This incident resulted in legal prosecution of the company and one individual. The second incident occurred in the Commonwealth jurisdiction in August 2017 and involved a quality control analyst working in radiopharmaceutical production. This incident was also rated at INES level 3. The investigation identified that the risk assessment had significantly underestimated the potential consequences of the accident scenario. Lessons learnt from this incident have been incorporated into the risk assessment of similar processes for another facility. The regulator imposed relevant licence conditions for improvement in risk assessment methodologies. A report on this incident was tabled in Parliament. Investigations into both incidents found that organisational controls, training and procedures and instructions needed to be improved.

Q.No	Country	Article	Ref. in National Report
*	Japan	Article 9.6	46

Question/ Comment	It seems necessary to be collected and analyzed operational experience by ANSTO. In addition to ANSTO's activity, dose regulator also analyze operational experiences to obtain new knowledge for review of regulatory requirements? It is appreciate if Australia provides some examples which significantly contribute to safety.
Answer	Yes. ARPANSA also used operational experience to review regulatory requirements. For example, measured operators' doses are used for optimisation of radiation protection processes such as setting facility-specific dose constraints. In addition, operational experience is used for determining the periodic safety review interval.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 11	H,48

Question/ Comment	Regarding radioactive waste sent to the near surface repository at Mt. Walton East in Western Australia, is the generator responsible for RW characterization to assess compliance with WAC? Does the operator of the facility perform audits in order to verify the compliance with WAC?
Answer	Radiological waste for disposal at Mt Walton East is characterised by either the waste generator or, in the case of legacy sources, at the centralised WA interim store in Perth. The regulator maintains oversight through observation and supervision of the disposal campaigns. External safety audits are performed by an independent regulatory authority at regulat intervals.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 12	H,49

Question/ Comment	You mentioned that the radium hill repository is now closed. Do you have a safety assessment plan?
Answer	Yes, the mining regulator within the South Australian Government has undertaken a number of studies between 2005 and 2010 that characterised the site, assessed chemical and radiological risks to humans and non human biota, and performed geotechnical and hydrologic assessments which included impacts from changes in climatic conditions. A Radiation and Environmental Management Plan has been developed detailing ongoing monitoring and management requirements. A summary of the safety assessments can be found here

http://nuclearrc.sa.gov.au/app/uploads/2016/02/Report-from-EPA-Radium-Hill-and-Port-Pirie.pdf
http://nuclearrc.sa.gov.au/app/uploads/2016/02/Report-from-DSD-Radium-Hill-and-Port-Pirie.pdf

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 12	H, 50

Question/ Comment: It is mentioned that you measures absorbed does rate , radon concentration, radionuclides in water but you do not mention contamination monitoring. Why?

Answer: Contamination monitoring of waste packages is also included in the suite of measurements performed.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 12	H,51

Question/ Comment: We see that Australia has a number of abandoned uranium mines. The report says that some of them have been rehabilitated. What is their current condition?

Answer: Uranium mining in Australia is licensed by different regulatory bodies depending on the location of the mines. ARPANSA is the responsible regulator for one former uranium mining site known as El Sherana in the Northern Territory. This mining site has now been rehabilitated, and a disposal facility constructed to house the residual radiological wastes and tailings from the mine workings. This disposal facility was licensed in 2009 following several years of remediation works.

Queensland: The Mary Kathleen uranium deposit was the only site in Queensland that had progressed to the mining and production stage. The mine closed (not abandoned) in 1982 and its rehabilitation was completed in 1985. Since the closure and rehabilitation of Mary Kathleen, studies have found some environmental issues including seepage of radioactive waters from the base of the tailings dam wall into the former evaporation ponds and local drainage system, and colonisation of rehabilitated areas with weed species. The mine is still under the regulated control of Queensland's Department of Natural Resources and Mines.

South Australia: SA has 3 former uranium mining sites, Radium Hill, Wild Dog and Mount Painter. Wild Dog and Mount Painter were very small operations with no on-site processing; naturally outcropping ore means background radiation levels are higher in the vicinity. There are some small waste rock heaps. Mine access has been blocked off and no additional institutional control measures are required.
Radium Hill was an underground operation in an area with natural ore outcrops. Radium Hill has a number of waste rock heaps, a covered tailings heap and a number of covered mine shafts. The tailings heap was used as a low level repository to dispose of waste from nearby uranium projects and laboratory waste from Adelaide. Radium Hill is licenced under the Radiation Protection and Control Act 1982. The shafts to the undergound workings have been backfilled and capped. The tailings heap was covered with soil in 1980 and a perimeter trench dug to capture any run off. There are a number of waste rock stockpiles, some with minor mineralisation. The site is managed by the South Australian mining regulator. A radiation and environmental management plan is in place detailing ongoing management arrangements. Details on the current site status can be view here: http://minerals.statedevelopment.sa.gov.au/mining/former_mines/radium_hill_mine

Northern Territory: Former mines in the South Alligator Valley area have been remediated and remain under long term monitoring . Sites are stable and remain under long term surveillance with seasonal inspections. Some small former mine sites at Adelaide River have been subject to a hazard reduction campaign to reduce physical and radiological risks to publically acceptable levels. Some small, abandoned, sites of former mining and ore processing remain within active mineral leases currently operatimg for other minerals. The former uranium mines are legacy sites with no final remediation plans in place at present. Remediation of other sites is underway in consultation with operators or, in the case of the Rum Jungle Uranium Field, being undertaken by Governments.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 12	H, 52

Question/ Comment: Regarding licenses for Rum Jungle Mine and Little Forrest Legacy : It seems that there are different licensing process for those existing facilities. If this is the situation which are the main differences between those licenses?

Answer: It is correct that there are different licensing processes because Australia is a federation of States and Territories, each with independent regulatory regimes.The Rum Jungle site is under the control of the Northern Territory (NT) Government and the NT regulator has oversight of Rum Jungle, whereas ARPANSA oversees the Little Forest Legacy Site. Little Forest Legacy Site has been acknowledged to be an existing exposure situation and has been licensed as such. That licence requires the operator, ANSTO, to prepare a plan for the medium and long term management of the site by 30 June 2018.

Q.No	Country	Article	Ref. in National Report
*	China	Article 12	H, P49

Question/ Comment: Please give more information about the long-term management plan, including information about institutional control, after the closure of the Radium Hill Low-Level Radioactive Waste Repository in South Australia.

Answer: Radium Hill was an underground mining operation in an area with natural ore outcrops. Radium Hill has a number of waste rock heaps, a covered tailings heap and a number of covered mine shafts. The tailings heap was used as a low level repository to dispose of waste from nearby uranium projects and laboratory waste from Adelaide. Radium Hill is licenced under the Radiation Protection and Control Act 1982. The shafts to the undergound workings have been backfilled and capped. The tailings heap was covered with soil in 1980 and a perimeter trench dug to capture any run off. There are a number of waste rock stockpiles, some with minor mineralisation. The site is managed by the South Australian mining regulator. A radiation and environmental management plan is in place detailing ongoing management arrangements.

Details on the current site status can be view here
http://minerals.statedevelopment.sa.gov.au/mining/former_mines/radium_hill_mine

Q.No	Country	Article	Ref. in National Report
*	China	Article 12	H, P51

Question/ Comment: Original text: A number of former uranium mines (including El Sherana) in the Northern Territory (NT) and Queensland were abandoned in the past. Some of these sites have been rehabilitated. Questions: What is the situation of the remaining uranium mines except the rehabilitated sites? What is the follow-up management plan?

Answer: South Australia: SA has 3 former uranium mining sites, Radium Hill, Wild Dog and Mount Painter. Wild Dog and Mount Painter were very small operations with no on-site processing; naturally outcropping ore means background radiation levels are higher in the vicinity. There are some small waste rock heaps. Mine access has been blocked off and no additional institutional control measures are required.
Radium Hill was an underground operation in an area with natural ore outcrops. Radium Hill has a number of waste rock heaps, a covered tailings heap and a number of covered mine shafts. The tailings heap was used as a low level repository to dispose of waste from nearby uranium projects and laboratory waste from Adelaide. Radium Hill is licenced under the Radiation Protection and Control Act 1982. The shafts to the undergound workings have been backfilled and capped. The tailings heap was covered with soil in 1980 and a perimeter trench dug to capture any run off. There are a number of waste rock stockpiles, some with minor mineralisation. The site is managed by the South Australian mining regulator. A radiation and environmental management plan is in place detailing ongoing management arrangements.

Queensland: The only operational mine in Qld (Mary Kathleen) has been rehabilitated. The mine is still under the regulated control of Queensland's Department of Natural Resourcs and Mines.

NT: Former sites in the South Alligator Valley (including El Sherana) have been remediated and are being monitored. Adelaide River area sites have been subject to a programme of hazard reduction to make them safe physically and radiologically to publically acceptable levels. The former ore prcessing site at Moline and the former mine at Fleur de Lys are within current, active mining tenements and are legacy sites for which there is no remediation plan at present.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 12	Page 49.

Question/ Comment: Is there any arrangement for implementing an institutional surveillance program at Radium Hill? Which were the measures taken for the closure of this repository?

Answer: Measures are in place and are required as a condition of licence, please see responses to questions 18807 and 18809.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 12	Section H

Question/ Comment: As in the Mt Walton East Intractable Waste Disposal Facility, where the owner of the facility (Western Australian Government) is the responsible for post-closure monitoring, is there any kind of similar provisions for institutional controls and/or guidance on long-term environmental monitoring in former uranium mines after rehabilitation and closure?

Answer: South Australia: The development approval process for facilities includes a requirement for documented proposed post-closure monitoring and controls that is subject to regulatory approval. The specific nature of controls based on location and nature of operation make this more appropriate than generic guidance. Responses to items 18807 and 18809 provide additional information to measures adopted in SA.

Northern Territory: The containment at the South Alligator Valley is subject to a regular monitoring and surveillance program which is organised by Parks Australia using specialist consultants; also inspections from other Commonwealth and NT Government agencies take place at unspecified intervals; these include the remediated mine sites. The former Nabarlek Mine site is monitored by the NT Government and the current lease holder, who employs a consultant to do field work. Program includes ground and surface water testing, vegetation, weeds and erosion assessment and radiological assessment. Long-term surveillance and monitoring programs for the Ranger Uranium Mine are yet to be formulated.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 12	Section H

Question/ Comment: Is there any further information on the long-term environmental monitoring program to be applied in stage 2 of the project for the management of the former Rum Jungle Mine Site?

Answer: NT: Details of the work programme at the Rum Jungle uranium field may be found at: https://dpir.nt.gov.au/mining-and-energy/mine-rehabilitation-projects/rum-jungle-mine

Q.No	Country	Article	Ref. in National Report
*	United States of America	Article 13	Section H pg. 53

Question/ Comment: Please describe any lessons learned during the process of licensing a fully integrated processing plant to treat intermediate-level waste in 2015.

Answer: Considering that the facility is the first of its kind, lessons learnt include: importance of rigorous risk assessment and HAZOP studies; prior regulatory approval for construction of structures, systems and components that will come in contact with radioactive material; and use of the regulator’s technical judgement in addressing the aspect of proven technology and engineering practice.

Q.No	Country	Article	Ref. in National Report
*	United States of America	Article 13	Section H pg. 54

Question/ Comment: The report describes the public participation process for the siting of the new disposal facility. Please elaborate on which aspects of the process were most useful and effective.

Answer: Department of Industry, Innovation and Science: The overall process of community consultation in the site selection process is comprised of many interlocking sub-processes. This includes:

1. Voluntary nominations of land owners to host the Facility with 90 day consultation period with communities of shortlisted sites.
2. Community sentiment surveys conducted to assess the community's willingness to further participate in the site selection process.
3. If sufficient support is evident and Minister accepts the nomination the department establishes Community Committees, Economic Working Groups, opens an office in the community and appoints a full time Community Liaison Officer (from the Community).
4. A $2M Community Benefit Fund is also established for community projects in recognition of their contribution and any short-term disruptions associated with participation in the process.
5. The consultation process is supported by:
- engaging independent technical experts where needed and information from technical site assessments, environment, heritage, infrastructure, and community sentiment, and cultural aspects;
- Maintaining an available presence - public notices published in national and relevant regional newspapers and online, inviting the public to comment and provide input into the process. Face-to-face meetings with key local stakeholders;
- Meetings with relevant associations and organisations;
- printed information detailing the Government process, radioactive waste and international best practice;
- Government has a presence in communities with fortnightly and monthly Committee meetings;
- Community and school educational tours to Australia's existing nuclear agency site at ANSTO in Sydney;
- Dedicated website, hotline, email, Facebook, fact sheets and monthly online and hard copy newsletters. In particular Facebook messenger is a key messaging tool used by the communities so this media and communication avenue has been particularly effective.

This consultation process is ongoing and evolving to fit community needs. It involves all key stakeholders no matter their view on the facility.

Also refer to the Department's Submission to the Australian Governments Senate Economics References Committee Inquiy into the Selection process for a national radioactive waste management facility in South Australia. This submission, with all other submissions to the Inquiry, is accessible at: https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/Wastemanagementfacility/Submissions

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 15	Nat. Report page 59

Question/ Comment: Does the licensee have to elaborate and send to the regulatory body periodic safety analysis reviews while the facility is under the decommissioning/closure process? How often has the licensee to do this?

Answer: Currently there is no facility under decommissioning. However, it is a standard licence condition to assess the safety performance no less frequently than every three years to ensure compliance with applicable standards and codes.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 16	H, 56

Question/ Comment: It is mentioned that for near-surface disposal sites institutional control periods of 100 and 200 years are assumed. Does this mean that the safety assessment only refers to such a period? what period of time is covered by the safety assessment?

Answer: No. The safety assessment takes into account the safety of the disposal facility beyond the institutional control period considering the performance of the passive safety features.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 16	H, 58

Question/ Comment: In page 58 is stated The regulatory authority in each jurisdiction is responsible for the characterisation and segregation of radioactive waste in their jurisdictions. Which is the extent of that responsibility?

Answer: The regulatory authority only provides guidance for characterisation and segregation of radioactive waste in the respective jurisdiction, and the operators provide the regulators with procedures for characterisation and segregation as part of operating arrangements. These aspects are monitored through jurisdictional compliance monitoring programs.

Q.No	Country	Article	Ref. in National Report
*	Germany	Article 16	p. 58, Section H

Question/ Comment: Could Australia please explain in more detail why it is not possible to create a standard regulation applying to all territories for safety of spent fuel management and safety of radioactive waste management?

Answer: Australia has a federal system of Government with separate Federal, State and Territory radiation regulators. Each jurisdiction has its own legislation related to radiation protection. However, spent fuel operation is undertaken only by a Commonwealth entity, which is governed by the ARPANS regulations and ARPANSA is the regulatory authority for this conduct. For regulation of radioactive waste management, national uniformity is maintained through the National

Directory for Radiation Protection (NDRP) where all codes and standards are referred to and all jurisdictions are required to adopt those in their regulatory framework. The Australian government is working towards establishing a National Radioactive Waste Management Facility (NRWMF) comprising a low-level waste disposal facility with a co-located storage facility for intermediate level waste. If the national facility eventuates, it will be governed by ARPANS regulations and ARPANSA will be the regulatory authority for this NRWMF.

Q.No	Country	Article	Ref. in National Report
*	Euratom	Article 18	E, 21

Question/ Comment: The National Report states that the Australian jurisdictions are working together towards a uniformisation of regulatory requirements and practices, and lists 4 national standards that have been adopted by the Commonwealth. However, the list of legal documents in Annex B shows that only Tasmania and South Australia have adopted one document each in the last reporting period.
Is there a plan or a schedule to harmonise the corresponding Laws, Regulations, Standards on radioactive waste management in all Australian jurisdictions?

Answer: Each jurisdiction has its own legislation related to radiation protection. National uniformity is maintained by applying the uniform requirements for radiation protection practices through the National Directory of Radiation Protection (NDRP). For example, Schedule 11 of the NDRP states that the codes and standards that are referenced therein must be adopted by all jurisdictions within their respective regulatory frameworks. Currently Australia is working on options for national approach to the regulation of radiation safety and security with an aim for a seamless regulatory experience for the safe use of radiation. These options include proactive implementation of the current NDRP, enaction and implementation of model law, and single national legislation.

Q.No	Country	Article	Ref. in National Report
*	Canada	Article 19.2.6	page 28

Question/ Comment: With respect to the regulatory agencies responsible for uranium mining and milling, where does the technical capacity reside for the inspection of complex structures such as tailings dams?

Answer: South Australia - The SA mining regulator possesses the technicial capacity internally and through engaging consultants to assess and inspect tailings dam facilities.

Northern Territory - On occasions where a specialist skill, such as dam engineering, is not present at the required level within the regulatory staff, independent experts have been enagaged by the NT Department of Health. Some mine sites may be required to engage independent experts in specialised techncial areas. Such experts may be subject to approval by the Department.

Q.No	Country	Article	Ref. in National Report
*	Euratom	Article 20	E, 29

Question/ Comment: The National Report lists the 9 regulatory bodies of Australia, and indicates the approximate number of licensees/licenses and the staff they have. There is a large variability in these numbers, and it is difficult to infer whether the number of regulatory staff is adequate for the supervision of the large number of licensees. Could Australia provide some more information on this?

Answer: Some State and Territory regulatory bodies currently face challenges with maintaining staffing levels, but in all cases there are arrangements in place to ensure that health and safety imperatives are not compromised.

Further details, where available, are provided in the answer to Question 18592 (asked by France).

Q.No	Country	Article	Ref. in National Report
*	France	Article 20	Section E - pages 29-32

Question/ Comment: The report indicates the "recruiting qualified staff is an issue, as there is a relatively small pool of qualified radiation protection and nuclear safety experts within Australia".
Could Australia provide further information on the human resources of the regulatory body (e.g. competences, education background, man/woman ratio and staff turnover for the past years)?
Could Australia indicate:
- If the regulatory body has sufficient staff to perform safety assessments on all the licensing documentations or do they also rely on appointed experts for reviewing the license applications?
- If yes, how are these experts selected and how is their independency guaranteed?
Does Australia have an official independent expert organisation in charge of the technical support to the safety authority?

Answer: ARPANSA: Currently Regulatory Services Branch (RSB) has 22 staff. 17 of the 22 staff are technical staff who are able to undertake general safety and security assessments. However, the number of staff who are competent to undertake safety and security assessments of spent fuel and radioactive waste management facilities is limited. Any shortfall in resource is currently addressed by employing short-term contractors, and by also by reallocating resources from the inspection and compliance monitoring program using a graded, risk-informed approach.
At present the number of female technical staff accounts for around 20% in ARPANSA Regulatory Services, but it is hoped to improve this statistic through a recent ARPANSA initiative to address the gender imbalance across the organisation. Turnover of staff in the Regulatory Services is low, with only 5% turnover per annum averaged over the last 5 years.
When external contractors are engaged, they are required to sign “no conflict of interest” declaration statements.
ARPANSA has recently benchmarked itself against the requirements of ISO 17020, and as a result has reviewed and updated its competencies for inspectors. It is currently piloting a Qualification Card system whereby all new inspectors will undergo competency checks in core areas for inspectors e.g. inspection and enforcement, nuclear installations,

radiation protection, regulatory systems etc. These competencies are additional to the mandatory qualifications and skills of the inspectors which is typically a tertiary qualification in science or engineering.
Australia does not have an official independent expert organisation in charge of the technical support to the safety authority per se, although strong technical expertise exists within the national regulator (ARPANSA) and operator (ANSTO). ARPANSA is also able to call upon external consultants obtained both domestically and internationally to supplement its in-house capabilities.

Queensland: EDUCATION & COMPETENCIES: Scientific and technical staff are tertiary educated with physics, chemistry, engineering or environmental qualifications. Most also have post-graduate qualification in medical physics. M/F RATIO: 8 male, 3 female. STAFF TURNOVER: The Radiation Health Unit has been reasonably stable over the past 5 years: One full time physicist position was converted to a policy position and filled; one officer is on long-term leave but a person has been appointed to fill that temporary vacancy; one short-term temporary position created and filled. SUFFICIENT STAFF: Qld regulator performs all safety assessments on licensing documentation. The Radiation Health Unit assesses the more complex or unusual licence applications and has developed assessment protocols so that the Department's Public Health Licensing Unit can assess other applications.

South Australia: The regulatory body has approximately 230 staff, covering environmental as well as radiation regulation. 17 staff work directly in radiation regulation, supported by other staff in areas such as business support, investigation, legal advice, and community engagement. Regulatory staff must have relevant degree-level qualifications and undergo a training program. Safety assessments for licensing are performed by the regulatory body, with the exception of accredited third party inspection of newly installed radiation apparatus.

Victoria: The Victorian Department of Health and Human Services has a Radiation Safety Team within the Regulation and Compliance Division comprising 11 personnel with backgrounds in physics, medical physics, health physics, nuclear medicine, radiography and environmental health. Many of these personnel have both government and non-government experience within their respective areas of expertise. The team has been stable with respect to staff turnover for several years.
The Victorian Department of Health and Human Services generally has sufficient expertise “in-house” to enable it to assess licence applications and associated documentation. On occasion, for more complex areas, such as (historically) synchrotron radiation protection design construction and approval assessments, and some waste disposal matters associated with mineral sands sector, the Department has sought outside expertise to verify its assessments and conclusions.
Despite Australia having a relatively small population of radiation protection professionals, assistance is sought from private sector radiation protection experts, often based within another Australian or overseas jurisdiction.
Victoria does not have an official independent technical support organisation.

Australian Capital Territory: The ACT has two Physicists (Radiation Safety Officer and Senior Radiation Safety Officer, one male and one female) and a Manager (female, with responsibility for both the Radiation and Environment regulatory groups). The current staff are qualified to Masters or higher level but a degree in Physics, or closely related subject with a Physics major, is the base requirement for the positions). In the past, staff turnover rates in this area have not been high but, due to the relatively small number of positions, any staff movement could have a significant impact.
The ACT has the Radiation Council as the decision-making body, but some of their functions have been delegated to the regulatory body in order to streamline operations.
The Radiation Council members are nominated and appointed via a strictly regulated process involving Ministerial approval.
ARPANSA provides independent technical support as required.

Tasmania: In Tasmania we have been fortunate to have had a stable regulatory workforce of 4 for approx. 25 years. The 3 regulatory physicists all came from a standard physics background and learned their regulatory role via professional development and continued learning. The licensing officer is highly technically literate and has an excellent knowledge of regulation. None of the staff obtained this knowledge according to a formal programme but via peer to peer learnings and professional development that built on existing qualifications.
The Tasmania unit had a 50/50 male to female ratio until 2016. It is a small unit of 4 permanent staff.
Recent recruitment and succession planning has added a regulatory physicist with 10 years’ experience as a senior jurisdictional regulator who also has a mechanical engineering degree and Masters in Medical Physics.

The unit runs a radiation protection intern programme for early career scientists or graduates. The intern programme involves carrying out a radiation protection research projects and understanding the nature of regulation, compliance and enforcement. There is no structured content and learnings are obtained in the workplace. The programme has attracted Masters in medical Physics graduates and Masters in Radiation Protection (France) who wish to expand their regulatory knowledge. The plan is to increase the pool of trained Health Physicists who may wish to work in Tasmania when the opportunity arises.
The unit has a high workload but performs safety assessments on all licence applications within the unit
The Australian context relies on good working relationships between federal and state regulators. A recently developed Radiation Regulator’s Network has formalised some of these existing relationships and is building on them.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 20	Pag 31. Para 1.

Question/ Comment: It is said that all regulatory bodies have some sources and store a small quantity of radioactive waste. What will be the final destination of all that material? Is it the NWMRF?

Answer: Department of Industry, Innovation and Science: It is anticipated that the highest possible percentage of Commonwealth waste will be disposed or stored at the NRWMF.

The exact waste that will be moving to the NRWMF has not been finalised at this point.

The Government, through its new National Radioactive Waste Management Framework, has also committed to identifying and developing a pathway for disposal of Australia's intermediate level radioactive waste.

The strategy and campaigns for relocation of waste will be developed by the new Waste Management Function and waste owners, and overseen by the regulators.

Q.No	Country	Article	Ref. in National Report
*	United States of America	Article 20	Section E pg. 29-32

Question/ Comment: Given the presence of nine radiation protection regulatory bodies for the various jurisdictions, please describe how consistent regulatory oversight among the different jurisdictions is ensured.

Answer: Each jurisdiction has its own legislation related to radiation protection. National uniformity is maintained by applying the uniform requirements for radiation protection practices through the National Directory of Radiation Protection (NDRP). For example, Schedule 11 of the NDRP states that the codes and standards that are referenced therein must be adopted by all jurisdictions within their respective regulatory frameworks.

Q.No	Country	Article	Ref. in National Report
*	Canada	Article 21	page 33 and 67

Question/ Comment: On Page 33 it is mentioned that both the Northern Territory and South Australia require uranium mine owners to provide a bank guarantee or cash deposit before operations can commence.
On Page 67 it is mentioned that the NFCRC recommends that the "full costs of decommissioning and remediation with respect to radioactive ore mining projects are secured in advance from miners through associated guarantees".
Do the current financial guarantees not secure full decommissioning costs or does the recommendation relate to applying more scrutiny on how decommissioning costs are calculated and the frequency of updates to remediation plans and costs?

Answer: SA - The Mining Act 1971 allows the committed Minister to require the holder of a tenement to have a security bond (e.g. cash deposit or bank guarantee). The mining regulator has a calculation tool to assess bonds and they are reviewed at least every 3 years. Financial guarantees broadly secure full decommissioning costs for current operations. The exception is the Olympic Dam project as this operation is regulated under separate legislation.

NT - The financial security (guarantee) for the Ranger Uranium Mine is held by the Commonwealth Government and is re-calculated every year to ensure currency and minimisation of liability to the community.The security for the Jabiluka Mine site is held by the NT Government. This sum is assessed every year and covers the estimated maintenance and monitoring costs for the site which is being remediated The Jabiluka site is still under the control of, and monitored by, the operator as part of the ongoing remediation process. Long term management and surveillance programmes are being implemented at Nabarlek and South Alligator Valley under the auspices of the current NT and Commonwealth Governments respectively.

Q.No	Country	Article	Ref. in National Report
*	France	Article 22	Section F - page 36

Question/ Comment: The Western Australian Government has the financial responsibility for the post-closure monitoring of the Mt Walton East Intractable Waste Disposal Facility (near-surface and bore-hole waste disposal facility currently operational). Today, no specific funds are set aside for the post-closure monitoring.
Could Australia clarify:
- whether the legal framework for this site requires post-closure institutional control and monitoring? If yes, when will the funding be allocated?
- if a post-closure environmental monitoring programme exists,
- if interactions between the regulator and citizen stakeholders with post-closure monitoring results are envisaged?

Answer: The approvals process for Mt Walton East requires a decommissioning and post closure plan to be developed prior to closure. This plan will include funding provisions which are the responsibility of the State Government of Western Australia. This plan will also include post-closure monitoring and stakeholder engagement arrangements.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 22	Página 36. Second paragraph "Financing o

Question/ Comment: What is the status of the different disposal facilities already existing in the country? Why is just Mt Walton the only one to be subjected to post-closure monitoring?

Answer: As well as the Mt Walton East disposal facility (which is still operational), the El Sherana disposal facility in the NT is closed and subject to ongoing post-closure monitoring.

Q.No	Country	Article	Ref. in National Report
*	United States of America	Article 22	Section F pg. 33-34

Question/ Comment: The U.S. commends Australia on endorsement of a four-year strategic workforce plan and implementation of several key initiatives that include the streamlining of recruitment processes, succession planning, and launch of a Diversity and

Inclusion Plan. The U.S. also compliments Australia for preparing the plan for a National Learning Strategy to support knowledge development and transfer. In the future, please consider providing information on the effectiveness of these initiatives.

Answer Australia is grateful for the encouraging comments and has noted the suggestion.

Q.No	Country	Article	Ref. in National Report
*	Canada	Article 22.3	page 36

Question/ Comment Do the financial guarantees posted by operators to cover the costs associated with decommissioning licensed facilities include the costs of monitoring the facility and surrounding environment during the transitional period between the completion of active decommissioning activities and closure?

Answer It is a legislative requirement that the applicant (operator) must demonstrate a capacity to comply with the regulations and any conditions likely to be imposed on the licence. This includes sufficient financial and human resources to manage certain conduct including decommissioning and closure.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 24	F, 37

Question/ Comment You do not mention a last dose limits for the lens of the eye (15 mSv). Do you taking into account?

Answer Dose to the eye is taken into consideration in any investigation. Practically, ANSTO has an investigation limit of 1 mSv/month which means that any exposure is investigated before the dose limit is reached.
The national code for radiation protection in planned exposure situations RPS C-1 also stipulates an annual equivalent dose to the lens of the eye of 20 mSv per year, averaged over a period of five consecutive years.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 24	F (Page 37)

Question/ Comment The report mentions that "Public health studies have confirmed that the operation of ANSTO's facilities has had no negative impact upon the health of nearby residents". How do you estimate the impact?

Answer ANSTO consistently monitors the radioactivity in the surrounding environment and publishes this information for the local community. These reports are available on the website and instantaneous information is available at: http://www.ansto.gov.au/Resources/Localenvironment/index.htm
ANSTO can demonstrate that the emissions are well within all regulated targets for airborne, liquid and solid wastes. There is a computational model used to take the measurements, wind directions and create a dose model for people in the critical group around ANSTO.
Extensive health studies of local residents were carried out in the 1990s as part of the approval process for the OPAL reactor. The independent environmental analysis of the proposal concluded that “there were no observable (or measurable) deleterious health effects upon the surrounding population which could be attributed to radioactive emissions from the present reactor or other infrastructure at the LHSTC”. This conclusion necessarily envelopes any health effects from spent fuel or waste management facilities on the site.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 24	F

Question/ Comment How do you prevent that uncontrolled and unplanned releases of radioactive effluents into the environment can occur?

Answer ANSTO: ANSTO applies international best practice controls to mitigate or eliminate any risk of uncontrolled or unplanned release, whether during transport or through process failure.

When transporting radioactive liquid on the ANSTO site there is always double containment. The radioactive liquid is contained in a closed container which is then enclosed in a second container, which is made of a separate material from the first. Examples are a plastic carboy in a Hazspill container, a polyethylene tank inside a steel shell or a steel tank inside a spill tray which can hold the entire contents of the tank. ANSTO strictly maintains conservative speed limits, secures all transport vessels to the vehicle, and deploys emergency spill kits in in all vehicles transporting radioactive liquids. Liquid packages will only be transported if they meet ANSTO’s strict safety requirements.

ANSTO applies a strong focus on design in order to mitigate or eliminate the risk of any spill due to physical or chemical failure. Most facilities are seismically designed and structurally sound. All areas which work with radioactive liquids have a dedicated drainage system that is independent of the non-radioactive sewer and drainage systems. This independent drainage system has the capacity to manage radioactive liquids and uses doubled-walled pipework and dedicated storage tanks.

Northern Territory: Prevention of uncontrolled releases is practically an impossible task for a regulator. Best Practice is to ensure operators have appropriate systems in place to minimise risks of such events happening; and appropriate mitiigation plans in the event there is an occurence.

To obtain approval, Mining Management Plans are required to demonstrate the presence and implementation of plans for defence-in-depth to prevent uncontrolled releases. This is often a three-level system.For example, in the case of the catastrophic failure of the leach tank at Ranger Mine in December 2013; the loss of primary containment when the tank failed and a large volume of process slurry was discharged was followed by the overtopping of the secondary containment around the tank but the subsequent overflow was contained on site, as designed, and drained to a water

management pond which could only overflow into the mine pit. There was no pathway to the external environment. All material spilled was contained and there was no off-site impact.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 25	F,37

Question/ Comment: What is the frequency of the emergency simulacrums?

Answer: In our report we state that "At the national level, there is a rotating exercise schedule covering safety and security, spanning crisis and consequence management and other disasters relating to emergency response. The schedule rotates on a two year cycle through the States and Territories. During the cycle, both field and table top exercises are conducted in order to test management and field responses at all levels." Whilst this program covers at least one national level exercise per year, other hazard specific programs will hold more frequent training, drills and exercises. These may be coordinated at the state/territory level.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 25	F, 38

Question/ Comment: It is currently any kind of Safety Culture Assessment methodology underway?

Answer: Australia has a federal system of Government with separate Federal, State and Territory radiation regulators. Each regulator is responsible for reporting to the Australian Radiation Incident Register in accordance with the National Directory for Radiation Protection - RPS6.

In the reporting period there have been no incidents specifically related to spent fuel or radioactive waste management. Roughly 95% of radiation incidents are medical in nature. In the reporting period there have been two significant accidents:

The first occurred in Queensland in February 2014 and involved a borehole logging source that was accidentally left on a drilling platform. It was rated at INES Level 3. This incident resulted in legal prosecution of the company and one individual.

The second incident occurred in the Commonwealth jurisdiction in August 2017 and involved a quality control analyst working in radiopharmaceutical production. This incident was also rated at INES level 3. The investigation identified that the risk assessment had significantly underestimated the potential consequences of the accident scenario. Lessons learnt from this incident have been incorporated into the risk assessment of similar processes for another facility. The regulator imposed relevant licence conditions for improvement in risk assessment methodologies. A report on this incident was tabled in Parliament.

Investigations into both incidents found that organisational controls, training and procedures and instructions needed to be improved.

With regard to ANSTO, ARPANSA conducts inspections on a regular basis (multiple times per year) which focus on different components of the safety culture in different areas. There is a constant monitoring of the safety culture at ANSTO. In addition, there is an international review of the safety case and safety culture as part of the 10 year review of the OPAL reactor (safety and security review). This is being planned now, but will happen in a few years.

Q.No	Country	Article	Ref. in National Report
*	Euratom	Article 25	F, 37

Question/ Comment: Do the Emergency Plans of Australian States and Territories take into consideration provisions for nuclear emergencies that affect simultaneously neighbouring States/Territories and are these provisions tested in the 2 year cycle exercises?

Answer: Australia notes in our report that considering Australia’s geographical position, it is unlikely that Australia could be affected by a radiological emergency at a spent fuel or radioactive waste management facility in a neighbouring country. However, crisis management planning is fundamental to the Australian government’s preparedness to a range of risks and hazards. The Australian Government Crisis Management Framework (AGCMF) outlines the arrangements enabling the Australian Government’s ‘all hazards’ crisis management approach. This approach is a continuum of prevention, preparedness, response and recovery. Emergency plans in all jurisdictions could be applied when responding to regional emergencies if necessary, and the AGCMF and associated arrangements allow coordination of a multi-jurisdictional response if required. As these arrangements apply to all hazards, they are regularly activated for real emergencies that impact Australia but are also reflected in the exercise program specific to radiological and nuclear emergencies.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 25	1

Question/ Comment: Is there any installation that requires an off-site emergency plan? If so, how are on-site emergency plan and off-site emergency plan coordinated? How far ranged the off-site emergency plan?

Answer: No spent fuel or waste management facility requires an off-site emergency plan. There is a site emergency plan supported by a local emergency plan for specific facilities. There is also a specific communication plan and arrangements for an on-site emergency. The site emergency management plan and overall emergency management arrangements for ANSTO are endorsed by and inter-operable with State (NSW) Emergency Service Organisations. The State Emergency Service conducts joint emergency exercise with the operator at a certain frequency. The boundary is 1.6 km for off-site response.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 25	2

Question/ Comment: How the Regulatory Authority guarantee the on-site-emergency plan operation during the rad waste and nuclear installations life?

Answer: The emergency plan forms part of the plans and arrangements for managing safety, which is required for applying for a licence. This emergency plan is assessed by the regulatory authority, applying relevant international standards, for granting a licence with or without conditions. It is a legislative requirement to review such a plan at least every 3 years. Further, the regulatory authority conducts inspection of the facility and observes the emergency exercises to verify the effectiveness of the emergency plan.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 25	3

Question/ Comment: Does the Regulatory Authority make any kind of supervision in relation to emergency preparedness to the nuclear and radiological installations? If so, could you explain a little more?

Answer: See answer for question 18958

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 26	F,41

Question/ Comment: What is the current situation of the decommissioning of the HIFAR reactor?

Answer: The HIFAR reactor was defuelled and the heavy water coolant and moderator were removed from the tank shortly after shutdown in 2007. HIFAR was then put into an extended shutdown period for initial decay and characterisation under a 'Possess or Control' licence issued by ARPANSA. The outcome of this process will be the production of a decommissioning plan for HIFAR. However, actual decommissioning will have to wait until the National Radioactive Waste Management Facility is in operation.

Q.No	Country	Article	Ref. in National Report
*	Germany	Article 26	pp. 40/41, Section F

Question/ Comment: Decommissioning:
ANSTO has a licence since 2008 to process and control the HIFAR research reactor for a safe enclosure period of 10 years and possibly longer.
Will the “program” to determine waste types and volumes leading to a decommissioning licence be completed in 2018?
Will this licence expire at the day when a decommissioning licence is approved, independent of how long it will take until the decommissioning licence enters into force?
What is the average time it takes between licence application and licensing for decommissioning?

Answer: The HIFAR licence is not time limited, i.e. there is no expiry. The existing 'Possess or Control Licence' will remain in place until a 'Decommissioning Licence' is granted at which time the current licence will be surrendered. Under the 'Possess or Control Licence' ANSTO is responsible for the care and maintenance of the reactor and are not permitted to remove any radioactive structures, systems of components. However, subject to regulatory authorisation, ANSTO is allowed to conduct characterisation projects to determine the degree of activation and contamination of the reactor and to assist in planning for decommissioning, including the estimation of waste types and waste volumes. ANSTO have used these projects to estimate the waste types and volumes that will be generated during decommissioning. There is no set time to review a licence application. The time taken for ARPANSA to assess an application is largely influenced by its complexity and quality of the information provided in the application. Based on previous ARPANSA decommissioning experience, it is expected that the review of an application for a HIFAR decommissioning licence will take several months. The licence itself may have further hold points throughout the decommissioning process for further regulatory review.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 26	Pag 39.

Question/ Comment: Apart from considering international best practices, is there any specific policy on decommissioning in Australia?

Answer: Department of Industry, Innovation and Science: The department is considering decommissioning of the NRWMF in its overall package to Government at the end of 2018.

ARPANSA: ARPANSA has responsibilities for providing its licence holders with regulatory guidance and in February 2018 completed public consultation for a new Regulatory Guide: Decommissioning of Controlled Facilities. This Regulatory Guide provides information to licence holders, technical support organisations, and other interested parties on planning, conducting and completing the decommissioning of nuclear installations. This guide will apply to all Commonwealth licensees, including ANSTO, and is based upon the recently published IAEA safety standards on decommissioning. The Guide aims to assist in ensuring that the decommissioning of these facilities is conducted in a safe and environmentally acceptable manner in accordance with international best practice. This document will also be used for regulatory assessment of a Commonwealth licence application for decommissioning a controlled facility.

At the national level the Radiation Health Committee (which includes representatives from all jurisdictions) is developing terms of reference for drafting of national guidance on decommissioning and remediation of NORM practices that is based on international best practice.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 27	I, 61

Question/ Comment: In Requirements on import it is written the importation into Australia of a radioactive substance is prohibited unless two situation. Which criteria are applied to determine if the importation is allowed? What measures are taken to minimize risks during the return of the sources to manufacturer? What measures are taken to prevent and detect inadvertent movement of radioactive material? How are the sources movements monitored?

Answer: In regard to the importation of radioactive substances Customs (Prohibited Imports) Regulation (1956) Regulation 4R (2) states the importation into Australia of a radioactive substance is prohibited unless: (a) a permission in writing to import the substance has been granted by the Minister or an authorised officer; and (b) the permission is produced to a Collector.

Designated ARPANSA staff are authorised officers to issue permits under Regulation 4R of the Customs Regulations for the import of radioactive substances for medical and non-medical use.

ARPANSA assesses the intended use or purpose for the importation of a radioactive substance to check that the appropriate ARPANSA application form has been used depending on whether a radioactive substance is intended for medical or non-medical use.
Reasons for the importation of a radioactive substance being prohibited include circumstances where a radioactive substance of overseas origin is intended for disposal in Australia.

ARPANSA checks with the appropriate Regulatory Authority to verify the intended recipient is suitably licensed; or that the activity of the radioactive substance is exempt.
An ARPANSA approved Import Permit must be presented to Australian Customs for the release of the goods.

ARPANSA encourages the manufacturer or local supplier of imported sources to have a commercial arrangement preferably in the form of a written contractual obligation to repatriate the source. A redundant high activity source; or aggregation of sources representing a category 2 shipment are to be identified by the exporter; and export permission needs to be obtained from ARPANSA by use of the ARPANSA export permit application form.

Inadvertent movement of low activity radioactive material in the scrap metal export supply chain is managed by use of hand-held detectors at scrap yards and portal monitors at large metal recycling facilities that consolidate high-value stainless steel scrap for export.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 28	K, 65

Question/ Comment: What Fukushima Daiichi lessons learned have been implemented for waste and spent fuel storage facilities?

Answer: OPAL (which constitutes the only spent fuel management facility in Australia) was designed to be inherently safe and is 130 m above sea level. A set of 'beyond design basis' accidents was reviewed after the Fukushima Daiichi accident, and only small changes were required physically in the plant.

The waste management facilities were assessed seismically through a safety analysis and it was deemed that there were no requirements to update or change the waste management facilities for earthquake. The loss of power or energy in Waste Management Services (WMS) facilities has likewise been assessed; there were no modifications required to the plant or equipment in any WMS facility.

ANSTO completed its safety reassessment of OPAL based on the IAEA guidance contained in the Safety Reports Series No.80: Safety Reassessment for Research Reactors in the light of the Accident at the Fukushima Daiichi Nuclear Power Plant. This reassessment resulted in 18 recommendations being identified, none of which are considered to be findings of non-compliance with regulatory requirements or that require corrective action to ensure an adequate margin of safety continues to be maintained.

The recommendations included some suggestions for continuous improvement to the safety case for OPAL’s integral Service Pool (SPO) where spent fuel is stored. This includes the review and revision of the existing emergency operating instructions as appropriate for gross failure of the SPO and the assessment of accident sequences for the Design Extension Condition of a load heavier than the design basis 100 kg being dropped in the SPO. All the recommendations identified in the safety reassessment are currently being assessed by ANSTO line management to determine which should be actioned although it should be noted that a number are already in progress or have been completed.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 28	K, 65

Question/ Comment: Do you have future safety and security improvements for OPAL reactor?

Answer: Outside the scope of the Joint Convention.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 32	C, 9

Question/ Comment: What is the main purpose for change the policy on spent fuel management in 2014?

Answer The revised spent fuel management plan:
• will achieve savings of up to $9 million over the lifetime of the reactor, compared to the original plan to send spent fuel to the United States;
• reduces the number of outgoing shipments over the reactor's lifetime, while resulting in no additional waste return shipments; and
• complies with international best practice.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 32	C, 9

Question/ Comment It is mentioned that the spent fuel will be transported to La Hague, France for reprocessing with the waste arising to be returned to Australia as long-lived ILW. But then you mention that all waste generated by reprocessing must be capable of classification as less than high-level waste (HLW). The waste is ILW or HLW, clarify, please.

Answer The waste is Intermediate Level Waste. Both statements mean the same thing. "Waste will be Long Lived ILW" and "classification as less than high level waste" both mean that the waste will be ILW.

Q.No	Country	Article	Ref. in National Report
*	Euratom	Article 32	C, 14

Question/ Comment The National Report of Australia states that the different jurisdictions of the country have not yet adopted the radioactive waste classification system proposed by ARPANSA already in 2010.
Is there any plan or calendar for the adoption by the Australian jurisdictions of the national waste classification system proposed by ARPANSA?

Answer ARPANSA publishes codes and guides related to radiation protection. National uniformity in radiation regulations is maintained through the National Directory for Radiation Protection (NDRP) where all codes and standards are referred to and all jurisdictions are required to adopt these in their regulatory framework. ARPANSA published the safety guide for classification of radioactive waste in 2010. Currently work is progressing to apply a nationally uniform waste classification system in developing the waste acceptance criteria for the proposed National Radioactive Waste Management Facility.

Q.No	Country	Article	Ref. in National Report
*	France	Article 32	Section D - pages 16-18

Question/ Comment The report presents Radioactive waste management facilities. It mentions several stores managed by ANSTO and 8 radioactive waste interim storage facilities managed by the State and Territory Governments.
Could Australia provide for each site:
- the estimated inventory of radioactive waste for each site (type of waste, waste conditioning, volume of waste)?
- more information on the safety-related design and operational features of the facilities and buildings (e.g. building characteristics, acceptance criteria for storage...)?
- the expected duration of institutional control (active and passive)?

Answer ANSTO: See detailed information and revised table of waste holdings (Australia Answer Support Document-18590 ANSTO).

NT: See revised version of Table listing mining wastes in the NT (Australia Answer Support Document-18590 NT).

For the Northern Territory Government Interim Waste Storage Facility (NTGIWSF), the volume of waste items is <2m3. Radioisotope and activity estimates were previously provided. Waste items consititue diused (orphaned) or seized sources.
The NTGIWSF has a monitoring and inspection program and will continue to operate until all sources have been disposed of. Currently the NTGIWSF does not accept any new sources.

Australian Capital Territory Store: The ACT has a small store of some legacy sources but does not have any other radioactive waste. The inventory is unchanged from that given in Australia's National Report Annex A.

Victoria: The Victorian Government Interim Storage Facility (VGISF) has been purpose built adjacent to a suite of radiotherapy bunkers in a below-ground floor of Victoria's major cancer treatment centre. The VGISF had a design criterion of not more than 0.3 mSv per annum at public/worker access points outside the facility. Post-construction, this requirement was independently verified (and well exceeded) via radiation transmission measurements. Structural concrete of high specific density identical to that used for linear accelerator shielding requirements was used throughout construction. Specific shielding requirements for respective leaded doors were also verified post-construction. A Category 2 Security requirement overlays the facility. Currently stored material has been repackaged over the past two years by ANSTO with a view to being as consistent as possible with the envisaged waste acceptance criteria for Australia's proposed national radioactive waste management facility. The VGISF exclusively holds only those sources secured by government for the express purposes of public health protection in cases of loss of control and/or abandonment. The inventory consists essentially of legacy sources secured by successive governments over several decades.

Ongoing government controls for the material stored within the VGISF will continue until such times as either (a) a national radioactive waste management facility for low and intermediate level wastes becomes available within Australia, thereby permitting a final disposal option, or (b) decisions are made to pursue other final disposal options/pathways prior to the availability of a national radioactive waste management facility.

Tasmania: The interim store holds legacy sealed sources that the State took control of in the early 1980s. It is not an active store in that no materials are added to it. Contemporary radioactive waste in Tasmania is either short half-life clinical isotopes that are disposed to sewer or landfill, or sealed industrial gauging sources returned to the supplier (a condition of licence to supply).
The interim store is used to safely and securely hold the legacy sources and allow for proper disposal as options arise. There are Am241 gold foils from lightening protection systems manufactured in Tasmania in 1980s that were returned to the Tasmanian manufacturer (no longer operating). There are some ex Radium brachytherapy sources and a few industrial gauging sources.
All sealed sources are packaged in accordance with the Transport Code.
The store was purpose built. Its location is not well known and it is alarmed and monitored by video. The regulator can respond to any incidents in the store quickly as it is close to the regulator's offices.
The State Government controls the store via a licence issued to the Secretary of the Department of Health.
The Tasmanian store only holds legacy sealed sources awaiting a disposal pathway. No sources are added to the store.
The inventory is well documented and controlled via a licence. The activity level is around 5000 MBq of Radium in Brachytherapy needles and 1800 MBq of Am241 foils.
Sources are in Type A containers and sealed with security tags. They are then in Type A DG drums and labelled for Transport.
The licence holder actively seeks disposal options for all these sources. They remain under institutional control by the State Government.

Q.No	Country	Article	Ref. in National Report
*	France	Article 32	Section B - page 8

Question/ Comment: The National Radiactive Waste Management Facility would be a disposal and storage site:
(i) low level waste (LLW) disposal to cater for the volume of waste reasonably foreseeable for the next 100 years, with a sufficient period of institutional control without causing undue reliance on future generations or harm to the environment.
(ii) ILW storage for a period of time sufficient for the Government to establish a permanent disposal facility. .
The report indicates three short listed potential sites for the National Radioactive Waste Management Facility (NRWMF). The three potential sites are located in the State of South Australia. However, the legislative constraint in section 13 of the Nuclear Waste Storage Facility (Prohibition) Act 2000 prohibits the construction of a facility for the storage of nuclear or radioactive waste originating from outside South Australia.
On 15 November 2016, the South Australian Government released a report confirming that the removal of this constraint was not supported at this time.
Could Australia indicate whether they plan to continue to investigate other potential sites outside South Australia, or to continue site characterisation studies in South Australia pending the removal of the legislative constraint in section 13 of the Nuclear Waste Storage Facility (Prohibition) Act 2000?

Answer: Department of Industry, Innovation and Science: The Australian Government is not actively seeking new nominations for the national facility although a nominator may provide one under the National Radioactive Waste Management Act 2012 (Commonwealth legislation) at any point prior to the Minister declaring a preferred site.

The focus of our work remains, therefore, on the three nominated sites.

In terms of South Australian legal prohibitions, the National Radioactive Waste Management Act 2012 overrides any state laws that may hinder, prevent or regulate the establishment of the national facility.

No final decision has been made where the proposed NRWMF will be located.

Q.No	Country	Article	Ref. in National Report
*	Indonesia	Article 32	K, 65

Question/ Comment: How does the government conduct the public consultation in order to get community support in the site selection process? What are the roles of the operator and the regulator at this stage?

Answer: Department of Industry, Innovation and Science: The NRWM Act itself does not prescribe a requirement for general community engagement or support in selecting the site. However, the Government has consistently said that the location of the Facility should have broad support in the hosting community.

For this reason the Government has moved well beyond its statutory requirements to design and implement a site selection process that explicitly and comprehensively provides for community and broader public engagement at each significant decision point.

Throughout the process the department employs a policy of continuous engagement supported by open and transparent provision of information in communities with active nominations.

After a nomination is received or an expression of interest in nominating is received, the department visits the local community to ascertain whether there appears to be sufficient community interest in the project. This information is complemented by a desk top assessment of the technical geophysical attributes of the site.

If the Minister decides to consider the nomination, a public consultation process of no less than 60 days is opened during which the department provides information and technical detail on the project, including possible community benefits and addressing community concerns or aspects of interest. This includes community 'town hall' meetings, one-on-one and smaller stakeholder group meetings, community mail-outs, regular newsletters and appearances in local and regional

media.

At the end of this period, community sentiment is measured either through a combination of independent surveying and submissions or an independently run community vote along with public submissions and interviews. The shift to undertaking a community vote was made following community feedback.

Where a community has supported proceeding to the second phase, the engagement process deepens with the department also maintaining a permanent community presence through the establishment of local offices staffed by local and Canberra-based team members.

Additional information is also provided through visiting experts from the Australian Nuclear Science and Technology Organisation (ANSTO), and Geoscience Australia; as well as ARPANSA. In December 2017, the department supported a panel of independent experts (including a prominent anti-nuclear campaigner) to participate in open community meetings in Kimba and Hawker and engage in debate and caller feedback on South Australian regional radio. In addition, the department has arranged for interested community members to visit ANSTO to familiarise themselves with radioactive waste and how it is managed.

The department has also established Local Consultative Committees in both communities. An Economic Working Group and an Aboriginal Cultural Heritage Working Group is operating in Hawker, and a further Economic Working Group and an Aboriginal Cultural Heritage Working Group is being established in Kimba. These forums are an avenue for the communities to receive information about the process and to provide community feedback to the department.

The department continues to work closely with the local traditional owners on the project and the Government has committed that it will preserve, protect and minimise the impact on indigenous heritage and cultural aspects on the land. The department is working closely with the local traditional owners of the land at Wallerberdina Station (Hawker) through the Aboriginal Cultural Heritage Working Group and has undertaken a cultural heritage assessment at that site. The department has also sought to consult with representatives of the Barngarla People, who hold native title in an area near the Kimba sites, and looks forward to working with their representatives through a Kimba Aboriginal Cultural Heritage Working Group.

To ensure that all voices in the community have the opportunity to be heard and considered as part of the Minister's assessment, community sentiment or support will be based on consideration of a range of stakeholder views including the general community, traditional owners, businesses and adjacent neighbours. These views are expressed in a variety of ways including through direct communication with the department, submissions, and an anticipated community sentiment assessment in the second half of 2018.

ARPANSA: Until the regulator receives an application, there is no formal role for the regulator. However, in line with the principle of early engagement, ARPANSA is providing information to stakeholders on the existence of an independent regulator, and a matured regulatory framework that is in place for if/when there is an application for preparing a site for the National Radioactive Waste Management Facility (NRWMF). Further, ARPANSA has published the Regulatory Guide: Applying for a licence for a radioactive waste storage or disposal facility (May 2017) and Information for Stakeholders: Radioactive Waste Storage and Disposal Facilities (May 2017). ARPANSA has also published a number of 'Fact Sheets' related to the NRWMF for stakeholder information.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 32	C. page 10

Question/ Comment: Plesae describe the rationale to clasify CSD-V from HIFAR spent fuel reprocessing as ILW.

Answer: The spent fuel residues from the HIFAR reactor meet the IAEA and Australian classification for Intermediate Level Waste. The material has an activity level of 300 TBq per canister, which is below the IAEA definition of HLW as being in the range of 10^4 to 10^6 TBq per package. The heat load is less than 50 W per canister, which is approximately 150 W/m3, which is less than the previous level of 2 kW/m3 of heat for HLW. For these reasons the waste was properly classified as Intermediate Level Waste.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 32	spent fuel practices

Question/ Comment: What is the current status of development for a concept design for ILW disposal facility.

Answer: Department of Industry, Innovation and Science: No concept design for an ILW facility has commenced. The Commonwealth Government is working to establish a Waste Management Function organisation that will look to commence work on a final disposal pathway for ILW.

Refer to the Framework doc for this:
http://www.radioactivewaste.gov.au/news/media-release-new-framework-function-guide-management-radioactive-waste-and-disposal-pathway

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 32.1.1	C, 9

Question/ Comment: With regard to the transport and reprocessing of spent uranium silicide fuel from the operation of OPAL by 2018. Do you have a safety assessment?, in which month the first transport is planned?

Answer: Yes. Transport of spent fuel is subject to safety assessment based on the requirements of IAEA Regulations for Safe Transport of Radioactive Material SSR-6 2012 Edition. ARPANSA adopts the IAEA Regulations as Code for Safe Transport of Radioactive Materials and it is a legislative requirement to comply with this transport code. Based on the results of assessment of the safety management and operational controls in the transport plan, ARPANSA issues a shipment approval certificate with or without conditions.

The safety assessment for the transport of spent fuel has gone through an internal approval process within ANSTO by the Reactor Safety Committee and the ANSTO Safety Assurance Committee. For security reasons, ANSTO are not in a position to precisely identify the date of the planned shipment.

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 32.1.1	C,12

Question/ Comment: What is the public opinion of locations of the three potential sites for the NRWMF?

Answer: Department of Industry, Innovation and Science: Currently three sites are being considered to host the NRWMF. In order for the Resources Minister to progress with only one site nomination, he will make an assessment on whether there is broad community support also taking into account the views of particular stakeholder groups (such as neighbours or Indigenous Australians). He has also stated that no individual or group has a veto.

As to be expected with a project of this type, there are many views held in the community ranging from strong support to strong opposition, and a proportion in between.

Importantly the government has placed the community at the centre of the site selection process.

After nominations were received, the surrounding communities underwent a 90 day consultation period, at the end of which community members were asked via survey or poll whether they supported the nomination moving into the next stage of assessment.

Around Wallerberdina Station, a survey of the community indicated that about 65% supported or did not oppose it moving into stage 2 of the process.

In Kimba (which has two sites) a community ballot indicated around 57% supported moving forward.

The current stage two of the process involves further consultation, site characterisation and assessment and a final community poll to assess support.

Q.No	Country	Article	Ref. in National Report
*	Spain	Article 32.1.1	Page 9

Question/ Comment: Is there any plan to draft an integrated national program for Radioactive Waste, Spent Fuel and decommissioning of nuclear facilities in Australia?

Answer: Department of Industry, Innovation and Science: See answer #18950 above.

Refer to the Framework doc for more detail:
http://www.radioactivewaste.gov.au/news/media-release-new-framework-function-guide-management-radioactive-waste-and-disposal-pathway

Q.No	Country	Article	Ref. in National Report
*	China	Article 32.1.4	A, B &C, P4, P8&P12

Question/ Comment: According to the report content, the 3 potential NRWMF sites are all located in south Australia, and according to local nuclear radioactive storage facilities act 2000, south Australia, the radioactive storage facilities shall not accept the radioactive waste outside of this region. Please give more information about the contingency plan for radioactive waste management beyond south Australia.

Answer: Department of Industry, Innovation and Science: The national facility will be sited on Commonwealth land, and will be operating under the National Radioactive Waste Management Act 2012 (Commonwealth legislation). This Act overrides any state laws that may hinder, prevent or regulate the establishment of the national facility.

That said the Commonwealth is, to the extent possible, seeking to progress site selection and eventual construction in a manner that is as consistent as possible with State planning, environment and heritage regulations.

Q.No	Country	Article	Ref. in National Report
*	China	Article 32.1.4	A, B &C, P4, P8&P12

Question/ Comment: In the case of significant environmental impacts caused by the migration of acid mine water and heavy metals in Rum Jungle Mine site in the NT between 1954 and 1971, please give more information about the environmental remediation plan, measures, and environmental effects of the remediation.

Answer: NT: Full details of the history, environmental impacts and remediation plan for the Rum Jungle uranium field may be found at: https://dpir.nt.gov.au/mining-and-energy/mine-rehabilitation-projects/rum-jungle-mine

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 32.2.1	D,15
Question/ Comment	It is mentioned on the page 10 that the residues is a total of 1288 spent fuel elements but on page 15 the inventory of HIFAR is a total of 993 spent fuel elements (114 + 150 +729). Clarify, please.		
Answer	Australia has sent spent fuel to three different countries. There is an overall total of 2281 SFE which were transported. Of this number, 264 (150+114) were sent to the UK, 729 were sent to the USA, and 1288 were sent to France.		

Q.No	Country	Article	Ref. in National Report
*	Argentina	Article 32.2.1	D, 18
Question/ Comment	The Mt Walton east intractable waste disposal facility has chemical and radiological waste, all together in the same place?		
Answer	The Mt Walton East facility allows for disposal of both radiological and chemical waste, with appropriate safety measures including separation of waste types as appropriate.		