

SESSION 3, MONDAY 1ST MARCH 2003, TURQUOISE ROOM

Co Chairs

John Mathieson, Nirex (UK); Lake Barrett, Consultant (US) (Facilitator)

Panellists

John Greeves, Director Division of Waste Management, USNRC (US);
John Arthur, Deputy Director, USDOE OCRWM (US);
Caroline Perkins, Director Radioactive Waste Management Section, Department of
Education, Science and Training (Australia);
John Dalton, Corporate Communications Manager, Nirex, UK; and
Yves le Bars, President ANDRA and current Chairman of EDRAM, France.

Session Organisers

John Mathieson and Mark Matthews (USDOE, WIPP)

Scribe

Leif Eriksson, Waste Control Specialists (WCS), (US)

SESSION SUMMARY

The Global Perspectives panel session attracted some 180 attendees to hear the panel members address some tough lines of questioning which tended to concentrate on international repositories. Following introductions by John Mathieson, each panellist was given up to ten minutes to discuss a subject of their choice.

John Greeves first chose to cover the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The first review meeting, held in November 2003, had highlighted the need for countries to provide a commitment to provide a reliable disposal capacity and nuclear decommissioning strategies. The meeting supported the idea of using harmonised safety standards for reference purposes. The final report of the meeting can be found at:

www-rasanet.iaea.org/downloads/conventions/jointcon_summary_report_finalNov19.pdf.

He then went on to discuss the Yucca Mountain licensing procedure. The construction license application (CLA) would be assessed against the standards issued by the Environmental Protection Agency (EPA) and be guided by Code of Federal Regulations Title 10 Part 63 (10CFR63) and the US Nuclear Regulatory Commission (USNRC) Yucca Mountain Review Plan. He highlighted the fact that the regulations were designed to protect the local public and workers during the operational and post-closure periods. He added that the pending licensing decision-making process will be open and transparent.

John Arthur gave an update on the Yucca Mountain (YM) licensing process noting that the CLA was about 60% complete and should be ready for the December 2004 submission milestone. He reminded the audience that the Secretary of Energy had laid out a number of national interest reasons in recommending to the President that the Yucca Mountain repository be developed. These included national security and the need to dispose of spent nuclear fuel (SNF) from the US nuclear Navy fleet; that YM would promote the non-proliferation objective; it would help ensure energy security by providing a disposal route for the commercial nuclear

WM'04 Conference, February 29 - March 4, Tucson, AZ

plants which contribute 20% of the nation's electricity; ensure that the terrorist threat would be reduced by consolidating SNF from 39 States into one location on isolated federal land; and permit an environmentally sound disposition plan for liquid high level waste (HLW) and other USDOE owned spent fuel, which would thus reduce the "landlord" costs associated with this waste. He mentioned that YM was a phased construction project which would take account of retrievability and also co-ordinate technological developments with other USDOE Offices.

Caroline Perkins said that whilst Australia had no nuclear power stations it did have a research reactor which gave rise to intermediate level waste (ILW) from SNF reprocessing overseas. She said the Australian Government were looking for a common site for disposal of low-level waste (LLW) and storage of ILW because it only had 3700 m³ of LLW which now arose at a rate of ~4 m³ /year. She added that 26 m³ of ILW will arise from reprocessing of HIFAR fuel and a further 20 m³ from the reprocessing of the replacement reactor fuel. Approval had been given for a site 20km east of Woomera in South Australia and the licence application process is preceding. If successful, the repository should be in operation by 2004. She concluded by stating the Australian Government policy of not accepting any waste from other countries.

John Dalton explained that from a Nirex perspective the debate on international repositories is ethically wrong, practically impossible to implement and unhelpful. Finding a solution to radioactive waste was not just a scientific and technical issue, but also an ethical and socio-political one. From Nirex's experience it was essential to have a transparent approach to everything it did, an open process and responsible behaviour from all the players. He added that nations must respect their citizens' views and those nations that are developed enough to have nuclear energy must be responsible for dealing with their waste. He noted that in the latest Eurobarometer survey only 7% of respondents would agree to accept another country's radioactive waste. He thought the IAEA understated the practical difficulties when they say that 'it will be difficult to find a host' country adding that the Joint Convention makes it clear that all nations have the right to say no. Dalton further thought that discussion of international repositories impeded progress in countries like Finland and Sweden pointing out that when Dr ElBaradei, Director General of the IAEA, made comments in support of international repositories at a radioactive waste management conference in Stockholm in December 2003, there was much disquiet over his remarks. Dalton concluded that the debate on the subject was purely academic and that it would not lead to an implementable solution. He also suggested that it was unethical and irresponsible to discuss the subject as the public will not accept it and governments would not be able to implement it.

Yves le Bars concluded the panel presentations. He said there were several fundamental requirements for a sustainable waste management policy: a waste inventory of material that was well characterised and could be classified accordingly; waste had to be conditioned early, and stored and monitored prior to disposal. Further, each waste category should have a designated disposal route. He said that each country should establish a stepwise process involving stakeholders for long-term management of waste relating to both defining solutions and site selection. He noted that interim storage is an unavoidable step towards geological disposal and that it should be recognised that reprocessing was an option. On international repositories he suggested this was an "ambiguous issue", not yet an option and that it could "disturb" national programmes. In order to pursue the idea a proper decision-making process needed to be adopted. He added that despite Russia's apparent willingness to host an international repository, there was a strong opposition to waste import in most countries and that no such site had been selected. He went on to say that there were new challenges at the national level and that stakeholder involvement in a fair siting process had still to be improved.

WM'04 Conference, February 29 - March 4, Tucson, AZ

Organisational structures, such as who should own the waste management organisation (waste producers or the government), when should transfer of waste ownership take place and how the financing schemes should operate were also current challenges. At the international level the priority should be to design an adaptive decision-making process and establish a successful organisational framework.

SUMMARY OF QUESTIONS AND ANSWERS

International Repositories

Charles McCombie of ARIUS, based in Switzerland, expressed concern at John Dalton's remarks on international repositories. He mentioned that representatives of organisations in 14 countries had recently come together in Slovakia to discuss the European Union's SAPIERR project, which would look at an approach to international repositories. Further, there were many in favour of international repositories as could be seen from the papers to be presented in a later session (Session 52) He added that Nirex's argument was diverting attention away from its own programme and that discussing international repositories was "perfectly respectable" if done right.

Hans Codée of COVRA, The Netherlands, was "upset" by the statement that discussion of international repositories was "an academic exercise". He added that it is impossible for the small countries to implement single solutions and that they must work together as they already do in other areas of radioactive waste management. Further, these countries should be supported by the larger programmes.

John Greeves pointed out that the subject of international repositories was not really a US concern. He felt that Sweden, Finland and the US should take the leadership in sharing technologies with the small countries and this was a positive aspect of international co-operation.

Richard Benya of Raytheon asked for the panel's views on what alternatives are available for the small countries and who would pay for storage and security. John Dalton said that the larger programmes had a responsibility to share experiences and that each nation should deal with its own waste within its own boundaries. Exporting waste to another country was not acceptable on ethical grounds.

Sylvain Saint-Pierre of the World Nuclear Association asked if the discussions were "missing the point". The aim should not be to prevent one option or another, and that any good option should be pursued and satisfactorily demonstrated to the public.

Lake Barrett noted that it would be unthinkable for one country to export its waste to an unwilling host. In considering the various arguments he added that "everyone is correct". However, although Pangea had had a technically correct solution [for its disposal project in Australia] it was a "disaster", as they could not gain public or political acceptance. He further commented that international solutions should not be used as a "crutch" for nations to use instead of implementing their own solution but noted that many statements on international repositories could be taken out of context which could "hurt" national programmes.

John Arthur commented that building public confidence was a step-by-step process as illustrated at the already certified and operating repository for TRU waste, WIPP, in New

WM'04 Conference, February 29 - March 4, Tucson, AZ

Mexico. He also emphasised that USDOE takes its charter seriously and shares its international experience.

Michael Jensen of the Swedish Radiation Protection Authority, SSI, asked that the concept of responsibility in relation to international repositories should be considered. This was a difficult issue in the Baltic States and not easy to talk about as the radioactive waste there had been mainly generated in Soviet times. The Soviet Union no longer exists and Russia is not willing to take back SNF from any former Soviet Bloc country unless for a fee. He could however foresee an institutional arrangement, under the auspices of the UN or IAEA, on a no fee international solution for these countries, but this would be the exception rather than the rule.

A member of the audience commented that Europe may be a federation in 30 years time and thus a regional repository, if built, would by definition not be an international repository and is therefore a "moot point".

Yucca Mountain programme

In a change of subject Bob Neill of the New Mexico Environmental Evaluation Group (EEG), US, highlighted the costs for the US radwaste management programmes. According to him the WIPP project had risen from US\$1bn to US\$19bn, Yucca Mountain was US\$60bn and the USDOE Environmental Management (EM) programme was at US\$250bn. He felt that costs could be reduced by avoiding self-regulation and unnecessary changes to procedures.

John Greeves pointed out that the huge costs associated with EM clean-up were as a result of not planning and implementing a decommissioning strategy early on. However, modern practice, in line with IAEA recommendations, was that decontamination and decommissioning (D&D) should be planned from the outset of a project and this would help reduce costs at the end.

Lake Barrett asked what challenges were facing the Yucca Mountain goal to start repository operations and receive waste in 2010. John Arthur highlighted the following main areas of risk: the pre-licensing phase had already identified 293 technical issues; construction time frames were tight and preparations for waste handling operations were challenging; licensing was a two-phase process with no guarantee to go through to the next stage; and finding areas for cost reduction would be difficult.

Geological disposal and other options

Charles McCombie asked whether geological disposal was still a viable solution given that some countries are reviewing their options? Yves le Bars said that geological disposal depends upon a "driving force or champion" and well-defined strategy. He also suggested there was a need to make other nations understand what can be done. One has to manage the waste properly and have a proper process for decision-making.

John Dalton added that the UK was currently examining all options under the guidance of the Committee on Radioactive Waste Management, however Nirex believed in a phased geological disposal concept.

John Greeves said the US policy was for disposal as laid out in the 1982 Nuclear Waste Policy Act and believed this law to be consistent with international views adding that there was a caveat on retrievability. Caroline Perkins said that the Australian Government had accepted

WM'04 Conference, February 29 - March 4, Tucson, AZ

geological disposal as a safe concept, but had not yet initiated a disposal programme while watching to see if other solutions emerged.

John Neate of the Canadian Nuclear Waste Management (NWMO) indicated that Canadian law had provided for recommending one of three scenarios by November 2005: geological disposal, centralised surface storage and at-reactor storage.

Hans Codée thought that if some countries had adopted disposal whilst France, Canada and the UK were still considering options, this could bring confusion to people as there would be no clear message. John Dalton said Nirex favoured phased deep disposal although there was no national policy in the UK for Intermediate and High Level Waste. Yves le Bars also said that the French national disposal agency ANDRA also supported deep geological disposal but added that the path forward was a political question to be determined by the democratically elected French Government. In addition, the limits of ANDRA's role must be accepted and the social dimension should not be forgotten.

John Mathieson closed the panel session by thanking all participants.

John Mathieson
Leif Eriksson
Lake Barrett