

**HOW HAS TEPCO COMPENSATED NUCLEAR DAMAGE IN FUKUSHIMA ACCIDENT?
--- THE ROLE OF NUCLEAR DAMAGE COMPENSATION FACILITATION CORPORATION ---**

Masato Dogauchi*

Abstract	1
I. Introduction	2
II. Out-Going of Money from TEPCO	2
1. Total Amount	2
2. Dispute Reconciliation Committee for Nuclear Damage Compensation	3
3. Nuclear Damage Compensation Dispute Resolution Center	3
4. Litigations	5
III. In-Coming of Money to TEPCO	5
1. Application/Non-application of Proviso of Article 3, Paragraph 1 of Nuclear Damage Compensation Act	5
2. Nuclear Damage Compensation Facilitation Corporation	7
a. Policy Determination	7
b. Act on Nuclear Damage Compensation Facilitation Corporation	8
c. Activities Related to Nuclear Damage Compensation Facilitation	9
(1) Financial Assistance to TEPCO	9
(2) Receipt of Contributions	9
3. Payment to TEPCO by the Government under the Indemnity Agreements	12
IV. Conclusion	13

Abstract

TEPCO has been paying a huge amount of money (around 8 trillion yen = 80 billion dollars) to the victims of the accident caused by the Fukushima *Dai-ichi* nuclear power plant. The reason why TEPCO can do this is the existence of the Nuclear Damage Compensation Facilitation Corporation established by a special legislation enacted just six months after the accident of March 2011. This mechanism is based on an idea of Retroactively Accumulated Reserve Fund, under which not only TEPCO but also other nuclear operators are obliged to contribute the Fund (around 300 billion yen). The main supplier of money to the Corporation is the Japanese government, which plays a role of buffer to make TEPCO pay the nuclear damages. TEPCO will have to repay such government money and it will be able to do because, with time, TEPCO can still be a profitable energy producer with thermal power plants and hydroelectric dams. However, a company generating electricity by exclusively nuclear power plant would not be capable of earning money going forward after an accident of the plant. Accordingly, the Japan's system would not necessarily work as well in a future nuclear accident.

* Professor of Law, Waseda University, Law School; Senior Counsel for Nagashima, Ohno and Tsunematsu (Tokyo, Japan).

I. Introduction

Immediately after the Great East Japan Earthquake on March 11, 2011¹, all operating nuclear reactors in North-East Japan automatically shut down. Although all the reactors involved, except for four, continued to be supplied with electricity, the four reactors in the Fukushima *Dai-ichi*² Nuclear Power Plant, operated by the Tokyo Electric Power Company (hereinafter cited as “TEPCO”), completely lost electricity because of tsunami. The inoperative cooling system led to nuclear meltdowns, hydrogen air-explosions, and the release of radioactive materials. This Fukushima Accident caused no deaths. Nonetheless, it resulted in a huge amount of damage to the livelihoods, businesses, and property of many residents and corporations.

The Fukushima Accident led two significant post-accident compensation mechanisms, which were built into the Japanese legal system in addition to the normal nuclear liability system: First, establishment of an entity to provide TEPCO with funds to have TEPCO pay compensation to the victims; second, establishment of a system under which Japan’s all major nuclear operators are forced to contribute funds to the entity. This entity is the Nuclear Damage Compensation [and Decommissioning] Facilitation Corporation (hereinafter cited as the “Facilitation Corporation”). The two mechanisms are related but should be considered separately, since the former can function without the latter.

Part II will introduce out-going of money from TEPCO to the victims, that is, payment of nuclear damages. The determination process of the amount of nuclear damages will also be mentioned. Part III will deal with in-coming of money to TEPCO, that is, how TEPCO is financed to pay nuclear damages. Part IV will present the conclusions of this paper.

II. Out-Going of Money from TEPCO

1. Total Amount

On 26 July 2017, TEPCO announced the total prospective amount of compensation for nuclear damage will be 9 trillion 704.74 billion yen.³ By 17 August 2018, the total amount TEPCO had paid to victims was around 8 trillion 336.1 billion yen (over 80 billion dollars), the breakdown of which is as follows:⁴

Items of damage	Gross Number of Payments	Amount (yen)
Personal Damage	962,000	3 trillion 075.1 billion
Business Damage	417,000	4 trillion 754.5 billion

¹ It is reported that this natural disaster resulted in 18,456 dead and missing, with 90% of the casualties caused by the tsunami.

² “*Dai-ichi*” means first. TEPCO has two nuclear power plants in Fukushima. The first plant (*Dai-ichi* plant) has six nuclear reactor units. Four of them caused the nuclear accident, but two other units remained safe since they were located three meters higher than the other four units. The second plant (*Dai-ni* plant) has four nuclear reactor units. In anticipation of another nuclear accident in *Dai-ni* plant, The Government issued a Declaration of a Nuclear Emergency Situation and subsequently ordered evacuation. However, it was later found that the reactors in *Dai-ni* plant did not caused any release of radioactive material at all. With regard to the payment to TEPCO by the Government under the indemnity agreements, see, III.3.

³ <http://www.tepco.co.jp/press/release/2017/pdf1/170511j0102.pdf> (in Japanese).

⁴ http://www.tepco.co.jp/fukushima_hq/compensation/results/index-j.html (in Japanese).

Voluntary Evacuation Damage and Others	1,295,000	353.7 billion
Total	2,674,000	8 trillion 336.1 billion

2. Dispute Reconciliation Committee for Nuclear Damage Compensation

On 11 April 2011, one month after the accident, the Reconciliation Committee was established in accordance with Article 18, Paragraph 1 of the Nuclear Damage Compensation Act.⁵

On 28 April, it made the first set of guidelines⁶ available to the public: “Preliminary Guidelines on Determination of the Scope of Nuclear Damage”.⁷ Subsequently, other sets of guidelines were published. Then, on 5 August 2011, the Reconciliation Committee produced the “Midterm Compiled Set of Guidelines on Determination of the Scope of Nuclear Damage”.⁸ And later, it was supplemented by other announcements.

These guidelines were expected to facilitate negotiations between the victims and TEPCO on certain categories of damage dealt with in the guidelines. Although they have no binding effects at all, they have functioned well.⁹ Negotiations conducted directly between the victims and TEPCO and mediation by the Nuclear Damage Compensation Dispute Resolution Center, which will be mentioned in the next section, have been carried out, in general, in accordance with the guidelines.¹⁰

3. Nuclear Damage Compensation Dispute Resolution Center

On 5 August 2011, the Nuclear Damage Compensation Dispute Resolution Center was established by the above-mentioned Reconciliation Committee pursuant to Article 18, Paragraph 2, Item 1 of the Nuclear Damage Compensation Act.¹¹

⁵ Article 18, Paragraph 1 provides that “this Committee shall be in charge of mediating reconciliation of any dispute arising from the compensation of nuclear damage and for preparing general instructions to help operators reach a voluntary settlement in such disputes.”

⁶ Article 18, Paragraph 2, Item (ii) provides that “(t)he Reconciliation Committee shall: ... (ii) in the event of a dispute arising from the compensation of nuclear damage, draft instructions establishing the scale of the nuclear damage and other general instructions to help operators reach a voluntary settlement of said dispute; ... ”.

⁷ <https://www.oecd-nea.org/law/fukushima/7089-fukushima-compensation-system-pp.pdf>, p. 89.

⁸ <https://www.oecd-nea.org/law/fukushima/7089-fukushima-compensation-system-pp.pdf>, p. 124.

⁹ The fact that several highly regarded jurists have been involved might give the guidelines a significant degree of heft. See, Eric Feldman, *Compensating the Victims of Japan’s 3-11 Fukushima Disaster*, 16 *Asian-Pacific L. & Pol’y J.*, Vol. 16 (2015), pp. 136-137, available at http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=2633&context=faculty_scholarship.

¹⁰ From 14 February 2012 through 8 November 2012, the Steering Committee of the Nuclear Damage Compensation Dispute Resolution Center created fourteen General Standards illustrating interpretations of the guidelines of the Reconciliation Committee. The mediators of the Center tend to be subject to these General Standards in order to deal with like claims alike. See, Eric Feldman, “No Alternative: Resolving Disputes Japanese Style,” in Moritz Bälz & Joachim Zekoll eds., *Dispute Resolution--Alternatives to Formalization, Formalization of Alternatives*, (2014), pp. 145-146, available at http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=2552&context=faculty_scholarship; Daniel Foote, “Japan’s ADR System for Resolving Nuclear Power Related Damage Disputes,” *The Univ. of Tokyo L. Rev.*, Vol. 12, (2017), p. 118, available at [http://www.sllr.j.u-tokyo.ac.jp/12/papers/v12part07\(foote\).pdf](http://www.sllr.j.u-tokyo.ac.jp/12/papers/v12part07(foote).pdf).

¹¹ Article 18, Paragraph 2, Item (i) provides that “(t)he Reconciliation Committee shall: (i) mediate reconciliation of any dispute arising from compensation of nuclear damage; ...”.

On 1 September 2011, the Center began to operate with 63 officers, including 45 lawyers.¹² The Center was used by those who did not want to speak with TEPCO at all or those who were unhappy with TEPCO’s payment proposals.¹³ The achievements of the Center up to 10 August 2018, are as follows:¹⁴

Total Number of Application	23,964 ¹⁵
Total Number of Closed Cases	22,550
(Settlement)	(18,318)
(Withdrawal)	(2,393)
(Discontinuance ¹⁶)	(1,838)
(Dismissal)	(1)
The Total Number of Pending Cases	1,414

In 85% of cases, the parties managed to reach a settlement. One of the reasons why such a high rate of settlement has been achieved is the fact that TEPCO announced its positive attitude toward proposals for settlement as suggested by mediators of the Nuclear Damage ADR Center.¹⁷

In addition, it should also be noted that the settlement agreements between the victims and TEPCO concluded when the victims received the compensation contain clauses providing that the agreements do not deny the possibility of the existence of damage above and beyond that compensated for by the agreements, and do not prevent the claimants from making claims for compensation for such additional damage.¹⁸ This could be viewed as reasonable in the light of the possibility of the late somatic effects of radiation, but, in reality, overwhelmed by social criticism, TEPCO seems to have had no other choice but to accept this inclusion and it has certainly played a significant role for a huge number of victims in pursuit of settlements. However, it opens TEPCO up to the risk of further claims over a long period of time. In fact, because some plaintiffs won their cases—even in part—there remains the possibility that further lawsuits will be brought as long as the expected value of litigation exceeds the costs of bringing cases.

In any event, the combination of the Guidelines made public by the Reconciliation Committee and the mediation conducted by the Nuclear Damages ADR Center has produced significant achievements in the face of the unparalleled number and sizes of claims. In fact, on the one hand,

¹² By August 2015, the number of officers had increased to 619, including 474 lawyers.

¹³ Feldman, *supra* note 9, pp. 138 and 142.

¹⁴ http://www.mext.go.jp/a_menu/genshi_baisho/jiko_baisho/detail/pdf/PDF-10_adr_014.pdf (in Japanese).

¹⁵ Forty per cent of cases were represented by lawyers; the other 60% of cases were processed by the victims themselves.

¹⁶ Since mediation has no final binding power, if it becomes apparent that there is no possibility of the parties coming to a settlement, the mediation is discontinued.

¹⁷ On 15 January 2014, TEPCO announced the “Three Promises” which included statements that it would respect the proposed settlements made by the Center.

¹⁸ With regard to the practice in the Nuclear Damage Compensation Dispute Resolution Center, see, <http://www.aec.go.jp/jicst/NC/senmon/songai/siryo13/siryo13-2.pdf> (in Japanese). Examples of the agreements can be found at http://www.mext.go.jp/a_menu/genshi_baisho/jiko_baisho/detail/1340802.htm.

93.4% of 2,821,000 claims against TEPCO without any third party involvement¹⁹ have been settled, as have 85% of 22,462 applications to the Center; and on the other hand, there have been relatively a few lawsuits against TEPCO,²⁰ though the number may increase in future because of the existence of the aforementioned clause in the settlement agreements.²¹ This practice should be referred to in similar situations in the future, following further validation.

4. Litigations

By the 30 June 2018, 457 lawsuits for damages had been filed against TEPCO,²² of which 284 were concluded²³ and 173 cases remained cases pending.²⁴ Of the pending cases, 31 are lawsuits brought by residents who claim that the compensation already received is insufficient. These 31 lawsuits were filed in 18 district courts with over 12,000 plaintiffs.²⁵

For instance, around 3,800 people filed a lawsuit in Fukushima District Court against TEPCO and the Government for damages of 2.8 billion yen in total. On 10 October 2017,²⁶ the Court ordered TEPCO to pay 50,000 yen per month from 10 March 2011 until the date when air radiation levels at the places of residence within the area affected by the Fukushima Accident fall below 0.04 $\mu\text{Sv/h}$. In conclusion, TEPCO was ordered to pay about 500 million yen in total to around 2,900 plaintiffs and the Government was also ordered to pay about 250 million yen, jointly and severally to that extent. Both parties appealed and the case is pending.

III. In-Coming of Money to TEPCO

1. Application/Non-application of Proviso of Article 3, Paragraph 1 of Nuclear Damage Compensation Act

Immediately after the Fukushima Accident, a burning question arose: whether or not the accident was caused by “a grave natural disaster of an exceptional character” (the Proviso of Article 3, Paragraph 1 of the Nuclear Damage Compensation Act). It has been pointed out that adoption of

¹⁹ On December 28, 2017 (http://www.tepco.co.jp/fukushima_hq/compensation/results/index-j.html) (in Japanese).

²⁰ Since a number of plaintiffs are involved in a lawsuit in some cases, the proportion of lawsuits to the number of claims is not an accurate indicator of the situation. However, the percentage can show that only a few claimants filed lawsuits on this occasion.

²¹ See, the next section.

²² Lawsuits in which both TEPCO and the Government are co-defendants are included.

²³ For instance, Tokyo District Court judgment on 20 March 2015, (L07132115) is a case where a company managing restaurants alleged that some of those restaurants were forced to close due to a rumor about nuclear contamination, and claimed damages of about 560 million yen. The Court held that a reasonable causal link between the accident and the closure of restaurants could not be established and such results merely have been caused by poor business judgment. Therefore, the court dismissed the claim. The Tokyo District Court judgment on 20 July 2016, (L07131605) is another case where a company managing a golf course alleging that a fall in its sales was caused by rumors of contamination claimed for about 86 million yen. The Court held that, notwithstanding that the golf course was located about 115km away from Fukushima *Dai-ichi* Nuclear Power Plant, it was not unreasonable for ordinary people, being affected by the reports in the media, to think about any health risk, but accepted that the causal link with the fall in sales represented only a part of that loss. The Court ordered TEPCO to pay about 18 million yen.

²⁴ The TEPCO document (in Japanese), p. 5, available at http://www.mext.go.jp/b_menu/shingi/chousa/kaihatu/016/shiryo/_icsFiles/afieldfile/2015/01/28/1354739_5.pdf.

²⁵ With regard to the litigations, see, Eric Feldman, *Compensating the Victims of Japan's 3-11 Fukushima Disaster*, 16 *Asian-Pacific L. & Pol'y J.*, Vol. 16 (2015), pp. 136, 144-151, available at http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=2633&context=faculty_scholarship.

²⁶ LEX/DB:25449056.

an unlimited liability system should be balanced by allowing the discharge of liability in certain cases in order for the nuclear industry to develop its business in a sound manner.

In accordance with the scheme of the Nuclear Damage Compensation Act, the application/non-application of the above Proviso would lead to two completely different scenarios. If the application of the Proviso were affirmatively admitted, TEPCO's liability would be discharged and the Government should, in accordance with Article 17,²⁷ take the necessary measures to relieve victims and to prevent the damage from spreading. On the other hand, if its application were to be denied, TEPCO would bear unlimited liability and the Government would provide TEPCO with "aid" in order for it to compensate for the damage under Article 16.²⁸

Urgent settlement of this issue was necessary, since the settlement was a precondition for the new legal structure for dealing with a huge number of claims arising from nuclear damage. In actuality, this issue was settled out of court within two months from the date of the based upon very limited data and information available concerning the cause of the accident.

On 11 May 2011, TEPCO requested the "aid" from the Government under Article 16 of the Nuclear Damage Compensation Act.²⁹ In this request, TEPCO wrote that its funds might become insufficient, because, by the end of March 2012, it would need an additional one trillion yen in order to import fossil fuel to maintain a stable supply of electricity³⁰ and 750 billion yen in order to redeem bonds and reimburse other debts.

The Government moved to the next step based upon the TEPCO's request.³¹ The next step was to determine how the Government should give aid to TEPCO in concrete terms under Article 16.

Incidentally, there was a discussion that TEPCO should be subject to proceedings under the Corporate Reorganization Act. On this issue, in the National Diet discussion regarding authorization under Article 16, Paragraph 2 of the Nuclear Damage Compensation Act, the Government explained the reason why such reorganization proceedings could not be supported: over 5 trillion yen would need to be paid to the holders of the bonds issued by TEPCO³² in

²⁷ Article 17 provides for as follows: "Where the provision for exoneration in Article 3, Paragraph 1 applies or where nuclear damage is deemed to exceed the amount provided under Article 7-2, Paragraph 2, the Government shall take the necessary measures to relieve victims and to prevent the damage from spreading."

²⁸ Article 16 provides for as follows: "(1) Where nuclear damage occurs, the Government shall give a nuclear operator . . . such aid as is required for it to compensate the damage, when the actual amount to be paid for the nuclear damage pursuant to Article 3 exceeds the financial security amount and when the Government deems it necessary in order to attain the objectives of this act. (2) The aid as provided for in the preceding paragraph shall be given to the extent that the Government is authorized to do so by decision of the National Diet."

²⁹ It should be noted that the Government does not have the authority to decide upon such legal issues as the applicability of the Proviso. If the Government were to exercise such authority, it would be a violation of the principle of the separation of powers. See, Julius Weitzdoefer, "Liability of Nuclear Damages under Japanese Law: Key Legal Problems Arising from the Fukushima Daiichi Nuclear Accident," in Simon Butt, Hitoshi Nasu and Luke Nottage eds., *Asian-Pacific Disaster Management: Comparative and Socio-legal Perspective*, (2014), p. 131.

³⁰ Out of TEPCO's 17 nuclear reactors, 6 reactors in Fukushima *Dai-ichi* Nuclear Power Plant have been undergoing a decommissioning process and operation of 11 further reactors has been suspended since the Fukushima Accident in 2011. In 2010, TEPCO depended upon nuclear power for 27% of its total production of electricity.

³¹ With regard to the discussion to deny the application of the Proviso, see, Eri Osaka, "Corporate Liability, Government Liability, and the Fukushima Nuclear Disaster," *Pacific Rim L. & Pol'y J.*, Vol.21 (2012), pp. 444-447, available at <<https://digital.law.washington.edu/dspace-law/bitstream/handle/1773.1/1161/21PRPLJ433.pdf?sequence=1>>.

³² According to Article 18, Paragraph 1 of the Electricity Business Act in force at the time of the Fukushima Accident, in general, a "General Electricity Business" such as TEPCO was under an obligation to supply electricity within its licensed supply area, and on the other hand, was prohibited from supplying electricity outside that area. This was a regional monopoly system and therefore the electricity price was calculated on the basis of certain authorized costs and had to be approved by the Government. Therefore, the "General Electricity Businesses" were deemed to be quasi-

preference to other creditors,³³ including victims of the Fukushima Accident, who would then not be fully paid in such proceedings. In addition, it would be extremely difficult to draw up a reorganization plan for TEPCO in consideration of the uncertainty regarding the total amount of nuclear damage. Furthermore, in light of the fact that TEPCO was at that time under an obligation to supply electricity to Tokyo area.³⁴ If it became insolvent, this would cause huge disruption to Japanese society and the economy. In particular, victims would rush to court for fear that they might not be fully compensated.

In order to avoid such a situation, the provision of governmental “aid” to TEPCO seemed to be the only feasible solution, at least in the case of the Fukushima Accident.³⁵ Both the smooth compensation for the damage and a stable electricity supply were secured by the “aid.”

2. Nuclear Damage Compensation Facilitation Corporation

a. Policy Determination

On the basis of the above-mentioned TEPCO’s request on May 10, 2011, on 13 May 2011, the Government sent a letter to TEPCO in order to confirm the following conditions:

- First, the upper limit of the total amount of damages should not be set in advance and the settlement thereof should be done promptly and adequately;
- Second, TEPCO should do its best to keep the reactors in the Fukushima *Dai-ichi* Nuclear Power Plant in a stable condition, improve safety and the environment of workers engaging in the clearance operation, and pay adequate attention to the economic aspect of the situation;
- Third, TEPCO should secure a sufficient budget to enable a stable electricity supply and the safe operation of facilities;
- Fourth, TEPCO should rationalize its management and cut expenditure, except for use in order to achieve the objectives mentioned in the third condition;

public entities. The total number of such entities was ten, of whom nine operated nuclear power plants. The Japanese electricity market has been gradually liberalized since 1995, and since April 1, 2016 a small, more liberalized retail market has finally developed. The concept of a “General Electricity Business” cannot be found in the Electricity Business Act at present.

³³ There was a special rule in force at the time of the Fukushima Accident that bond holders of a “General Electricity Business” such as TEPCO were given statutory lien. That was Article 37 of the Electricity Business Act at that time, according to which they were to be redeemed in preference to other general creditors from the fund of the General Electricity Business. The objective of this rule was to make it possible for such businesses to raise money at low interest rates for building and maintaining social infrastructure. It was said that the amount of bonds issued by TEPCO to be redeemed within a year was around 500 billion yen. Therefore, if corporate reorganization proceedings started regarding TEPCO, the bond holders were redeemed in preference to the victims who had tort claims. Incidentally, the above statutory lien will be removed, in principle, by 1 April 2020 as a part of the liberalization of Japan’s electricity market.

³⁴ TEPCO’s total supply of electricity in 2010 (one year before the Fukushima Accident) was around 293.4 billion kWh, which was almost equal to that of Italy and amounted to one third of the total supply of energy in Japan. If TEPCO were to become insolvent, it would have a huge impact on Japanese society and the economy. Incidentally, TEPCO’s total supply of electricity in 2016 was reduced to 241.5 billion kWh because of electricity saving and the liberalization of the electricity market.

³⁵ With regard to an alternative way, see, Haturu Morita, “Rescuing Victims and Rescuing TEPCO: A Legal and Political Analysis of the TEPCO Bailout,” *J. of Japanese L.*, Vol.34 (2012), pp. 8-10, available at <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2026868>. According to this approach, by letting TEPCO go bankrupt, the Governmental aid would be given to a newly established separate independent entity (a trust or a special purpose vehicle) whose task would be to compensate for the nuclear damage, and TEPCO would be split into a bad company and a good company which would succeed to the former TEPCO’s business. It is explained that the assumption of the risk resulting from the operation of nuclear power plants by the shareholders and creditors would be socially desirable since it is relatively easy for them to monitor the activities of the operator in comparison with the victims of the accident for whom it is almost impossible to monitor such activities.

- Fifth, TEPCO should accept management and financial investigation by a third-party independent committee to be established by the government in order to make a fair assessment of TEPCO's assets and a thorough re-examination of its expenditure;
- Sixth, TEPCO should obtain the co-operation of all related stakeholders and report to the government on such co-operation, including especially the status of co-operation from financial institutions."

TEPCO confirmed that it would be subject to these conditions. In response, the Government determined the following policies:

1. A support organization ("Facilitation Corporation") shall be established to deal with payments, etc. of compensation in case of occurrences of nuclear damage in general.
2. In principle, nuclear operators that manage nuclear power plants are obliged to participate in the Facilitation Corporation, and the participants are required to pay contributions to the Facilitation Corporation to enable it to procure adequate funds. The contributions shall be deemed to be operating expenses.
3. The Facilitation Corporation shall support (by way of granting of funds, maintaining capital, etc.) any nuclear operator in need of funds in order to compensate for nuclear damage. No upper limit shall be imposed on the support. The support shall be provided as many times as necessary to cover all cost for compensation for damage, investment in facilities, etc. in order to not have the nuclear operator (the recipient) fall into capital deficiency.
4. The Government or the Facilitation Corporation shall respond to consultations with the victims of nuclear accidents. The Facilitation Corporation shall play a proper role to settle their claims by providing the nuclear operator (the debtor) with funds by, among other things, purchasing its assets.
5. The Government shall provide the Facilitation Corporation with such necessary financial aid by means such as the granting of government bonds and the provision of government guarantee.
6. Prior to the provision of financial aid, the Government shall, in response to requests by a nuclear operator, examine what kind of financial aid is necessary, how the nuclear operator is making efforts to rationalize its management, etc. and shall supervise the nuclear operator for a certain period of time with respect to the rationalization of its management, etc.
7. The nuclear operator (the recipient) shall pay to the Facilitation Corporation a special contribution to be calculated in consideration of operating revenue of each year, etc.
8. The Facilitation Corporation shall make a reimbursement payment to the Treasury from resources made by contributions, etc. of the nuclear operators.
9. The Government may provide financial aid to a nuclear operator in exceptional circumstances, such as where it is facing difficulties in supplying electricity in a stable manner due to the payment of its contributions.

In this manner, in about two months after the Fukushima Accident, a complete scheme of compensation for nuclear damage was constructed.

b. Act on Nuclear Damage Compensation Facilitation Corporation

In accordance with the policy No.1 above, the Facilitation Corporation was established as a buffer to supply funds to TEPCO in meeting its compensation payment by the Act on Nuclear Damage Compensation Facilitation Corporation (Act No. 94 of 2011).³⁶ Its main task was to provide any nuclear operator under obligation to compensate for nuclear damage with the necessary funding.

³⁶ <https://www.oecd-nea.org/law/fukushima/7089-fukushima-compensation-system-pp.pdf>, p. 185. This Act was amended by Act No. 4 of 2014 to give the Facilitation Corporation the task of funding decommissioning. The name of the Act was altered to the "Nuclear Damage Compensation and Decommissioning Facilitation Corporation." In addition, this Act was amended by Law No. 30 of 2017 to add provisions on a reserve fund for decommissioning.

The objective is to have the victims paid expeditiously and adequately and to have the operator manage its nuclear power plants and electricity supply smoothly.³⁷

It is particularly noteworthy that, in accordance with the policy No.2 above, the other nuclear operators besides TEPCO, the eight electric power companies, the Japan Atomic Power Company, and Japan Nuclear Fuel Ltd. are also obliged to provide the Facilitation Corporation with general contributions. The following explanations are made by the Government:

- (i) In consideration of the objectives of the Nuclear Damage Compensation Act, nuclear operators should have inherently secure the necessary funds in preparation for any possible nuclear accidents, but in reality, no such funding has been accumulated;
- (ii) Accordingly, the cost of accumulating sufficient funds has not been included in the cost of electricity production and consumers have enjoyed cheaper prices for electricity generated by nuclear power plants;
- (iii) Although it would certainly be reasonable to require such consumers to retrospectively bear the cost of the accumulation of such funds, it would be unrealistic after the Fukushima Accident to identify such consumers and the amount to be borne by them respectively;
- (iv) In addition, in reference to the progressive reforms to liberalize the electricity market, in order to maintain fairness among beneficiaries, not only TEPCO but also these other leading nuclear operators should bear the cost of funds to have been accumulated before the Fukushima Accident (hereinafter cited as the “Retroactively Accumulated Reserve Fund”).³⁸

The reasonableness of the above logic might leave much margin for discussion, but it seemed inevitable that the other major nuclear operators besides TEPCO would have to accept the above scheme in social circumstances where people were casting a cold eye on nuclear power production. In fact, they spoke no major objections.

The Act on Nuclear Damage Compensation Facilitation Corporation passed in the National Diet on August 3, 2011.

The Nuclear Damage Compensation Facilitation Corporation was established on 12 September 2011. The total amount of initial subscriptions amounted to 14 billion yen, half of which was borne by the Government and the other half by the nine major electric power companies, the Japan Atomic Power Company, and Japan Nuclear Fuel Ltd.

c. Activities Related to Nuclear Damage Compensation Facilitation

(1) Financial Assistance to TEPCO

The Facilitation Corporation is providing TEPCO with financial aid. It has implemented these provisions in various ways such as grants of government bonds, subscriptions for shares, finance loans and investments in bonds. As of 23 July 2018, the total amount of financial aid is 8 trillion 173.1 billion yen.

(2) Receipt of Contributions

The Facilitation Corporation is collecting the contributions from the nuclear operators in order for TEPCO to compensate victims for damage caused by the nuclear accident expeditiously and smoothly. The contributions are divided into two kinds: the “General Contribution” and the

³⁷ http://www.ndf.go.jp/soshiki/pamph_e.pdf

³⁸ See, Agency for Natural Resources and Energy, “Genshiryoku Jiko no Baisho no Sonae ni kansuru Futan no Arikata nitsuite” [How should the Damages for Nuclear Accidents be Borne], on 29 November 2016 (in Japanese), available at <http://www.meti.go.jp/committee/sougouenergy/kihonseisaku/denryoku_system_kaikaku/zaimu/pdf/05_03_00.pdf>.

“Special Contribution.” The former is to be paid by the major nuclear operators as stated above, and the latter is to be paid by the nuclear operator which receives financial aid from the Facilitation Corporation, that is, TEPCO in the case of the Fukushima Accident.

The total amount of General Contributions is to be calculated as fulfilling the following two conditions: (i) in light of the long-term prospect of tasks to be performed by the Facilitation Corporation, the amount should be sufficient to cover all costs necessary to adequately and definitely perform these tasks; (ii) in light of the revenues of each nuclear operator, the amount should not create obstacles to the stable supply of electricity by its business operations, including the smooth operation of nuclear power plants, or impose a tremendous burden on consumers.³⁹ And, with regard to the ratio of contributions for each nuclear operator, these shall be determined in principle in relation to the size and substance of its business concerning nuclear power plants as well as taking account of other conditions.⁴⁰

On the basis of the above principles, the Managing Committee of the Facilitation Corporation determined the amount of the General Contribution of the respective electric power companies as follows: (i) the average amount of the internal reserve was calculated by subtracting the average total amount of dividends to shareholders from the average after-tax profit for the past 10 years; (ii) on the other hand, the ratio of burdens for each respective nuclear operator was calculated with reference to the total thermal power of their nuclear reactors and other factors; (iii) the amount of the General Contribution should be the maximum amount calculated in order to fulfill the condition that the amount of the internal reserves of all nuclear operators would be above zero, if the amount of respective General Contributions calculated in accordance with the ratio were to be subtracted from the amount of the internal reserve.⁴¹ This idea is based on the assumption that, if the respective operators were forced to accumulate this kind of fund, they would pay their respective contributions to the extent that they would not fall into the red, since, in the governmental authorization process of electricity prices in those days, all costs could be included and therefore the contribution should be included.

On the other hand, with regard to the Special Contribution, Article 52 of the Act on the Nuclear Damage Compensation (and Decommissioning) Facilitation Corporation provides that the amount of the Special Contribution shall be determined at the highest possible rate, in light of the revenue of the nuclear operator (the recipient of the financial aid), insofar as the amount should not bring about obstacles to the stable supply of electricity in the operation of its business, including the smooth operation of their nuclear power plants.⁴²

The amount of the General Contribution and that of the Special Contribution are as follows:⁴³

	General Contribution		Special Contribution borne by TEPCO (yen)
	Total Amount (yen)	The ratio (and the amount) borne by TEPCO (yen)	

³⁹ Article 39, Paragraph 2. In reference to these conditions, more detailed criteria were provided for by Article 2 of the Order of the Cabinet Office and Ministry of Economy, Trade and Industry on 10 August, 2011.

⁴⁰ Article 39, Paragraph 3. Based upon these conditions, more detailed criteria were provided for by Article 3 of the Order mentioned in *supra* note 39.

⁴¹ See, Board of Audit, “Kokkai karano Kensa Yousei Jiko nikansuru Hokoku” [Report on Investigation on the Issues Requested by the National Diet], Attached Chart No. 4, October 2013 (in Japanese), available at <<http://report.jbaudit.go.jp/org/h24/YOUSEI5/2012-h24-Y5206-0.htm>>.

⁴² Article 52, Paragraph 2. In reference to these conditions, more detailed criteria were provided for by Article 8 of the Order of the Cabinet Office and Ministry of Economy, Trade and Industry on August 10, 2011.

⁴³ As to the data of 2017, <http://www.meti.go.jp/press/2017/03/20180330011/20180330011.html> (in Japanese).

2011	81.5 billion ⁴⁴	34.81% (28.37015 billion)	0 ⁴⁵
2012	100.8465 billion	38.51% (38.81982 billion)	0
2013	163 billion	34.81% (56.74030 billion)	27.1 billion ⁴⁶ (Increased later to 50 billion)
2014	163 billion	34.81% (56.74030 billion)	60 billion
2015	163 billion	34.81% (56.74030 billion)	70 billion
2016	163 billion	34.81% (56.74030 billion)	110 billion
2017	163 billion	34.81% (56.74030 billion)	70 billion
2018	163 billion	34.81% (56.74030 billion)	70 billion
Total	1 trillion 160.3465 billion	35.13% (407.63177 billion)	430 billion

The total amount of General and Special Contribution borne by TEPCO and that of General Contribution borne by other nuclear operators are as follows.

Total Amount of General and Special Contribution borne by TEPCO	837.63177 billion
Total Amount of General Contribution borne by other nuclear operators	322.71473 billion

On 31 July 2012, the Facilitation Corporation borrowed, with a guarantee provided by the Government, 1 trillion yen from private banks and subscribed for newly issued shares of TEPCO. Out of 1 trillion yen, 320 billion yen was used to subscribe for 1.6 billion Type-A preferred shares (at 200 yen per share) with voting rights and 680 billion yen was used to subscribe for 340 million Type-B preferred shares (at 2,000 yen per share) without voting rights. At any time, the Type-B share may be converted to the Type-A shares (the conversion rate is 1:10), and the Type-A shares may be converted to normal shares at a price of 90% of the average closing price on the Tokyo

⁴⁴ According to the calculation method, the amount in 2011 was 163 billion yen. But, since this system began to work in September, the amount was halved.

⁴⁵ The Facilitation Corporation determined that the amount of the Special Contribution should be zero because TEPCO's revenue was falling into the red in 2011 and 2012, and the Government authorized this determination.

⁴⁶ The Facilitation Corporation determined that the amount of the Special Contribution should be 27.1 billion yen and this was authorized by the Government on 20 March 2014, but, in consideration of the fact that TEPCO's revenue unexpectedly rose, the amount was changed to 50 billion yen on 21 April 2014.

Stock Exchange during the five consecutive business days immediately prior to the date of request for conversion.

Since the total number of shares in TEPCO was around 1.6 billion at the time of the Fukushima Accident, including the treasury shares and fractional shares, the Facilitation Corporation had acquired around 50.11% of the voting rights. If the conversion of the Type-B shares to Type-A shares were to be carried out, the Facilitation Corporation would become a controlling shareholder with 75.5% of shares.

Incidentally, the changes in TEPCO’s share price from immediately prior to the Great East Japan Earthquake are as follows:

10 March 2011 (the day before the Great East Japan Earthquake)	2,153 yen
15 March 2011 (last explosion of the reactor in Fukushima <i>Dai-ichi</i> Nuclear Power Plant)	1,221 yen
18 July 2012 (lowest stock price)	120 yen
31 July 2012 (the day when the Government subscribed for the newly issued shares of TEPCO at 200 yen)	131 yen
21 August 2018	539 yen

The Facilitation Corporation has a plan to gradually withdraw its commitment from TEPCO. According to the plan as of 2014, the Facilitation Corporation will sell half of its shares on the market in the middle of the 2020s and by the middle of the 2030s it will have sold all its remaining shares.

3. Payment to TEPCO by the Government under the Indemnity Agreements

The Fukushima Accident was outside the insurance coverage under the contract between TEPCO and the Japan Atomic Energy Insurance Pool, since it was caused by a tsunami, irrespective of the size thereof. Therefore, the Government, in accordance with the indemnity agreements made under the Indemnity Act, paid out 120 billion yen (full payment) on 21 November 2011 regarding the accident at the Fukushima *Dai-ichi* Nuclear Power Plant (1F); and around 68.9 billion yen on 4 March 2015 regarding the evacuation cost in relation to the Fukushima *Dai-Ni* Nuclear Power Plant (2F). Although no release of radioactive material from 2F, the Government issued evacuation order relating to 2F.⁴⁷ Because the 2F evacuation area overlapped with that of 1F, a partial payment was made in relation to 2F.⁴⁸

⁴⁷ See, supra note 2.

⁴⁸ After the above payments, the Government ordered TEPCO to bring the amount of secure financial security up to 120 billion yen for two plants again, in accordance with Article 7, Paragraph 2 of the Nuclear Damage Compensation Act. In the face of a refusal to enter into a liability insurance contract by the Japan Atomic Energy Insurance Pool, TEPCO deposited 120 billion yen in cash with the Tokyo District Legal Affairs Bureau regarding 1F and entered into the indemnity contract with the Government regarding 2F.

Incidentally, after the Fukushima Accident, the premium for the indemnity agreement for nuclear power plants was raised. The premium had been 3/10,000 of the insured amount since 1960 when the Act was put into force until March 31, 2013 and the annual fee was 36 million yen in the case of nuclear electricity generation with a capacity of

IV. Conclusion

First, notwithstanding that TEPCO is just a private company with limited assets—albeit a large one⁴⁹—it has provided compensation worth over 8 trillion yen in addition to bearing the cost of decommissioning and decontamination (12 trillion yen) over the last six years through the supply of funds from the Facilitation Corporation which again receives financial aid from the Government under Article 16 of the Nuclear Damage Compensation Act. Metaphorically speaking, TEPCO is bleeding profusely and has been kept alive through almost unlimited blood transfusions. It used to be said that unlimited liability meant liability up to the total value of assets possessed by the nuclear operator in question.⁵⁰ However, Japan has introduced a time factor into the unlimited liability system. Giving TEPCO unlimited funds and an unlimited time to make payment for compensation through the Facilitation Corporation. This system exposes TEPCO to truly unlimited liability.

Second, however, the present system would not necessarily work as well in a future nuclear accident. In the case of the Fukushima Accident, nuclear power production is only one part of TEPCO's business. Since it also produces electricity with thermal power plants and hydroelectric dams, it can earn profits without active nuclear power plants. Therefore, with time, TEPCO can still be a profitable energy producer. However, a company generating electricity by exclusively nuclear power plant would not be capable of earning money going forward after an accident of the plant. This means the Japanese system could not necessarily be applied to all situations of massive nuclear damage as it has applied to the TEPCO's Fukushima Accident.

Third, the idea of Retroactively Accumulated Reserve Fund has become the central plank of Japan's nuclear damage compensation mechanism. Under this mechanism, other nuclear operators besides TEPCO are also obliged to pay the General Contribution to the Facilitation Corporation. The amount of that contribution has been over 300 billion yen. However, this mechanism is based on unstable foundations. Therefore, it will be necessary to consider carefully whether this mechanism can be a model for compensation for widespread damage in other cases.⁵¹

more than 10,000kW. However, after the Fukushima Accident, the premium rate was amended from 3/10,000 to 20/10,000 on 1 April 2013. Accordingly, since then, the annual fee has been 240 million yen.

⁴⁹ The aggregate market value of TEPCO was 900.8 billion yen at the time of Fukushima Accident in 2011, and the proceeds and income from ordinary operations were 5.0162 trillion yen and 133.7 billion yen respectively in the 2010 fiscal year. Incidentally, the proceeds and income from its ordinary operation of TEPCO were 5.851 trillion yen and 254.86 billion yen respectively in the 2017 fiscal year, and TEPCO's aggregate market value is 867.789 billion yen on 21 August 2018.

⁵⁰ Incidentally, it is pointed out that the limited liability system of corporate law lets nuclear power companies rationally externalize the cost of doing nuclear generating business which might cause damage so large that they cannot pay for it. See, Mark Ramseyer, "Why Power Companies Build Nuclear Reactors on Fault Lines: The Case of Japan," *Theoretical Inq. L.*, Vol. 13 (2012), p. 485.

⁵¹ The Act on the Launching and Management of Artificial Satellites (Act No. 76 of 2016) adopts rules very similar to those found in the Nuclear Damage Compensation Act, such as non-fault liability (Articles 35 and 53), channeling (Article 36), and Obligation of Financial Security (Articles 9 and 40 to 52).