

**Panel:** Building Public Confidence in Nuclear Safety (Grand Ballroom III)

**Date/Time:** Tuesday, February 19, 2013 / 12:30-13:45

**Talking Points for:** Ahn Joonhong, Professor and Vice Chair, Department of Nuclear Engineering, University of California, Berkeley

- In this talk, a new way of thinking about safety, resilience engineering, is proposed, in contrast to conventional “error-counting” paradigm, where erratic human or organizational performance is considered to degrade an otherwise well-designed and “safe” system.
- Complex systems are dynamic, and a state of dynamic stability may change into a state of dynamic instability. In a world of finite resources, of irreducible uncertainty and of multiple conflicting goals, safety is created through proactive resilient processes rather than through reactive barriers and defenses.
- One measure of resilience is the ability to create foresight – to anticipate the changing shape of risk, before failure and harm occurs. Resilience engineering aims to provide support for the cognitive processes of reframing an organization’s model of how safety is created before accidents occur by developing measures and indicators of contributors.
- To implement resilience into socio-technical systems, we should recognize that resilience is different for different stakeholders in a society. It is imperative to analyze and involve stakeholders, to develop a comprehensive set of measures, corresponding to each stakeholder group.
- For a nuclear country, system resilience needs to be considered and implemented at different levels: of individual reactors, of nuclear fuel cycle, or a fleet of reactors, of energy portfolio, and of the country. It will provide the public with a greater number of options from which they can choose, depending on scenarios for their future. This is also an important point regarding fairness for future generations.

---

\* The views expressed herein do not necessarily reflect the views of the Asan Institute for Policy Studies.