

Post-Corona Japan, the Quake-Nuke-Maglev Combined Disaster and the Kashiwazaki-Kariwa NPS

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There is no telling what will happen with COVID-19, the novel coronavirus pandemic, that should be regarded as a major disaster, but after it dies down somehow (“post-corona”), Japanese society will likely have to undergo sweeping changes. Under the doctrine of putting economic growth above all else, values such as centralization, scaling up, efficiency and speed have been emphasized, but post-corona, decentralization, scaling down, leeway and similar values will need to become fundamental to society.

From this perspective, nuclear power stations and the super-fast magnetic levitation (maglev) train, which symbolized the former era, ought to be making their way to the exit. Heretofore, criticism of nuclear power did not necessarily go hand-in-hand with that of the maglev train, but there appears to be a deep connection between the Kashiwazaki-Kariwa Nuclear Power Station (KKNPS) operated by the Tokyo Electric Power Co. (TEPCO) in Niigata Prefecture and Japan’s maglev train.

Post-corona Japan

One of the lessons we have learned from the corona calamity is that we must bear in mind that not only new diseases coming to light, but also unforeseeable events such as global scale natural disasters, overseas large-scale nuclear accidents, acts of terrorism and wars can massively disrupt the global production and distribution of goods. In addition, in Japan, we must not forget to prepare for major earthquakes, particularly the anticipated great Nankai trough quake and earthquakes centered directly under Tokyo. Prime Minister Shinzo Abe has called the corona calamity “a once in a century national crisis,” but other national crises may be bearing down on us now too.

In order to transform Japan into a society resilient against earthquakes, I appealed for restoring primary industries and promoting decentralized land use patterns, freeing ourselves from a blind belief in eternal economic growth and rectifying our priorities away from extreme free trade, reassessing the excessive policy of tourism-oriented country, and so on, in an article on earthquake disasters I published in a magazine just prior to the spread of COVID-19. This would also apply to post-corona theory.

In other words, in the future, Japan should make a radical break from the hyper-concentration in Tokyo and other major metropolitan areas that has depopulated its

rural areas, and cultivate autonomous local societies with economic circulation within each region based on energy self-sufficiency and local production of food for local consumption. The most proper way to reviving and invigorating Japan's rural areas would not be through measures such as "regional revitalization" involving risky businesses promoted by the Abe administration, but by restoring primary industries that are essential to survival. That would also provide the basis for Japan's food security. To accomplish that, Japan would need to put a lid on the dogma of international division of labor and complete free trade, which has caused Japan's primary industries to decline, resulting in depopulation of the countryside (and overpopulation of the cities). This is not against international cooperation, nor censured as "protectionism." With global warming in mind, we ought to be persuading the world to create a new system of trade in moderation. I think we are facing a post-corona age of "civilizational overhaul."

The Earthquake-Nuclear-Maglev Combined Disaster

Central Japan Railway Co.'s maglev train, which is under construction and expected to commence service in 2027, connecting Shinagawa Station in Tokyo with Nagoya at the maximum speed of 500 km/h, is being extolled as eventually creating a hyper-megalopolis area of 60 million people stretching from Tokyo to Osaka. However, this idea promotes even more overcrowding in the cities and runs counter to a decentralized national land. So, it would be an anachronism in the post-corona era. Changes in people's behavior patterns, such as the popularization of on-line meetings, may make the utilization of the maglev train lower than anticipated.

The major media organs do not convey any truth at all about the maglev train so as not to offend their major advertising customer, Central Japan Railway Company. But from the start, there have been many doubts about various aspects of the maglev train such as its necessity, economic and technical feasibility, profitability, safety and ecological impact. I have criticized it myself, particularly regarding its safety in the case of earthquakes.

I will not touch on the specifics, but the maglev route will pass through the most seismically hazardous zone on the planet. The public has been sold on the idea of the maglev train being a necessary alternative to the Tokaido Shinkansen in the event of the latter being hit by the anticipated great Nankai trough earthquake, but there is a strong chance that the maglev itself would suffer severe damage too. In a worst-case scenario, the track might break and the train be buried under debris in a major catastrophe with

no hope of restoring it. The line would be rendered a ruin, nothing more than a memorial to the disaster.

Even though Central Japan Railway announced that it would promote the maglev train at its own expense, public funds (3 trillion yen in low-interest public loans) has been invested, in a non-transparent manner in what could be the third major scandal to rock the Abe administration after two involving favoritism for schools. Together with Central Japan Railway's deficits, the maglev could wind up being an enormous negative legacy for future generations. It is the same as nuclear energy, the "dream of the future," that was promoted by inertia without any self-inspection and resulted in the Fukushima accident.

It is said that the maglev train will require three to five times as much electric power as the current Shinkansen trains, and it seems to have been planned from the start presupposing nuclear energy, as explained below. If the Hamaoka Nuclear Power Station, in Shizuoka Prefecture operated by the Chubu Electric Power Co. on the coast between Tokyo and Nagoya, were to be restarted to provide energy for the maglev train and the great Nankai trough earthquake occurred when they were both in use, there are fears that in the worst case, a severe accident could occur at the Hamaoka station with radioactive releases and the maglev could be buried under rubble with the loss of many lives. This could be called an "earthquake-nuclear-maglev combined disaster," an expansion of *genpatsu shinsai* (earthquake-nuclear combined disaster) which I had hypothesized and which was realized at Fukushima in 2011.

The Maglev Train and KKNPS

The situation of the KKNPS at the time of 1986 was that its Unit 1 reactor had begun operating in September 1985, with construction of Units 2 and 5 having begun in October 1983, the Electric Power Development Coordination Council having decided on Units 3 and 4 in March 1985, and the first public hearings on Units 6 and 7 being planned for November 1987. Meanwhile, according to a news report in February 1986, TEPCO was planning to build new power transmission lines from the KKNPS and a new transformer substation in Yamanashi Prefecture west of Tokyo to meet rapidly growing demand for electricity there. TEPCO requested cooperation from the prefecture, and Yamanashi's governor declared that he wished to cooperate in every way in providing attractive conditions for inviting an experimental maglev line.

Construction of the experimental maglev line in Yamanashi was decided upon in August 1989, with work completed in March 1997 and experimental runs starting that April. This experimental line, about 43 km in length, has been incorporated into the final maglev line of about 285 km. Meanwhile, electric transmission commenced on the South Niigata Main Line connecting the KKNPS with the West Gunma Switching Station (in Nakanojo Town, Gunma Prefecture) in October 1993, and on the West Gunma Main Line connecting that switching station to the East Yamanashi Transformer Substation (in Otsuki City, Yamanashi Prefecture) in May 1992, with both designed for 1 million volt capacity. Transmission of 154,000 volts to the Tsuru Transformer Substation (in Tsuru City, Yamanashi Prefecture) for the experimental maglev line that Central Japan Railway was building commenced in October 1995. Note that the West Gunma Switching Station was also receiving electric power from the Fukushima Daiichi and Daini Nuclear Power Stations.

The East Yamanashi Transformer Substation is part of a 500,000 volt transmission network linked with hydroelectric and thermal power stations, and even with the reactors at the KKNPS idled, experimental runs of the maglev train have continued. So, it is not the case that the maglev cannot run without nuclear power. However, according to an article in the August 2018 issue of *Zaikai-Niigata*, Secretary-General Nikai Toshihiro of the Liberal Democratic Party has a burning desire to see the maglev train begin operating as soon as possible (with service starting to both Nagoya and Osaka at the same time, if possible), and the government and Central Japan Railway are both said to be eager to restart the KKNPS reactors, as they will be essential for operating the maglev line.

The final push to have the KKNPS, with the many dangers it poses, decommissioned and eradicate the risk of an earthquake-nuclear-maglev combined disaster is one of the most important issues of post-corona Japan.