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Japan in Disaster: Managing Energy Vulnerabilities

By Sofiah Jamil and Mely Caballero-Anthony

Synopsis

While Japan is renowned for its disaster preparedness, the recent earthquake, tsunami and nuclear accidents pose immense strain on its ability to manage complex emergencies. The nuclear crises should come as a reality check for other states pursuing nuclear energy plans, including ASEAN's.

Commentary

JAPAN's RECENT earthquake – and the tsunami that followed it – is the strongest on record in the country and has been dubbed as Japan's worst crisis since the Second World War. The increasing ferocity and unpredictability of these natural disasters has seriously challenged Japan's record of effective disaster management capabilities and high safety standards. As the country grapples with the ensuing threat of multiple nuclear meltdowns after explosions at three nuclear power plant (NPP) reactors in Fukushima and a leak at a NPP reactor in Onagawa, questions are being raised as to the overall impact of these developments.

This disaster is a critical reality check for Southeast Asia as the region continues to consider nuclear energy as a means for sustaining energy needs and economic development. The Japanese experience has shown that dealing with the latent threats of nuclear safety issues would require more than reliance on advancements in nuclear science and technology.

Managing Japan's Triple Disasters

As Japan starts to count the human and property cost of its triple disasters, it is engulfed in an uphill task in managing disaster relief operations as well as mitigating further damage to the NPPs. As it stands, the death toll is estimated to surpass 10,000 while almost two million households are without power supply and 1.4 million are without running water in the colder Northern regions of Japan. Moreover, Japan's aging population also faces higher vulnerabilities in terms of health and safety.

This situation is likely to get worse when the government starts rolling blackouts in a bid to conserve energy – energy that would be needed to maintain the cooling systems in Japan's NPPs to avoid nuclear meltdowns. The lack of clean water not only severely affects public health and sanitation, but also sets back the critically-needed cooling of the nuclear reactors. In a desperate move, Japanese NPP operators have used sea-water to cool the NPPs, running the risk of further damage and corrosion of the NPP equipment. The blackouts will also affect livelihoods as stalled economic activity in the industrial sector will exacerbate an already ailing Japanese

economy, let alone the massive costs of damage from the earthquake and tsunami.

These estimates have not taken into account the fallouts from predicted aftershocks with a magnitude as high as 7 on the Richter scale that could cause further damage to the NPPs. Nuclear experts have, however, suggested that a Chernobyl-like explosion is unlikely given advancements in nuclear technology. Nevertheless, steps have been taken to evacuate residents living in areas surrounding the NPPs and to screen residents for exposure to radiation.

Managing Japan's Energy Needs

While these measures are commendable, on hindsight more could have been done prior to the earthquake. For instance, it was barely five years ago that the Kashiwazaki-Kariwa NPP experienced a fire and a leak as a result of an earthquake measuring 6.8 on the Richter scale. Most NPPs in Japan have only been designed to withstand earthquakes up to 6.5 on the Richter scale. Moreover, assertions by anti-nuclear groups in Japan that point to the tendency to conceal information about safety procedures during inspections do little to boost public confidence. In fact, there were reports that the damaged NPP reactor in Fukushima was to be de-commissioned in February 2011 but had its operating licence extended by 10 years.

A possible reason for the licence extension: 30% of Japan's energy supply is generated from nuclear energy. While some may be quick to criticise Japan's substantial dependence on nuclear energy, it is also important to realise that nuclear energy is a way for Japan to diversify its energy mix. Japan, like other Northeast Asian countries, has depended on oil imports from the Middle East. Energy diversification was a crucial means of facilitating economic growth with cheaper sources of energy while enhancing Japan's sense of energy security. Alhough Japan has been the best example in Asia in terms of disaster preparedness and the use of advanced technology in NPPs, it is high time to review the processes governing the building of NPPs in Japan.

Reality check for Southeast Asia

The current situation in Japan has even caused policymakers in the United States, Switzerland, Germany and India to put future nuclear energy plans on hold. In Southeast Asia, where the demand for energy sources is growing rapidly, it is likely that governments would still consider the nuclear option, while keeping a close watch on the situation in Japan. Nuclear energy is included in Malaysia's Economic Transformation Programme, and there are plans to build a regional nuclear monitoring facility by 2014. Vietnam seeks to build two NPPs along its southern coastal province of Ninh Thuan as early as 2014 while Thailand is considering building an NPP by 2020.

It is therefore vital that ASEAN countries take environmental impact assessments seriously. They should also further enhance their disaster management capabilities so that they can respond to potentially complex emergencies.

In the light of the increasing unpredictability and intensity of natural disasters, setting a high safety standard is obviously a must if the region wishes to go nuclear. Achieving Japan's preparedness capabilities is only the very basic benchmark for the less developed East Asian countries.

Sofiah Jamil and Mely Caballero-Anthony are respectively Associate Research Fellow and Head (currently on leave) of the Centre for Non-Traditional Security (NTS) Studies at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University.