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Citizens' Nuclear Information Center

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The Post 3/11 (“three-eleven”) Anti-Nuke Movement

What was that nuclear accident?

The investigation into the nuclear accident is continuing at a snail’s pace. This is because it is still impossible to get a clear understanding of just what the accident entailed.

There have been countless incomprehensible moves surrounding the accident, and while a large number of issues remain unresolved, only the obliteration of memory moves forward. Smothering over errors is tantamount to the abandoning of a determination of the causes of the accident and the pursuit of liability, and because of this there is a lack of opportunity for self-reflection, which is likely to be the reason why the same errors are repeated over again. If so, this in itself can be said to be another error. In this sense, the expression the “erosion of memory” is not necessarily correct, and there are doubts that anything such as “understanding” worthy of erosion existed in the first place.

One example would be the explosion that occurred in Unit 4 during the accident at Fukushima Daiichi Nuclear Power Station (FDNPS), in spite of it being shut down for regular inspections. The reasons given for this are absolutely incomprehensible. Tokyo Electric Power Company (TEPCO) “estimates” that the explosion occurred “because vent gasses, including hydrogen, associated with a vent of the Unit 3 containment vessel, flowed into Unit 4 through an exhaust pipe,” (“Why did a hydrogen explosion occur in Unit 4?” TEPCO website) but this cannot be readily accepted. There are many other issues that need to be investigated, such as the tangled information

regarding the “explosion” in Unit 2, information regarding pipe ruptures before the arrival of the tsunami, and whether or not, in the first place, the operations to bring the emergency at FDNPS to an end were carried out in accordance with the procedure manuals.

Neglect of these facts seems to have created an atmosphere where horrifying claims such as “It cannot be proven that shut down nuclear reactors are safer than those in operation” are allowed to become widespread, albeit on the net.

The investigation of errors gets put on the backburner when people are up to their eyebrows in issues that appear without limit from one day to the next. That is why unearthing of the true causes and problems of the nuclear accident is not carried out and liability becomes ambiguous, leaving countermeasures to fall behind, ending up with the current reality of permitting nuclear restarts. As plainly indicated by the example of Monju, which was operated without any decommissioning technology being available, it has now become the norm to “think while running” even with issues that pose serious risks to people’s life and health,

Isn’t it just at this time that we should be pausing for thought, and finding it necessary to engage in self-reflection and investigation of the errors? If we did so, as the investigation of the accident progressed, the difficulties of getting at the truth of the causes would probably become more apparent, and if that happened, it should be impossible to do anything like permit facile restarts of nuclear power plants.

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3/11 as a Big Bang

One of the important pillars of the nuclear accident investigation is verification of the damage and suffering involved. The complexity of the damage has been emphasized, and that trend is deepening even today. However, if the realities are untangled one by one, the actual situation is not really all that complex. The haphazard handling of the situation in the wake of the nuclear accident has contributed to the confusion, but if we look back and consider the origins of the incident, the essential matters come into view. With the accident's first instant as the point of departure, problems spread, people moved around, and it became difficult to see what was happening. Disorganized and inconsistent handling of the accident occurred repeatedly. These became the causes for the inconsistent conclusions that were drawn.

Therefore, in the investigation of the damage and suffering caused by the nuclear accident, if we liken the first instant of the accident to a "big bang," the complexity can be overcome by probing into what occurred after that in chronological order.

In contrast, if we peer at the situation from the stated premises of "the evacuation zones determined by the government" or the various "safety standards," and so on, the problems (here, the "damage") become obscured, and it would be necessary to add the processes by which these responses were made to the list of items for investigation.

What the "three-hour blank" brought about

The tsunami arrived at FDNPS at around 50 minutes after the earthquake struck at 14:46 on March 11 2011. (There are several views about the precise time of the arrival of the tsunami.) At around 15:37 to 15:41, all AC power was lost to Units 1, 3, and 2 in that order. This caused TEPCO to issue, at 15:42, an "Article 10 notification" to the government based on Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness (hereafter, "Act on Special Measures"). Following that, it was judged that the power station was now experiencing a station blackout (SBO – loss of all power) when, at 16:36, DC power (from batteries) was lost in Units 1 and 2, and thus TEPCO issued, at 16:45, an "Article 15 notification" to the government (based on Article 15 of the Act on Special Measures). This signified the occurrence of a severe accident.

Strangely, in March 2016 (around the same time that the manual on the assessment of a meltdown was "discovered"), it was "found" that the batteries had been submerged when the tsunami arrived, and thus the DC power had also been

lost at the time when all the AC power was lost. We can therefore see that, by rights, the Article 15 notification should have been issued at that point (around 15:40). A delay of around one hour occurred at the stage of the report by TEPCO to the government.

It is stipulated in the Act on Special Measures (Article 15, paragraph 2) that the Prime Minister, upon receiving an Article 15 notification, must "immediately" announce a Declaration of a Nuclear Emergency Situation (hereafter, "Declaration"). Furthermore, it is also stipulated that the Prime Minister should take such action as issue instructions on evacuation and indoor sheltering to the mayors or governors of the relevant municipalities and prefectures.

In fact, however, the Declaration was announced at sometime after 19:00, more than two hours after the Article 15 notification had been received. Why was that?

Since the main membership of the Nuclear Emergency Response Headquarters had been prescribed in advance by law (Act on Special Measures, Article 17), it was not because there was a delay in selecting the members. In addition, since the actual Declaration made no mention of "zones where emergency response measures should be implemented," it was not that the delay was caused by determination of the scope within which emergency response measures were to be implemented. So, what was the hesitation in the delay of the announcement all about?

Naturally, since everyone was rushing about responding to the earthquake and tsunami, one possible explanation is that there was simply no time to issue the Declaration. However, with just that eventuality in mind, the Act on Special Measures calls for an "automatic" response that allows no margin for rumination.

Even today, the reason for the delay has not been made clear. What we know is that in the process of announcing the Declaration TEPCO and the government brought about delays of one hour and two hours, respectively. The "unlawful handling of the nuclear power plant accident" began as a continuation from this point onwards.

"Derailment" due to double standard

In contrast to the Basic Act on Disaster Control Measures, a general law, the Act on Special Measures is a special law that takes the stance of the precautionary principle by containing provisions that handle some matters in advance if there is a "probability" of the occurrence of a nuclear accident. The reason is that taking measures after an accident occurs would make it impossible to protect the livelihoods, lives and health of local residents. The "automatic implementation" of the Declaration is adopted

for just that reason, but this crucial measure was not carried out according to the rules.

Once “derailment” begins, the next derailment occurs in the cover-up and justification of the first. The Declaration that was announced carries no specification of the announcing body, nor the time of announcement (which is an anomaly for an administrative document), and is written as if it had been automatically announced on receipt of the notification of the station blackout at “16:36.” This chain of derailments was later not limited to cover-ups and falsification of information, but induced a simultaneous, but contradictory, double handling of the situation.

Already on the day of the earthquake disaster, March 11, evacuation buses were arranged in Ohkuma Town by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and this was communicated to the General Affairs Department at Ohkuma Town Office sometime after 20:00 that day. At the chief cabinet secretary’s press conference, begun at 19:42, however, it was stated that “At the present time, there is no confirmation of impacts outside the facility due to radioactive materials. Thus, it is not necessary for residents and others present inside the relevant zones to take any immediate special action now. Please stand by in your homes or in your current location and act according to latest information from the administrative disaster prevention wireless, television, radio and so on, without beginning to evacuate in a hurried manner” (Office of the Prime Minister website). In the evening of March 12, at Tsushima, Namie Town, it is reported that people wearing “full protective clothing and gas masks of a kind never seen before” were encouraging people to evacuate by yelling out, “Please get out of here! You are in danger!” (Owada, T., Kitazawa, T., (ed.) *Nuclear Refugees: Shrieking Notes*, Akashi Shoten)

Despite clear knowledge of a large-scale release of radioactive materials, the government issued a contradictory press release that emphasized the “soundness of the nuclear reactor.” A local newspaper reported that “The government Nuclear Emergency Response Headquarters has stated that ‘it is unlikely that serious damage has occurred to the containment vessels’” (*Fukushima Minpo*, March 17, 2011).

Fudging safety standards

At the accident site, safety standards were altered in a haphazard manner. These, however, were not changes based on laws or regulations, but literally case-by-case changes made to fit local convenience. For instance, the decontamination “screening level” for residents in the affected area was raised from 13,000 cpm

(counts per minute) to 100,000 cpm. Since this standard is linked to the standard for taking iodine tablets, the alteration had the effect of dramatically reducing the number of people who need to take the tablets. Relaxation of the safety standards eliminated the necessity itself of making accident responses. “Experts” gave their approval to this.

Very early on the decision was made that when serious contamination was confirmed, the evacuation zones and those to be evacuated were not to be expanded, but the safety standards relaxed to give an underestimation. It was the people at the accident site who shouldered the risks.

This is how the responses to the nuclear accident cleaved into the “window-dressing scenario” that attempted to underestimate the damage and suffering, and the dire “back-room scenario” at the accident site. This signified the fact that the various types of safety standards that were established before the nuclear accident to protect people’s lives and health were relegated to the “back-room scenario,” and underestimation of the accident became the “window-dressing scenario.”

The actual responses, having issued the Declaration, were such as to explain the “current exposure situation,” and the “front” and “back” scenarios have continued to meander in confusion to this day. In addition, in contaminated areas, 20 mSv/y (millisievert per year) was set as the new standard for the public exposure dose limit, while in other areas it was maintained at the previous 1 mSv/y. This double standard has also become the norm. The doubt arises as to what the pre-accident standard meant.

In the midst of this confusion there arose the “custom” of not keeping minutes even at meetings where important decisions were taken. This is a topic that is also continuing to this day, as everyone knows. Hide anything inconvenient; if it gets out, evade responsibility; falsify information, etc., etc. If this is the premise we are to go on, then it would be no surprise if someone said that minutes were meaningless in the first place.

The derailment that began from the March 11 point of departure continued to expand in scale across all sectors. Take, for instance, the Act on the Protection of Specially Designated Secrets, the security-related legislation and clauses on emergency responses, the Okinawa base construction and the issue of interference in local government, and so on; it is necessary to understand these as a “series of events flowing” (towards collapse) along a line extrapolated out from the original derailment.

What was “completely under control”?¹

Looking back in this way, what was under control was not the radioactive material or the contaminated water, and certainly not the nuclear reactors involved in the accident, but the media and information, the views of “experts,” and the actions of the residents in the affected areas.

Despite the “emergency,” large numbers of residents not evacuated from the contaminated areas were forced to continue their daily lives without any panic occurring and with no ostensible opposition movement arising. One can only say that it was absolutely “brilliant.”

What probably made this rare feat possible was the daily exercise of “risk management.” In the context of media control, for example, under the regional electric power monopoly (which granted ten privately-owned regional power companies a monopoly on power supply in each region), which was in place from 1931 until last year (2016), we can discern the reason why the power companies shouldered huge advertising costs to continually bombard the public with unnecessary commercials. It was “insurance” against just such a crisis as we have now. This “media countermeasure cost” was also included in the “overall costs” as one of the items passed on to the power users, but with this mechanism being set up in 1931, advertising on this basis has a long history.

More importantly, many Japanese people swallowed whole the information given out by the government and “experts” without any doubts. This is also a blessing ensuing from long years of “education.” In studying for entrance exams, conducted on the principle that for each question there is only one correct answer, what you end up with is people who think that “in a crisis, we are assisted by the correct and uniform information that the government provides.” There is also a long history of various forms of favored treatment for the research carried out by “experts.”

In contrast, social pressure not to cause a panic probably generates a normality bias. Indeed, the “safety declaration” issued by the administration was precisely the “words we want to hear,” “the required response” for the local residents that wanted to believe it. In this sense, also, these psychological mechanisms were nothing more than a normality bias.

At the time of a tsunami or other such event, this normality bias will magnify the damage and suffering by suppressing the sense of crisis, but for the stratum that wishes to control people’s behavior, it is desirable that the people are “rational” human beings who act with “composure.” The fact that elementary schoolchildren were made to sit in a schoolyard for a headcount in the face of an oncoming

tsunami² is symbolic of this kind of society. The fable of “*Chumon no Ooi Ryoriten*” (*The Restaurant of Many Orders*)³ was written by Kenji Miyazawa a century ago, but contains warnings about this kind of social atmosphere that are valid even now.

The Anti-nuke Movement

At first glance, the administration’s and media’s responses – the window-dressing responses mentioned above – that began with the 311 “derailment” appear to have been abrupt phenomena brought about by the occurrence of a huge and unprecedented accident. As we have seen above, however, isn’t it more likely that they were the “prefabricated” responses to an accident that was waiting to happen? In other words, it was perhaps true to say that the two kinds of responses were already built into the preparations themselves.

The larger the accident, the greater will be the responsibility associated with it. In the case of nuclear power, therefore, there would have been the necessity to create a mechanism for “evading responsibility” in order not to expose errors in national policy.

At the time of an investigation of a nuclear accident, the actual knowledge of and an inquest on the process of preparation of these kinds of responses (which are, unfortunately, the “window-dressing responses”) is essential. Although it doesn’t bear thinking about, without knowing how the “responses” that sacrificed the residents of the affected areas and exposed their lives and health to critical risks, the ultimate significance of the nuclear accident may never become clear. This is the way the author (Arakida) perceives the situation now, at the beginning of 2017.

311 brought us the end of “a society which protects local residents at the time of an accident.” It was already nothing more than a “public position” anyway, but this abandonment of society became clearly apparent in the attitude of those in power. Thus, the manifestation of the “big bang” was perhaps the opening of Pandora’s box. The author’s conclusion is that the “three-hour blank” was the time it took to make the decision to turn the rudder in that direction. I have said earlier that the notion of “not protecting local residents at the time of an accident” is not simply an issue of the nuclear accident and local residents. The proof of this is amply illustrated by the example of the sole application of the provisions of Article 9 of the Japanese Constitution being brought to the brink of death by the security-related legislation, symbolized by the clauses on emergency responses. Thus, the issue of the nuclear accident was not simply an issue of the nuclear accident alone.

At present, with the true intentions and undisguised violence of power holders taking society by storm, this is not the time for a restoration of the “public position.”

The nuclear phase out/anti-nuke movement has been accorded new meaning after 311: The regeneration of the world we live in. I believe that from now on it will be necessary to conduct our activities with our eyes on the horizon of the

“building of a new world” beyond the issues of nuclear restarts and local consent.

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Endnotes

1) Prime Minister Abe used the phrase “completely under control,” (referring to Fukushima Daiichi) in his address to the International Olympic Committee in September 2013 when urging them to select Tokyo for the 2020 Olympics.

2) This refers to Okawa Elementary School in Miyagi Prefecture, where 74 children and 10 staff lost their lives, failing to evacuate the school before the tsunami engulfed them.

3) An English translation of this fable can be seen at <http://tonygonz.blogspot.jp/2006/05/restaurant-of-many-orders-miyazawa.html>

Policy Subcommittee for Acceleration of Electricity System Reform Concerns that the Reforms will help no one but TEPCO

It has become clear that TEPCO's losses from the Fukushima Daiichi NPS accident will exceed 21.5 trillion yen. Since TEPCO alone is incapable of bearing such huge liabilities, METI has decided on the policy of levying a part of the compensation from consumers through their electricity bills. Concretely, this will mean levying the funds from power transmission fees. Thus, without taking any responsibility for what was after all a 'national policy' of building nuclear reactors and claiming they were totally safe, the government now plans to have electricity users foot the bill for its own negligence.

METI says that, in exchange for the cost burden, it will take action such as creating a baseload power source market to stimulate the wholesale electric power market. By rights, the stimulation of the wholesale power market should be carried out through separation (separation of ownership) of power distribution to completely separate companies, but in Japan, since company split-up (legal separation under one company umbrella) is recognized, it is unlikely that the market will be stimulated. Unless this situation is changed, it is hard to imagine that a fully functioning baseload power source market would result even if were to be created.

The Policy Subcommittee for Acceleration of Electricity System Reform (hereinafter, the Subcommittee) has published its interim draft report.

The point of accelerating power system reforms is to create further choices for consumers and business opportunities for companies. What the report proposes are various policies geared toward that, together with financial accounting reforms under the pretext of solving problems facing electric power. More than accelerating reforms of the power system, however, it turns out the proposals would have the effect of rushing to TEPCO's rescue.

The Subcommittee deliberated specific proposals in two working groups (WG), one focusing on creating markets for electricity and the other on financial accounting. The

present report discusses the financial accounting reforms, which have a strong effect on consumers' lives, while touching on the market creation issues.

Market Preparation Effects Limited

The report's proposals primarily consist of establishing a baseload power source market and a non-fossil value trading market as a means of providing markets. The former would be a market for trading power sources such as coal power, nuclear power and large-scale hydropower, and the report says it would be created for the purpose of enabling new electric power to be procured from those sources. The latter would involve trading in the value of renewable energy and nuclear energy as non-fossil power sources. It is similar to the

previously existing clean energy certificates, so theoretically, non-fossil energy sources would be introduced as a result of such purchases. The Ministry of Economy, Trade and Industry (METI) is seeking to achieve a 44% non-fossil energy source ratio by 2030, so they are trying to reach that goal through value trading.

From the start, if electric power were being actively purchased in the wholesale electric power market, there would be no need for anyone to go out of their way to create a baseload power source or non-fossil value markets.

In fact, Japan already has a wholesale electric power market, which was established in 2004 as the Japan Electric Power Exchange (JEPX). The electric power sales on this exchange, however, have never exceeded a tiny 2.6% of Japan's total electric power sales (as of June 2016). This is way too low compared to Britain's 51%, northern Europe's 86% (both for FY2013) or France's 25% (FY2015). The reason for this is that the old general electric power companies (below, the nine power companies—excluding Okinawa) offer almost none of their electric power on the market. They only offer surplus electric power as a minimal voluntary undertaking.

The separation of electric power generation and transmission to be implemented in 2020 is a legal separation. TEPCO is already anticipating this and taking on a legally separated form. Namely, they are splitting up into TEPCO Fuel & Power (thermal power generation), TEPCO Energy Partner (power distribution) and TEPCO Power Grid (power transmission), with TEPCO Holdings retaining their stock and controlling their management (the same company will retain the nuclear power plants as well). These companies will act strongly according to TEPCO Holdings' intentions, threatening the neutrality of the power transmission division. The other nine power companies will probably follow suit.

Legally speaking, the right of ownership is supposed to be separated and divided completely among independent companies. If this is not done, deals among the split-up companies will take center stage, and even after the legal separation of power generation and transmission, it is difficult to imagine the wholesale electric power market being stimulated by it.

It seems that METI cannot force the nine power companies to provide their power to the markets. Thus, it has decided to make the markets it has created functional by offering to shift part of the burden of paying compensation for damages onto consumers' shoulders, as will be described below. Shifting the cost of

compensation to consumers would incentivize TEPCO, but how does it intend to get the rest of the nine power companies to follow suit to make the markets functional?

New accounting system will not promote reactor decommissioning

The financial accounting WG proposed a decommissioning accounting system and compensation mechanism. Both proposals merely relate to changes in electricity business accounting rules, and neither has any real relevance.

The decommissioning accounting system aims at increasing the incentives for decommissioning and reducing Japan's degree of dependence on nuclear power as put forward in Japan's Basic Energy Plan. It was previously revised in 2013 and 2015, and modifications this time are said to be minor. To summarize them, if a reactor is decommissioned after 40 years of operation or earlier, related facilities that will continue being used after the decommissioning (such as spent fuel pools) would not be removed at the same time as the reactor, but would continue to depreciate as assets. The transmission division would be allowed to recover the cost of that depreciation. Also, while as a general rule, the funds needed for reactor decommissioning are set aside and accrued for 40 years, any deficiencies could also be recovered by the transmission division. In other words, through these revisions, they are trying to pass the burden to all power consumers through transmission fees. This extremely peculiar accounting system for electric companies is the target of strong criticism, and it seems doubtful anyhow that introducing this system will promote decommissioning. Permission to extend the operating periods of the Takahama Unit 1 and 2 reactors beyond 40 years was sought and granted, followed by Mihama Unit 3. It is clear that the nine power companies are aiming for 60-year operating periods.

Foremost Goal to Have Consumers Bear the Cost of Rescuing TEPCO

The report proposes having consumers bear the burdens of providing compensation for nuclear accidents and securing funds for decommissioning the Fukushima Daiichi NPP reactors. That right there is the biggest goal of this draft report. The report does not touch upon increased costs of compensation for the Fukushima nuclear accident and decommissioning of the reactors, it just talks about the system. It was indicated at the "Committee on TEPCO Reform and the 1F Problem (TEPCO Committee)" meeting that the cost increases would not be revealed to the

public, but the way those costs would be borne was indicated. “1F” means “the Fukushima Daiichi NPP.” There was only one page of reference material, but the Subcommittee issued its report in line with it.

According to the reference material, the funding that needed to be secured had been reassessed at 8 trillion yen for dealing with the “1F” reactors and water contamination countermeasures (an increase of 6 trillion yen), plus 7.9 trillion yen for compensation (an increase of 2.5 trillion yen), plus 5.6 trillion yen for decontamination and interim storage costs (an increase of 2 trillion yen).

Among the above, the funds for reactor and water contamination countermeasures are being placed in a reserve fund from TEPCO Holdings’ profits, but it is the transmission division (TEPCO Power Grid) that is generating steady profits. Rate-of-return regulation will continue applying to the transmission division even after liberalization, so METI says its profitability will remain assured. They explain that the costs of decommissioning will not be incorporated into transmission fees, so these will not rise above their current level, but recognize that although the fees are supposed to decrease as a result of liberalization, it is possible they will remain high. The government will pay for the costs of decontamination and interim storage, earmarking funds as in the past from future sales of TEPCO stocks that it purchased for 1 trillion yen.

The problem is the cost of compensation. METI abruptly turned this problem around to one concerning the nature of the “burden of providing for past liabilities that should have been secured prior to the accident.” This is an amazingly irresponsible act of duplicity for a government that created policies under the assumption that no accident would occur. In the future, too, when the largest possible accident could far exceed the Fukushima accident, how should they ensure sufficient funds for compensation? They use preposterous logic, but by introducing this “past liabilities” they organize it in a way that even forces the burden onto consumers who have switched to new power companies. Specifically, they will recover the increased part of the costs through transmission fees (the TEPCO Committee gave it as 2.5 trillion yen, but the present report estimates it at 2.4 billion yen).

It is estimated that these “past liabilities” can be paid off by adding about 18 yen per month onto the electric power consumption bills of ordinary households. In addition, there is detailed annotation explaining that there is also an indirect burden on the industrial sector.

The period for recovery of costs is estimated to be 40 years, requiring households to continue paying each month for 40 years. The calculation method also lacks logic, and on the basis of the installed capacity as of FY2015, it would only make sense if the figures were deliberately fudged to come up with the 2.4 trillion yen.

If they had been told after the accident that the funds should have been secured beforehand, the consuming public would feel horrified by such facilities and not want anything to do with them.

All of these proposals have been put forward as TEPCO-rescue policies for promoting the company’s continued existence. Critical voices are rising anew that what would be proper in this case would be prioritizing the dissolution of TEPCO (legal liquidation). This framework that rescues TEPCO without requiring it or its major stockholders to bear any burden, but instead makes the consuming public pay, must be rejected.

METI, in its pursuit of reforming the electricity market, realized it could not do so through force, but that the accounting rules could definitely be changed to shift the burden of compensation costs onto consumers, purportedly to stimulate markets. However, in the end, won’t the proposals only have the effect of achieving TEPCO’s rescue?

<Hideyuki Ban, CNIC Co-Director>

Reference Material:

Radiation Exposure Data for Nuclear Industry Workers (Fiscal Year 2015)

Table 1: Radiation exposure of workers at nuclear reactor facilities for power generation

| Plant | Attribution | Effective dose level (mSv per person) | | | | | | | | | | | Total (Sv/person) | Average effective dose (mSv) | Maximum effective dose (mSv) | |
|------------------------|---------------|---------------------------------------|-------|-------|--------|-------|-------|-------|-------|-------|-----|-----------------|-------------------|------------------------------|------------------------------|------|
| | | <5 | 5~10 | 10~15 | 15~ 20 | 20~25 | 25~30 | 30~35 | 35~40 | 40~45 | >45 | total (persons) | | | | |
| Tomari | Power Company | 468 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 468 | 0.00 | 0.0 | 0.2 |
| | Subcontractor | 2,194 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,194 | 0.10 | 0.0 | 2.1 |
| | Total | 2,662 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,662 | 0.11 | 0.0 | 2.1 |
| Onagawa | Power Company | 498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 498 | 0.01 | 0.0 | 0.5 |
| | Subcontractor | 2,241 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,252 | 0.39 | 0.2 | 11.7 |
| | Total | 2,739 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,750 | 0.40 | 0.1 | 11.7 |
| Higashi Dori | Power Company | 288 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 288 | 0.00 | 0.0 | 0.2 |
| | Subcontractor | 976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 976 | 0.10 | 0.1 | 4.1 |
| | Total | 1,264 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,264 | 0.10 | 0.1 | 4.1 |
| Fukushima 1 | Power Company | 1,531 | 108 | 41 | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1,697 | 3.14 | 1.9 | 24.0 |
| | Subcontractor | 11,713 | 2,247 | 1,261 | 686 | 251 | 161 | 110 | 69 | 1 | 0 | 0 | 16,499 | 74.52 | 4.5 | 43.2 |
| | Total | 13,244 | 2,355 | 1,302 | 697 | 257 | 161 | 110 | 69 | 1 | 0 | 0 | 18,196 | 77.66 | 4.3 | 43.2 |
| Fukushima 2 | Power Company | 460 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 460 | 0.03 | 0.1 | 1.3 |
| | Subcontractor | 1,475 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,482 | 0.23 | 0.2 | 12.5 |
| | Total | 1,935 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,942 | 0.26 | 0.1 | 12.5 |
| Kashiwazaki Kariya | Power Company | 1,249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,249 | 0.04 | 0.0 | 1.1 |
| | Subcontractor | 5,580 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,605 | 1.18 | 0.2 | 11.4 |
| | Total | 6,829 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,854 | 1.22 | 0.2 | 11.4 |
| Hamaoka | Power Company | 779 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 779 | 0.05 | 0.1 | 2.9 |
| | Subcontractor | 3,503 | 94 | 27 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,626 | 2.03 | 0.6 | 15.8 |
| | Total | 4,282 | 94 | 27 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,405 | 2.08 | 0.5 | 15.8 |
| Shiga | Power Company | 417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 417 | 0.00 | 0.0 | 0.2 |
| | Subcontractor | 1,962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,962 | 0.03 | 0.0 | 1.1 |
| | Total | 2,379 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,379 | 0.03 | 0.0 | 1.1 |
| Mihama | Power Company | 402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 402 | 0.01 | 0.0 | 0.5 |
| | Subcontractor | 1,760 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,760 | 0.18 | 0.1 | 3.5 |
| | Total | 2,162 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,162 | 0.18 | 0.1 | 3.5 |
| Takahama | Power Company | 521 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 521 | 0.03 | 0.0 | 1.7 |
| | Subcontractor | 2,800 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,802 | 0.67 | 0.2 | 7.3 |
| | Total | 3,321 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,323 | 0.70 | 0.2 | 7.3 |
| Ohi | Power Company | 500 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 501 | 0.07 | 0.1 | 5.3 |
| | Subcontractor | 3,155 | 36 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,197 | 1.46 | 0.5 | 13.4 |
| | Total | 3,655 | 37 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,698 | 1.53 | 0.4 | 13.4 |
| Shimane | Power Company | 517 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 517 | 0.01 | 0.0 | 0.6 |
| | Subcontractor | 2,370 | 28 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,399 | 0.88 | 0.4 | 13.2 |
| | Total | 2,887 | 28 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,916 | 0.89 | 0.3 | 13.2 |
| Ikata | Power Company | 421 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 421 | 0.01 | 0.0 | 1.0 |
| | Subcontractor | 2,067 | 40 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,111 | 0.93 | 0.4 | 12.1 |
| | Total | 2,488 | 40 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,532 | 0.94 | 0.4 | 12.1 |
| Genkai | Power Company | 550 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 550 | 0.00 | 0.0 | 0.4 |
| | Subcontractor | 2,856 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,873 | 0.69 | 0.2 | 7.7 |
| | Total | 3,406 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,423 | 0.70 | 0.2 | 7.7 |
| Sendai | Power Company | 490 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 490 | 0.01 | 0.0 | 0.9 |
| | Subcontractor | 1,873 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,873 | 0.27 | 0.1 | 3.4 |
| | Total | 2,363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,363 | 0.28 | 0.1 | 3.4 |
| Tokai | Power Company | 241 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 241 | 0.00 | 0.0 | 0.0 |
| | Subcontractor | 718 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 718 | 0.00 | 0.0 | 0.1 |
| | Total | 959 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 959 | 0.00 | 0.0 | 0.1 |
| Tokai-2 | Power Company | 293 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 293 | 0.02 | 0.1 | 1.4 |
| | Subcontractor | 1,266 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,284 | 0.43 | 0.3 | 14.6 |
| | Total | 1,559 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,577 | 0.45 | 0.3 | 14.6 |
| Tsuruga | Power Company | 332 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 332 | 0.01 | 0.0 | 0.8 |
| | Subcontractor | 1,496 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,496 | 0.11 | 0.1 | 2.8 |
| | Total | 1,828 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,828 | 0.12 | 0.1 | 2.8 |
| Commercial Plant Total | Power Company | 9,957 | 109 | 41 | 11 | 6 | - | - | - | - | - | - | 10,124 | 3.44 | 0.3 | 24.0 |
| | Subcontractor | 50,005 | 2,517 | 1,307 | 688 | 251 | 161 | 110 | 69 | 1 | - | - | 55,109 | 84.20 | 1.5 | 43.2 |
| | Total | 59,962 | 2,626 | 1,348 | 699 | 257 | 161 | 110 | 69 | 1 | - | - | 65,233 | 87.65 | 1.3 | 43.2 |

Table 2: Radiation exposure of workers at Monju and Fugen

| Plant | Attribution | Effective dose level (mSv per person) | | | | Total (Sv/person) | Average effective dose (mSv) | Maximum effective dose (mSv) |
|-------|---------------|---------------------------------------|------|--------------------|-----------------|-------------------|------------------------------|------------------------------|
| | | <5 | 5~10 | nothing over 10mSv | total (persons) | | | |
| Monju | Power Company | 402 | 0 | 0 | 402 | 0.00 | 0.0 | 0.0 |
| | Subcontractor | 1,079 | 0 | 0 | 1,079 | 0.00 | 0.0 | 0.0 |
| | Total | 1,481 | 0 | 0 | 1,481 | 0.00 | 0.0 | 0.0 |
| Fugen | Power Company | 102 | 0 | 0 | 102 | 0.01 | 0.1 | 2.2 |
| | Subcontractor | 341 | 0 | 0 | 341 | 0.04 | 0.1 | 3.1 |
| | Total | 443 | 0 | 0 | 443 | 0.05 | 0.1 | 3.1 |

Table 3: Radiation exposure of workers at nuclear fuel fabrication facilities

| Plant | Attribution | Effective dose level (mSv per person) | | | | Total (Sv/person) | Average effective dose (mSv) | Maximum effective dose (mSv) |
|------------------------------------|---------------|---------------------------------------|------|--------|-----------------|-------------------|------------------------------|------------------------------|
| | | <5 | 5~10 | >10mSv | total (persons) | | | |
| Global Nuclear Fuel-Japan (GNFJ) | Power Company | 256 | 0 | 0 | 256 | 0.01 | 0.1 | 1.5 |
| | Subcontractor | 146 | 0 | 0 | 146 | 0.00 | 0.0 | 0.1 |
| | Total | 402 | 0 | 0 | 402 | 0.01 | 0.1 | 1.5 |
| Mitsubishi Nuclear Fuel (MNF) | Power Company | 178 | 0 | 0 | 178 | 0.00 | 0.0 | 0.6 |
| | Subcontractor | 63 | 0 | 0 | 63 | 0.00 | 0.0 | 0.0 |
| | Total | 241 | 0 | 0 | 241 | 0.00 | 0.0 | 0.6 |
| Nuclear Fuel Industries (Tokai) | Power Company | 187 | 0 | 0 | 187 | 0.02 | 0.1 | 1.1 |
| | Subcontractor | 71 | 0 | 0 | 71 | 0.00 | 0.0 | 0.2 |
| | Total | 258 | 0 | 0 | 258 | 0.02 | 0.1 | 1.1 |
| Nuclear Fuel Industries (Kumatori) | Power Company | 127 | 0 | 0 | 127 | 0.00 | 0.0 | 0.2 |
| | Subcontractor | 73 | 0 | 0 | 73 | 0.00 | 0.0 | 0.0 |
| | Total | 200 | 0 | 0 | 200 | 0.00 | 0.0 | 0.2 |

Table 4: Radiation exposure of workers at Japan Nuclear Fuel Rokkasho Nuclear Fuel Cycle Facilities

| Plant | Attribution | Effective dose level (mSv per person) | | | | Total (Sv/person) | Average effective dose (mSv) | Maximum effective dose (mSv) |
|---|---------------|---------------------------------------|------|--------|-----------------|-------------------|------------------------------|------------------------------|
| | | <5 | 5~10 | >10mSv | total (persons) | | | |
| Reprocessing Plant | Power Company | 1,199 | 0 | 0 | 1,199 | 0.01 | 0.0 | 0.5 |
| | Subcontractor | 3,798 | 0 | 0 | 3,798 | 0.04 | 0.0 | 1.8 |
| | Total | 4,997 | 0 | 0 | 4,997 | 0.05 | 0.0 | 1.8 |
| Uranium Enrichment Plant | Power Company | 181 | 0 | 0 | 181 | 0.00 | 0.0 | 0.8 |
| | Subcontractor | 429 | 0 | 0 | 429 | 0.00 | 0.0 | 0.1 |
| | Total | 610 | 0 | 0 | 610 | 0.00 | 0.0 | 0.8 |
| Low-level radioactive waste disposal center | Power Company | 84 | 0 | 0 | 84 | 0.00 | 0.0 | 0.1 |
| | Subcontractor | 261 | 0 | 0 | 261 | 0.00 | 0.0 | 0.0 |
| | Total | 345 | 0 | 0 | 345 | 0.00 | 0.0 | 0.1 |
| High level radioactive waste management | Power Company | 193 | 0 | 0 | 193 | 0.00 | 0.0 | 0.0 |
| | Subcontractor | 800 | 0 | 0 | 800 | 0.00 | 0.0 | 0.0 |
| | Total | 993 | 0 | 0 | 993 | 0.00 | 0.0 | 0.0 |

Table 5: Radiation exposure of workers at Research and Development Facilities

| Plant | Attribution | Effective dose level (mSv per person) | | | | Total (Sv/person) | Average effective dose (mSv) | Maximum effective dose (mSv) |
|--|---------------|---------------------------------------|------|--------|-----------------|-------------------|------------------------------|------------------------------|
| | | <5 | 5~10 | >10mSv | total (persons) | | | |
| Ningyo Toge Uranium Enrichment Prototype Plant | Power Company | 71 | 0 | 0 | 71 | 0.00 | 0.0 | 0.0 |
| | Subcontractor | 118 | 0 | 0 | 118 | 0.00 | 0.0 | 0.1 |
| | Total | 189 | 0 | 0 | 189 | 0.00 | 0.0 | 0.1 |
| Reprocessing facilities (Tokai) | Power Company | 360 | 1 | 0 | 361 | 0.04 | 0.1 | 8.4 |
| | Subcontractor | 758 | 6 | 0 | 764 | 0.10 | 0.1 | 8.3 |
| | Total | 1,118 | 7 | 0 | 1,125 | 0.14 | 0.1 | 8.4 |
| Oarai Waste Management Facility | Power Company | 34 | 0 | 0 | 34 | 0.00 | 0.0 | 0.3 |
| | Subcontractor | 205 | 0 | 0 | 205 | 0.00 | 0.0 | 0.6 |
| | Total | 239 | 0 | 0 | 239 | 0.00 | 0.0 | 0.6 |

NEWS WATCH

Monju Decommissioning Now Official

On December 21, 2016, the Japanese Ministerial Committee on Nuclear Power formally decided to decommission the Monju prototype fast-breeder (280 MW), Tsuruga City, Fukui Prefecture, owned by the Japan Atomic Energy Agency (JAEA). On the same day, the Minister of Education, Culture, Sports, Science and Technology requested JAEA to prepare a Monju decommissioning work schedule for submission around April 2017 (see this article in NIT 175).

However, the committee's decision indicates that research for the development of a fast reactor will be continued and that a new demonstration research reactor will be built on the Monju site in the future. The government's budget bill for fiscal 2017, which was publicized on December 22, earmarks 11 million yen for study and investigation concerning a demonstration research reactor utilizing the Monju site. The prototype fast-breeder will remain highly costly in terms of electricity before the removal of the liquid sodium loaded as coolant, because high temperatures need to be maintained. The 2017 budget bill includes 17 billion yen as the Monju management cost, and 900 million yen as a cost to be spent on preparation for the removal of the fuel.

Fukushima Prefectural Assembly Adopts Statement Demanding Decommissioning of the Fukushima Daini Nuclear Power Station

On December 21, 2016, the Fukushima Prefectural Assembly adopted a statement that strongly demands the decommissioning of the Fukushima Daini NPS (four BWRs, 4,400 MW in total). This is the fourth time the prefectural assembly has adopted such a statement. It was adopted unanimously. Tokyo Electric Power Company is reluctant to comply with the statement, presenting the excuse that Fukushima Daini NPS has the role of supporting the decommissioning of the Fukushima Daiichi NPS. However even the assembly members of the Liberal Democratic Party and Komeito indicated that this TEPCO excuse does not justify the continued existence of the Fukushima Daini NPS.

Difficult-to-return Zone to Be Decontaminated at National Expense

On December 20, 2016, the Japanese cabinet decided on the basic policies for accelerating the restoration of Fukushima Prefecture. One of the policies clearly states that full-scale decontamination in the difficult-to-return zones will start in FY2017 at national expense, instead of at TEPCO's. This policy runs against the basic law that demands that decontamination be performed at the expense of the entity that caused the contamination. According to the policy, housing preparation in the zones is combined with the decontamination work, and the whole project is treated as public works, justifying public expenditure. The governmental budget bill for fiscal year 2017 allocates 30.9 billion yen for the project.

Japanese and British Governments Sign Memorandum on Nuclear Cooperation

The Japanese and British governments signed a memorandum to reinforce cooperation in nuclear power generation on December 22, 2016. In the United Kingdom, Horizon Nuclear Power, a Hitachi subsidiary, plans to build two reactors at Wylfa Newydd, and New Generation, 60% of whose capital is funded by Toshiba, plans to build three reactors at Moorside. The memorandum takes the two projects into account.

Prior to the agreement, Nihon Keizai Newspaper reported on December 15 that the Japanese government plans to invest in and loan to the Hitachi project through the Japan Bank for International Cooperation and Development Bank of Japan, and that the funding would be covered by Nippon Export and Investment Insurance. Concerning this article, Yoshihide Suga, Chief Cabinet Secretary, said: "There is no basis in fact that the government has decided to support such a project financially."

Japanese and Russian Governments Sign Memorandum on Nuclear Cooperation

On December 16, 2016, the Japanese and Russian governments signed a memorandum concerning bilateral cooperation in the nuclear industry field, including the resolution of the Fukushima Daiichi NPP accident aftermath and the management of radioactive wastes. To accelerate business cooperation between companies of the two nations, the memorandum states: "In case of any barriers, they will be removed."

Cooperation Agreement between NUMO and DBE

On December 16, 2016, the Nuclear Waste Management Organization of Japan (NUMO) and Germany's DBE Technology GmbH, signed an agreement of cooperation concerning the geological disposal of radioactive wastes. NUMO is an organization specializing in the disposal of high-level radioactive wastes and wastes with high energy beta and gamma rays, while DBE is a waste disposal facility construction and management company. The two organizations plan to exchange information and human resources in a wide range of fields, including disposal site selection.

Ikata NPP Reactor Unit No. 1 Decommissioning Plan Approval Applied for

On December 26, 2016, Shikoku Electric Power applied to the Nuclear Regulatory Commission for approval for its Ikata Nuclear Power Station Unit No. 1 (PWR, 566 MW) decommissioning plan. The decommissioning process is scheduled to take 40 years and cost 40 billion yen, and the resulting amount of low-level radioactive wastes is expected to be 3,060 tons.

Labor Authorities Find TEPCO Employee's Thyroid Cancer Case Eligible for Work Compensation

On December 16, 2016, the Ministry of Health, Labor and Welfare announced that it had found that a TEPCO employee who developed thyroid cancer is eligible for work compensation. The employee is a male in his forties. He worked at multiple TEPCO nuclear power plants between 1992 and 2012, and was diagnosed with thyroid cancer in April 2014. His total whole-body dose accumulation is 150 mSv, of which 140 mSv is the dose after the Fukushima Daiichi accident of March 2011. About 40 mSv is internal exposure. The employee was working outdoors in the Fukushima Daiichi premises when the reactor buildings of Units 1 and 3 suffered hydrogen explosions.

This is the third case in which a worker has been found eligible for compensation since the Fukushima Daiichi accident. The employee in this article is the first person found eligible as a thyroid cancer patient in which the years before the March 11 accident are included. (In the two other cases, the workers contracted leukemia). The Ministry has for the first time published the criteria for work compensation for thyroid cancer, which is over 100 mSv as accumulated whole-body dose. The dose criterion is the same as that used for lung cancer and stomach cancer, but according to the Ministry, when internal exposure is intense locally near the thyroid, the case will be examined separately.

Mitsubishi Heavy Industries Proposes Investing in Areva's Nuclear Fuel Cycle Business

On December 16, 2016, Mitsubishi Heavy Industries issued a release stating that it had made an investment proposal to Areva SA concerning the Areva holding company and New Co, an Areva subsidiary specializing in the nuclear fuel cycle. On the same day, Japan Nuclear Fuel Limited announced that it is also examining similar investment.

MHI plans to invest in Areva NP, a nuclear power generating company whose business performance is deteriorating rapidly.

Group Introduction:

Tarachine — Mothers' Radiation Lab Fukushima

by Kaori Suzuki*

On March 11, 2011, we in Fukushima experienced an unprecedentedly severe earthquake and tsunami, which were followed by explosions in a nuclear power station. While the earthquake and tsunami were devastating, we were aware of how to survive them, thanks to the efforts of people and the knowledge that has been handed down from our ancestors; we coped with the difficulties by devoting ourselves to the problems. On the other hand, the horrific human-made nuclear disaster had never before occurred in our land. While we were left in an environment where the atmosphere included a high concentration of radionuclides emitted from the exploding reactors, no one told us how we could protect our children and survive. "Don't worry," repeated the mass media, including the television. "There will be no immediate impact on your health." We could not learn how to deal with the danger from these words. Japan must have radiation experts, but they never appeared in front of us, and we did not know what food should, or should not, be served to children. Two months after the accident, we became acquainted with a group of people who had sponsored radiation-measuring instruments after the Chernobyl nuclear disaster. We learned that there were instruments that could measure radiation in food, and thankfully we were donated one. This was how Tarachine, or the Mothers' Radiation Lab Fukushima, was founded. Having established the lab together with local volunteers living in Iwaki City, Fukushima, we mothers, who felt responsible for protecting the children, started to run the lab. The word Tarachine comes from a word appearing in the Man'yōshū, Japan's oldest selection of poetry, meaning mother. A mother is not only a tender guardian of children; she sometimes needs to fight to protect them. Without being aware of such maternal confidence, we would not have been able to face radiation to protect the children.

Five years has already passed since November 13, 2011, when Tarachine was established. We started with the measurement of cesium 134 and 137 in food. Since then, we have expanded the scope of our activities. The measurement of some radionuclides within the human body using a whole-body counter, the measurement of strontium 90 and tritium, research on seawater off the shore of the Fukushima Daiichi NPS, thyroid testing, and recreation programs. Located in a contaminated area, we have continued with these activities out of necessity. We measure everything in the



surroundings of the children, including water, soil, materials, seawater, airborne dust, and dust collected in vacuum cleaners, as well as food. The number of years required for restoration after the nuclear accident is unknown. Some say 50 years, others say 100 years. Taking so many years means that work involving exposure to radiation needs to be done not only by today's adults but also by future generations. As the adults of the present day, we are handing over an onerous legacy to today's children, who bear absolutely no responsibility for the accident. It is an adverse legacy, which will affect their health and life. When this notion comes to our mind, we are faced with a feeling of helplessness for our inability to resolve the problems, however hard we commit ourselves. We at Tarachine are determined to do everything we can do to help change the future for the better, even if a little, instead of giving up.

In May 2017, we are going to open a medical clinic to support the health of the children. The March 11, 2011 nuclear accident deprived us of a tremendous number of things that we can never bring back. We are living now on the basis of the things we have lost. The purpose of opening a clinic is not to lose anymore that is precious to us as well as to support and protect the children's health. It will be the first NPO-run clinic in Japan. We are currently not sure how much we can do, or even what we can do, but we are living each day, with a determination to do anything we can for the sake of the children's health and a better future.

***Secretary General, Mothers' Radiation Lab Fukushima URL: www.iwakisokuteishitu.com/english/index.html**

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