

## Nuclear Spent Fuel and Waste Management

**Session:** Grand Ballroom 1

**Date/Time:** February 19, 2013 / 14:00-15:15

**Moderator:** Thomas Isaacs, Lawrence Livermore National Laboratory

**Speakers:** Jacob Dalnoki, Veress James Martin Center for Nonproliferation Studies  
Philippe Gillet, AREVA  
Song Myung Jae, Korea Radioactive Management Corporation  
Jack Spencer, The Heritage Foundation

**Rapporteur:** Robert Kim, Center for Strategic and International Studies

### *Session Sketch*

This panel explored the issues and hurdles to resolving the spent nuclear fuel problem of the ROK. Mr. Tom Isaacs started the discussion by pointing out that the issue of spent fuel needs to be resolved in order to ensure the future of nuclear energy. There is an ethical obligation to storing and providing a permanent solution to the waste problem. While there is a scientific consensus on how to store spent fuel geologically, the challenge lies in gaining acceptance. Pertinent examples and lessons lie in the successes and failures of numerous countries.

Following this, Dr. Jacob Dalnoki-Veress stated that while South Korea is well positioned as a nuclear exporter, it nonetheless faces the problem of saturation of pool ponds before the end of the decade and no siting of a geological repository. Even with pyroprocessing, the ROK will still need to have a repository. He agreed that it is a social problem, not a technical problem. Community outreach and inclusion of many stakeholders is crucial, and the public should not find itself worse off than before. The deep borehole repository solution is another option to consider, although it has yet to be proven. Ultimately, the entire issue of spent fuel needs to be reframed in order to be resolved.

Mr. Philippe Gillet started out by mentioning that the popularity of nuclear power rises if a country finds a solution for waste. He proposed that a solution resides in recycling, which he

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believes can even strengthen nonproliferation. MOX fuel is described as a reliable and safe solution to nuclear waste with a proven track record in regards to safeguards. Recycling through MOX also allows the preservation of 25% of natural uranium by using it again. Later in Q&A, he stated that while MOX fuel should not prevent work on a permanent solution, it is nonetheless a solution that is safe, stable, and smaller in quantity.

Dr. Myung Jae Song described the current status of the spent nuclear fuel problem in the ROK. Initially, the nuclear program of the ROK postponed dealing with waste. Eventually, the first objective was to secure a site for low level and intermediate level wastes, which translated into the Gyeongju site. Now, the main issue is interim and final disposal. Currently, the government is conducting the stakeholder engagement process. He stated that the final disposal will be possible around 2050, and that this makes an interim storage absolutely necessary since the current spent nuclear fuel storage will be saturated by the end of the decade.

Mr. Jack Spencer drew primarily upon the back-end experiences in the U.S. He argued that the primary problem in dealing with nuclear waste is that there is too much government involvement and that a market-based approach is a better solution. Waste producers need to be responsible for waste management, and the market should determine the pricing for waste options. The status quo is a fee system that is not attached to any actual rendered service by the government. When responding to proliferation concerns during Q&A, he stated that he is not arguing for a laissez-faire approach and that the government should still have a role in regulation. He thinks privatization is the best solution, but he does not think it is necessary for a solution.

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