

WM2014 Conference Panel Report

PANEL SESSION 001: WM Symposia 2014 Plenary Session

Co Chair(s):

Jim Fiore, (USA)
James Gallagher, (USA)

Panel Reporter: John Mathieson, (United Kingdom)

Panelists:

1. **Christopher Eckerberg, President, SKB (Sweden)**
2. **Tiina Jalonen, Director, Posiva Oy (Finland)**
3. **John Lehew, Senior Vice President, CH2M HILL Nuclear Business Group**
4. **David Huizenga, Senior Advisor for Environmental Management, US DOE**

Welcome

Mr Fiore welcomed attendee and panellists to the 40th meeting of WM. He outlined the number of awards made to students and noted that last year some 41 countries were present. He thanked the Finnish and Swedish delegations for making this year's programme a success. He outlined a number of features of the forthcoming week's programme. He mentioned the various sponsorships and scholarship awards and thanked Mr James Glasgow and Mr John Longenecker, amongst others, for their contributions. He further thanked the Programme Advisory Committee and the International Programme Advisory Committee for their contributions in developing the programme. The Tuesday evening Women of Waste Management charity this year would be the Breast Cancer Research Foundation.

Mr Gallagher added his welcome to the participants and in introducing the speakers noted that there would be no question and answer session, but speakers would be available afterwards.

In presenting the Swedish programme, **Mr Eckerberg** said that it was Swedish policy that the generation that benefits from the nuclear power should take care of the waste in a responsible way (in line with the Brundtland Commission's proposals on Sustainable Development) and that the nuclear industry has the responsibility for this. The geological repository siting process, which started in 1976, had seen the selection of a location near to the Forsmark nuclear power station, north of Stockholm, in 2009, through a volunteer process. A license application for repository construction and associated spent fuel encapsulation plant was submitted in 2011. If the application is successful, construction would start in 2016-17 with operations commencing towards the end of the 2020's. The KBS-3 concept was that spent fuel is encapsulated in a copper canister and disposed of in hard rock at some 450m depth, surrounded by a bentonite buffer. The repository would cater for the spent fuel from the country's 10 reactors located at three sites; these supplied 45% of the nation's electricity.

The success of the programme was based on a number of factors, which included strong international co-operation, public consultation with strong local involvement and co-operation (which is funded), and a trustworthy regulator. Local community veto was seen as a risk by many but encouraged working together in partnership.

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There were a number of remaining challenges including licensing, moving from theory to practice, and combining nuclear and mining activities. Maintaining public confidence throughout the process was also key – “you have to remember you have two ears and one mouth!”

Ms Jalonen said that Finland currently had four reactors operated by two companies which supplied about 27% of the country’s electricity. A new reactor was under construction at the Olkiluoto site which would also be the location of the country’s deep repository. Finnish energy policy was driven by security of supply considerations, competitiveness, self-reliance and a low CO₂ policy. Prior to 1995 the policy had been to ship fuel overseas to the Soviet Union with no return. Following joining the EU in that year, research into geological disposal was undertaken and a strategy established which would see disposal commencing within the country by 2020.

As with Sweden, Finland did not allow other countries’ waste to be disposed of and the waste had to be taken care of with no undue burden being placed on future generations. International co-operation was a key feature of the programme, especially with Sweden as Finland had adopted the KBS-3 concept. A licence application had been submitted in 2012 and construction was hope to begin in 2015 with test disposal operations commencing in 2022.

Another key feature of success was the work being undertaken with the host community. She added that the underground laboratory “ONKALO” had become such a well-known name that they were looking at ways of keeping in the eventual title for the repository.

Safety and Safety Culture, John Lehew, CH2M HILL Nuclear Business Group

Mr Lehew described the evolution of the safety culture over the past few decades noting this had been a long and challenging road to get to where we are today. The term “partnering” had taken on new connotations both in the US with DOE and overseas such as with the NDA in the UK. He showed the timeline of the DOE programme over the years with the transition from production to decommissioning in 1990 and the creation of DOE-EM following the end of the Cold War.

In 1996, DOE implemented the Integrated Safety Management System but there was a struggle in terms of complying with the requirements, but in 2014 a system of continuing improvement was introduced. Partnership with the workforce and changes in management accountability were also a key feature of improving the safety culture. Further, improvements in personal protection equipment, again involving the workforce, also contributed.

More efficient waste management practices, for example through transport and disposal of larger packages, meant there was less worker dose and improvements to the decommissioning schedules.

There continues to be challenges to the safety performance but in general safety is improving, safety metrics are improving and productivity improving.

Environmental Management Program Update, David Huizenga, Senior Advisor for Environmental Management, US DOE

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Mr Huizenga thanked WM Symposia for specifically encouraging young people to come to the conference. As this was the 25th anniversary of EM he wanted to outline the achievements of the program. However, before doing that he touched upon the recent events at WIPP.

On 6 February a salt truck had caught fire and on 15th February there had been a radiological event. The thought was that these were unrelated but the second event was complicating the investigations into the first. Americium and plutonium had become airborne (consistent with TRU waste) and triggered the HEPA filtration system to become operational. These had performed with 99.97% particulate removal efficiency. Independent (offsite) sampling and whole body counting of potentially exposed individuals showed that exposures were “extremely low”.

It was still uncertain as to what happened in either event and this will be better determined when a team goes down; such a team is currently being brought together and a plan developed to enter the mine. In the meantime, the impact on the feeder sites is being determined.

In looking at the achievement over the past 25 years, Mr Huizenga indicated that 16 out of 107 clean-up sites remained but 3,000 square miles had been reduced to 300. However, there were still \$205bn estimated future costs to clean these up.

He described the whole programme in terms of three “eras”. The first being 1989-94 focussed on characterisation and risk management, working with stakeholders and regulators on developing waste treatment solutions and addressing urgent risks. This included the development of Site Specific Advisory Boards.

In the second era, 1995-99, stability and strategy formulation was developed with the establishment of the first baseline report to understand the big, top-down, picture. This in turn led to the formulation of plans to close sites and clean-up high risk areas of the larger sites. This era also saw the first major site closure and the opening of the WIPP facility.

The third era was from 2000 to the present. This has seen 20 site and other high risk area closures and \$30bn saved on the baseline. Major D&D projects continue at sites such as Portsmouth, Los Alamos, Savannah River and Hanford.

As with other speakers, Mr Huizenga stressed the importance of international collaboration and in this context referred also the National Labs’ involvement in the Fukushima-Daiichi clean-up efforts. He added his thoughts on safety and metrics improvements and EM’s commitments to a safety first culture.

In closing he mentioned the \$100m small business initiative and welcomed WM’s small business opportunity at the conference.