Perspective on Fuel Cycle Technology Development in Korea

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Summary

In Korea, the nuclear energy plays a key role to mitigate the foreign energy dependency, which currently reaches up to about 97%. Korea will operate 28 nuclear power reactors by 2015 with the nuclear share of 40% in electricity generation. As Korea inevitably follows this track, the total spent fuel accumulation will become around 100,000 MT by the end of this century. In order for Korea to continuously utilize the benefits of nuclear energy while minimizing the burden of spent fuel arising, it is necessary to develop the new innovative, environmentally friendly back end fuel cycle technology with enhanced proliferation resistant properties.

KAERI is currently developing the proliferation resistant pyroprocessing technology with the emphasis on the high throughput process development and improvement of the efficiency while minimizing the process waste arising. The DUPIC technology development for reusing spent PWR fuel in CANDU reactors keeps also going on to aim at its technical completeness. Moreover, spent fuel disposal technology is under development with the aim to develop the advanced Korean reference disposal system (A-KRS) by 2015.

In order to develop the necessary technology more effectively and to ensure the R&D transparency completely, KAERI is always open to the R&D collaboration with international societies, which would bring out the mutual trust and the benefit for the future generation.