



The Fukushima Nuclear Crisis and the Fight for Compensation

David McNeill

Tales from the Disaster Zone

In March 2011 Shoji Katsuzo was farming rice, vegetables and cows in a small plot of land in Iitate village, Fukushima Prefecture. Like many in the area, Mr. Shoji's farm was handed down from father to son; his had been in the family since the 1880s. That history effectively ended on March 11, 2011 when cooling systems at the Fukushima Daiichi Nuclear Power plant, about 40 km away, failed and nuclear fuel in three of the plant's reactors began to melt down in the wake of earthquake and tsunami.



Katsuzo Shoji, his wife Fuki and granddaughter Hiroko in their farm greenhouse before they evacuated in May 2011. All the cabbages in the greenhouse had to be dumped. (David McNeill)

Mr. Shoji (76) and his wife Fumi (75) today live in two-room temporary housing in Date, about 60 km northwest of the plant after being forced to abandon their property.¹ Initially designated outside the 20 km compulsory evacuation zone around the stricken plant, Iitate was ordered cleared in April after non-government observers including Greenpeace and the International Atomic Energy Agency warned that levels of cesium and other radioactive contaminants exceeded official criteria for immediate evacuation.

The Shoji herd has been slaughtered, the crops dug up and abandoned to weeds and the family has joined about 7,000 other nuclear exiles from the town. Nearly eleven months since the destruction of their land, income and way of life, the Shojis have received about 1.6 million yen (16,376 Euro@ Jan 14, 2012), or about 150,000 yen a month. "We have no expectations of being properly compensated and have given up hope of returning to our homes," says Mr. Shoji.²

As I write, the family is currently waiting for its claim of roughly 2 million yen from Tokyo Electric Power Co., (TEPCO) operator of the Fukushima plant. Three months after the crisis erupted, TEPCO paid 1 million yen in 'temporary' compensation to the family, then another 300,000 per person for their relocation. It was the same deal offered to thousands of others. From September 12th, half a year after the meltdown, the utility started sending, mostly through the post, a 58-page application form for compensation that demanded receipts (actual, not copied) for transportation and other fees incurred during the evacuation, bank or tax statements proving pre-disaster

income levels and documented evidence of worsening health since the move.³ A month later, TEPCO had received just 7,600 completed forms – that is about 10 % - because they were widely considered too arduous and detailed, but above all because many of the required documents requested were destroyed by the earthquake and tsunami.⁴

One section of the form asked claimants to show (with original receipts) the cost incurred in returning to their abandoned homes to pick up belongings. Another asked if the claimant had been screened for radiation. The form was accompanied by a 158-page explanation, including ten pages detailing how much in travel expenses to claim from every corner of Japan. Compensation payments applied to damages only from March 11 till Aug. 31st and the process required applicants to reapply every three months thereafter. Criticism of the application process was so severe that TEPCO was in December forced to simplify it to 4 pages.

When the check for 2 million yen arrives at the Shoji home, it is supposed to last till November 2012, when the family will have to file another claim. In the meantime, the family head says he has mentally moved on. "I've rented a small allotment (*hatake*) and I'm growing vegetables. I don't want to think any more about the loss of my land or getting paid for it because it makes me too sad."

Mr. Shoji's story illustrates the systemic problems of the compensation process following the Fukushima nuclear disaster. He is one of about 114,000 from the contaminated prefecture of Fukushima - people who were forced to abandon their farms, homes, schools and jobs between March and May 2011 and live elsewhere. An unknown additional number, anywhere from 50,000 - 120,000, according to many observers, has moved voluntarily because of radiation fears, ignoring official claims that life inside or around Fukushima Prefecture is safe.⁵ Typically, mothers have taken their children out of the prefecture and started new lives, many as far away as Tokyo, Osaka or Kyushu, splitting up families, often in the teeth of protesting fathers and in-laws.

"My husband didn't agree to the move and tells us to come back home," explains Sato Akemi, a housewife from Fukushima City (about 60 km from the nuclear plant) who now lives in Tokyo with her two children, aged 9 and 7.⁶ "I have to pay my bills in Tokyo and travel to Fukushima to see my husband three or four times a month. It's very expensive and stressful but I didn't see a choice. People say we have a chance to get compensation but I've been too busy to even think about that or talk to a lawyer."

Mrs. Sato and her two children live in rent-free public housing (*toei jyutaku*) provided by Tokyo city. However, she estimates that the cost of living from moving to Tokyo has increased by 100,000 – 150,000 yen a month as she struggles to pay extra bills for utilities, transport and her children's education.⁷ Those like Mrs. Sato who have *voluntarily* relocated to escape radiation are not currently entitled to even the same meager compensation package as the Shojis by government and TEPCO reckoning.

In protest, a small number of victims have refused to play by TEPCO's compensation rules. Naito Fumitaka paid 9.8 million yen for a 6800-tsubo (2.2 hectare) plot of land in Iitate in 2009, now unworkable because of contamination.⁸ "My view is that what happened is not my fault, so I want the company to provide me with a new farm elsewhere," he says. "I can't wait 20 or 30 years till they compensate me for the land – I'll be dead. But when I saw the compensation form there was no space to write my claim." Mr. Naito calculated the cost of his land, equipment and ruined produce and attached a separate sheet of paper claiming about 70 million yen. A TEPCO official called, queried the claim and eventually offered 150,000 yen. "I told them not to send it. I'm going to fight in the courts instead."

Liability Background & Strategy

Japan's Act on Compensation for Nuclear Damage (1961), enacted as the nation's nuclear industry was in its infancy, places no cap on the operator's nuclear liability, "regardless of fault, negligence or intention to harm."⁹ The legislation obliges TEPCO to prepare private insurance (roughly 120 billion yen) per site in the event of nuclear accidents (Fukushima Daiichi's six reactors count as one site). The key part of this legislation reads:

...“nuclear damage” means any damage caused by the effects of the fission process of nuclear fuel, or of the radiation from nuclear fuel etc., or of the toxic nature of such materials (which means effects that give rise to toxicity or its secondary effects on the human body by ingesting or inhaling such materials).”

Crucially, however, the act does not stipulate practical details and rules for applying for compensation. As lawyer **Tadano Yasushi explains**, it vastly underestimates the financial preparation needed for a large-scale disaster such as Fukushima. “TEPCO’s insurance to 120 billion wasn’t anywhere near enough to cover the number of victims. At a minimum it will cost 5 trillion yen.” Moreover, Section 16 says that the government may assist in compensation claims if they exceed the operator’s liability – subject to Diet (parliament) approval. Section 16 is considered controversial because it makes the government in effect the indemnifier of last resort in a nuclear accident.¹⁰

Says Tadano: “I am opposed to the idea of TEPCO being allowed to survive on public funds because I believe the shareholders and management of TEPCO should be held accountable for this accident first.”

The lack of practical details for compensation compelled the government in April 2011, one month after the Fukushima accident, to establish the Dispute Reconciliation Committee for Nuclear Damage Compensation (hereafter, the Reconciliation Committee) a government organization designed to establish guidelines – and boundaries - for compensation claims.¹¹

On April 28th, the Committee adopted preliminary guidelines for determining the nuclear damage, initially defining them as resulting from instructions by the authorities, such as orders to evacuate, stop farming or fishing.¹² Subsequent ‘secondary’ and ‘interim’ guidelines, adopted respectively on May 31st and August 5th, include provisions for “permanent compensation.”¹³ At the time of writing, none of these guidelines stipulate compensation for loss of assets such as homes or farms, nor do they provide compensation for people who have left Fukushima ‘voluntarily’ in response to radiation danger, rather than to government orders. There is speculation that roughly 1 million people, which is over half the population of Fukushima Prefecture, may be offered 80,000 yen each in one-off compensation, in addition to 400,000 per child (under-18) - a figure Yoshino Hiroyuki, a leading member of the Fukushima Network for Saving Children from Radiation calls “absolutely unacceptable.” Mr. Yoshino, also a resident of Fukushima City, says his wife and four-year-old son have gone to live in Kyoto. “We have to rent an apartment there and run two separate lives. How are we supposed to live? The government doesn’t seem to care.”¹⁴



Fukushima residents attend an information meeting with TEPCO officials, April 2011

Thus, the 1960 law speaks in fairly general and even generous terms about compensation, but the specific guidelines for claims have been decided since the incident itself. The Reconciliation Committee has ring-fenced claims to include only government-designated victims of the disaster, with a possible sop to residents of Fukushima Prefecture outside the evacuation zones, some of whom live in heavily irradiated areas. The Committee accepts the government’s controversial recommendations that ‘livable’ radiation levels may be up to 20 millisieverts per year, though as we have seen many families with children distrust that recommendation.

The Internationally recommended and recognized limit, and the Japanese government’s own standard prior to the 3.11 disaster, is one millisievert.

“It’s now some appointed commission that decides what’s claimable and the problems is that making guidelines after the accident is legally absolutely unacceptable,” explains Julius Weitzdoerfer, a German researcher who has compiled one of the most comprehensive reports on liability and the Fukushima disaster.¹⁵

Moreover, a major question mark looms over the costs of decontamination in Fukushima, an operation likely to leave a pile of nuclear waste almost 29 million cubic meters high – enough to fill one of the Tokyo’s largest stadiums 80 times.¹⁶ Who will pay for it? TEPCO has already argued in court that it is not responsible for the radioactivity showered across Fukushima because it doesn’t “own” it. “Radioactive materials (such as cesium) that scattered and fell from the Fukushima No. 1 nuclear plant belong to individual landowners there, not TEPCO,” the utility’s lawyers told Tokyo District Court, during a disposition to hear demands by the operators of the Sunfield Nihonmatsu Golf Club, 45 kilometers west of the plant, that TEPCO decontaminate the property. The owners said they were ‘flabbergasted’ by TEPCO’s argument, but the court essentially freed the utility from responsibility, according to *The Asahi Shimbun*.¹⁷ If the decision holds through legal challenges, local and central governments will be forced to foot the bill.

The victims of the Fukushima nuclear disaster face a choice of either waiting, if they are entitled under the guidelines, for a TEPCO settlement to their claims, or going to court. As Weitzdoerfer explains, ‘voluntary’ settlements are “detrimental to the victims because they might not get as much as they can from the court.” But for social and legal reasons, not least Japan’s shortage of lawyers, very few compensation cases end up in Japanese courts. Nevertheless, some lawyers are preparing for battle. “The scale of difference between what TEPCO is offering and what these people need is so large that we’re telling people not to bow down and to fight, even if we can’t promise that they’ll win,” says lawyer Tadano.

In the meantime, lawyers and independent observers say the strategy of TEPCO and the government during what is likely to be the most expensive liability case in Japanese history is, in effect, to suppress compensation claims by making them as restricted, bureaucratic and difficult as possible for thousands of Fukushima victims. “It’s standard practice in these cases,” says Martin Schulz, Senior Economist at Fujitsu Research Institute, Tokyo. To illustrate, he points to previous mass compensation claims in Japan, including the most famous of all – the mercury poisoning of food around the town of Minamata in Kyushu island in the 1950s. “It took 40 years to settle those claims. This is how Japanese bureaucracy works.” By that time, many of the original plaintiffs had died.

In the most recent comparable accident to Fukushima, at the Tokaimura nuclear fuel fabrication plant in 1999, 98 percent of claims were settled within a year of the accident. But as Weitzdoerfer and others have pointed out, the Fukushima disaster is of a different magnitude involving vastly greater damage to many more people. “The two cases are not comparable because evacuation at Tokaimura was for a few hundred meters, lasted a few days and it was over. Obviously this is completely different.”¹⁸

The current strategy will include keeping elderly people like the Shojis waiting till they die and peel off all but the most determined claimants, says Kaido Yuichi, a lawyer and antinuclear activist. “They’re drawing the time out, paying as little as they can and putting off settling the main, most expensive claims so the victims will get fed up and quit.”¹⁹ Mr. Kaido says the majority of enquiries from the March 11 disaster to the Japanese Bar Association are about the nuclear accident. He estimates that at least 1,000 lawyers are currently in discussion with citizens or groups from the irradiated zones scattered around over 40 different prefectures around the country. “Most people, however, are too busy struggling with new lives to even think of a lawyer or claims.”

The medium-term approach is to avoid nationalizing TEPCO for as long as possible, to keep the claims at arms length, says Schulz. He and other economists believe the utility is in effect a zombie company: insolvent, unprofitable for at least a decade and facing imminent nationalization, probably sometime this year.²⁰ “As long as TEPCO remains a private buffer for claims against the government it remains helpful,” says Schulz. “This is why they are focusing on these limited cases; because as long as they do so, they can at least pretend to stay in business.”

TEPCO denies these charges and says it is doing its best amid an “unprecedented” disaster, the line followed since March 2011 when Shimizu Masataka, then company president, said that the tsunami that struck the Fukushima Daiichi nuclear plant was “beyond our expectations.”²¹ Spokesman Kawamata Hiroki denies making the application process deliberately difficult. “From our point of view we were merely trying to cover all bases and make sure there is nothing left out.”²²

TEPCO says that it has already paid out temporary compensation to 160,000 people. Families have been awarded an initial payment of 1 million yen each (except for single-person families at 750,000 yen), and up to another 300,000 yen for the costs of moving out of the designated evacuation areas. Mr. Kawamata adds that his company has already paid the first claims of 14,500 people, awarding up to 4 million yen each, but admits that the initial compensation of 1 million yen will be deducted from this figure.²³ He denies stalling on claims. “They are very complex and we’re moving as fast as we can.”

About 285 Farmers, hundreds of fishermen and small-mid-sized business people have also been compensated for loss of earnings. After bitter public criticism of its application procedure the utility says it has tripled the number of staff to explain how to apply, bringing a total of 7,000 people working in call centers, 14 local offices and company back offices. It says it has paid out a total of 291.7 billion yen so far and estimates the total cost over two years at 1 trillion, 700 billion yen.

The Cost and Who Pays

That’s widely considered a gross underestimate of the value of the destruction. TEPCO’S current compensation scheme cleaves closely to the government directive on evacuation, meaning only those who have been *compulsorily* moved are entitled to claim. For now, the scheme also sidesteps the question of abandoned property and other assets since the government line is that evacuees from Futaba, Iitate and other heavily irradiated areas will return to their homes, farms and ports – a course few scientists believe is either possible or desirable.²⁴ The compensation scheme excludes cities such as Iwaki and Minamisoma, which are located in areas that border the evacuation zone and whose mayor announced in January, 2012 that he is suing TEPCO for economic damages.²⁵ Mayor Sakurai Katsunobu said 27,000 of the town’s 70,000 population may permanently leave, depriving the town of taxes and likely resulting in eventual bankruptcy.²⁶



Citizens of Fukushima city meet in late 2011 to discuss compensation issues (David McNeill)

Finally, the compensation scheme takes no account of the long-term impact on local populations of prolonged exposure to radiation, which is likely to eventually provoke hundreds of lawsuits.²⁷ As Tadano explains, “The government has made no preparations to offer compensation to radiation victims, but they fear such claims. Radiation is low-level nuclear damage so they can’t see the consequences but they undoubtedly fear that in the future victims will emerge, and they fear that it will cost most compensation. There is a 20-year limit in the claiming period from the date of the accident. The problem will be what happens after that.”

Estimates of the total cost of the Fukushima catastrophe, including compensation, fluctuate wildly. TEPCO was told by an advisory panel in October to prepare for claims of 4.5 trillion yen in the two years through March 2013.²⁸ The private research institute, Japan Center for Economic Research put the bill over the next ten years at 5.7 trillion yen to 20 trillion yen or higher.²⁹ But neither figure includes compensation to the farming and fisheries industries, though the latter does budget for the purchase of contaminated land inside the 20-km evacuation zone. Some sources calculate the cost of buying up contaminated land *alone* at about 4 trillion yen.³⁰ A broader calculation, by the same research institute, puts the entire cost of the disaster, including compensation and decommissioning the Daiichi plant’s six reactors, at 40-50 trillion yen – a figure that approaches the bill for cleaning up the US subprime banking meltdown in 2008/9.³¹

Despite being at the time of the accident the world’s fourth largest power utility, TEPCO, which was established in 1951 and monopolizes the supply of electricity to Tokyo (i.e., one third of Japan’s total electricity) cannot deal with this enormous financial liability by itself. The government has so far tacitly though not explicitly accepted this, the prelude say most observers to eventual nationalization, when these claims will move into the bureaucratic realm – in other words, they will be handled by government bureaucrats and their advisors and layers, not private firms.³² Shifting the burden for the catastrophe from the private to the public has been condemned by, among others, economist Oshima Keiichi, who says the disaster proves again that the capitalist marketplace cannot make nuclear power pay. “The nuclear industry made good profits from ordinary people before the accident but now we are the ones who have to pay for the cleanup.”³³

Under a law rushed through parliament in August, Japan’s government has set up a new public-private agency, the Nuclear Damage Liability Facilitation Fund, to keep TEPCO on life support and oversee compensation, from a mix of public cash, bank loans (underwritten by the government), government-backed bonds and money from Japan’s 10 electric power companies.³⁴ In a careful analysis, economist Oshima concludes that although the fund has been packaged as a rapid response to the nuclear victims, it is aimed ultimately at “rescuing and preventing the collapse of the nuclear industry...It doesn’t question the industry itself or make its responsibility for the accident clear.”³⁵

TEPCO subsequently announced plans to sell off properties and other assets to raise over 600 billion yen, and (in December, 2011) to raise electricity prices for industrial users. It is able to draw on 120 billion yen – 240 billion yen from a government-run insurance fund provided for under the law on compensation for damage from nuclear accidents. However, Japan’s biggest business lobby, Keidanren, has been lobbying the Democrat (DPJ) government to set limits on industry liability for compensating for the disaster. In the meantime, the burden of paying for it is already beginning to rain on the taxpayer.³⁶

In November 2011, the government agreed to an 890 billion-yen compensation bailout fund. In late December, TEPCO asked the fund for another 690 billion yen. This likely barely scratches the surface of the total bill. In this context, the reported figure of 4 trillion yen in final compensation costs has, in the words of lawyer Kaido, “absolutely no basis in reality.” The government’s strategy, therefore, in the coming months and years will be to seek to limit claims on the public purse. “The government will probably nationalize TEPCO and separate ‘good TEPCO’ (meaning its generating and supply functions) from ‘bad TEPCO’ (its liabilities and debts),” says Iida Tetsunari, director of the Institute for Sustainable Energy Policies in Japan. “The government will then, in a bureaucratic manner, try to limit payments.”

Conclusion

The battle for adequate compensation for the world’s worst nuclear accident since Chernobyl is likely to be protracted, bitter and, in the end, hugely unsatisfactory for its victims. Mr. Kaido calls it the great legal challenge of the coming years. “How Japan handles it will define our profession for years to come.” Schulz notes that as a six-decade monopoly, protected by the bureaucratic state, TEPCO is just doing what it has always done: bungling and ignoring public opinion. “But they shouldn’t be allowed to. It borders on outrageous. It is government policy that resulted in this situation. Ultimately it will be the government that will pay.”

The key word here is ultimately. Hundreds of thousands of nuclear victims from Fukushima will wait, their lives in limbo, as their claims are processed. Many won't receive anything at all. In the meantime, they will pick up the pieces as best they can. Mothers will raise children hundreds of miles from their fathers. Fishermen will repair their nets and surviving boats and wait for the sea to clear of contamination. A few will go out trawling for debris washed out by the March 11 tsunami, a job that earns them 11,000 yen a day from the government. Farmers like Shoji Katsuzo will either fight in court or abandon their legal claims to avoid being driven mad by TEPCO's Kafkaesque paperwork.

Amid the devastation, a surreal touch: unemployed farmers around Iitate have been offered work cleaning up the crippled nuclear plant, for 12,000 yen a day. Says Mr. Shoji: "We're the victims and TEPCO is the perpetrator, but I get no sense at all of the company being guilty."

I'd like to acknowledge the help of Nanako Otani in compiling this report.

Timeline

Friday March 11, 2011: Earthquake strikes, shutting down reactors 1, 2 and 3 of the Fukushima Daiichi Nuclear Plant, triggering a tsunami that strikes about 41 minutes later, and detonating the start of the nuclear crisis. Prime Minister Naoto Kan will initially declare that no radioactive leaks have been detected.

Saturday March 12: The government begins ordering the evacuation of residents within 10 km of the plant. After an explosion at Reactor 1, the evacuation zone is widened to 20 km. Residents further afield are told to stay in their homes and close windows.

April 11: Iitate Village and other municipalities 30 km or more from the plant are told to evacuate after government confirms that residents are at risk of being exposed to a cumulative dose of more than 20 millisieverts of radiation a year.

April 15: TEPCO announces payments of 'initial' compensation of 1 million yen to each evacuated household. Amount condemned as too little by families interviewed in the media. TEPCO begins distributing the money in May but some residents say they don't receive it till June or July.

April 28: Dispute Reconciliation Committee for Nuclear Damage Compensation adopts preliminary guidelines for determining the nuclear damage. Subsequent meetings on **May 31st** and **August 5th** will determine guidelines or 'interim' and 'permanent' compensation.

Tuesday August 30: TEPCO unveils details of its compensation plan, with a pledge to begin payments by October.

September 12th: TEPCO begins sending out compensation forms and explanation booklets to refugees, through the post and via refugee centers.

October 31st: TEPCO admits it has received just 10 percent of completed forms after bitter criticism of complicated application procedure. Begins to simplify applications and beef up front and back-office staff around the country.

December 31st: NHK reports that fewer than half of compensation claimants have actually received payment.

Jan 25, 2012: Fukushima Governor Yuhei Sato criticizes government/TEPCO plans to exclude residents in the west and south of the prefecture from compensation plans and proposes a \$520 million fund to assist them.

This is a revised and slightly expanded version of a chapter in the Greenpeace volume *Lessons From Fukushima* (February 2012).

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Articles on related subjects

- Hiroshi ONITSUKA, Hooked on Nuclear Power: [Japanese State-Local Relations and the Vicious Cycle of Nuclear Dependence](#)
- Gayle Greene, [Science with a Skew: The Nuclear Power Industry After Chernobyl and Fukushima](#)
- Nishioka Nobuyuki, [Toward a Peaceful Society Without Nuclear Energy: Understanding the Power Structures Behind the 3.11 Fukushima Nuclear Disaster](#)
- Satoko Oka Norimatsu, [Fukushima and Okinawa – the “Abandoned People,” and Civic Empowerment](#)
- Hirose Takashi, [A Farewell to Nuclear Power – a Lecture on Fukushima](#)
- Koide Hiroaki, Philippe Pons, and Paul Jobin, [Nuclear Irresponsibility: Koide Hiroaki Interviewed by Le Monde](#)

For a complete list of APJ articles on 3.11 and nuclear power see [Nuclear Meltdown: Radiation and its consequences for People and Environment in Japan and the World](#)

Notes

¹ Personal interview, October 4, November 2, 2011 and Jan 16, 2012.

² Ibid.

³ 東京電力株式会社、賠償金後請求書、個人さま用。 Figures come from TEPCO, personal interview with Nagai Yoshikazu and Kawamata Hiroki, Corporate Communications Department, Jan. 13, 2012.

⁴ See "[10% of compensation forms filed/TEPCO's arduous application process blamed for claimant's slow response](#)," *The Daily Yomiuri*, Oct. 31, 2011. (Jan. 23, 2012)

⁵ Figures come from TEPCO and from interviews with Ban Hideyuki, Secretary General of the Citizens' Nuclear Information Center.

⁶ Personal Interview, Jan. 14, 2012.

⁷ Tokyo has the world's highest cost of living, according to *The Economist*. See *Pocket World in Figures* (2010), p.90.

⁸ Personal Interview, Jan. 17, 2012.

⁹ A copy of this act can be found [here](#). (Jan. 23, 2012). The operator is exonerated from liability in cases of 'grave natural disaster of an exceptional character,' but at the time of writing TEPCO has apparently not invoked this exception and many legal experts believe that it is unlikely to do so.

¹⁰ Personal interview, Jan. 25, 2012.

¹¹The organizing body appears to be MEXT ([link](#))

In practice, judges and other legal specialists are involved. ([link](#))

¹² See X. Vasquez-Maignan, "[Fukushima: Liability and Compensation](#)," published by the Nuclear Energy Agency, (Jan. 23, 2012).

¹³ Ibid.

¹⁴ Personal Interview, Jan.14, 2012.

¹⁵ See his "Die Haftung für Nuklearschäden nach japanischem Atomrecht – Rechtsprobleme der Reaktorkatastrophe von Fukushima I" (Liability for Nuclear Damages pursuant to Japanese Atomic Law – Legal Problems Arising from the Fukushima I Nuclear Accident), *The Journal of Japanese Law*, No.31, 2011 (English summary available). Personal interview, Jan. 25, 2012.

¹⁶ See David McNeill, "[Japan Reveals Huge Size of Fukushima Cleanup](#)," *The Irish Times*, September 29, 2011.(Jan 31, 2012)

¹⁷ See. "[TEPCO: Radioactive Substances Belong to Landowners, Not Us](#)," Nov. 24, 2011. ([Jan. 31, 2012](#))

¹⁸ Ibid. For a report on compensation for Tokaimura, click [here](#). (Jan. 23, 2012)

¹⁹ Personal Interview, Jan. 13, 2012

²⁰ See "TEPCO shares fall on fears that it may be nationalized," *BBC News*, Dec. 28, 2011.

²¹ The statement was widely ridiculed. The Daiichi plant's defense walls were built to withstand a tsunami of just 5.5 meters, perhaps a third the size of the 14-15-meter tsunami that disabled its cooling systems. In 1933, 28-meter waves demolished parts of Aomori, Iwate and Miyagi. A 38-meter wave hit the northeast region in 1896.

²² Personal Interview, Jan. 13, 2012, Ibid.

²³ Ibid.

²⁴ See my interview with Professor Tim Mousseau in "Learning Lessons from Chernobyl to Fukushima," *CNNGO*, July 28, 2011. Available online [here](#). (Accessed Jan.3rd, 2012).

²⁵ See"南相馬市が賠償請求へ訴訟も視野に東電の責任追及", , *福島民友ニュース*, Jan 6, 2012.

Available [here](#). (Jan. 14, 2012)

²⁶ See "[Disaster Towns Left in Limbo](#)," *The Japan Times*, Jan.16, 2012. (Jan. 16, 2012)

²⁷ It also makes no provision for the many unexpected consequences of the disaster, such as the irradiation of a newly built apartment building in the prefecture, which used contaminated stones in its construction. Families inside the building will have to be relocated and the building likely destroyed. See "New Condo's Foundation Radioactive," *The Japan Times*, Jan. 17, 2012.

²⁸ See, "[TEPCO seeks 690 billion yen more for Fukushima compensation](#)", *Asahi Shimbun*, Dec. 27, 2011. (Jan. 14, 2012)

²⁹ See "[Fukushima crisis estimated to cost from 5.7 trillion yen to 20 trillion yen](#)." *The Asahi Shimbun*, June 1, 2011.

³⁰ See report by Japan Center for Economic Research, "Impact to last Decade or more if Existing Nuclear Plants Shut Down," p.11. Published April 25, 2011. Available [here](#).

³¹ "The 38th Middle-Term Forecast", Dec.2, 2011, (abstract, p. 3). http://www.jcer.or.jp/eng/pdf/m38_abstract.pdf.

³² See "Japan's Yukio Edano rebuffs Tepco bailout claim," *BBC* , Dec. 9, 2011. See also, "Japan's nuclear conundrum: The \$64 billion question," *The Economist*, November 5: "[T]he longer the government dithers over nationalizing Tepco, the more the costs will rise and the impetus for action will wane."

³³ 大島堅一、原発のコスト、岩波新書 (2011).

³⁴ See "Government Oks TEPCO compensation framework," *The Asahi*, May 13, 2011.

³⁵ 原発のコスト, Ibid

³⁶ *Tokyo Shimbun*, perhaps the most consistent mainstream media critic of TEPCO and government policy on Fukushima, came to this conclusion early, in July 2011. See "[Tokyo Shimbun's Devastating Critique of Fukushima Compensation Bill](#)," *Japan Focus*, Aug. 3, 2011. (Accessed Jan. 15, 2012)