Northeast Asia Nuclear Safety Cooperation: The Case for Russia-South Korea Partnership

Intaek HAN
Jeju Peace Institute

Intaek HAN is Research Fellow and Chair of the Peace and Cooperation Program at the Jeju Peace Institute, an independent think tank located in Jeju, South Korea.

I. South Korea's Middle Power Activism and Nuclear Cooperation

South Korea considers itself a middle power and sees promotion of peace and stability in Northeast Asia as one of its roles. Its middle power activism is pronounced in its pursuit of the Northeast Asia Peace and Cooperation Initiative. In particular, it has demonstrated strong interest in promoting nuclear cooperation in the region.

There are three broad areas of cooperation concerning nuclear issues. First is nuclear safety, which is about safe operation of nuclear power plants. Secondly, there are nuclear safeguards. Aimed at non-proliferation, these are the measures to ensure that nuclear materials are used only for peaceful purposes. Recently, nuclear security has gained significance, as evidenced by the successive Nuclear Security Summits. Nuclear security is about the physical protection of nuclear material and installations against intentional malicious acts such terrorism.

South Korea has been committed to the promotion of cooperation in each and every one of these areas. It was the host of the Nuclear Security Summit in 2012, for instance. Also, it has been a strong advocate and exemplary model of nuclear non-proliferation despite or because of North Korea's nuclear programs. Currently, however, nuclear safety seems to be the main focus of South Korea's efforts to promote nuclear cooperation.

Its focus on nuclear safety makes sense on several grounds. First is accidental but is no less important - the Fukushima Daiichi nuclear disaster. A disaster rated as the highest on the International

Nuclear and Radiological Event Scale (INES), it occurred after a series of tsunamis struck the Japanese nuclear energy facility following earthquakes, disabling systems needed to cool the nuclear fuel. The gravity of the disaster is equaled only by the Chernobyl accident, the only other INES rating 7 disaster in history. As a country geographically and historically close to Japan, South Korea naturally has a strong interest in developments in Japan, as accidents like Fukushima can affect South Korea in various ways.

2. Growing Threats to Nuclear Safety in Northeast Asia

While the Fukushima nuclear disaster has certainly made nuclear safety the highest policy priority in countries in and out of Northeast Asia, it is only one of the factors that have made nuclear safety a most impending issue. Earthquakes and in particular tsunamis are not only infrequent but also uncommon in many parts of Northeast Asia. As such, a Fukushima-like nuclear disaster is a rare event by many standards. If Fukushima has raised the importance of nuclear safety, its effect is likely to be one-time and short-lasting.

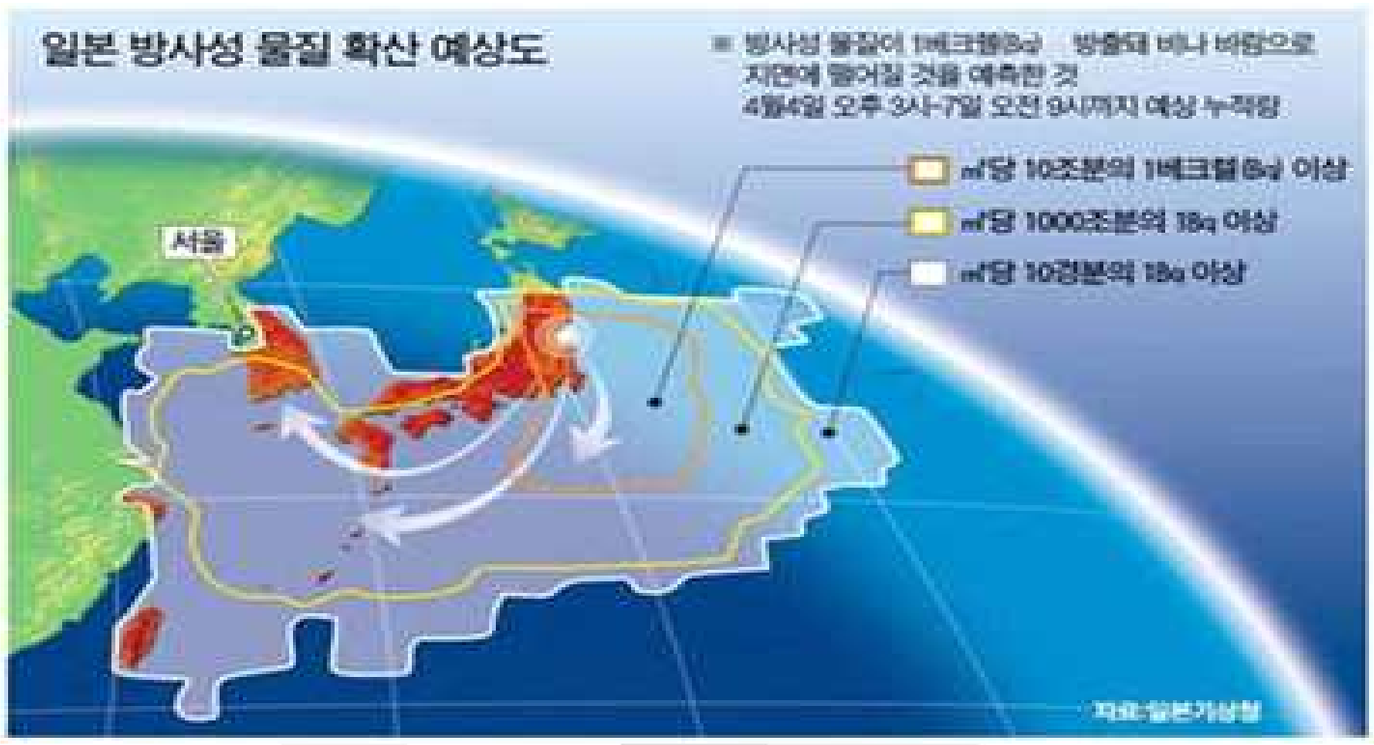
Nuclear Power Plants in Northeast Asia (as of 2014)

Even before Fukushima, there were structural changes that made nuclear safety increasingly important. According to one account, eighty-eight nuclear power plants were in operation in China, Japan, and South Korea before Fukushima. Not only that, these three Northeast Asian countries were building thirty-seven new nuclear power plants and were planning to add two hundred four nuclear power plants in the coming years! If everything goes as planned, there will be over three hundred nuclear power plants in Northeast Asia, making the region number one in terms of operating nuclear power plants.

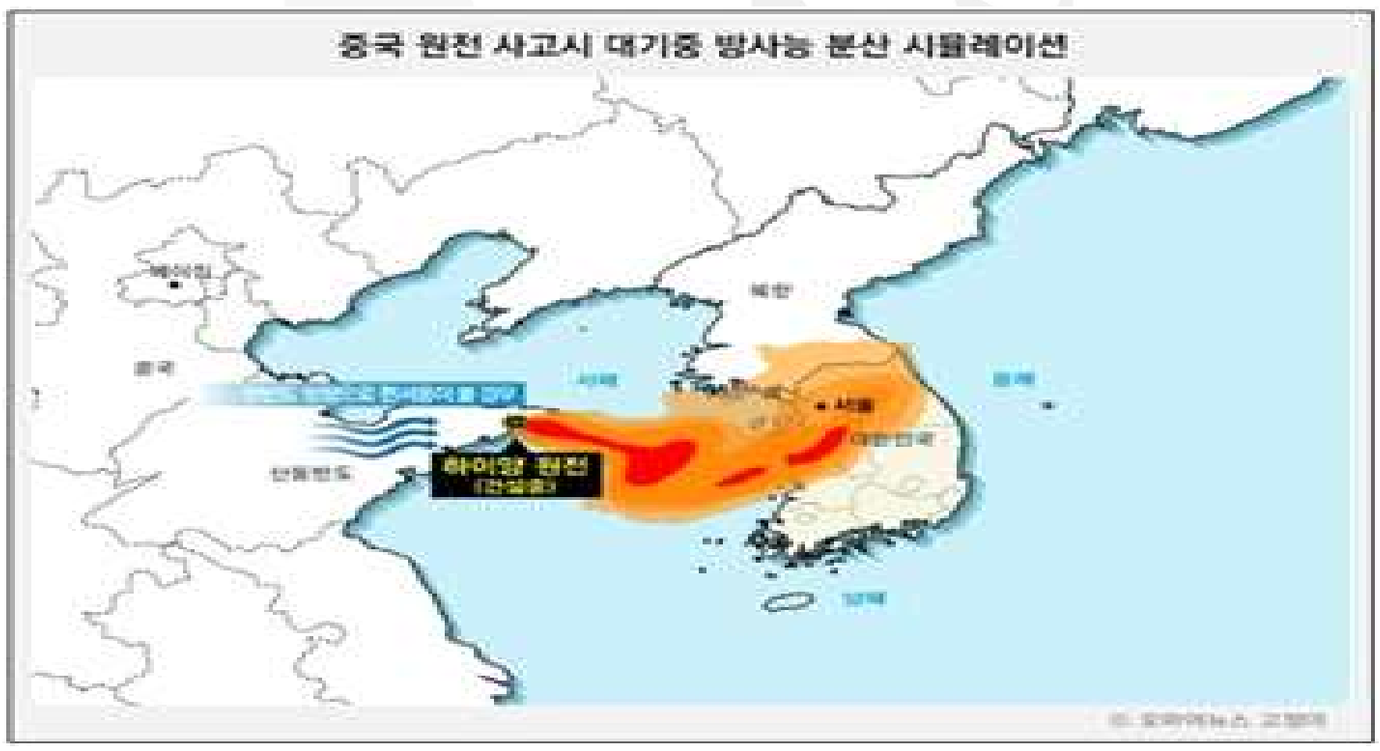
While few like nuclear power plants - and fewer like them in their neighborhoods - nuclear power

plants are, and will be, a fact of life in Northeast Asia. Deprived of other cost-effective means to produce electricity to support huge populations and operate industrial facilities, these countries have no other viable option than nuclear power plants. As Northeast Asia becomes the engine of growth for the world economy, its dependence on nuclear power generation is accordingly deepening, and with it increases the risk of nuclear accidents. The rising risk of nuclear accidents in the region is a challenge that one cannot deny. It is a challenge that has to be dealt with.

Spread of Radioactive Material from Fukushima
(Predicted by the Japanese Meteorological Agency)



Spread of Radioactive Material from Haiyang Nuclear Power Plant Accident (Simulation)



3. Comparing Responses to Fukushima and Chernobyl

Countries can respond to the rising risk of nuclear accidents individually or collectively. South Korea's call for increased nuclear safety cooperation between Northeast Asian countries is based on the belief that cooperative approach towards dealing with nuclear risk is desirable, or not harmful at the least. While we can discuss how desirable this cooperative approach is, what is clear from the

Fukushima disaster is that countries in Northeast Asia have hardly embraced cooperative approach. There was not much cooperation between China, Japan, and South Korea in dealing with the nuclear disaster both during the accident and afterwards. By one account, Japan did not share information with its neighboring countries in time to say the least. It sometimes gave false information only to correct it later. Pointing this out is not to simply blame the Japanese government for lack of cooperation, for Japan's neighbors showed similarly limited interest in nuclear cooperation. South Korea, for instance, is said to have sent only one person to Japan to monitor developments in Japan!

Despite the paucity of cooperation, Japan responded to the crisis better than the Soviet had during the Chernobyl accident. The following excerpts from a Fact Sheet comparing Fukushima and Chernobyl produced by the Nuclear Energy Institute demonstrate this point.

- The Japanese government moved rapidly to implement protective measures, evacuating people and halting food shipments from the area. The government also distributed potassium iodide to residents near the facility to prevent their thyroid glands from absorbing radiation. These actions limited any adverse health effects from the accident.

- Authorities in the former Soviet were slow to take action to protect the supply of food and milk, which led to a spike in thyroid cancers among children and adolescents from consuming contaminated foodstuffs.

- No deaths from radiation exposure have been attributed to the accident in Japan. Separate studies published in 2013 by the United Nations (UN) and the World Health Organization concluded that health risks from radiation released during the Fukushima accident are minimal, even for those "most affected," and there are essentially no health effects outside Japan.

- At Chernobyl, 28 highly exposed workers died within four months of the accident. Experts say there is "some evidence" of an increased risk of leukemia and cataracts among workers who received higher doses when engaged in recovery efforts. Long-term health monitoring of these workers is ongoing. As of 2005, about 15 children had died from thyroid cancer. Improved monitoring has been implemented to help ensure that thyroid cancer is detected early, when it is highly treatable. However, countermeasures taken over the next few years after the accident kept radiation doses relatively low. The resulting doses "should not lead to substantial health effects in the general population," according to a 2011 report from the United Nations.

Source: http://www.nei.org/Master-Document-Folder/Backgrounders/Fact-Sheets/Japan-Comparing-Chernobyl-and-Fukushima

While Japan did a better job than the Soviet as an individual country, Northeast Asia as a region did not do as well as Europe as a region or Russia and Europe as partners in terms of working

together to deal with nuclear risks. The following developments after the Chernobyl accident show then that the Soviet and Europe worked together to promote nuclear safety.

(1) Convention on Early Notification of a Nuclear Accident

This convention is a 1986 International Atomic Energy Agency (IAEA) treaty whereby states have agreed to provide notification of any nuclear accident that occurs within their jurisdiction that could affect other states. It was adopted in direct response to the Chernobyl disaster. By agreeing to the Convention, a state agrees that when any nuclear or radiation accident occurs within its territory that has the potential of affecting another state, it will promptly notify the IAEA and the other states that could be affected. The information to be reported includes the incident's time, location, and the suspected amount of radioactivity release. The Convention was concluded and signed at a special session of the IAEA general conference on 26 September 1986. It was signed by 69 states, including the Soviet Union, and the Convention entered into force on 27 October 1986 after the third ratification. As of 2013, there are 116 state parties to the Convention.

(2) Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

This is a 1986 treaty of the International Atomic Energy Agency (IAEA) whereby states have agreed to provide notification to the IAEA of any assistance that they can provide in the case of a nuclear accident that occurs in another state that has ratified the treaty. Along with the Convention on Early Notification of a Nuclear Accident, it was adopted in direct response to the April 1986 Chernobyl disaster. The Convention was concluded and signed at a special session of the IAEA general conference on 26 September 1986. It was signed by 68 states, including the Soviet Union, and the Convention entered into force on 26 February 1987 after the third ratification. As of 2013, there are 111 state parties to the Convention.

(3) Association of Regulators of Western Europe (WENRA)

Though not as a direct response to the Chernobyl disaster, nuclear countries in Western Europe created an association of nuclear agencies or regulatory agencies in 1999. The Association of Regulators of Western Europe (WENRA) is a regional network of chief regulators of EU countries with nuclear power plants to improve nuclear safety.

Specifically, it aims to:

- *develop a European approach to nuclear safety*
- *provide an independent capability to examine nuclear safety in applicant countries*
- *serve as a network of chief nuclear safety regulators in Europe and*
- *be a place for exchanging experiences and discussing significant safety issues for regulators.*

Source: https://en.wikipedia.org/wiki/Western_European_Nuclear_Regulators'_Association

WENRA consists of the representatives of authorities or nuclear regulators from 10 countries (in 1999 at the time of creation) as of 2003, WENRA has 17 state members.

4. The Case for Russia-South Korea Partnership for Nuclear Safety

Note that little comparable cooperative development in Northeast Asia followed after the Fukushima nuclear disaster. While Northeast Asia does have a framework for cooperation among regulators similar to WENRA since 2008, the framework, Top Regulators' Meeting or TRM, has been largely a talk shop, not a robust platform for regional cooperation. South Korea's recent efforts to expand and empower TRM are noteworthy and commendable in this regard but they are far from sufficient. There is a limit to what a middle power can do. And the limit is even more constraining if it has to persuade major powers to share sensitive information and reveal weaknesses. Not only that, but relations between China, Japan, and South Korea are at best sour in recent years, due to questions over history and territory.

This author believes that Russia has an important role to play in enhancing nuclear safety for Northeast Asia. From the ashes of Hiroshima and Nagasaki, Japan emerged as a world leader for anti-nuclear movement. Similarly, from the ruins of Chernobyl, Russia can emerge as a world leader for nuclear safety. Also, as an out-of-region country, Russia can be accepted as an impartial partner and leader for nuclear safety cooperation in Northeast Asia. This author thinks that a lot of great things can happen if South Korea's middle power activism can be combined with Russia's leadership for nuclear safety.

July 22, 2015