

### Session 03

#### Panel: Global Partnership: Spent Fuel Management from the User's Perspective

Panel Reporter: John Mathieson, Nirex (UK)

Participants included:

- Claes Lindberg, President, SKB International Consultants AB
- Professor Shih-Hai Li, National Tsing Hua, University (Taiwan);
- Dr. Abel J. González, Senior Advisor, Nuclear Regulatory Authority (Argentina);
- Mr. Sylvain Saint-Pierre, Director for Environment and Radiological Protection, World Nuclear Association (UK);
- Enrique Biurrun, Head, International Co-operation Department, DBE Technology (Germany)
- Facilitator: Lake Barrett, Consultant (USA)

This panel discussed the proposed Global Partnership promoted by some policyholders between nuclear fuel supply nations and user nations; the Global Nuclear Energy Partnership (GNEP) Program is an example. Although supply nations and their industries would be anxious to sell reactors and fuel services, their commitment to close the fuel cycle (i.e., permanently take back fuel and high level waste) remains unclear.

The panel explored fuel take back and waste disposal from the perspective of current and prospective user nations. Given the existing legacy of spent nuclear fuel dispersed throughout the world, the panel discussed the assurances user states would require to "sign up" to a Global Partnership scheme.

More than one hundred attendees heard a lively debate from the panel. Co-Chair Dennis Berry, opened proceedings by linking the growth in the world's energy demand to an increase in nuclear power, which in turn would lead to a demand for spent fuel services. Under global partnership arrangements, these services would be provided by supplier nations to user nations.

Several themes came out of the debate: guarantees of long term supply of fuel and take-back, reprocessing as a management option, the controversial subject of regional/international storage and disposal facilities, and the question of whether the IAEA has enough bite to act as a nuclear watchdog for partnering arrangements. Claes Lindberg of Sweden called for strong commercial arrangements to underpin partnering arrangements and ensure security of the supply chain. Sweden is not focusing on a Global Partnership Scheme, because it was concentrating on managing its own spent fuel. He added that there was no view from the Swedish Government on Global Partnerships. He mentioned that Sweden had abandoned reprocessing, although reprocessing could not be ruled out in the long term, particularly if linked to new builds. The mission of SKB was to implement disposal and in the meantime CLAB was available for spent fuel storage.

From a partnership point of view, a priority for Sweden was to look for a stable supply of enriched U followed by the repository itself. Mr Lindberg asked what was the use of Global Partnerships? Will there be a market, do you buy services on commercial terms, will there be potential interference from supply nations, licensing will not be straight forward. Many contractual aspects needed to be addressed such as

if there was breakdown of the supply chain. He concluded that users needed to see a credible, commercial concept for guarantees, liabilities etc. to become convinced of such a scheme.

Professor Shih-Hai Li of Taiwan said that his country has both commercial and research reactors and that the research fuel was purchased from the US with a guarantee of take-back. They have six commercial units and may have two more in the future. Initial efforts for HLW Management started in 1980. He noted that Taiwan had considered reprocessing against direct disposal but had concluded on cost grounds not to go ahead with reprocessing, and that they were looking at cooperation with China or the US, or long-term storage.

Future energy supply from nuclear was an issue plus the relationship between Taiwan and China was a difficulty. He concluded that his country would welcome partnering arrangements which would help address the political and geological difficulties. The frequency of national elections and ruling party changes meant policy instability.

This is compounded by the fact that geological disposal would only be available on islands near to mainland China due to the main island being in an earthquake zone.

Abel Gonzalez of Argentina pointed out that his country had instigated a nuclear renaissance following several years of decline. It had exported nuclear technology and services to countries as far afield as Peru, Egypt and Australia. He challenged the “patronising” notion of “supplier” and “user” nations saying that any partnership should be seen to be one of equals. Through graphic illustration involving falling coconuts from shaken palm trees and bound guard dogs, he further challenged the adequacy of the current IAEA structure to be able to act as an oversight body unless their programme changes.

Sylvain Saint Pierre, of the World Nuclear Association suggested that the capacities of existing reprocessing were sufficient to meet foreseeable demands. Countries without such facilities need affordable back end facilities which should be located in countries with expertise. He further suggested that multinational storage or disposal facilities would be an affordable approach for many small nuclear nations. However, he recognised the difficulties of achieving this but believed it could be done when several national programmes were realised. The partnering debate should also not be taken in isolation from the global energy and environment debate.

Enrique Biurrun of Germany said that nuclear fuel cycle closure is the key for the nuclear renaissance; there will be no further nuclear power without SF/HLW repositories. The German commitment was to reduce CO<sub>2</sub> emissions but this was problematic with the phase-out of nuclear and the increase in CO<sub>2</sub> emissions despite the use of windmills – 20 GW(e). He indicated Germany had deep repositories but political forces closed the operational one and stopped development of new ones. He pointed out that his country imported chemical waste for disposal without any controversy but any hint of radioactive waste imports would create a storm of protest. He noted two EU studies which were looking at how the smaller nuclear nations were addressing the long-term management issues. The first, SAPIERR, was looking at regional repository solutions, and a complementary project (CATT) was considering technology transfer to assist in providing national disposal solutions.

Lake Barrett, of the US, facilitated open discussions with the audience. One questioner queried why WIPP should not take HLW and further suggested the use of international remote islands as locations for storage and disposal facilities. Some panellists again raised the difficulties of achieving multinational solutions but the idea of maybe starting such a scheme for orphan sealed sources was suggested.