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# Nuclear Nationalism and Fukushima□核国家とフクシマ

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**Abstract:** Despite the description of the March 11, 2011 disaster as "outside safety expectations", there were multiple warnings from Japanese scientists, writers, activists, and international bodies that a large earthquake and tsunami could cripple Japan's nuclear plants. This article examines how assumptions of nuclear safety remained strong in Japan from the 1950s until the 2000s, even after numerous accidents that demonstrated inadequate oversight, and ties these assumptions to technological nationalism at the heart of Japan's conservative political culture.

**Keywords:** nuclear power, nationalism, technology, industry, conservative politics in Japan, Fukushima Daiichi accident, *amakudari*, TEPCO

### Introduction

Toyoda Aritsune's book *Nihon no genpatsu gijutsu wa sekai o kaeru* (Japan's Nuclear Technology Can Change the World) was published in December 2010, fewer than four months before the March 11 tsunami struck.[1] Toyoda, a science fiction author and longtime proponent of nuclear power, writes that "... nuclear energy has become the global standard. Japan, which has long pursued the peaceful use of nuclear energy, now holds the world's highest level of nuclear technology and knowhow."[2] He describes anti-nuclear positions as a "fashion" or "fad."[3] He even boasts of how "earthquakes have proven the safety of Japanese nuclear technology."[4] Now, in 2012, this brand of technological nationalism and curt dismissal of criticism seems like so much hubris.

Toyoda's claims concerning the quality of Japanese reactors were essentially correct - Japan's nuclear technology was and is among the world's best. The Fukushima meltdown did not take place *because of* but rather *despite* Japan's undeniably advanced nuclear technology.

This essay attempts a cultural history of nuclear power in Japan, examining the terms used to represent it to the public and the blind spots which allowed the worst nuclear disaster since Chernobyl to take place. Even if Toyoda is correct about the level of Japanese nuclear technology, his book still encapsulates the hubris of decades of conservative energy discourse - the idea that *best* necessarily means *safe*. I will argue that frequent use of the terms of economic and technological nationalism stifled debate and fostered a system that allowed warning signs to be overlooked.[5] If "technology" is used to mean not only the sophisticated reactor cores and fuel reprocessing facilities, but also the "application and practice of science" as the whole network of personal and institutional elements through which Japan's nuclear plants have been organized and overseen, Toyoda's claims are false. They and the discourse of which they are a part indicate a fixation on "Japanese technology," a nationalist marker that ties into the whole trajectory of Japan's postwar development, which left the country vulnerable on March 11.

## Warnings Ignored

The backup diesel generators at Fukushima Daiichi, which could have maintained cooling functions and forestalled the radiation crisis, were built to withstand waves of up to 5.7 meters. The tsunami that struck Japan's northeastern coast on March 11 is reported to have been as high as 15 meters, nearly three times the level considered to be safe.

In the months since the tsunami, online sources and the Japanese press have drawn attention to examples of the Liberal Democratic Party, in power until 2009 and the major steward of Japan's nuclear policy since the 1950s, repeatedly ignoring warning signs.

In 1991, the Japanese government received a report from America's Nuclear Regulatory Commission warning of the vulnerability of backup cooling systems at Japanese power plants.[6]

In 2000, Tokyo Electric, the power company that runs the Fukushima Daiichi plant, was found to have falsified dozens of safety reports, hiding cracks in reactor shrouds. The deception was not uncovered by Japan's nuclear regulators, but was revealed by a whistleblower from one of Tokyo Electric's international partners. Falsification had been going on for over a decade, calling into question the commitment to disclosure of Japan's large energy companies, as well as the competence and effectiveness of atomic inspectors and the entire system of regulation.[7]

In 2001, Minoura Koji, a Tohoku University geologist, published a paper on a ninth century earthquake and tsunami that devastated the region around Fukushima. In the decade after the paper appeared, Minoura and other researchers repeatedly presented the findings to Tokyo Electric representatives, arguing that the historical tsunami was much larger than the 5.7 meter level that Fukushima Daiichi was built to withstand and should be factored into risk assessment. Their assertions were still "under review" when the March 11 tsunami hit.[8]

In 2006, a Japan Communist Party member of the lower house of government raised the example of an earthquake and tsunami in Chile, arguing that several Japanese nuclear power stations including Fukushima Daiichi could see their cooling mechanisms knocked offline by a similar six meter wave. His calls for more stringent anti-tsunami measures were ignored.[9]

In 2007, the Japan Communist Party again singled out the Fukushima Daiichi plant and called on both the Liberal Democratic Party government and Tokyo Electric to improve tsunami resistance measures. They tried to draw attention to the very flaw that sparked the present crisis, but were ignored once again.[10]

In 2008, the International Atomic Energy Agency warned the Japanese government that earthquake resistance measures at Japanese plants were outdated.[11]

These are some of the most forceful warnings relevant to Fukushima Daiichi, but the list is by no means a complete one.

To explain the lack of oversight and the hesitance to act when flaws were pointed out, we need look no further than the tight relationship between elite conservatives, business, and bureaucracy. For example, in 2007, the Communist Party newspaper *Akahata* reported that virtually all top managers at Tokyo Electric had given personal donations to the Liberal Democratic Party, at the level of several tens of thousands of dollars yearly.[12] In the following year, the government reduced the mandatory inspection requirement for Fukushima Daiichi from once a year to once every two years.[13] Corporate donations from the nuclear industry subsequently wer even greater. In 2009, companies linked with the industry gave the equivalent of around

US$10,000,000 to the Liberal Democrats. Donations to the Democratic Party barely topped $300,000.[14]

In addition, since the 1990s dozens of senior energy bureaucrats have joined Tokyo Electric after retiring from public service through the process known popularly as *amakudari* or "descent from heaven."[15] Employment with private firms is seen as a form of "reward" by bureaucrats who reciprocate by using their ministry connections to smooth over regulatory issues. When a civil servant visits a Tokyo Electric plant, he or she may be met by a former boss, now working for the company.

Also important is the "deregulation" mantra of the Liberal Democrats under Koizumi Junichiro, prime minister between 2001 and 2006. Everything from labor oversight to inspections in the energy industry were downgraded in deference to a neo-liberal "international competitiveness" mandate.[16] The Koizumi government also cut funding for specific measures including nuclear plant earthquake resistance research and development programs for robots to be used in nuclear emergencies.[17]

These examples may help to establish the context of poor oversight and official inaction, but they do not give much insight into how Japan's conservative politicians convinced the Japanese public and, in the end, *themselves,* that nuclear accidents like Three Mile Island and Chernobyl were impossible in Japan. To understand this, we can turn to examples of political rhetoric surrounding Japanese atomic energy.

**Technology, Growth, Nationalism**

The April 25, 2011, issue of news magazine *Weekly Gendai* described the "reality" of the Fukushima Daiichi crisis, which ten days earlier had been upgraded to "Level 7", the highest on the International Nuclear Event Scale and the same class as the Chernobyl disaster, as having "transcended imagination."[18] The article points out that in essence, Japan's nuclear energy had always been imagined as safe by the government. The failure of Japanese nuclear technology was simply outside the realm of imagination.

In an April 26 editorial, the *Yomiuri Shimbun*, Japan's (and the world's) largest circulation newspaper, returned to the Japanese government's assessment of the Chernobyl disaster in 1986. The tragedy in the Ukraine was termed an example of an "operator mistake."[19] It was judged a "man-made catastrophe" of a type not possible in Japan where technological efficiency was held to guarantee safety.

The political rhetoric of atomic energy speaks to questions of national identity. Political rhetoric does not define national identity, but politicians attempt to set the tone for acceptable public expression of what constitutes community, norms, and values. Discussions of nuclear safety in terms of unquestioned Japanese qualities helped to create a blind spot. The assumption that Japanese technology was essentially safe stymied debate. In particular, it was used repeatedly by the Liberal Democrats to dismiss serious inquiries about nuclear safety.

There were dozens of exchanges on issues of nuclear safety in the Diet between Liberal Democratic Party Prime Ministers and cabinet members and members of the opposition Communist and Socialist Parties from the 1970s until 2009. Almost without exception, conservatives dismissed safety concerns with a curt line or two and repeatedly referred to Japanese nuclear technology as uniquely safe.

The following are two examples of nationalism and presumed national characteristics entering into debates over nuclear power.

In 1982, LDP Diet member Uekusa Yoshiteru described atomic energy as "supporting the nation" and "answering the people's demands

for prosperity." He went on to describe Japan as "a country built on science and technology" and tells of how he "... wants everyone to cooperate with our atomic energy plans to make Japan a world leader." He castigated critics who refer to spent fuel reprocessing areas as nuclear "graveyards," "garbage dumps" or "toilets," as using "dirty" rhetoric and opposing, not because of legitimate concerns, but "just for the sake of opposition." He said that critics should refer to sites properly as "waste product disposal and reprocessing facilities" instead. Conservative politicians have frequently placed themselves as representatives of scientific rationalism and branded critics as succumbing to passion or irrationality, dismissing their arguments while simultaneously using an emotive language of national purpose and progress that masks the inconvenient details. Uekusa speaks as though "safety has already been guaranteed" at nuclear plants in his constituency.[20]

At worst, the terms of technological nationalism have made accidents seem an impossibility. Tokai Kisaburo, an LDP Vice-Minister of Education, Science, and Technology in the Fukuda cabinet, was confronted about Japan's nuclear safety record in Diet debate in 2007. He described the use of technology to minimize risk as fundamental to progress and nuclear technology as a particular example of "how far we have come." He could not say that the risk of a catastrophe is zero, but he did suggest that it might be something "like 0.000001 percent" and that acceptance of small risks is necessary to move forward.[21]

This style of representation predates Japan's postwar economic boom. In 1950, in the latter part of the American occupation, future prime minister Nakasone Yasuhiro, then serving his first term in the House of Representatives, claimed that freedom to carry out atomic energy research and join America and the club of Western scientific powers at the forefront of an energy revolution would be a mark of Japan's restoration to the global stage.[22] The "peaceful use of atomic energy" became a way of putting the war behind through the development of a technologically founded nationalism befitting what was described as the postwar "cultural state." In this way, atomic energy was put forward as a marker of Japan's relative national quality.

Politicians like Nakasone forged links with the conservative media establishment to promote this new vision. Shibata Hidetoshi, a Yomiuri media group manager and right hand man of pro-nuclear don Shouriki Matsutarou, is reported to have told American representatives, "In Japan we have an old saying - ‘eliminate poison with poison'... In order to get rid of opposition to nuclear weapons, we can get a lot of use out of the ‘peaceful use of nuclear power' idea, and give hope for a great industrial revolution of tomorrow."[23] The background to this comment is a climate of conservative fear and intense US pressure to quell popular anti-nuclear outcry in the aftermath of the Lucky Dragon incident of 1954, which saw the crew of the Japanese fishing boat irradiated by the Bikini Atoll hydrogen bomb test. Conservatives were concerned that anti-nuclear sentiment could jeopardize the security alliance with America. At the same time, American officials also lobbied on behalf of US nuclear tech exporters like GE, the eventual builder of the Fukushima Daiichi plant, tying security and energy partnership together as a comprehensive diplomatic push.[24]

Shibata and Shouriki had deep ties to conservative political elites and used the Yomiuri media empire to propagate a new vision - nuclear energy was the "light" and nuclear weapons the "shadow." Japan not only had a right but a duty to spearhead technological change, using nuclear power to move from the shadow of Hiroshima and Nagasaki to the light of peace and economic development.[25]

The Yomiuri's publicity campaigns worked up a frenzy of 'uranium hunting' among ordinary citizens who were challenged to secure Japan's future as a leader in the peaceful use of nuclear power by locating deposits of radioactive elements in the country.[26] This tied visions of future prosperity and technological progress to the actions of ordinary citizens. In reality, Japan's nuclear program came about as a result of massive central initiatives and close coordination, some would say cronyism, between government and big business. The Yomiuri imaginary, however, tied individual and national subjects together in nuclear boosterism.

One man, Azuma Zensaku, nicknamed "*Uran Jiji*" (Old Man Uranium), gained notoriety for travelling the countryside with a portable Geiger counter in search of nuclear fuel. Azuma, an eccentric adventurer who had moved to the United States in his youth, fought in Europe as a volunteer pilot during World War I, lost a bid for office in Japan, and opened a Japanese restaurant in California, found another niche in the 1950s. As "*Uran Jiji*" he promoted radiation as "great for your health" and advocated adding uranium to hot springs and fertilizer for vegetable gardens to increase longevity. A "*Uran Basan*" (The Uranium Lady) soon appeared selling radioactive sake.[27]

These excesses were modeled on America's own "radium goods" which included facial creams, candy, and cure-all medicines.[28] In Japan, however, a "radiation boom" was carefully managed by one of the country's biggest media outlets as part of a campaign promoting the import of US nuclear power technology into Japan.

Pop culture dimensions aside, nuclear power was at the center of the government's articulation of national goals and points of nationalist identification. The 1955 Economy White Paper declared that Japan, having moved into a new era of prosperity, was "no longer postwar." The 1956 Economy White Paper attempted to entrench the economic basis of postwar nationalism and wed it to ideas of technological progress by introducing another buzz term *gijutsu kakushin* (technological innovation) as a new national mandate. "Automation" and "the peaceful use of nuclear power" were held to be representative of this new drive.[29] By the time Japan arrived as a gross domestic product champion and leader in atomic energy in the 1980s, the aspirational rhetoric of the 1950s was transformed into an unshakable official confidence in the safety of Japanese nuclear technology.

Not all Japanese shared official confidence in nuclear safety or the belief that nuclear power was a necessary part of prosperity. Daniel Aldrich, in his book *Site Fights: Divisive Facilities and Civil Society in Japan and the West*, has argued that the Japanese government and energy companies faced considerable resistance to the building of nuclear plants, much of it grassroots and at the local level, and developed strategies to manage dissent, deflect criticism, and enact their desired policies.[30]

Dying areas with high unemployment were targeted as sites for nuclear plants. Author and longtime anti-nuclear crusader Kamata Satoshi describes the situation in terms of "The more that a group has been ignored or cast off by the authorities, the more they are forced to rely on those same authorities."[31] *Burakumin* areas peopled by a minority subject to horrific discrimination because of the "unclean" professions of their ancestors, regions where the collapse of coal mining put many thousands out of work, and similarly desperate zones were picked by planners as nuclear sites because resistance could be easily bought off with badly needed cash.

In areas where people felt cut off from the "Japanese Miracle," the rhetoric of economic and technological nationalism was used to

stress safety and win people over. A notable example of this came in 1988, when Ishikawa Prefecture Assistant Governor Sugiyama Eitaro told constituents, "We cannot see radiation with the naked eye so it is only normal that people will feel uneasy, and if we look back in Japanese history, it is understandable that people are nervous about radiation, however, Japan's scientific technology is at the highest level in the world... we have systems for managing radiation and it is totally safe."[32] He described critics as "like cult leaders" and effectively presented technological nationalism as rational while framing critique as irrational.[33] Science journalist and author Uchihashi Katsuo describes how through the 1970s and 1980s, "... people who harboured doubts about nuclear energy were called 'the Don Quixotes of the scientific nation.' In Japan, a country built on cutting edge science, they were treated like backward remnants from the last century, or Don Quixote-like eccentrics."[34]

At the village level, there are reports of even more egregious rhetoric. A Shizuoka community was told "they have a spray that can wipe out radiation" by local elites anxious to attract a plant to the area.[35] Other terms such as "cooperation with national policy" were used to link increasingly marginalized regions to the norms of the developmental state and the dream of profiting equally from what were largely urban patterns of economic growth.[36] Many locals felt duped. In 2002, Fukushima Governor Sato Yuhei said that government and business talked big about shared benefits but before adequate debate or local participation in risk assessment could be arranged, "... they just came charging in with the bulldozers."[37]

Nuclear development met with prolific protests through the 1970s, however, and opposition even extended to power company employees. However, many workers who eventually became active in anti-nuclear protests report that they originally welcomed the shift to nuclear "peaceful use" - using Japanese technology to turn the traumatic legacy of Hiroshima and Nagasaki in a positive direction. It was only with the evolution of the anti-pollution crusade into a nationwide movement and a broadening awareness of the impact of industry on public health in the early 1970s that power company employees began to debate the dangers of nuclear power.[38]

In this climate, companies like Chugoku Electric moved to control internal dissent. Managers handed out 10,000 yen notes to workers to get them on side and to prevent internal protests.[39] Union activists accused the company of "buying off their critics." Protestors reported a three-pronged attack by the company and officialdom - popular ideology in the form of "peaceful use" and uniquely Japanese contributions to technological progress, cash in the hand, and an energy industry "rationalization" program designed to break down unions.[40] The latter eventually bled into the neo-liberal norm of "flexible labor," the casualization of nuclear labor, and the virtual elimination of internal dissent over nuclearization. Companies also resorted to threats. Workers report being told that any protest meant the company would refuse to hire their children or family members.[41] This was a brutal prospect in areas where power companies were the major employers. In addition, "nuclear education" programs targeting power company employees were riddled with propaganda. Workers report being told as part of education sessions about the nuclear transition that "The power plants are walled in on all sides. There is no chance of radiation leaking."[42] It was taken as a given that leaks were impossible.

As Japan's first nuclear plants were put online, shocking stories of workers struck down by radiation exposure began to emerge. Photojournalist Higuchi Kenji's investigation of the nuclear industry revealed casual irradiation of contract workers and a lack of basic oversight that called the whole edifice of

nuclear safety into question. Safety masks for workers often leaked, many were not even airtight.[43] Precautions were taken inside key facilities, but areas like the laundries, where suits, gloves, and masks were cleaned of accumulated radiation, were free of adequate safety equipment and checks, and workers were routinely exposed.[44] As bad as safety education could be for regular power company employees, it was often non-existent for short-term contract workers. Higuchi was told by one plant veteran, "... if they offered [realistic] safety education, workers would run for the hills."[45] Because of a lack of basic training, some workers casually removed their safety masks inside dangerous areas because of the stifling heat, dramatically increasing exposure.[46] Labor bosses charged with recruiting and supervising contract workers frequently used threats or violence to keep them in line. Workers who expressed concerns about dangerous conditions were met with threats like "I'll fucking kill you" by overseers.[47] When temporary laborers set up union offices, windows were smashed and death threats made.[48]

In a 1974 Diet debate, Prime Minister Tanaka Kakuei was confronted with the story of temporary worker Iwasa Kazuyuki's exposure to radiation at a Tsuruga plant in 1971. Tanaka was shocked to learn that it was not power company employees but rather contract workers or even itinerant day laborers doing the heavy lifting in Japan's atomic energy industry. He said, "They rely on contract workers.... [the workers] wear the same hats and the same uniforms, but even if we think they are regular employees, they just aren't, and yet they are doing the important work.... The core of this new scientific industry is in the hands of people from who knows where, people whose identities may not even be clear."[49] He summed up his take on the situation: "Even in this huge Japanese economy, there are still blind spots...."[50] While Tanaka demonstrated little sympathy for the workers and employed a typical Liberal Democrat language of economic nationalism with "new scientific industry" and "this huge Japanese economy" at the foreground, he was clearly surprised at the evident lack of both government and corporate oversight.

Tanaka seems to have had the image of scientific elites overseeing all facets of the tech economy, but the reality was poorly paid workers with no job security being casually irradiated in Japan's plants. Author Okamura Hideo argues that due to the "oil shock" and the accompanying plunge in GDP at an annual average of more than 2% between 1973 and 1976, down from 10% gains in the 1960s, Tanaka's comments did not lead to a serious rethinking of nuclear safety at the center.[51] The drive was instead to push energy prices down to support "consumer society" and "international competitiveness." Increased regulation was seen as an obstacle in an era of power company "rationalization".

In 1986, the Chernobyl catastrophe sparked much debate about nuclear energy in Japan. It did not, however, become a turning point in considerations of Japan's nuclear system. In *Genpatsu wa naze kiken ka* (Why Are Nuclear Plants Dangerous?), Tanaka Mitsuhiko shows that in the rhetoric of the government, power companies, and much mass media coverage, Chernobyl was not presented as a warning for Japan, but rather as an unsafe outside point of contrast with Japan's rigorous technology of safety.[52] Higuchi Kenji contends that Japan's official approach to the issue of radiation and public health, which persisted after Chernobyl, amounted to *muchi wa mugai* - roughly equivalent to "What you don't know can't hurt you."[53] Scientists are still engaged in debate over what levels of exposure to radiation can be considered safe, but official discourse has consistently turned gaps in knowledge about the health effects of radiation into assumptions of safety.[54]

Why did Higuchi's brand of skepticism not become the norm for the public presentation of Chernobyl? One explanation for stunted public discussion in the 1980s is the historically tight relationship between the mass media and companies and organizations with interests in Japanese nuclear power. For example, a member of public broadcaster NHK's Board of Directors and chief of the Broadcasting Division at the time of Chernobyl, Tanaka Takeshi, was also on the Board of Directors of the nuclear PR and lobby group Genshiryoku Bunka Shinkyo Zaidan (Japan Atomic Energy Relations Organization). The tone of the group's nuclear understanding is made clear by the July 1986 issue of its PR magazine *Genshiryoku Bunka* (Nuclear Power Culture). In it, radioactive medicine expert Tateno Yukio argued, "It was not necessary to evacuate any civilians from Warsaw" and declared the region around Chernobyl "totally safe." Similar perspectives were presented across Japan's mediascape.[55] NHK's coverage was not this dogmatic, but critics of Japanese nuclear power have seldom appeared on Japan's airwaves compared to proponents. Discussion tended to emphasize Japanese technological superiority. While skepticism remained, early 1990s opinion polls revealed that "the excellence of Japanese technology" was one of the primary reasons why around half of the public believed nuclear power to be safe.[56]

Before the 1990s, it would have been difficult to draw clear distinctions between economic and technological nationalism in Japan as GDP growth and visions of Japan as a technology superpower were inexorably linked. In the recessionary 1990s, with growth no longer a given and ordinary Japanese left debating what went wrong, assumptions of Japanese technological superiority became an even more important part of the world view of conservative nationalists.

In the so-called "lost decade," atomic energy rhetoric took on new nationalist directions. Japan's relative decline roughly coincided with China's rise to economic power status. In 1998, Terajima Jitsurou, an academic specialist on energy policy and head of a Mitsui-sponsored think tank, was invited to address a House of Councilors "Global Issues" committee. His comments demonstrate the ease with which the technological nationalism favored by conservatives was adapted to changing international circumstances. He told the committee: "... now that America has basically given up making nuclear reactors, there is not a single country that can match the technical prowess of Japan's power companies. Korea, Taiwan, and China, our neighboring countries, are making reactors one after another. Now, the sharing of nuclear technology for peaceful use... is a major issue [for Japan]."[57]

No longer the engine of global growth, and facing eclipse as an export powerhouse by neighboring China, Japanese conservatives contended that Japan could exercise regional leadership through its superior technology. At home, however, assumptions of Japanese technological superiority masked poor planning and structural failings. Nevertheless, in 2012, Japan's major rivals in atomic energy technology remain virtually accident free while the reputation of Japan's industry is in tatters.

Another framing of a technological nationalist hierarchy is provided by Liberal Democrat Ando Tetsuo, also in 1998. Ando described China's strides in building nuclear plants as illegitimate as the country also maintained a nuclear weapons program. By contrast, he described leadership in the peaceful use of nuclear energy as the "common desire of the Japanese people."[58] In this style of rhetoric, atomic energy and related technology is made fundamental to the idea of national community. It also exploits war traumas, effectively using atomic victimhood as an imperative for making Japan a nuclear energy power. To resist, in effect, would be to go against the attractive nationalist trope of Japan as a peaceful

technological leader.

When elite conservatives were challenged through the 2000s, especially after nuclear accidents and revelations of corruption, the response was most often a simple statement of Japan's technological superiority: dismissal, not debate. This pattern was even maintained after the shocking Tokaimura nuclear accident in 1999. Three workers at a spent fuel reprocessing facility managed by Japan Nuclear Fuel Conversion Co. (JCO) were irradiated while manually mixing radioactive materials. Two of the victims died. It was later revealed that the workers received no preparatory training, and no one in a management stopped them from combining radioactive elements in a precipitation tank with no containment structure. Hundreds of nearby residents and nuclear workers were exposed to elevated levels of radiation.

New energy industry legislation in 1995 opened spent fuel reprocessing to foreign competition. JCO insiders reported considerable pressure to cut costs in order to increase competitiveness. This meant a decline in training standards, even greater reliance on contract workers, and less onsite oversight.[59] Some individuals in research and development positions doubled as onsite overseers. Researchers were promoted based on results while overseers were required to maintain the status quo. It is obvious which of these areas would have commanded more attention.[60]

In the wake of the JCO accident, anti-nuclear NGO Genshiryoku Shiryou Jouhou Shitsu argued that plainly irresponsible practices had become systemic because "Nuclear power was sold to the public as an ‘inexpensive form of energy' compared to oil, but in order to support this ‘inexpensive form of energy' they were forced to cut corners in everything from facilities to safety considerations and personnel. We can say that it was because of demands to improve efficiency that things were not done by the book and the [JCO] accident was allowed to take place."[61] In essence the cheap energy of the future was a prophecy and cost cutting was needed to make it come to pass. The rhetoric of Japan's nuclear foundation can be tied to the erosion of safety.

The nuclear industry is one that has relied on guaranteed regional monopolies and massive government investment. It was, however, still left open to the doctrines of neo-liberal cost cutting without robust regulation implemented to protect workers and the public. Hirokawa Ryuichi, a photojournalist who became one of the most prolific Japanese commentators on Chernobyl and then Japan's own nuclear industry, has argued that when nuclear companies want to cut costs, "safety is the first thing to go."[62]

So confident were politicians of the safety supposedly provided by Japanese technology that they reacted to accidents, including those that claimed lives, not by commenting on root causes or taking responsibility for poor regulation, but rather by lamenting that "operator mistakes" such as that at the JCO plant in 1999 had, in the words of Koizumi Junichiro in a 2005 comment in Diet debate, "damaged the public's image of nuclear power."[63] This as well is a common phrasing and speaks to a tendency by government to prioritize promoting its nuclear energy agenda - which was to see 50% of Japan's energy needs met through nuclear power by 2030 - over serious public debate on safety. Managing the public's image of nuclear power was a higher priority for government than regulating the industry. Leading conservatives such as Horiuchi Mitsuo, speaking as the Minister of Trade and Industry, dodged any governmental responsibility to answer questions about fuel processing activities with "... fuel processing ... is something that the various companies are responsible for so I don't feel that the government is in any position to answer questions about this problem."[64] Japan's

Japanese Nuclear Safety Commission was modeled after America's Nuclear Regulatory Commission. At the time of the JCO accident in 1999, it had only one-tenth of the personnel of its US counterpart. Despite reform efforts in the 2000s, the frequency of inspections at some plants, including Fukushima Daiichi, actually decreased.[65] Horiuchi may not have been willing to talk about the details of fuel reprocessing, but he was comfortable telling opposition critics that nuclear power "is generally understood to be basically safe."[66]

In the 2000s, a series of scandals plagued the Japanese nuclear industry while politicians dodged calls for more robust regulation and ignored specific warnings about plants like Fukushima Daiichi. The most intense of these public controversies broke out after the magnitude 6.6 earthquake struck Niigata Prefecture in 2007. The quake caused radiation to leak from a power plant run by Tokyo Electric. The plant was previously the focus of an inspection data falsification scandal and had a history of several minor accidents.

Many saw the leak as a warning, but conservatives were dismissive. Tokyo Governor Ishihara Shintaro, long one of the leading proponents of conservative technological nationalism, was interviewed by the local paper *Niigata Nippo* in the aftermath of the accident. Niigata residents are keenly aware that Tokyo relied the energy provided by plants in the periphery, and Ishihara was diplomatic in admitting that Tokyoites should think more deeply about the burdens that others carry to provide energy for the metropolis.[67] Nevertheless, Ishihara soon launched into an uncritical defense of nuclear power.

Ishihara repeatedly asserted that, despite the fact that nuclear plants are being run for the profit of private companies, the central government should step in and "convince the locals of the safety of nuclear power."[68] With the government conceived of as guarantor of public consent, calls for increased safety, moves to include dissenting voices in public discussion, or serious pressure on companies are all dismissed as counterproductive. In this view, government is imagined as serving corporate interests by deflecting criticism, not protecting the public by ensuring safety.

Ishihara systematically downplayed the dangers of nuclear accidents: "Whatever the case, [the Niigata accident] did not become a major tragedy. If we had the land, I wouldn't have any problem with them building a nuclear plant in Tokyo Bay."[69] For Ishihara, the Niigata accident merely reinforces the need to "come up with foolproof plans for earthquake resistance."[70] Here, Ishihara assumes that Japan's technological march forward will prevent a major tragedy from taking place. By contrast, the idea of never-ending technological progress has been described by as "widely believed nonsense."[71] It leads to complacency. In the absence of any clear plan to improve earthquake resistance nationwide and on the heels of major cuts by the Koizumi government, Ishihara proclaimed his belief in Japanese nuclear technology and called for "level-headed" discussions for restarting Niigata's reactors to feed Tokyo's power grid as soon as possible as if any discussion not leading to restart is irrational.[72]

Author David E. Nye stresses how technologies are interconnected, making easy claims of progress problematic.[73] In the Niigata case, oversights in the most basic infrastructure make grand claims about technological progress or security seem naïve. Nuclear and Industrial Safety Agency agents took nearly three hours to reach the plant after the emergency broke out as earthquake damage and the flight of panicked residents caused traffic jams.[74] The technology the agents wanted but lacked? A simple police siren would have allowed them to reach the plant much faster. Due to the delay, they were in no position to report quickly to the central

government or suggest countermeasures.[75] Added to this was confusion among police, local government officials, and the center as to who had the authority to order an evacuation of the region around the plant and whether an evacuation should be ordered at all.

To this point, this article has criticized the Liberal Democratic Party and old guard conservatives for their nuclear blind spots and overconfident rhetoric. Some members, however, have been critical of their party's nuclear dogma. Kono Taro, a five term member of the lower house, has been a consistent critic of nuclear power from the perspective both of economics and safety. He laments, however, that party members were seldom willing to engage in serious debates and reports hearing comments like "That guy talks like a Communist Party Member. Is it really okay to let a Communist Party member into our HQ?" and "Go on over to the Socialists you commie!"[76]

The Liberal Democratic Party was voted out of office in 2009 and while some things changed, their Democratic Party successors maintained the old discourse on nuclear power. Naoshima Masayuki, the Economy and Industry Minister in Hatoyama's cabinet told the Diet, "... the [nuclear] technological power and know how, which I feel is at the top level in the world, is a strength that we must put to good use... The safety of Japan's nuclear plants and our ability to build safe plants is valued all over the world and I think that we can continue to hone our nuclear safety while raising the level of our technology."[77] Naoshima was not from the diverse Democratic Party's right; he was a former member of the leftist Democratic Socialist Party. Even on the left of the political mainstream, nuclear nationalism was the norm.

**The Energy Industry's Nuclear PR**

With a lack of consistent alternatives to the image of Japanese atomic energy as essentially safe from the political center, it is important to note the significant parallels between the government's atomic energy rhetoric and the icons and ideas that energy companies have used to sell atomic energy to the general public. Tokyo Electric, for example, has spent the equivalent of 300 million US dollars a year on advertising, maintaining the services of PR mega firm Dentsu.[78] Much of this advertising has emphasized the safety and efficiency of Tokyo Electric nuclear power.

The company also maintains a sweeping PR infrastructure that includes science museums for children, online manga or graphic novels, and a host of mascot characters. Here are some examples:

Until the Fukushima Daiichi accident drove the company to remove pro-nuclear PR from their website "in consideration of public feelings," Tokyo Electric offered a free online manga series *Toden Ken ni kike* (Ask Touden Ken). Toden Ken is an energy scientist whose name can also be read as "Tokyo Electric Research." He is a personification of the company. The manga was penned by industry heavyweight Hirokane Kenshi, the author of the *Shima Kosaku* series - Japan's most popular businessman manga. The chapters of the graphic novel focusing on atomic energy are presented from the point of view of a female college senior who is thinking about entering the working world. She expresses a desire to work for a better future for Japan and is told by Toden Ken that nuclear energy, made safe by Japanese ingenuity, is the field in which young Japanese can do the most to support their "resource poor country". The resource Japanese can rely on, he says, is the technological savvy of the people.[79]


Fukushima itself is host to an "Atom Kids Land" - a play and science space (billed as "the land of knowledge) built as a joint project between Tokyo Electric and local groups devoted to promoting nuclear power.


Children's museums, built in cooperation with the communities that host power plants like Fukushima Daiichi, are designed to draw tourists into depressed and peripheral areas. They are one of the most visible parts of the massive infrastructure spending that power companies offer to convince local governments and residents to accept nuclear plants. These museums have a common narrative: Japanese nuclear power, supported by the ingenuity of a people who need to work hard in order to overcome their country's lack of natural resources, is the safest in the world.

In the wake of the 3.11 disaster, Tokyo Electric has taken down their PR websites, but images from Chubu Electric, another regional monopoly, convey an idea of how atomic energy has been "branded" in Japan. Science centers feature:

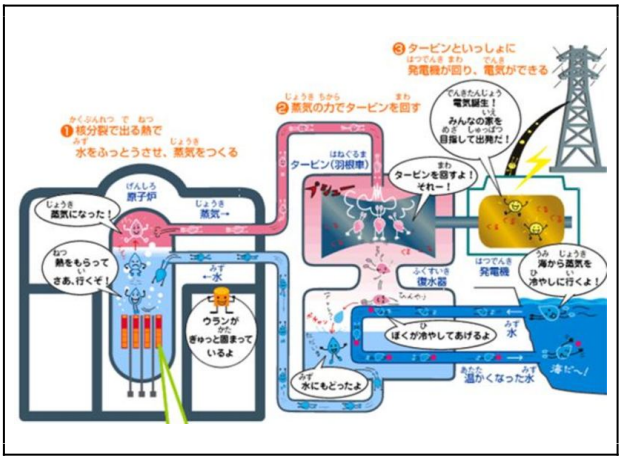
CG films

Parks

Interactive science exhibits


Even mockups of nuclear reactors that children can play on

Note here the happy electricity heading from the reactor to people's homes




And finally, an illustration of the invariably upbeat tone of exhibits


It tells of how radiation is all around us - in our food, from space, in useful technology like x-rays that guarantee our safety. The implication seems to be that with all of the radiation around us, a little extra from a nuclear power plant is no big deal.

Parallels between the rhetoric of long-ruling conservatives and energy company PR are evident. Disturbingly, however, the Nuclear Safety Commission, the organ of government responsible for regulating the industry, is also tasked with *promoting* the use of nuclear energy in Japan and educating the public, not about potential dangers, but about its safety. The result has been a triangle of government, business, and regulators turning to an identical imaginary and assumptions of safety, all tied to technological nationalism.

## Conclusion

In 2005, in the middle of the period in which government and Tokyo Electric ignored repeated warnings about the safety of Fukushima Daiichi, Prime Minister Koizumi Junichiro promised "... we are planning to increase earthquake resistance measures so there will be no radiation leaks or other accidents in the case of an earthquake or tsunami and we are building devices to ensure that cooling water can still be supplied [to reactors] in the case of a tsunami...."[80] He did this, however, to stave off opposition criticisms while praising Japanese nuclear technology, asserting that Japan's leading safety technology could be shared internationally as a contribution to the world. In the period between 2005 and 2009 the Koizumi and Abe governments' increased use of nationalistic techno-safety rhetoric characterized by moments such as the casual quip by Koizumi's Minister of Economy and Industry Hiranuma Takeo, "... I think it is time that the government does some solid PR on the necessity and the safety of [our nuclear plans]...."[81] the percentage of Japanese responding that they feel "confidence" in the safety of atomic energy rose from 24.8 to 41.8 percent, effectively recovering from a low of 20% immediately after the Tokaimura accident of 1999.[82] Tokaimura did not offer lasting lessons, partly due to the comprehensive propaganda of "safety through technology."

A 2007 public opinion poll conducted by the *Asahi Shimbun* found that 66% of Japanese believed that current levels of reliance on nuclear energy should be maintained or increased with just 7% answering that they should be eliminated and alternative energy sources sought.[83] Despite evident malaise, a significant number of Japanese were won over by safety and necessity arguments.

In Japan, criticisms of atomic energy and lax regulation have been prolific. The problem is not a lack of investigative journalism; it is a lack of communication of controversial themes to the mass public.[84] Numerous critical accounts of nuclear energy and attacks on government policy have been published in weekly magazines and mass market paperbacks. The problem is that while Japanese newspaper companies and other publishers have produced dozens of high quality, in-depth reports on nuclear power - including a few in the months leading up to the earthquake that now seem prophetic - these debates are mainly accessible to a minority of knowledgable readers who look beyond the major daily newspaper and TV news streams.[85] The silent majority typically only had access to sound bites on nuclear safety by politicians and the technological nationalism of the big power companies as well as their theme-park-like promotion infrastructure. Now, after the Fukushima Daiichi disaster, change is in the air.

A number of mainstream media sources including Asahi and NHK have commented on the explosion of Twitter use and the extensive discussions of the earthquake and Fukushima nuclear crisis. Twitter use expanded rapidly in Japan through 2010, with Japanese users making up approximately 20% of the global total of accounts with at least one follower, or some 15 million users, the highest per capita use rate internationally.[86]

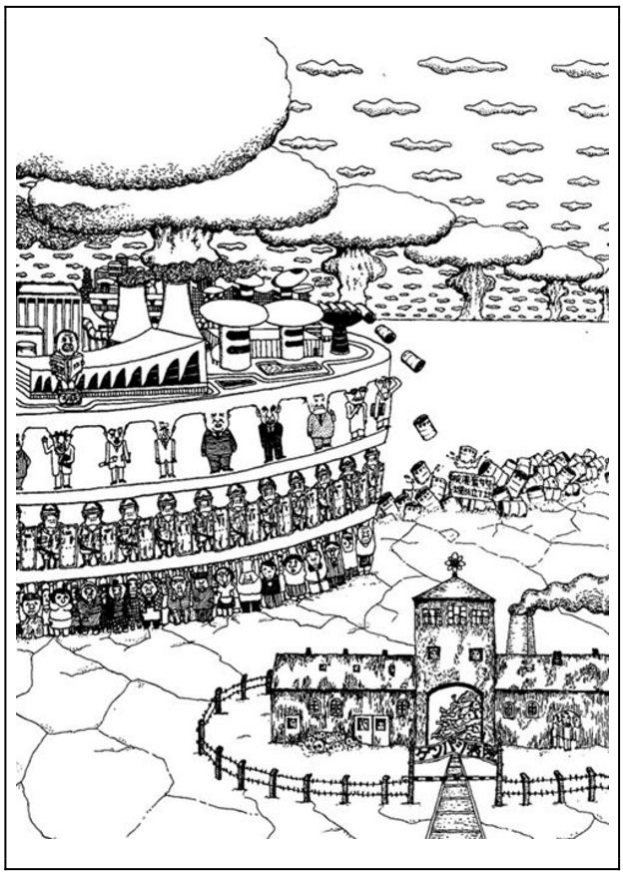
I will highlight examples of how new media is working to enrich Japan's public sphere and provide alternatives to the center-defined nationalism that has helped to suppress criticism.

One important example from Twitter and the blog-sphere is the wide circulation of the Fukushima branch of the Japan Communist Party's demand that Tokyo Electric improve tsunami resistance at Fukushima Daiichi.[87] The Communists have long been marginalized, not only from the center of power, but also by the

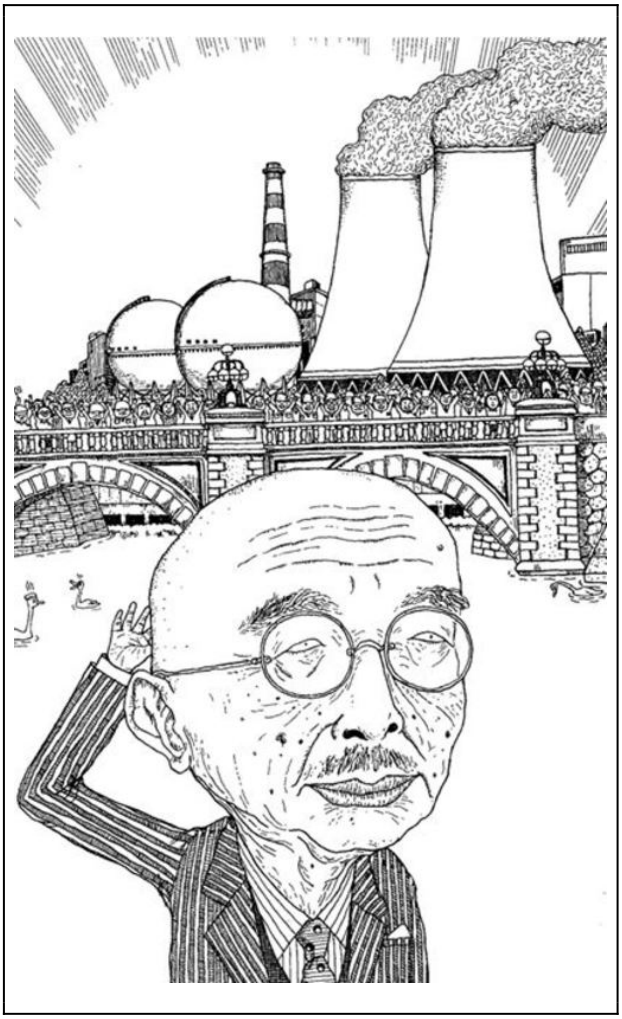
lack of serious discussion of the party's ideas in the mainstream media. New media, however, can eliminate knowledge hierarchies. The Communist Party statement was tweeted and re-tweeted, not due to any ideological commitment, but because they were right. In this way, critical alternatives overlooked by the mainstream media can find a more significant place in the public sphere.

The second follows in the footsteps of progressive satirical protest art of past decades. Here are two 1970s examples from illustrator and author Hashimoto Masaru's "Nuclear-topia" series.

In the first, ordinary Japanese bear the burden of nuclear danger, separated from technocrats and elite conservatives by a layer of riot police. The skeleton filled ruin in the right of the image is labeled "Nuclear Hospital".



This second image foregrounds the elderly emperor Hirohito. One of the key tropes of the 1970s anti-nuclear movement, and again in the wake of the Fukushima meltdown, was the idea that if Japan is to have nuclear plants, one should be built in the center of Tokyo so that the country's urban elite could feel the danger. In this case, the Imperial Palace is posited as a prime location for a plant.



The Fukushima Daiichi crisis has prompted a renewed rush of parody and protest art. Most is not produced by professional illustrators like Hashimoto, but by ordinary netizens who share the images on Twitter and blogs. Here are some examples:

In the days after the 3.11 earthquake, Japanese TV stations stopped running commercials. Instead, public service advertisements were

used around the clock. One teaches children to say "please" and "thank you" by using cartoon animals like *arigato-usagi* and *konnichi-wan*, word plays that mean "the thank you bunny" and the "good day dog".


The irony of these juvenile calls for politeness running during programs following the deteriorating situation in Fukushima was not lost on netizens, and they have been widely parodied.

Here is *hibakuma* or "irradiated bear":


Next is an image of plant workers saying *ittekimasu* - roughly "I'll go and be back soon" - but returning on stretchers:


In a different, far grimmer mode, Kago Shintarou, a professional satirical manga artist, posted this image on April 18. It deliberately evokes the imagery of the wartime draft, suggesting now that young Japanese will be sent to die at Fukushima Daiichi because of the nation's nuclear enthusiasm.


**"Mother, I shall return!"**

**"Please stop the radiation for the sake of the country."**

In other pieces of parody and satirical artwork, Tokyo Electric mascot character "Denko-chan" has received a makeover:


In contrast, some artists have chosen a mournful tone. This piece by the anonymous artist "muimui" appeared on Pixiv, one of Japan's most prominent amateur art community sites.[88] It is entitled "Memories of my hometown, what nuclear power took away." Whether the artist is from one of the evacuated towns around Fukushima or whether this is a statement of empathy, the image is a powerful one.

The website nonukeart.org featured nearly 1000 anti-nuclear posters as of mid-October 2011, many of which were used in actual protests.

These pieces fit seamlessly into alternative information flows, draw attention to news reports, spark discussion, and provide a counter narrative to official positions on radiation and nuclear safety.

In a 2009 Cabinet poll on nuclear energy, just under 80% of respondents voiced opposition to a nuclear fuel reprocessing plant in their area.[89] Given that over 65% supported atomic energy, however, this means simply that the Japanese mainstream wanted nuclear, just not in their neighborhood. As a result of this attitude, there have been many examples of local protests against nuclear power, but coordinated protest and pressure on the center waned in the decades following the late 1970s. Now, after March 11, this is once again changing.

The same new media that have disseminated critical analysis and sarcastic images have also been used to spread calls to action. Following March 11, a local movement in Shizuoka Prefecture to shut down the Hamaoka nuclear power plant coordinated with Tokyo community groups to stage two protests in the city - one on April 10 and the other on May 7 - which are reported to have attracted over 15,000 people on each occasion. This form of popular pressure and region-center coordination has brought attention to the issue and played a role in pushing Prime Minister Kan Naoto to order the closure of the plant until a sea wall that can resist a 3.11-scale earthquake and tsunami can be built. Internet-based information and media images of the Tokyo protests have both informed and emboldened protestors nationwide.

An important change has also taken place in Japan's stunted blogging culture. Before 2011, there were few Japanese blogs that reached the output and quality of major US examples. The lack of a progressive web presence was particularly notable. Post Fukushima Japan, however, has seen the appearance of a variety of blogs, by scientists, academics, independent journalists, and ordinary citizens that criticize the government's approach to Fukushima, radiation, and public health.[90]

With these new media trends in the background, major Japanese public opinion polls have indicated that nearly 75% of Japanese favor a gradual phase-out of nuclear power with only 14% opposed.[91] Fukushima cleanup may take decades, but the shift in public culture and the circulation of ideas that tear down received wisdom such as the conservative "nuclear safety" discourse, is well underway.

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**Responding to Disaster: Japan's 3.11 Catastrophe in Historical Perspective**

Is a Special Issue of The Asia-Pacific Journal edited by Yau Shuk-ting, Kinnia

See the following articles:

• Yau Shuk-ting, Kinnia, Introduction

• Matthew Penney, Nuclear Nationalism and Fukushima

• Susan Napier, The Anime Director, the Fantasy Girl and the Very Real Tsunami

• Yau Shuk Ting, Kinnia, Therapy for Depression: Social Meaning of Japanese Melodrama in the Heisei Era

• Timothy S. George, Fukushima in Light of Minamata

• Shi-lin Loh, Beyond Peace: Pluralizing Japan's Nuclear History

• Brian Victoria, Buddhism and Disasters: From World War II to Fukushima

**See the complete list of APJ resources on the 3.11 earthquake, tsunami and nuclear power meltdown, and the state and societal responses to it here.**

**NOTES**

[1]Toyoda Aritsune, *Nihon no genpatsu gijutsu ha sekai wo kaeru* (Tokyo: Soudensha, 2010).

[2] Ibid., cover.

[3] Ibid., p. 46.

[4] *Ibid*., p. 129.

[5] This paper uses "technological nationalism" to mean a facet of Japan's economic-based postwar nationalist discourse that related Japan's imagined national "quality" with the relative level of Japanese technology. Terms such as "technological nationalism" or "techno-nationalism" are more commonly used to mean the assumption that technological autonomy is necessary for national security. See Gregory P. Corning, *Japan and the Politics of Techno-Globalism* (Armonk, NY: M.E. Sharpe, 2004).

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[9] "Chiri jishin ga keishou: Genpatsu no reikyakusui kakuho dekinu osore," *Shimbun Akahata*, March 1, 2010, [link].

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[15] "Touden: Kanryou amakudari 50nin ijou," *Mainichi Shimbun*, September 25, 2011, [link].

[16] Hirose Takashi, *Fukushima genpatsu merutodaun* (Tokyo: Asahi Shimbun Shuppan, 2011).

[17] "Senmonka no iken wo mushi shi, sekai saidaikyuu genpatsu taishin tesuto setsubi ha Koizumi seiken baikyaku," *AREA*, April 4, 2011. "Robotto taikoku no na ga naku, genpatsu sakugyou ha Oubei tayori," *Shuukan Shincho*, April 14, 2011.

[18] "'Reberu 7' Genjitsu wa sozo wo koeru," *Shukan Gendai*, April 25, 2011, [link]. As has been pointed out in numerous sources, the amount of radiation released in the Fukushima disaster was a fraction of that released from the Chernobyl plant. See [link].

[19] "Cherunobuiri - Ima koso 'shijou saiaku' ni kyoukun manabe," *Yomiuri Shimbun*, April 25, 2011 [link].

[20] Uekusa Yoshiteru, [001/001]96, Shuugiin Kagaku Gijutsu Iinkai, 3gou, March 23, 1982.

[21] Tokai Kisaburou, [011/028]156, Shuugiin Monbukagaku Iinkai, 14gou, May 28, 2007.

[22] Nakasone Yasuhiro, [011/254]7, Shuugiin Yosan Iinkai, 7gou, February 3, 1950.

[23] Takeda Tooru, *'Kaku' Ron* (Tokyo: Keisou Shobou, 2002), p. 45.

[24] *Ibid*., p. 48.

[25] *Ibid*., p. 48.

[26] *Ibid*., p. 49.[27] *Ibid*., pp. 50-4.[28] *Ibid*., p. 56. The American examples were already controversial before World War II. Such concerns were largely overlooked in the Yomiuri promotion efforts.

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[33] *Ibid*., pp. 130-1.

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[37] Genshiryoku Shiryou Jouhou Shitsu, *Kenshou Touden Genpatsu Toraburu Kakushi* (Tokyo: Iwanami Shoten, 2002).

[38] Inoue Hiroshi (ed.), *Hangenpatsu roudou undou*, (Tokyo: Satsuki-sha, 1982), p. 27.

[39] *Ibid*., p. 25.

[40] *Ibid*., p. 29.

[41] *Ibid*., p. 43.

[42] *Ibid*., p. 45.

[43] Higuchi Kenji, *Genpatsu hibaku rettou* (Tokyo: San-ichi Shobou, 1987), p. 41.

[44] *Ibid*., p. 58.

[45] *Ibid*., p. 50.

[46] *Ibid*., p. 50.

[47] *Ibid*., p. 43.

[48] *Ibid*., pp. 43-44.

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[60] *Ibid*., p. 156.

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[63] Koizumi Junichiro, [040/042] 151, Shuugiin Yosan Iinkai, 18gou, May 28, 2001.

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[67] Niigata Nippou-sha (ed.), *Genpatsu to jishin* (Tokyo: Koudansha, 2009), p. 258.

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[69] *Ibid*., p. 260.

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[75] *Ibid*., p. 23.

[76] [link]

[77] Naoshima Masayuki, [003/020]174, Shuugiin Yosan Iinkai, 2gou, February 26, 2010.

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is based on notes taken after surveying the series on March 15-16, 2011.

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[81] Hiranuma Takeo, [039/042]151, Sangiin Yosan Iinkai, No. 16, May 30, 2001.

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[88] See the website here [link].

[89] Genshiryoku ni kan suru tokubetsu yoron chousa, November 26, 2009, [link].

[90] Include link to Japan Focus web resources page.

[91] "Shorai-teki ni 'datsugenpatsu' sansei 74%", *Asahi Shimbun*, June 13, 2011, [link].