

# ВОЗМЕЩЕНИЕ УЩЕРБА ЗА БОЛЬ И СТРАДАНИЯ ЭВАКУИРОВАННЫХ ЗА ПРЕДЕЛАМИ ЗОНЫ ЭВАКУАЦИИ В СУДЕБНЫХ ДЕЛАХ: ФОКУС НА ЮРИДИЧЕСКОМ ИНТЕРЕСЕ В РАЗУМНОСТИ ЭВАКУАЦИИ

Хитоми Митани, магистр права

Университет Кумамото, Кумамото, Япония

## DAMAGES FOR PAIN AND SUFFERING OF EVACUEES OUTSIDE THE EVACUATION ZONE IN COURT CASES: FOCUSING ON THE LEGAL INTEREST IN THE REASONABLENESS OF THE EVACUATION

Hitomi Mitani, Master of Laws

Kumamoto University, Kumamoto, Japan

В результате аварии на 1-й атомной электростанции Фукусима компании ТЕРСО с 2011 года было много эвакуированных людей. Правительство установило зоны эвакуации в соответствии с уровнем дозы радиации. Комиссия по рассмотрению споров о ядерном ущербе опубликовала временные руководящие принципы в отношении этих зон. Обычно зона эвакуации и компенсация ущерба — совершенно разные вещи (борьба с масштабным ущербом и невидимым страхом перед радиоактивными материалами). Однако при назначении компенсации правительство опиралось на эти временные руководящие принципы, что внесло раскол среди жертв аварии на Фукусиме. И эта система привела к разрыву между эвакуированными; разрыв в компенсации означает разрыв между жителями, проживающими в районах, на которые распространяется действие временных руководящих принципов компенсации, и остальным населением. Статья посвящена делу, в котором суд присудил компенсацию эвакуированным в соответствии со стандартом, отличным от временных руководящих принципов (юридические интересы, специфические для аварии на Фукусиме). В результате суды признали компенсацию более широкой, чем временные руководящие принципы. В частности, суд подтвердил компенсацию для добровольно эвакуированных людей. Халатность компании ТЕРСО и рассмотрение возможности увеличения размера психического ущерба являются основными в делах об авариях на АЭС в данном исследовании.

*Ключевые слова: добровольные эвакуированные лица, временные руководства, санкционированная функция (возмещение ущерба за боль и страдания), случай Фукусимы, реорганизация зон, подлежащих эвакуации*

There have been many evacuees suffering from the accident at TEPCO's Fukushima 1st Nuclear Power Plant (NPP) since 2011. The evacuation zones have been set up by the government according to the level of radiation dose. The Nuclear Damage Dispute Review Panel published interim guidelines with regard to these zones. Normally, the evacuation zone and the compensation are completely different (fighting the widespread damage and the invisible fear of radioactive materials). However, when awarding damages, the government relied these interim guidelines. This made a division among victims of the Fukushima Accident. And this system has resulted in a relief gap between evacuees; relief gap means between residents living in areas covered by the interim guidelines for compensation and the rest of the population. This article will focus on a case in which the court awarded compensation for evacuees according to a different standard than the interim guidelines (legal interests specific to the Fukushima Accident). As a result the courts have recognized compensation more widely than the interim guidelines. In particular, it is remarkable that the court affirmed compensation for voluntary evacuees. The negligence of TEPCO and the consideration on the possibility of increasing the amount of mental damage are main focused in NPP accident cases in this study.

*Keywords: voluntary evacuees, interim guidelines, sanctioned function (damages for pain and suffering), Fukushima case, reorganisation of evacuation-ordered zones*

### Introduction

As a result of the accident at TEPCO's Fukushima 1<sup>st</sup> NPP (Fukushima Accident) triggered by the Great East

Japan Earthquake, the government of Japan established three evacuation-ordered zones in Fukushima Prefecture (Difficult-to-Return zone, Restricted residence zone and Evacuation order cancellation preparation zone) according

to the level of radiation dose (since 1 Apr. 2012; the zones were changed in stages). In May 2017, Act on Special Measures for Reconstruction and Revitalisation of Fukushima was amended. This amendment allows the Prime Minister to define specific reconstruction and revitalization zones. And evacuation orders were lifted and habitable zones were made in the Difficult-to-Return zone. Eleven years after the earthquake, the evacuation order has been gradually lifted in the area and the remaining evacuation-ordered zone is reducing. However, their living environment after the lifting of the evacuation order is far from restored to before accident, and more than 35,000 evacuees continue to be displaced all part of Japan.

The Fukushima Accident, as with the Chernobyl Accident, corresponds to a Level 7 'severe accident' on the International Nuclear Event Scale. We have never experienced such a widespread and serious large-scale nuclear accident before. This accident is completely different from the environmental infringement cases triggered by natural disasters that Japan has experienced in the past. Many of the evacuees from the Accident were fortunate enough to escape the collapse of their houses by the earthquake or the tsunami that washed them away. However, due to the Fukushima Accident, they were forced to evacuate and have not been able to return home for a certain period of time or, in some cases, for a long period of time up to the present day. Under these circumstances, how can damages for pain and suffering from continued evacuation due to this accident, be legally calculated? Are these damages (mental damages) compensable under Japanese tort law? Can the damages be recovered using traditional calculation methods? Ten years after the Accident, there have been several court decisions on Fukushima Accidents. How are the damages caused by the nuclear accident being assessed in the courts [1]?

From my interviews in Fukushima, I noted that the damages suffered by the victims were varied and that mental distress specific to the nuclear accident had occurred [2]. The specific contents of the damages have already been mentioned in district court judgments and literature. For example, the damages can be broadly classified into the following categories: mental damages suffered by residents (stayers) living within the evacuation-ordered zone due to changes in the staged; mental damages suffered by residents living outside the evacuation-ordered zone due to the fact that their lives were fundamentally changed by the forced evacuation; and mental damage suffered by evacuees who are elderly and want to continue living in their own homes, even though their homes are within the evacuation zone, but were forced to move to evacuation centre (schelter).

This paper focuses mainly on the psychological damages of evacuees outside the evacuation zone, but also considers evacuees from the so-called 'voluntary evacuation zone'.

The reason for the limiting the target is that the court referred to relief for evacuees outside the evacua-

tion-ordered zone in a different framework from the government's criteria. The court case discussed in this paper (following section 3.) actually expanded compensation and approved compensation for evacuees outside the evacuation-ordered zone. According to the interim guideline, residents 'outside' the government-designated evacuation-ordered zone should not be 'immediately' affected by radiation. However, they decided to evacuate on their own, based solely on their self-determined, etc., rather than following the government's criteria. Why did the court award compensation for these voluntary evacuees? And what did the court use 'special' theory?

The purpose of this article is to provide an overview of cases in which the courts have referred to compensation for evacuees outside the evacuation zone, mainly from the perspective of the theory of compensation (especially mental damages). The purpose is then to extract from the court's decisions what legal interests the court has recognised. This is because the legal interests approved there are the newly identified legal remedies specific to the Fukushima Accident by the court. This is important because the judges have created a new damage cost through this Accident.

The court cases discussed in this paper are limited to the decisions of the Court of Appeal (Judgement included casebook by 31 May 2022 of the draft date) in class actions (20 Dist. Ct. and 7 High Ct.). The Supreme Court dismissed the defendant TEPCO's second appeal, and the High Court decisions have become final. Therefore it is necessary to consider this final decisions.

## Damage Relief for Evacuees Outside the Evacuation Zone

### 1. Outline of the Fukushima Accident Lawsuits

### 2. Three Remedies

There are several remedies available to parties who have suffered damage as a result of the Fukushima Accident.

The first is compensation under the guidelines of the Nuclear Damage Dispute Review Board (the Board), which was established under Article 18 of the Act on Compensation for Nuclear Damage (the Act) to formulate guidelines for compensation. The so-called interim guidelines, which the Board has published several times, set out the scope of nuclear damage to be compensated for. The damages (scope) indicated by the interim guidelines basically rely on Japanese judicial precedents and prevailing view. At the same time, taking into account the special characteristics of the Fukushima Accident, a wide range of damage costs are included. The framework of judgment is considered reasonable and appropriate from a socially accepted perspective [3]. Secondly, the Nuclear Damage Dispute Resolution Centre (Nuclear ADR), which was set up to mediate settlements, is also available.

However, all such remedies are based on no-fault liability, relying on the Law on Liability for Nuclear

Damage from the perspective of victim protection. These are not pursuit of liability based on the negligence liability of the government and TEPCO. In the first place, the government is obliged to promote nuclear energy policy as a matter of national policy and to supervise nuclear operators. In addition, the nuclear accident itself was the fault of the nuclear operators, and it is necessary to clarify the responsibility of both parties for their negligence. Therefore, finally the victims of the Fukushima Accident have filed lawsuits in various parts of Japan to pursue the negligence of the government and TEPCO; particularly with regard to the foreseeability of the tsunami and the avoidability of its consequences.

### 3. Definition of Evacuees

There are several phrases describing evacuees in this nuclear accident-related litigation. These include the evacuation zone, indoor evacuation zone, planned evacuation zone, emergency evacuation preparation zone, specified evacuation recommendation points and temporary evacuation request zone, as defined by the government. This report mainly focuses on those who evacuated outside the evacuation zone, but also refers to evacuees in the 'voluntary evacuation zone', which was additionally recognised at the interim guidelines.

The following factors are comprehensively taken into account in the 'area subject to voluntary evacuation'; distance from the Fukushima 1st NPP, proximity to evacuation-ordered area subject to evacuation orders, information on radiation levels released by the government and local authorities, the situation of voluntary evacuation in the municipality (e.g. the number of voluntary evacuees). In other words, this zone is the area of municipalities in Fukushima Prefecture, excluding evacuation-ordered area.

### 4. Damages for Pain and Suffering in the Interim Guidelines

This (Fourth Supplement) is guidelines about compensation for residents in Difficult-to-Return zones, where residents have to be evacuated for long periods (more than 6 years after the Accident). The purpose is to provide them with prospects for their future lives. Specifically, the prospect of the lifting of the evacuation order is not clear due to the lack of full-scale decontamination and infrastructure restoration. And the mental damages caused by prolonged evacuation. In this point, compensation under the interim guidelines is mainly limited to evacuees 'within' the evacuation-ordered zone. The interim guidelines on voluntary evacuation, by its name, gives the impression that it is positioned as one of the categories of the evacuation-ordered zones, but this area is 'outside' the evacuation zone.

As already mentioned, the interim guidelines, from policy decision, are established for the purpose of voluntary solutions by the parties. However, because the government and TEPCO positioned the interim guidelines as if they were their own norms (or in some cases, judicial norms!), when determining the amount of low-dose radi-

ation exposure, the residents of the areas subject to voluntary evacuation were treated closer to those who evacuated outside the areas, rather than to those who evacuated within the indicated areas.

## Scientific Knowledge on Low-Dose Radiation Exposure in Court Decisions

### 1. Scientific Knowledge on Low-Dose Radiation Exposure

The court adopts the following as a generally well-known view, on the basis that even experts have divergent opinions on low-dose radiation exposure. There are two types of effects of radiation on the human body; deterministic effects, which appear only when a certain limit dose (threshold) is exceeded, and stochastic effects, in which the probability of an effect occurring increases in accordance with the dose received. Acute injury, leukaemia and cataracts are considered deterministic effects, while no deterministic effects occur in the region below 100 mSv. The occurrence of cancer is considered a stochastic effect and in the area above 100 mSv, the risk of cancer has been confirmed to increase in proportion to the radiation dose.

On this basis, it is difficult to prove a clear increase in the risk of cancer from radiation at doses below 100 mSv because the dose is so small that it is masked by the effect of other factors on carcinogenesis; whether the risk of stochastic effects increases linearly even in the low-dose region below 100 mSv is disputed. For example, there are theories that low doses rather benefit the body (radiation hormesis), that there is a threshold for stochastic effects (linear model with threshold), that radiation must pass through multiple pathways to produce effects (low doses are less likely to produce effects than linear), that the risk increases linearly in the region below 100 mSv (LNT model) and that long-term low-dose exposure is more dangerous than short-term high-dose exposure (Petkau effect).

The International Commission on Radiological Protection (ICRP) and other international organisations adopt the LNT model and refer to radiation protection as a linearly increasing risk of stochastic effects even in the region below 100 mSv.

### 2. ICRP Recommendations

The ICRP 1990 Recommendations set the dose limit for public exposure at 1 mSv/y and, in special circumstances, a higher effective dose in a single year may be permitted if the average dose over a five-year period does not exceed 1 mSv/y (the ICRP 2007 Recommendations also maintain the 1990 Recommendation for dose limits to the public).

At the time of the Fukushima Accident, the 1990 Recommendations of the ICRP had been incorporated into national laws and regulations, but the incorporation of the 2007 Recommendations into national laws and regulations was still under deliberation by the Radiation

Council, so there were no laws and regulations directly setting public exposure limits. However, radiation sources were required to be controlled so that doses outside the perimeter monitoring area were below 1 mSv/y. This means, in effect, that exposure of the public to radiation in excess of 1 mSv/y was not permitted, as stipulated by the 1990 Recommendations (there was no legal provision directly regulating this).

### 3. UNSCEAR Report

In the 'Levels and effects of radiation exposure due to the nuclear accident after the 2011 Great East Japan Earthquake' (the 2013 Fukushima Report), UNSCEAR explained that the exposure was well below the threshold for a deterministic effect in terms of health effects in the public. UNSCEAR notes that no reports have emerged on acute health effects (acute radiation sickness or other deterministic effects) arising from radiation exposure. It was also observed after the accident that mental health problems and the disruption of a peaceful life had severely affected their health. This is a consequence of the tremendous impact of the earthquake, tsunami and nuclear accident, as well as a natural reaction to the fear and humiliation of radiation exposure. In addition, psychological effects such as depression and PTSD symptoms have been observed in the public, and may continue to have serious health consequences in the future.

The report also points out; the lifetime risk of cancer from radiation exposure may not lead to an identifiable increase in disease incidence. However, the possibility remains that there may have been an increased risk for some cancers and age groups. It is suggested that if the dose is close to the upper range limit, the incidence of thyroid cancer due to radiation exposure may increase to an identifiable degree in a sufficiently large population as a result of increased individual risk.

However due to insufficient information on dose distribution, UNSCEAR did not reach a firm conclusion on the following points; whether the incidence of thyroid cancer is likely to increase to an identifiable degree for those exposed to higher thyroid doses during childhood and adolescence.

UNSCEAR subsequently published 'Progress since the publication of the UNSCEAR 2013 report on the levels and effects of radiation exposure due to the nuclear accident following the Great East Japan Earthquake' (2015 Report). And based on the progress of findings since the 2015 Report, UNSCEAR published a series of '2016 White Papers Pointing to the Future Work Plan by the UN Scientific Committee on Progress since the Publication of the UNSCEAR 2013 Report on the Levels and Effects of Radiation Exposure Due to the Nuclear Accident after the Great East Japan Earthquake' (2016 Report). The majority of them, however, followed up on one (or more) of the key assumptions of the 2013 Fukushima Report. Hence, they did not substantially affect the main findings of the 2013 Fukushima Report.

## Summary

Based on this section, experts and international organisations do not have clear answers on the effects of low-dose radiation exposure on the human body. Therefore, although the radiation dose values relating to low-dose exposure are the basis for setting evacuation zones, international scientific findings do not necessarily have a significant influence on court decisions.

However, the Fukushima Accident is a case that is widely known not only domestically but also internationally due to its seriousness. Therefore, it is necessary to actively communicate to the world; how did the Japanese courts award the scope, cost and content of damages for the Fukushima Accident.

Specifically, in the above-mentioned report, the court approved compensation for evacuees from areas subject to voluntary evacuation and evacuees from outside the evacuation-ordered areas, taking into account their future anxiety, despite the fact that there is no definitive answer on the risk of low-dose radiation exposure. It can be said that the court made its own judgment on the reasonableness of the evacuation. Therefore, in the following section 3, I would like to give an overview of how the reasonableness of the evacuation in the court proceedings, especially those who evacuated from areas subject to voluntary evacuation and those who evacuated from areas not subject to evacuation orders.

## Mental Damages of Evacuees Outside the Evacuation Zone in Court Cases

As mentioned above, the interim guidelines are guidelines formulated for voluntary solutions by the parties. Therefore, even taking into account the background of the guidelines, the criteria based on the guidelines cannot be directly used as criteria for the reasonableness of evacuation and the scope of compensation for the parties. However, in NPP ADRs which are designed to settle the parties, there are situations where the interim guidelines are operated as if they have a certain normative basis [4], therefore evacuees who are not satisfied with this have filed lawsuits.

For the purposes of this paper, I was extracted five judgments (as of 31 May 2022) from class actions [5] that refer to the reasonableness of evacuation and mental damages of evacuees from voluntary evacuation area. In the following, I will confirm the content of the reasonableness of evacuation according to the interim guidelines. The following section will then focus on the 'reasonableness of evacuation' of evacuees from voluntary evacuation area and evacuees from outside the evacuation-ordered areas.

### 1. Reasonableness of Evacuation in the Interim Guidelines

The Nuclear Damage Dispute Review Panel's 'Supplement to the Interim Guidelines for Determining

the Scope of Nuclear Damage Caused by the Accident at TEPCO's Fukushima 1<sup>st</sup> and 2<sup>nd</sup> NPP (regarding damage related to voluntary evacuation, etc.)' (6 Dec. 2011) states that at least in the same area, residents had reasonable grounds for having considerable fear (anxiety) of exposure to radiation, and that it was unavoidable for them to have voluntarily evacuated to avoid the danger. And the guidelines states that there are reasonable grounds for the residents to have had a considerable fear (anxiety) of radiation exposure in the area and that the voluntary evacuation to avoid the danger is unavoidable.

## 2. Overview of Evacuees from outside the Evacuation Zone

According to the interim guideline supplement, the target areas for voluntary evacuation are generally located within the 30–100 km zone from the Fukushima 1<sup>st</sup> NPP (the 100 km zone of the Fukushima 1<sup>st</sup> NPP), and most of them are generally located within the 30–80 km zone (the 80 km zone of the Fukushima 1<sup>st</sup> NPP).

'Evacuees subject to voluntary evacuation' are defined as those who had a residence as their home in the area. It does not matter whether they voluntarily evacuated from the residence after the accident, or whether they continued to stay in the area from outside the area subject to voluntary evacuation, or whether they continued to stay in the residence.

## 3. Reasonableness of Evacuation for Evacuees from outside the Evacuation Zone.

According to the interim guideline supplement (remarks), with regard to the amount of damages to be compensated, voluntary evacuations are not evacuations under evacuation orders, and it is not fair and reasonable to treat them equally. However, both voluntary evacuees and sojourners (residents in the area subject to voluntary evacuation) suffered psychological distress as a result of their stay in a residence at voluntary evacuation area. These damages will be resolved by the voluntary evacuation, but they will have to bear the increased living costs, etc. for living in a new evacuation area. Some of the residents in the areas subject to voluntary evacuation were forced to stay due to various reasons. Therefore, it is hardly fair to make a distinction between voluntary evacuees and those who stay in the area.

In addition, it is generally recognised that children and pregnant women who are voluntary evacuees have a high sensitivity to radiation. Even at low doses, it is recognised that there is a certain reasonableness in having fear and anxiety about radiation exposure to higher than normal radiation doses.

## 4. Mental Damage for Evacuees outside the Evacuation Zone.

The interim guidelines recognise the following mental distress: (i) Mental damages caused by the disruption to normal life due to voluntary evacuation. (ii) Mental damages caused by the person continued to stay in the area subject to voluntary evacuation while holding on to their fear and anxiety about radiation exposure, which made it difficult for them to lead a normal life.

The guidelines recognised the infringement of the right to a peaceful life. As mental damages for this infringement, the guideline set standards for evacuees from voluntary evacuation area at 3040 USD (10 months) per child and pregnant woman and 608 USD per others (during 11 Mar. to 22 Apr. 2011).

## Reasonableness of Evacuation in Court Decisions

The five High Court judgments listed below are all lawsuits against the government and TEPCO by persons who claim to have suffered damages as a result of the Fukushima Accident. The purpose of this article is on the psychological suffering of evacuees outside the evacuation zone. Therefore, this section focuses only on judgments in which the plaintiffs were residents of voluntary evacuation area under the interim guidelines and evacuees outside the evacuation-ordered zone. Cases (1) refer to both, cases (2) and (3) refer only to the former, and cases (4) and (5) refer only to the latter. The summary of the judgments will be enumerated only with regard to the mental distress of the evacuees covered by this paper. Therefore this paper does not cover the contents concerning the mental damages of evacuees in the evacuation-ordered zone.

### 1. Outline of Court Cases

(1) *Sendai High Ct.*, 30 Sep. 2020 (*Hanrei Jiho* No. 2484, p. 185) [6]: *appeal dismissed*

Plaintiffs: 2,673 voluntary evacuees (including 213 children and 21 expectant mothers), 499 out-of-area evacuees (incl. 71 child. and 8 e. mothers); reasonable period of evacuation; voluntary evacuees (12 months for child. and e. mothers, 12 months for others), out-of-area evacuees (1-12 months for child. and e. mothers, 10 months for others); compensation for infringement of the right to a peace life; voluntary evacuees (1140 USD for child. and e. mothers, 380 USD for others); compensation for continued evacuation; voluntary evacuees (228 USD/month for child. and e. mothers, 76 USD/month for others), out-of-area evacuees (152 USD/month for child. and e. mothers, 76 USD/month for others)

(2) *Tokyo High Ct.*, 21 Jan. 2021

(LEX/DB25571648): *appeal dismissed*

Plaintiffs: 56 voluntary evacuees (incl. 23 child.); reasonable period of evacuation; voluntary evacuees (18 months for child. and e. mothers, 3/11–4/22 for others); compensation for infringement of the right to a peace life; voluntary evacuees (3800–5320 USD for child. and e. mothers, 2280–3040 USD for others); compensation for continued evacuation; voluntary evacuees (3648 USD for child. and e. mothers, 608 USD for others)

(3) *Sendai High Ct.*, 26 Jan. 2021

(LEX/DB25571290): *appeal dismissed*

Plaintiff: 50 voluntary evacuees: reasonable period of evacuation; voluntary evacuees (10 months for others); compensation for infringement of the right to a peace life; voluntary evacuees (2,280 USD); compensation for con-

tinued evacuation; voluntary evacuees (608 USD for others): ADR settlement; voluntary evacuees (304 USD)

(4) *Tokyo High Ct.*, 19 Feb. 2021

(LEX/DB25591877): *appeal dismissed*

Plaintiff: 9 out-of-area evacuees (incl. 4 child.): reasonable period of evacuation; out-of-area evacuees (13 months for child. and 7 months for others): compensation for continued evacuation; out-of-area evacuees (1140 USD for child. and e. mothers and 380 USD for others): compensation for evacuation; out-of-area evacuees (3800–10,032 USD for child. and 2280–6348 USD for others)

(5) *Takamatsu High Ct.*, 29 Sep. 2021

(LEX/DB25591107): *appeal dismissed*

Plaintiff: 14 out-of-area evacuees (incl. 1 child and 4 e. mothers): reasonable period of evacuation; out-of-area evacuees (18 months for child. and e. mothers, 12 months for others): compensation for continued evacuation; out-of-area evacuees (1520 USD for child. and e. mothers, 760 USD for others): compensation for continued evacuation; out-of-area evacuees (532 USD/month for child. and e. mothers, 380 USD for others): compensation for voluntary evacuation; out-of-area evacuees (1520 USD for child.)

## 2. Reasonableness of Evacuation in Court Decisions

First, the court recognises the reasonableness of the evacuation if the choice of evacuation can be assessed as reasonable, in the view of the ordinary person, with regard to their fears about radiation exposure. Factors to be taken into account include the radiation level in the residential area, the distance from the NPP, the timing of the evacuation, and the attributes of the evacuee or their family (especially whether they are young or pregnant etc.).

Specific grounds considered by the court are: (i) The fear (anxiety) of the evacuees of radiation exposure is a specific fear (anxiety) of the effects on their own life and body. This is reasonable on the basis of ordinary people. (ii) At the beginning of the accident, the situation at the Fukushima 1<sup>st</sup> NPP was unstable and it was unclear how the damage would spread in the future. The evacuees did not have sufficient information on their situation. Therefore, it is reasonable that the residents chose to evacuate temporarily out of fear (anxiety) of radiation exposure. (iii) Residents of the voluntary evacuation are essentially the same as those in the evacuation-ordered areas in terms of their fear of radiation exposure. Rather, voluntary evacuees were forced into a situation where they had to consider for themselves the necessity and possibility of evacuation and voluntarily evacuate. (iv) Under the emergency situation, it was unavoidable that the evacuees were concerned about the information on the government's evacuation order. (v) The fact that there were only a few evacuees from the areas of voluntary evacuation is not a negative factor regarding the reasonableness of the evacuation. (vi) Residents have their own circumstances and decide whether or not to evacuate in their restrictions. In addition, there are individual differences in fear (anxiety) of radiation exposure.

## 3. Mental Damage for Low-Dose Radiation Exposure

Secondly, the court states that there are diverse views, even among experts, on the effects and dangers of low-dose radiation exposure, and that there is no necessarily a clear answer. In addition, the accident caused a rapid increase in environmental radioactivity. The damage caused by this radiation exposure to the residents of voluntary evacuation area was extremely serious and severe. In view of the Japanese radiation protection system and social conventions at the time of the accident, it is not possible to conclude that the radiation exposure of the residents of the evacuation zone was not caused by the Accident.

Specific grounds considered by the court are; (?) The knowledge of the health risks of low-dose exposure is knowledge that should be known to TEPCO and surrounding operations workers. It is not knowledge that the evacuees happen to know. (?) The residents were suddenly forced to live in an area contaminated by radioactive materials and, as a result, voluntarily evacuated as a means of self-defence. When voluntary evacuation was not possible, they had no choice but to protect themselves by changing their daily life. (?) Evacuees were not able to calmly select and choose between accurate information on low-dose radiation exposure (for several years after the accident) due to the various biases in the information that came out after the Accident. In some areas, radiation doses of around 10 mSv/y were measured, which exceeded normal radiation levels. It is not reasonable to assume that the inhabitants of the voluntary evacuation zone have accepted the following views without question and that their fears and anxieties about radiation have been eliminated; 'low doses of radiation have no adverse effects on health'. (?) The number of voluntary evacuees in Fukushima once decreased after the Accident. However, since the end of April, the number has increased again. As of 22 September, the number had increased by about 10,000 people, compared with the number as of 15 March. This phenomenon indicates that, after the Accident, local residents who were not ordered to evacuate had confused information, which consequently affected their behaviour. (?) Fetus and infants are highly radiosensitive. Pregnant women are at risk of miscarriage. Children and pregnant women had greater health concerns about low-dose radiation exposure than others. Therefore, it was even more reasonable for children and pregnant women living in the area to choose to evacuate voluntarily.

Some courts have taken a special view on children and pregnant women when considering the reasonableness of evacuation of out-of-area evacuees. Sendai High Ct. (1) emphasised the following points; that the Aizu area is far from the NPP. The Aizu area is far away from the NPP, separated from it by the Ou Mountains, and radiation levels have remained low since immediately after the Accident. However, this area is in Fukushima Prefecture, where the NPP is located.

Sendai High Ct. (1) also emphasised the following point; Tochigi Prefecture is adjacent to Fukushima, and Nasu Town is the closest town in Tochigi to the NPP, and in a field survey at Nasu in Jun. 2011, radiation levels of approx. 5 mSv/y were measured. From these facts, the court concluded that it was reasonable for evacuees outside the evacuation zone to evacuate voluntarily.

### Summary

In this section, I have extracted five court of appeal decisions in the class actions. All of these judgments referred to the reasonableness of evacuation for evacuees outside the evacuation-ordered zone, including evacuees from voluntary evacuation area. In each of these five cases, the defendant TEPCO was found liable and the judgments were final. Sendai High Ct. (1) referred to both evacuees subject to voluntary evacuation, etc. and evacuees outside the evacuation-ordered zone, while Tokyo High Ct. (2) and Sendai High Ct. (3) referred only to those subject to voluntary evacuation, etc., and Tokyo High Ct. (4) and Takamatsu High Ct. (5) referred only to those outside the evacuation-ordered zone.

Three judgments (1), (4) and (5) referred to the reasonableness of evacuation. All the judgments concluded that the reasonableness of evacuation is not necessarily determined by relying on the interim guidelines, etc., but is determined by taking individual circumstances into consideration.

In this point, the court did not use the interim guidelines as a judicial norm, as pointed out in the NPP ADR, but made a reasonable decision. However, as the damages for pain and suffering are calculated at the discretion of the judge, so the basis for the calculation is unclear, resulting in lower compensation [7].

On the other hand, the judgements (1), (2) and (3) on the reasonableness of evacuation for evacuees from voluntary evacuation area, expanded the scope of such evacuation compared to the interim guidelines. However, they also shortened the period for recognising the reasonableness of evacuation. In this point, the original trial court in judgement (2) constituted the injured interest as an infringement of the 'right to self-determination', rather than an infringement of community life. So it was noted that this led to a lower amount of compensation. In other words, the damage they suffered was not recognised as damage caused by the evacuation action necessary to avoid exposure to radiation for evacuees from voluntary evacuation area. They were forced to choose 'needless evacuation action' due to lack of information and confusion. This was deemed to have deprived them of the opportunity for reasonable self-determination. As a result, their reasonableness for the continuity of their evacuation was denied, and their compensation was low. However, the Court of Appeal affirmed the compensation for continued evacuation based on the infringement of the right to peace life and approved a significant increase

in the amount of compensation. In addition, the judgment (3) calculated as evacuation compensation (for children) for evacuees outside the evacuation-ordered zone (152 USD was affirmed as an additional cost for increased evacuation living), which approved an amount of 1.5 times in the Red Book (Japanese Standards for calculating damages).

The original judgments (2) on voluntary evacuees and (1) on evacuees outside the evacuation zone were not used the interim guidelines as judicial norms. However, the decision was made in line with the basic policy of the interim guidelines and the evacuation order, which relied on the 20 mSV theory. As a result, the serious damage caused to the evacuees was not fully grasped and the compensation was low.

In the judgement (1), the interim guidelines are limited the target to areas subject to voluntary evacuation and awarded only a small amount of compensation. On the other hand, it is significant that the court expanded the scope of relief. The court referred to cases in which compensation was granted in accordance with the actual situation of the damage even in voluntary evacuation area and outside the evacuation-ordered zone (outside the prefecture). Specifically, compensation was granted in areas where the air dose rate exceeded 5 mSv/y (children and pregnant women for 12 months) and in areas where the shortest distance from the NPP was 45 km (10 months except for children and pregnant women) were recognized, but not in areas where the shortest distance from the plant was 60 km or more.

### Conclusion

The reason why this paper has focused on evacuees outside the evacuation zone (and those who voluntarily evacuated) is that it considers the fact that a compensation gap (a large difference in relief for victims) arises depending on whether the government designates a zone or not to be evacuated to be a problem. In the following, I will refer to my future tasks.

#### 1. Reorganisation of Evacuation-Ordered Zones

Evacuation-ordered zones are appropriate as a temporary response to an emergency. However, despite radioactive materials were dispersed over a wide area, this indicated zone has never been restructured since then. This inevitably led to a division between 'evacuees in the evacuation zone=evacuee' and 'evacuees outside the evacuation zone=self-evacuee' [8].

First of all, it is for the victims themselves to decide whether they have suffered damage or not, and this cannot be determined by the government. Certainly, the determination of the scope of evacuees and the calculation of damages, which is not based on scientific findings, must not be allowed in court. However, the judgment, referred to in this article, expanded its scope of the decision from the interim guidelines, despite the effects of low-dose radiation exposure on the body are 'uncertain-

ties'. This means that the evacuation zones set by the government need to be reviewed, and if these zones are reorganised in a timely manner, more substantial relief for victims will be provided.

More than 60 years have passed since the official recognition of Minamata Disease (that was the origin of the pollution case which occurred in Japan) in 1956, and the issue of compensation has not yet been resolved. One of the reasons for this is that the government selected patients according to criteria of its own making before it was clear what the cause of Minamata Disease was. Later, the Supreme Court rejected this criterion and the criteria were reorganised to comply with this judgement. We should know from experience the folly of unilateral selection of patients by third parties who are not victims. The situation of the evacuees in Fukushima case is also in line with Minamata case [9]. In this sense, it is easy to assume that evacuees will continue to be at the mercy of the situation. At any rate, it is necessary to accumulate case law on the reasonableness of evacuation for evacuees outside the evacuation zone.

## 2. Making Unique Methods of Mental Damages for Fukushima Case

The interim guidelines play a major role in the calculation of damages relating to the Accident. The interim guidelines adopt a calculation method based on traffic accident cases, which is commendable in terms of objectivity, uniformity and universality of the standards [10]. However, unlike motor vehicle accident cases, nuclear accidents have special damage items. Furthermore, this damage is difficult to take into account in the calculation

method used in the pollution compensation method. So I think that a unique calculation method is necessary for Fukushima Accidents.

In the past, Japanese tort law has sought to provide relief to victims of pollution cases by creating its own compensation method. One direction is the need to consider increasing the amount of damages by not only compensatory damages but also sanctions functions [11]. Because all the High Court judgments affirmed TEPCO's negligence. And TEPCO could have foreseen the occurrence of the tsunami, and if they had responded appropriately, the damage could have been prevented from spreading to this extent, even though the earthquake was unprecedented. So I think it is necessary to reflect the strong criticism of TEPCO in the amount of mental damages.

Now many court cases related to the Fukushima Accident are currently pending. Therefore, based on the five cases referred to in this paper, it is hasty to generalise and discuss trends in the reasonableness of evacuation and compensation for this accident evacuees (especially those outside the evacuation zone). However, I consider that the five judgments have provided useful suggestions for the review of the interim guidelines and for the improvement of support for victims.

\* I dedicate this paper to Prof. Emeritus Dr. Makoto Hashimoto of Kumamoto University, who retired in March 2020. I sincerely apologise for not being able to publish it in time due to COVID-19 and would like to express my sincere thanks for his useful advice given to me in writing this paper.

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