

How Do the Present Conditions of the Fukushima Daiichi Nuclear Power Plant Turn Out?

–We cannot Continue a Huge Burden–

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On May 24, 2014, the author visited the Fukushima Daiichi Nuclear Power Plant to interview representatives of the Tokyo Electric Power Company (TEPCO) about the accident that was triggered at their plant by the 2011 Tohoku earthquake and the subsequent tsunami. In contrast to the prevailing social perception of an ongoing crisis at the nuclear power plant, the accident site is shifting away from the coordination of a crisis response under hellish conditions toward the planning and implementation of routine tasks. The accident site has been cleared and turned into a construction site where 5,000 personnel safely carry out their work on weekdays in a composed manner. Nevertheless, the almost excessive implementation of safety measures has raised doubts about whether the construction work really needs to be carried out this way. To ensure that this work can be carried out properly, cost minimization should be taken into account to promote labor and cost savings.

I. Reduced Risks of Escalation

Intense images of scattered debris and the hydrogen explosions that occurred remain seared in the minds of many people who witnessed the Fukushima Daiichi Nuclear Accident unfold. Media outlets commonly stress danger and fuel a sense of fear. Nonetheless, the author did not feel any fear when he visited the accident site. Although hazards remain, they have been identified and addressed by appropriate measures. They are no longer out of control.

Responding to a request in the on-site interview for a description of the current situation from the perspective of his role as the Chief Decommissioning Officer, who is also responsible for measures against contaminated water, Mr. Naohiro Masuda, TEPCO's Managing Executive Officer, had the following to say.

Even if an earthquake and tsunami comparable to the one that hit the east coast of Japan in 2011 were to happen, an escalation of the accident involving the release of radioactive materials is less likely now. Certainly, we still face mounting challenges, but we would like people to know that steady improvements have been made.

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Following his visit to the site, the author also agreed with this view on the current situation.

Let us take a brief look back at some of the Fukushima Daiichi Nuclear Accident. The power plant had six reactors, and Units 1 through 3 had been in operation before their emergency shutdown was prompted by the earthquake that struck East Japan. The subsequent tsunami flooded the plant extensively. The flooding of buildings and loss of power made it impossible to cool the three reactors that had been in operation. Their nuclear fuels melted and the reactor at Unit 2 suffered damage, which led to the release of radioactive materials. The reactor buildings for Units 1, 3, and 4 were partially damaged in the explosions caused by leaking hydrogen.

Three years on, the situation has been improved remarkably through construction work. The damaged top of Unit 1 has been covered and the major release of radioactive materials has been almost fully contained. Each reactor is cooled by injecting water to maintain a cold shutdown.

In each reactor, the spent fuel had been kept in a pool situated in the same building. However, in the immediate aftermath of the accident, these pools were vulnerable to potential damage from another earthquake and a subsequent release of radioactive materials. Some of these pools have now been reinforced to manage the fuel they contain safely.

Construction work has gathered pace. On weekdays, about 5,000 personnel from affiliated companies carry out their work. Furthermore, about 1,000 TEPCO employees are working inside the premises of the Daiichi Nuclear Power Plant or 15 km away at the Daini Nuclear Power Plant to facilitate the recovery from the accident. About half of the personnel from affiliated companies and TEPCO employees are Fukushima residents.

In principle, all of the costs incurred due to the nuclear accident must be covered by TEPCO. To bring the accident under control, decommission the reactors, and implement measures against contaminated water, TEPCO has posted an extraordinary loss of 970 billion yen up to March 2013. They have not used up their entire budget yet, but the annual expenses for these tasks is expected to amount to several dozen billion yen.

TEPCO has effectively been nationalized with more than half of the capital being injected by the state-backed Nuclear Damage Compensation Facilitation Corporation. This fund has been helping the power company to pay compensation for the nuclear accident. This August, the fund will be replaced by the Nuclear Damage Compensation and Decommissioning Facilitation Corporation to provide financial support for efforts to recover from the accident and decommission the reactors. The completion of this work is expected to take a very long time, perhaps even as long as 30 to 40 years from when the accident struck.

II. Strict Protective Measures Against Radiation

During his visit, the strict radiation controls that were employed there left a striking impression on the author. The following is an overview of what he experienced there.

Hirono is a town in Fukushima Prefecture that is home to J-Village, the National Training Center of Football. Situated about 20 km from the Fukushima Daiichi Nuclear Power Plant, this center is now being rented by TEPCO to serve as a base for efforts to recover from the accident. Before anyone leaves the center for the plant and then later returns to the center, their internal exposure to radiation is measured using a whole-body counter that is installed there.

The author took a bus from the center to visit the Fukushima Daiichi Nuclear Power Plant. As he travelled north on National Route 6, he noticed that most parts of Naraha, Tomioka, and Okuma in the Futaba District were visibly deserted. These places were still designated as difficult-to-return zones or restricted residence zones. The houses there were being overgrown with thick green vegetation. The sight of these crumbling communities caused the author great distress.

The plant could be accessed through only one point. Furthermore, photography was restricted on the premises. The author went through a metal detector and completed the identification procedure before entering the plant, at which point he was handed a personal dosimeter. All these are probably for a precaution against terrorism.

Thanks to the progress that has been made in decontaminating the site, the work there is becoming less hazardous. The radiation doses vary from one spot to another, though. In the immediate aftermath of the accident, it was quite common for the on-site dose to be several hundred microsieverts per hour. Now, however, the dose has mostly been brought down to a few microsieverts per hour. The author's visit lasted for one and half hours, most of which was spent on a bus and a little bit on foot. The resulting dose amounted to 20 μSv , which is not much compared to a regular dose of 50 μSv from one X-ray examination. Nevertheless, people must still stay away from some spots near the reactors to avoid a high radiation dose.

At the site, the author wore the same outfit as the workers there. On top of the undershorts and T-shirt that he was provided with, he wore a one-piece protective garment called a Tyvek coverall. Part of this protective garment is made of transparent vinyl that allows the gate attendant to check that everyone is carrying a personal dosimeter and an ID card, which were often forgotten. The garment does not shield against radiation, but it protects the skin from any contact with radioactive materials.

After that, the author put on a paper cap, a rubber mask and a helmet. The mask was equipped with a filter at its tip to remove radioactivity. This mask provides protection against the inhalation of contaminated materials so it cannot be removed in some designated zones on-site. Before walking in some potentially contaminated areas, the author put on work shoes that were further protected with plastic shoe covers. The author removed these plastic covers each time he entered a building or a bus to avoid further contamination from shoes.

The protective outfit is light enough and normal movements can be performed without any discomfort. After you have taken a few breaths through the mask, the perceived difficulty in breathing soon fades away. However, the summer heat remains a problem. Workers can be provided with coolants, but they say it is still difficult to perform heavy work for a long time. It was explained to the author that these protective measures are taken just in case, not because the environment is hazardous. In fact, no visitor has inhaled or touched any radioactive substances. Such an incidence is also rare among workers.

The author was additionally examined twice with dosimeters before he left designated zones at the site to check for exposure. If someone is exposed to an excessive amount of radiation, they undergo a decontamination process followed by a medical diagnosis and treatment by a medical doctor. As of today, no one has experienced a large enough exposure to warrant receiving any such treatment.

At some on-site locations, the radiation doses from about 50 spots were displayed in real time to encourage those inside to take the necessary precautions. Such on-site measurements made it possible for individual daily exposure doses to be predicted. If the actual dose ever exceeds the predicted level, an investigation is carried out to identify the contamination source.

The individual exposure doses of workers and TEPCO employees are recorded as database.



Figure 1 A view of the inside of the Unit 4 reactor building, where the spent fuel pool was feared to have broken open

Aseismic reinforcement has been completed for the pool and the spent fuel is being removed. Visitors can observe the work conducted there as long as they are wearing protective garments and masks. (Photo credit: Noriyuki Inoue, WEDGE)

TEPCO provides the workers, TEPCO employees and managers with this information once a month or if their exposure doses exceed the expected levels by a wide margin. It is very difficult to check the several thousand persons who enter the premises every day, but the necessary procedure is automated as much as possible. The statutory exposure dose limits are now back to the normal levels that applied before the accident; in other words, a maximum of 100 mSv in five years and 50 mSv in a year. Any person who reaches these limits is no longer allowed to work at the Fukushima Daiichi Nuclear Power Plant or to carry out any other work that may entail exposure to radiation. Such strict controls leave only a small possibility of workers at the nuclear power plant suffering any health damage.

III. Resolution of Imminent Danger of Damage to Spent Fuel in Unit 4

Let us move on to describe what the situation looked like on-site. The author first entered an important anti-seismic building. During the accident, the central command here was connected to the TEPCO headquarters via a communication line for video-conferencing. It was a well-known place because of the media coverage. After the hydrogen explosion, the plant manager Masao Yoshida and his fellow TEPCO employees remained on-site at the command center, prepared to die if necessary.

However, the building is by no means a historical relic. It is still in use and over a hundred people work in this vast command center. Officers assigned from the Agency for Natural Resources and Energy, the Nuclear Regulation Authority, and the Fukushima Prefectural Government are stationed there, and meetings are often convened there too.

The building also provides a resting place for workers. TEPCO plans to build a new resting facility and an administration building at the site in the near future. The old administration buildings were destroyed by the tsunami.

Letters and messages of encouragement from people in Japan and abroad, such as “Hang in there” and “The whole of Japan is rooting for you,” have been neatly posted along the

whole passageway together with hand-folded paper cranes to boost the morale of workers and TEPCO employees. There were many posters in different spots calling for safety checks, because the building also functioned as the construction site office.

After changing into his protective outfit, the author observed the site while travelling around on a bus. He was taken inland to an elevated spot that commands a panoramic view of the four reactor buildings. Photographs of these reactors were taken from this spot during the accident. Today, all of the reactors have been cleared up and the damaged parts have been covered.

Later, the author entered the reactor building for Unit 4. The fourth and fifth floors of this building were blown away by the hydrogen explosion. There were fears that radioactive materials may be released from the spent fuel stored in this building. Fortunately, the spent fuel pool retained water so it could sustain its cooling function.

TEPCO has since reinforced the building and the pool. They have also built a giant steel structure on adjacent land. This structure has been equipped with a horizontal extension consisting of an iron frame to set up a crane in a reversed and tilted L-shape.

The reactor in Unit 4 has been reinforced using 4,200 tons of steel, which is almost comparable to the amount used for Tokyo Tower. The spent fuel has been removed from there since last autumn. The building and the pool have been reinforced with an enormous, robust steel structure, making them seem ready to withstand any earthquake.

When the accident took place, 1,500 spent fuel assemblies were being stored there. Nearly half of them have now been relocated to a dry cask storage facility in the nuclear power plant.

The author took a simplified construction site elevator to go up to the fifth floor. Once there, he gazed into the pool that stored spent fuel assemblies under blue water.

Standing right next to the pool, the author felt a modicum of relief. The object that once terrified the whole of Japan is now back under human control and the hazards have been reduced.

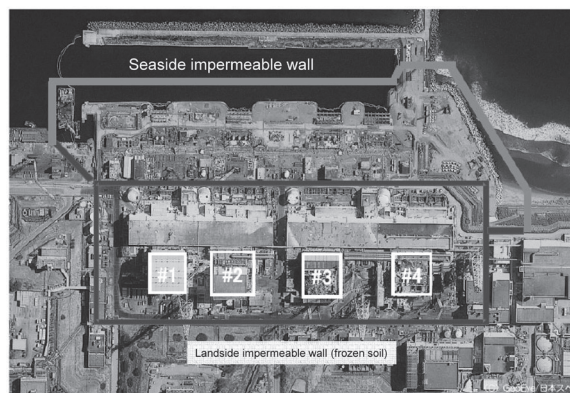


Figure 2 Situation at the premises of the Fukushima Daiichi Nuclear Power Plant and construction of frozen soil walls and impermeable walls
The four reactors will be enclosed to block water from flowing into the reactors (extract from materials provided by TEPCO).

IV. Progress Made in Implementing Measures Against Contaminated Water

Measures are being taken to deal with the contaminated water that attracted public attention. In the immediate response to the accident, the spent fuel and reactors were cooled by discharging water brought in from off-site areas. Immediately after the accident, the reactors were cooled. The contaminated water that these efforts produced has since been removed and stored. Four of the reactors are situated at a lower elevation at the site. The areas surrounding these reactors are estimated to have a groundwater inflow of around 400 tons per day. Rainwater adds to this amount.

TEPCO is currently pumping water up from a well bored on the inland side of the reactors. In May, they began to release this water into the ocean after confirming that it had not been contaminated. Furthermore, the company has begun carrying out simplified pavement (fac-ing) work around the plant to keep rainwater from seeping underground.

TEPCO is also trying to build something called a “frozen soil wall.” A cutting-edge technology is used to freeze underground water by pouring a special chemical into the ground, thereby blocking the flow of water. The company says that their demonstration experiment was successfully completed. In addition, construction work for another impermeable wall situated along the coast has almost been completed with the aim of preventing contaminated water from leaking into the ocean.

On May 24, when the interview was conducted, TEPCO resumed operation of its multi-nuclide removal equipment (ALPS). This equipment removes 62 types of radionuclides from the water used to cool reactors as well as from water that has seeped inside the reactors and been contaminated with radioactive materials. In June, the operation of three such units was begun. In the future, the volume of contaminated water treated per day is expected to reach 750 tons.

The vast ALPS resembled a chemical plant, and its top was covered with a tent. According to a TEPCO representative, they are trying to separate contaminated groundwater from rainwater. The radioactive materials are removed from the water by using special filters.

TEPCO is storing all of the contaminated water in tanks on the plant premises because they have been unable to obtain consent from fishery operators and local residents to discharge the water elsewhere. Currently, a whopping 500,000 tons of contaminated water is being stored at the plant. One thousand huge tanks of various different shapes have been constructed there, and some new tanks with a height of about 10 m were being constructed at various places on-site.

Given that Unit 1 still has high radiation levels and work was underway there, visitors could not approach it. Thanks to the enormous cover on Unit 1, the dispersion of radioactive materials into the atmosphere has been curbed. The building has now been cleared up, and progress is gradually being made in relation to examining the damaged reactor by deploying robots and the like.

V. An Almost Unimaginable Tsunami in the Calm Ocean

At the coast, the author observed the devastation left by the repeated tsunami waves that reached a height of roughly 15 m. The concrete seawalls there, which probably stood several meters tall, were destroyed across the board, demonstrating just how powerful the force of the



Figure 3 The enormous multi-nuclide removal equipment (ALPS) seen during the interview (Photo credit: Noriyuki Inoue, WEDGE)

tsunami was. Provisional coastal protection facilities were being constructed with Tetrapods to prepare for the possible arrival of another tsunami.

The coast could not be approached due to the ongoing construction work there, but the wreckage had already been cleared away. Nevertheless, traces of mud were still visible even on buildings located quite far away from the coast. Some of the wreckage had been piled up and left untouched at the side of the road here and there.

The author found it hard to imagine that the calm, blue ocean visible from the power plant could have caused that tsunami. Since the accident, TEPCO and the Nuclear and Industry Safety Agency, which was the regulatory authority at that time, have been criticized for their inadequate anticipation of tsunamis. However, the author felt that the usual calmness of the ocean would have understandably made it difficult for them to anticipate such a massive tsunami.

Media outlets in Japan and abroad commonly fuel fears concerning the Fukushima Daiichi Nuclear Power Plant by focusing on negative news about unsuccessful measures. The author believes that they do not accurately report the current situation. Admittedly, dangerous spots remain and small mistakes are occasionally made, but the risk of an accident escalating has been reduced. The author felt nothing but gratitude and respect toward all of the people engaged in this enormous and painstaking effort.

VI. Are the Efforts Having a Tangible Effect?

Having observed the comprehensive efforts being made on-site by TEPCO, the author harbored some doubts about their adequacy in terms of costs versus benefits. The company seems to be pursuing safety by implementing excessive measures without any clear sense of purpose to the procedures.

The future of the whole of Japan depends on the work carried out to bring the accident under control. The Japanese government also allocates a budget for these efforts. Everyone would agree with the goal of eliminating the health damage caused by the accident. Naturally, the work to recover from the accident should focus on safely controlling the radioactive materials contained in the reactors, especially with respect to the treatment of the nuclear fuel in Units 1 to 3 as they experienced a meltdown. TEPCO is addressing the hazard there as well.

The author could clearly see, however, that the company was devoting too much of its personnel and other resources to measures against contaminated water.

Currently, the health of nearby residents has barely been affected by the nuclear accident. The government of Japan, the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), and the International Atomic Energy Agency (IAEA) as well as experts from Japan and abroad commonly estimate that the accident has caused only negligible health damage to the residents of Fukushima Prefecture and the rest of the country. In fact, the health of the residents of Fukushima Prefecture is being harmed by their prolonged evacuation from the areas surrounding the nuclear power plant. Given the reality of the situation, the purpose seems unclear with excessive safety measures being implemented for the construction work. Enhanced safety levels incur increased costs.

One example of this is the issue of contaminated water. TEPCO is storing all of it in tanks, so their vast premises were packed with storage tanks.

Radioactive materials leaked into the ocean immediately after the accident. Today, however, there is no major leakage of contaminated water. Even if some contaminated water did leak out, it would be diluted by the seawater. Furthermore, there is only a marginal chance of it affecting human health through marine creatures and seawater.

Experts from Japan and other countries recommend that TEPCO release the contaminated water into the ocean after removing any nuclear materials and making sure that it will have no impact on human health. Although current technologies are unable to separate tritium from water, this radioactive isotope poses little harm to the human body. However, even if this isotope can be left in the water, the government and TEPCO are still cautious about a release into the ocean. Meanwhile, TEPCO keeps on building tanks. Naturally, local residents and fishery operators are wary of contaminated water being spilled into the ocean. However, there is no sign of any proactive efforts being made by the government to persuade stakeholders of the safety of a marine release and to coordinate with them on it.

When the author asked Mr. Masuda, TEPCO's Managing Executive Officer as well as its Chief Decommissioning Officer, why the company could not safely treat the contaminated water by releasing it into the ocean, he responded by saying that TEPCO cannot take such a decision alone. This is probably because the company is managed by the government, and their responsibilities have not been clearly assigned for the ongoing construction work. The decision-making is perhaps being slowed down by concerns and reservations, while the costs borne by TEPCO continue to pile up.

The Japanese government's support has been inconsistent. The frozen soil wall was created to block contaminated water with national support amounting to 47 billion yen. The funds for this work were disbursed from a discretionary reserve from the budget for fiscal 2013, which does not require a detailed audit by the Diet. In autumn 2013, during Japan's bid to host the Olympics in Tokyo, the issue of contaminated water drew attention. To dispel domestic and international concerns over this issue, Prime Minister Shinzo Abe remarked at both the IOC general meeting and other domestic events that "The government is taking the reins and will completely resolve the matter." That was how the government came to take the lead in allocating a budget to deal with contaminated water.

However, work conducted as part of efforts to recover from the nuclear accident has been assigned to TEPCO as a private company. Since taxpayers' money cannot be spent on civil engineering work carried out by private companies, discretionary reserves have been spent in the name of providing assistance for research and development with exceptional approval from the Ministry of Finance. This is how the construction of the frozen soil wall was decided on as an advanced technical solution. In contrast, the construction of tanks, pavements to

block rainwater, and other low-tech measures cannot be covered by taxpayers' money.

In 2013, the International Research Institute for Nuclear Decommissioning (IRID) was established under an initiative of the Japanese government and with support from TEPCO and other companies to lead technical research into the Fukushima Nuclear Accident. At the institute, experts on decommissioning and measures against nuclear accidents were brought together from different countries to form an international advisory team and offer advice on recovering from the accident. The author interviewed one of the team members. The interviewee had a high opinion of the work that had been carried out since the Fukushima Nuclear Accident and felt that it had generally been conducted appropriately.

However, it is important to note that the interviewee also said, "More than one plan should be prepared so that alternatives can be tried out flexibly if one approach doesn't work. Also the cost and effectiveness should be carefully nailed down." Asked if TEPCO is failing to do this, the interviewee answered by saying, "That is not the case." Perhaps the interviewee also questioned the way in which the construction work is prioritized.

Nevertheless, it would be unfair to assign all of the blame to TEPCO. The government has to accept a considerable amount of responsibility for this matter. TEPCO's operations are supported by the Japanese government through both capital injections and assistance from national institutes. Overly concerned with public opinion, the government has continually opted to implement excessive safety measures in dealing with the accident rather than adopting the recommendations of experts.

Such policies have been adopted in relation to various matters, including the decontamination efforts in Fukushima, the management of radioactive materials, and food sanitation. These policies have produced various detrimental effects. The same can be said with respect to efforts to recover from the accident and decommission reactors. A clear line must be drawn in relation to acceptable costs for the measures carried out by TEPCO, while the government mediates between stakeholders to dispel their concerns.

TEPCO cannot continue to incur costs without limit. Decisions must be made concerning who does what, which tasks should be prioritized, and which tasks should be omitted to save costs. TEPCO continues to sell electric power, and the costs that they incur are passed on to the people of Tokyo and its surrounding regions in the form of higher electricity bills. Taxpayers must shoulder a greater burden to enable the government to support TEPCO with their money.

VII. Concerns Over Morale Among Workers

In a tale similar to that of Sisyphus and his rock, Japanese Buddhist folklore speaks of souls in the underworld being forced to build a pile of pebbles only for the pile to be maliciously knocked down by demons. A modern day equivalent of this is the effect that repeatedly carrying out construction work to recover from the accident without a clear purpose could have on the morale of workers.

A range of construction work has been carried out through a partnership between TEPCO and its affiliated companies. TEPCO plans to offer longer-term contracts to workers from its affiliated companies to make it easier for them to gain the requisite skills. The company also intends to build a resting space to create a more conducive work environment. Workers are paid quite well for their work, with some receiving tens of thousands of yen per day depending on the tasks that they perform.

However, employees of TEPCO, as the entity responsible for the accident, continue to face a harsh situation. In any conversation with the author, every TEPCO employee in Fukushima expressed remorse for the accident and pledged to rebuild the area. TEPCO's Executive Vice President Yoshiyuki Ishizaki, who heads the Fukushima Revitalization Headquarters, said the following: "TEPCO will face up to its responsibility for having caused this terrible accident. Personally, I will devote my entire life to the reconstruction of Fukushima." Mr. Naohiro Masuda, the Managing Executive Officer in charge of decommissioning, vowed to maintain the company's rapport with its affiliated companies as part of its efforts to recover from the accident and reassure the people of Fukushima.

This sense of commitment is certainly admirable, but it also felt a little painful to the author. Can individual employees shoulder the responsibility for an accident that was caused by their company? Certainly, some people would still feel responsible for the accident that took place three years ago. However, it is unconceivable for the whole company and individual employees to continue holding on to this sense of responsibility for several tens of years.

The Japanese government and TEPCO have presented a medium- to long-term roadmap for the decommissioning work. The last step of this decommissioning is not clearly defined and its completion is expected to take 30 to 40 years from the time of the accident. Can workers really shoulder this responsibility for that long?

People from Fukushima harbor mixed feelings toward TEPCO, and they certainly feel a certain amount of anger. More than anything, though, they "cannot afford to speak ill of others during their struggle to survive each day" (according to the female leader of a local NPO).

Evacuees from areas designated by the Japanese government receive a compensation payment of 100,000 yen per month for the psychological pain that the accident inflicted. Before the accident, the local construction industry and many other community members used to receive orders from TEPCO for work related to operating the plant. They now perform jobs related to recovering from the accident. In this respect, TEPCO is an important member of the local community.

"Why don't you visit the residences of TEPCO employees to cover the conditions there? They are in a sorry plight." That was a suggestion made by the woman from the NPO. About 1,000 TEPCO employees of different ages were living in an array of prefabricated company dormitories built on the J-Village football pitch. They resemble temporary offices at a construction site.

The area is partitioned into spaces with an area of a dozen square meters where each worker can sleep and live. Apparently, many of the workers repeatedly eat breakfast and supper at the staff canteen and bring lunchboxes to work. The living conditions at the dormitories are kept to a bare minimum probably in light of public scrutiny of the company responsible for the accident. TEPCO employees live in such a harsh environment and carry out strenuous work aimed at recovering from the accident under enormous pressure.

VIII. Necessary Considerations for Minimizing Costs

When the Fukushima Nuclear Accident occurred, the then government formed by the Democratic Party of Japan pinned the responsibility on TEPCO while allowing the company to stay in business. Such inconsistent decisions may have been inevitable considering the strong criticism that TEPCO was subjected to in the immediate aftermath. However, it is high time we assessed the positive and negative aspects of the measures taken to deal with the

consequences.

Today, the key to handling the accident is minimizing the labor inputs and costs. At the site, the enormity of the construction work catches your attention, but its effectiveness is probably not really scrutinized. This vast construction work may reach an impasse unless the financial burden, roles, and responsibilities are limited to acceptable levels for TEPCO and the public.

If this work continues without any clear goals in sight, the prevailing public mistrust and anxiety over nuclear energy will continue to go unaddressed. This will certainly continue to have an adverse effect on the future of nuclear energy in Japan.

Since the immediate aftermath of the nuclear accident, fear and unfounded rumors have thrown society into disarray and obstructed cool-headed decisions on various issues. With three years having passed already, rational decisions must be made in relation to handling the accident by assessing the current realities at the nuclear power plants in Fukushima.

TEPCO cannot draw a clear line for acceptable costs on its own. The process must be led by the government. Specific actions can be taken by Prime Minister Shinzo Abe and the governing Liberal Democratic Party. Furthermore, it is our voices as citizens that will prompt the necessary decisions.