

Session 3: Spent Nuclear Fuel Issues in Korea

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Summary

The Republic of Korea was used as an example of how to deal with the universal issue of spent nuclear fuel management. Dr. Hwang Yongsoo with the Korea Atomic Energy Research Institute argued that nuclear energy is a “stable, not harmful solution” in meeting the Republic of Korea’s energy demands, and is in turn, the “best solution.” He noted that the United States also faces the same problem of spent fuel management, which he claims, is why Korea wants to build comprehensive measures to deal with this problem. Dr. Hwang emphasized that Korea is not engaged in research and development with the U.S. for pyro-processing ambitions, but rather, to find a practical solution that can “secure energy security and provide the best methods in protecting the environment.” Therefore, he called for open dialogue that embraces two-way communication to addresses all areas of concern. Dr. Hwang stressed that Koreans are eager to discuss recycling and fast reactors because they want to hear the final solution and disposition, claiming that the storage option is a mere platform that is not eternal.

Dr. Jorshan Choi with the Berkley Nuclear Research Center emphasized that the issue of used fuel is not only a Korean issue, arguing that every country operating commercial reactors will face the same problems. He noted that Korea faces challenges as a PWR exporter, carries with it a strategic non-proliferation commitment and needs to address security concerns for reactors located in less stable regions that require special attention. Dr. Choi stressed that there is no “grave” in the “cradle to grave” concept while claiming that dry cask storage is merely a temporary home that brings with it domestic opposition. He argued that pyrochemistry may be the option that works on the “grave” aspect while capitalizing on Korea’s technical skills. Dr. Choi proposed that Korea can assume leadership after it works

with its customers to deal with storage in a regional setting and reassures final disposition.

Miles Pomper with the Monterey Institute pointed out that Korea faces political issues with the U.S. and domestic politics in regards to spent fuel. Pomper outlined some options Korea could take beginning with utilizing an interim storage facility at home with an interim storage facility overseas, which is an option he says is most preferred by the non-proliferation community. Another option would be to have a third country like France perform Purex reprocessing, but noted this to be an expensive process that does not resolve the issue of high level waste. Pomper says that the third option would be to build a multinational facility in Korea where one can look at various experiments on spent fuel management and disposal, but pointed out that details need to be hammered out including safeguards and what to do with the materials that come out of the facility.

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